

**COACHING FOR INSTRUCTIONAL IMPROVEMENT IN
SELANGOR AND SABAH**

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ABSTRACT

This study looks at the implementation of coaching in Malaysian schools. It focuses on the practice of coaching and its relation to the improvement of teachers' classroom practices in primary and secondary schools in Selangor and Sabah. A total of 470 teachers and coaches (SISC+) from 10 District Education Department in Selangor and 24 District Education Department in Sabah were involved as respondents in this study. This quantitative study is based on survey method. The research data were obtained through a set of questionnaire as the research instrument of the study. The instrument is used to measure different variables of this study which is adapted based on 5 instruments from previous studies (Reed, 2015; Frye, 2015; Eismin, 2015; Dugan, 2010 & Parman, 2015). To answer research questions 1, 2 and 3, descriptive statistics were analyzed using the Statistical Package for Social Sciences (SPSS) Version 23.0 based on the mean value and standard deviation for the purpose of measuring the level of coaching elements and the impact on all the variables related to coaching. Whereas, inferential analysis for research questions 4, 5, 6 and 7, data were undertaken using Structural Equation Modeling PLS 3.0 to analyse the relationship between the variables as well as to look at the mediation and moderating effect of certain variables. The findings show that the level of guidance in schools in Selangor and Sabah is high for every construct measured based on mean score and standard deviation. Analysis of findings also shows the level of knowledge and skills of the coach are of moderate level. In addition, the findings show that the practice of coaching in schools in Selangor and Sabah is at the "implementation" level which indicates that coaching is not a school culture. However, the findings also showed that there were no significant differences in the perceptions of teachers and coaches based on state or roles. The findings of the SEM PLS analysis show that there is a significant and positive

relationship between coaching and other variables such as instructional improvement, continuous professional learning, leadership, learning outcomes, school climate and the implementation of coaching practice. The analysis of the elements of coaching shows that all the elements of coaching were significant towards other variables except for element reflect. An analysis of the findings based on indirect effects shows that coaching has a partial mediating effect in the relationship between continuous professional learning, leadership, school climate and the level of implementation of coaching practices towards instructional improvement, learning outcomes and school improvement. The PLS SEM analysis on moderation also shows that there is no moderating effect for teaching experience and frequency of training towards instructional improvement. Finally, some research implications for stake holders are also discussed based on theoretical and practical implications. Some advanced research recommendations have also been suggested so that the findings of future studies will be more meaningful and adds to the body of literature of similar field.

AMALAN BIMBINGAN UNTUK PENINGKATAN PENGAJARAN DI SELANGOR DAN SABAH

ABSTRAK

Kajian ini adalah bertujuan untuk mengkaji amalan bimbingan dan peningkatan pengajaran guru di sekolah menengah dan rendah di Selangor dan Sabah. Seramai 470 orang guru dan pegawai pembimbing sekolah (SISC+) dari 10 buah Pejabat Pendidikan Daerah di Selangor dan 24 Pejabat Pendidikan Daerah di Sabah terlibat sebagai responden dalam kajian ini. Kajian ini adalah kajian kuantitatif berdasarkan kaedah tinjauan yang menggunakan soal selidik sebagai instrumen kajian. Instrumen yang digunakan bagi mengukur pelaksanaan amalan bimbingan dalam kajian ini telah diadaptasi dari 5 instrumen dari kajian terdahulu (Reed, 2015; Frye, 2015; Eismin, 2015; Dugan, 2010 & Parman, 2015). Untuk soalan 1, 2 dan 3 analisis deskriptif telah dijalankan dengan menggunakan perisian program IBM Statistical Package for Social Sciences (SPSS) Version 23.0 berdasarkan nilai min dan sisihan piawai untuk mengkaji tahap pelaksanaan elemen-elemen bimbingan dan kesan amalan bimbingan terhadap pembolehubah yang berkaitan. Manakala, analisis inferensi untuk soalan kajian 4, 5, 6 dan 7, telah dijalankan dengan menggunakan Structural Equation Modelling PLS 3.0 untuk melihat hubungan diantara pembolehubah berkaitan dengan amalan bimbingan dan juga kesan perantara dan penyederhana pembolehubah yang berkaitan. Dapatan kajian menunjukkan tahap amalan bimbingan di sekolah-sekolah di Selangor dan Sabah berada pada tahap yang tinggi bagi setiap konstruk yang diukur berdasarkan skor min dan sisihan piawai. Namun begitu, analisis dapatan menunjukkan tahap pengetahuan dan kemahiran pembimbing berada pada tahap sederhana. Dapatan kajian juga menunjukkan amalan bimbingan di sekolah di Selangor dan Sabah berada di tahap “pelaksanaan” dan bukan merupakan budaya

sekolah. Walau bagaimanapun, dapatan kajian juga menunjukkan tidak terdapat perbezaan yang signifikan terhadap persepsi guru dan pembimbing berdasarkan negeri atau peranan. Dapatan kajian berdasarkan analisis haluan SEM PLS menunjukkan terdapat hubungan yang signifikan yang positif antara amalan bimbingan dengan peningkatan pengajaran, pembelajaran profesional berterusan, kepimpinan, hasil pembelajaran, suasana sekolah dan tahap pelaksanaan amalan bimbingan. Dapatan analisis haluan juga menunjukkan terdapat hubungan yang signifikan diantara elemen-elemen amalan bimbingan terhadap pembelajaran professional berterusan, kepimpinan, hasil pembelajaran, iklim sekolah dan tahap pelaksanaan amalan bimbingan, kecuali elemen refleksi. Analisis dapatan berdasarkan kesan tidak langsung menunjukkan amalan bimbingan mempunyai kesan perantara separa dalam hubungan di antara pembelajaran professional berterusan, kepimpinan, iklim sekolah dan tahap pelaksanaan amalan bimbingan terhadap peningkatan pengajaran, dan peningkatan sekolah. Analisis PLS SEM berdasarkan nilai statistik-t juga menunjukkan tidak terdapat kesan penyederhanaan bagi pembolehubah pengalaman mengajar dan kekerapan latihan terhadap peningkatan pengajaran. Akhir sekali, beberapa implikasi kajian juga turut dibincangkan supaya pihak berkepentingan dapat mengambil langkah yang sewajarnya terutamanya dalam membuat perancangan berkaitan amalan bimbingan di sekolah di masa hadapan. Beberapa cadangan kajian lanjutan juga telah dikemukakan agar dapatan kajian-kajian di masa hadapan akan lebih bermakna dan bermanfaat kepada teori dan ilmu pengetahuan dalam bidang yang sama.

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TABLE OF CONTENTS

Abstract	iii
Abstrak	v
Acknowledgement	vii
List of Figures	xvii
List of Tables	xix
List of Abbreviations	xxvi
List of Appendices	xxvii
CHAPTER 1: INTRODUCTION	1
1.1 Introduction	1
1.2 Background of The Study	3
1.3 Statement of Problem	6
1.4 Theoretical Framework	13
1.4.1 Instructional Coaching Model	14
1.4.2 Theory of Change	17
1.4.3 Leadership Theories	19
1.4.4 Theory of Instructional Improvement	22
1.4.5 Professional Development for Instruction Model	23
1.4.6 Theory of Adult Transformational Learning	26
1.4.7 Mediation and Moderation Model	27
1.5 Research Purpose	30
1.6 Research Rationale	31
1.7 Research Objectives	32
1.8 Research Questions	33

1.9 Conceptual Framework	34
1.10 Significance of the Study	37
1.11 Limitation of the Study	40
1.12 Operational Definition	41
1.12.1 Instructional support	41
1.12.2 Coaching	41
1.12.3 Instructional Improvement	42
1.12.4 Professional Development	42
1.12.5 Supervision	42
1.12.6 Coach	43
1.12.7 School Improvement Specialist Coach+ (SISC+)	43
1.12.8 Leadership Roles	43
1.12.9 Learning Outcomes	44
1.12.10 School Improvement	44
1.13 Summary	45
CHAPTER 2 LITERATURE REVIEW	46
2.1 Introduction	46
2.2 Conceptual Definition of Coaching	46
2.3 Brief History of Coaching	47
2.4 Role of Coaching	52
2.5 Elements of Coaching	55
2.5.1 Trust	55
2.5.2 Collaboration	58
2.5.3 Reflect	60

2.5.4 Feedback and Support	62
2.6 Models of Coaching	64
2.6.1 Cognitive Coaching	65
2.6.2 Literacy Coaching	65
2.6.3 Peer Coaching	66
2.6.4 Instructional Coaching	67
2.7 Factors Related to Effective Coaching	70
2.7.1 Conceptual Definition of Leadership in Coaching	70
2.7.1.1 The Impact of Leadership on Coaching	70
2.7.2 Conceptual Definition of Coach Competency	78
2.7.2.1 Pedagogical Knowledge	78
2.7.2.2 Content Expertise	79
2.7.2.3 Interpersonal Skills	80
2.7.2.4 The Impact of Coach Competency on Coaching	80
2.7.3 Conceptual Definition of Continuous Professional Development (CPD)	83
2.7.3.1 Models and Theories of Professional Development	86
2.7.3.2 Impact of Coaching on Professional Development	91
2.7.3.3 The Impact of Coaching on Transformation of Knowledge and Skills	93
2.7.4 Conceptual Definition of Instructional Improvement	97
2.7.4.1 Impact of Coaching on Instructional Improvement	99
2.7.4.2 Impact of Coaching on Learning Outcome and School Improvement	101
2.7.5 Resistance Towards School Reform	105

2.7.6 School Climate	106
2.7.7 School Improvements	110
2.8 The Implementation of Coaching in Malaysian Schools	113
2.8.1 Phases of Coaching Implementation	114
2.8.2 School Improvement Specialist Coach (SISC+)	116
2.9 Summary	120
CHAPTER 3: METHODOLOGY	122
3.1 Introduction	122
3.2 Research Epistemology and Ontology.....	122
3.3 Research Design	123
3.4 Population and Sampling	125
3.5 Instrumentation	127
3.6 Likert Scale	129
3.7 Data Collection Process	130
3.8 Data Analysis Procedures	131
3.9 Research Hypotheses	133
3.10 Pilot Study.....	141
3.11 Validity and Reliability	142
3.12 Construct Validity	147
3.13 Factor Analysis	147
3.14 Data Screening	153
3.14.1 Analysis of Missing Values Outliers	153
3.14.2 Normality Test	154
3.14.3 Multicollinearity Test	158

3.14.4 Homoscedasticity Test	159
3.14.5 Common Method Bias (Harman Single Factor Test)	160
3.15 Summary	161
CHAPTER 4: FINDINGS	163
4.1 Introduction	163
4.2 Descriptive Statistics	163
4.3 Descriptive Analysis	170
4.3.1 The practice of Coaching and the Impact	171
a) The practice of Elements of Coaching	172
b) The impact of coaching on instructional improvement	181
c) The impact of coaching on role of leadership	186
d) The impact of coaching on continuous professional development	190
e) The Impact of coaching on Training	193
f) The impact of coaching on learning outcomes	196
g) The Impact of coaching on School Improvement	199
4.3.2 Coaching Knowledge and Skills	203
a) Level of Coaching Knowledge and Skills.....	203
b) Training for Coaches	207
4.3.3. Coaching Implementation	211
a) Coaching Implementation Phase	211
b) Level of Coaching Practices Implemented in Malaysian Schools.	213
c) Malaysian School Climate	216
4.4 Inferential Statistic	219
4.5 Measurement Model	221

4.5.1 Internal Consistency.....	221
4.5.2 Convergent Validity	223
4.5.3 Discriminant Validity	228
4.5.3.1. Fornell Larcker Assessment	229
4.5.3.2 Heteromonotrait Assessment (HTMT)	238
4.6 Structural model.	243
4.6.1 Coefficient of Determination (R ²)	244
4.6.2 Assessment of Predictive Relevance (Q ²)	244
4.6.3 Assessment of Effect Size Level (Effect Size f ²)	246
4.6.4 Factors Related to Coaching	246
4.6.5 Relationship between Elements of coaching and Other Factors Related to Coaching	251
a) Relationship between elements of coaching and instructional. Improvement	252
b) Relationship between Elements of Coaching and Role of Leadership	254
c) Relationship between Elements of Coaching and Role of CPD ..	256
d) Relationship between Elements of Coaching and Learning Outcome	258
e) Relationship between Elements of Coaching and Training	261
f) Relationship between Elements of coaching and Climate, Implementation Level and Overall Improvement	264
4.6.6 Mediating Effects of Coaching	270

4.6.6.1 Effects of coaching on role of leadership, professional development (CPD), learning outcomes and instructional improvement	271
4.6.6.2 Effects of coaching on the relationship between school climate, coaching implementation and overall improvement	276
4.6.7 Moderating Effects of Working Experience and Training	281
4.6.7.1 Moderating Effect of Teaching Experience	282
4.6.7.2 Moderating Effect of Frequency of Training	283
4.7 Summary of Findings	284
4.7 Conclusion	286
CHAPTER 5: DISCUSSION	287
5.1 Introduction	287
5.2 Summary of the Study	287
5.3 Discussion of Findings	288
5.3.1 The Practice of the Elements of coaching	289
5.3.1.1 Collaboration	289
5.3.1.2 Feedback and Reflect	290
5.3.1.3 Support and Trust	291
5.3.2 The impact of coaching on instructional improvement	292
5.3.3 The impact of coaching on teacher professional development	292
5.3.4 The impact of coaching on Training	294
5.3.5 The impact of coaching on learning outcomes	295
5.3.6 The impact of coaching on role of leadership	296

5.3.7 The level of knowledge, technical and interpersonal skills applied by coaches	298
5.3.8 Coaching implementation Phase	300
5.3.9 Factors Related to Coaching	302
5.3.10 Implementation of Coaching Practices	303
5.3.11 The Relationship between Elements of Coaching and Other Variables	307
a) Elements of Coaching and Instructional Improvement	307
b) The Relationship between Elements of Coaching and CPD	308
c) Elements of Coaching and Leadership	309
d) Elements of Coaching and Learning Outcome	310
e) Elements of Coaching and Climate	311
f) Elements of Coaching and Implementation	312
g) Elements of Coaching and Overall Improvement	313
5.3.12 Mediation Effect of Coaching	314
a) Mediation Effect of Coaching on CPD and Instructional Improvement	314
b) Mediation effect of coaching on learning outcome and instructional improvement	315
c) Mediation effect of coaching on leadership and instructional improvement	317
d) Mediation Effect Coaching on Climate and Overall School Improvement	319
e) Mediation effect coaching on level of implementation (of coaching) and overall school improvement	320

5.3.13 Moderating Variables	322
5.4 Implications of Findings	322
5.4.1 Theoretical Implication	323
5.4.2 Practical Implication	325
5.5 Contribution	327
5.6 Recommendation and Future Studies	329
5.7 Conclusion	330
REFERENCES	335

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LIST OF FIGURES

Figure 1.1 Mediator Model (Baron & Kenny,1986)	27
Figure 1.2 Moderator Model (Baron & Kenny, 1986)	28
Figure 1.3 Theoretical Framework	30
Figure 1.4. Conceptual Framework for the study	35
Figure 2.1 The Development of Coaching in Various Fields	48
Figure 2.2 Guskey’s Professional Development Model	86
Figure 2.3 Joyce and Showers (1980) Model of Professional Development	87
Figure 2.4 Professional Development for Instruction Model (PDI Model)	89
Figure.2.5 Phases of Change	114
Figure 2.6 Roles and Responsibilities of SISC+ based on one year working days	117
Figure 2.7 Roles and Responsibilities of SISC+ in Curriculum and Assessment ...	118
Figure 3.1 Quantitative Research Design	124
Figure 3.2 Data Collection Procedure	131
Figure 3.3 Histogram on Data Distribution of Construct Feedback, Reflect, Leadership, Support and CPD	157
Figure 3.4 P-P plot for Construct Collaboration and leadership	158
Figure 3.5 Homoscedasticity Test on Variable Collaboration and Instructional Improvement	160
Figure 4.1 Structural Model	245
Figure 4.2 Relationship between Coaching Constructs and Instructional Improvement	253
Figure 4.3 Relationship between coaching sub constructs and Leadership	256

Figure 4.4 Relationship between coaching construct with professional development	258
Figure 4.5 Relationship between Coaching Constructs and Learning Outcome	260
Figure 4.6 Relationship between Coaching Constructs and Training	263
Figure 4.7 Relationship between Coaching Construct towards Climate, OVIMP and IMPLEM	267
Figure 4.8 Mediation Model for Coaching on the Relationship between Learning outcome, CPD and Leadership and Instructional Improvement	274
Figure 4.9 Mediation Model for Coaching on the Relationship between Climate, Implementation and Overall Improvement	278

LIST OF TABLES

Table 1.1 Summary of Theories and the Attributes	28
Table 2.1 The Differences between Supervision and Coaching	49
Table 2.2 Variations of Coaching	69
Table 2.3 Transformational Leadership	73
Table 2.4 Evaluating Professional Development.....	85
Table 2.5 Principles of Adult Learning	95
Table 2.6 Coaching Implementation Stage	119
Table 3.1 Summary of Sampling of the Study	126
Table 3.2 Summary of Instrument Items in Part 2	128
Table 3.3 Summary of Research Questions and Types of Data Analysis	140
Table 3.4 Example of the adaptation process of the items in the instrument for the study as part of the validation process.	143
Table 3.5 Cronbach's Alpha from Reed (2015) and Dugan (2010)	146
Table 3.6 Reliability Statistics	146
Table 3.7 Factor loading, KMO and Bartlett's value for sub-constructs Collaboration, Feedback, Reflect, Trust and Support	149
Table 3.8 Factor loading, KMO and Bartlett's value for sub-constructs instructional improvement, Leadership, CPD and Learning Outcome	150
Table 3.9 KMO, Bartlett's value and factor loading for construct Training, Coaching Implementation, Climate and Overall Impact	152
Table 3.10 Skewness and Kurtosis values for individual item	156
Table 3.11 Multicollinearity Test	159
Table 3.12 Harman Single Factor Analysis	161
Table 4.1 Demographic Information of Respondents	164
Table 4.2 Number of Respondents from Selangor and Sabah	164

Table 4.3 Type of School, Standard and Subject Taught by Respondents	165
Table 4.4 Respondents' Position and Working Experience	167
Table 4.5 Respondents' Involvement with Coaching, Certified Field and Qualification	168
Table 4.6 Number of Schools Attached	170
Table 4.7 Formulae for Calculating Interpretation	170
Table 4.8 Mean Interpretation	171
Table 4.9 Mean Interpretation	171
Table 4.10 Mean and Standard Deviation of sub construct Collaboration	173
Table 4.11 Respondents' Perception on Sub-Construct Collaboration based on States	174
Table 4.12 Means and Standard Deviation on Teachers and Coaches Perception on Sub-Construct Collaboration based on Roles	175
Table 4.13 Mean and Standard Deviation of sub-construct Feedback and Reflect ...	176
Table 4.14 Mean and Standard Deviation on Sub-Construct Feedback and Reflective based on States	177
Table 4.15 Mean and Standard Deviation on Sub-Construct Feedback and Reflective based on Roles	178
Table 4.16 Mean and Standard Deviation of sub-construct Support and Trust	179
Table 4.17 Mean and Standard Deviation on Sub construct support and trust Based on States	179
Table 4.18 Mean and Standard Deviation on Sub Construct Support and Trust based on Roles	181
Table 4.19 Mean and Standard Deviation for Construct Instructional Improvement	182
Table 4.20 Mean values and Standard Deviation on the impact of coaching on instructional improvement based on States	183
Table 4.21 Mean Values and Standard Deviation of Coaching Impact on Instructional Improvement Based on Roles	185
Table 4.22 Mean values and Standard Deviation on the impact of coaching on construct Leadership	187

Table 4.23 Mean values and Standard Deviation on Coach Leadership Based on States	188
Table 4.24 Mean values and Standard Deviation on Coach Leadership Based on Roles	189
Table 4.25 Mean and Standard Deviation on the impact of coaching on construct CPD.....	190
Table 4.26 Mean values and Standard Deviation of Continuous Professional Development based on States	191
Table 4.27 Mean values and Standard Deviation of the Impact of Coaching on Continuous Professional Development Based on Roles	192
Table 4.28 Mean values and Standard Deviation on Frequency of Training	193
Table 4.29 Mean values and Standard Deviation on Frequency of Training Based on States	194
Table 4.30 Mean values and Standard Deviation on Frequency of training Based on Roles	195
Table 4.31 Mean values and Standard Deviation of Impact of coaching on learning outcome	196
Table 4.32 Mean Values and Standard Deviation of Impact of Coaching on Learning Outcome Based on States	197
Table 4.33 Mean Values and Standard Deviation of Impact Of Coaching on Learning Outcome Based On Roles	198
Table 4.34 Mean values and Standard Deviation on construct Overall School Improvement	199
Table 4.35 Mean values and Standard Deviation on the Impact of Coaching on Overall Improvement Based on States	200
Table 4.36 Mean values and Standard Deviation on Impact of Coaching on construct Overall Improvement Based on Roles	202
Table 4.37 Mean value and Standard Deviation on Implementation of Coaching skills	204
Table 4.38 Mean values and Standard Deviation on implementation of coaching skills based on states	205

Table 4.39 Mean values and Standard Deviation on the implementation of coaching skills Based on roles	206
Table 4.40 Mean Values and Standard Deviation on Training for Coaching	207
Table 4.41 Mean values and Standard Deviation on Training for Coaching based on States	209
Table 4.42 Mean values and Standard Deviation on Training for Coach Based on Roles	210
Table 4.43 Mean values and Standard Deviation on Phase of Coaching Implementation Phase	212
Table 4.44 Mean values and Standard Deviation on Coaching Implementation Phase Based on States	213
Table 4.45 Mean Values and Standard Deviation on Overall Implementation of Coaching in School	214
Table 4.46 Mean values and Standard Deviation on Implementation of Coaching Practices Based on States	215
Table 4.47 Mean values and Standard Deviation the impact of coaching on construct School Climate	217
Table 4.48 Mean values and Standard Deviation of the impact of coaching on construct School Climate based on states	218
Table 4.49 Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) for all Constructs	222
Table 4.50 Loading values for each indicator and the AVE for construct Collaboration, Feedback, Reflect, Support and Trust	223
Table 4.51 Loading values for each indicator and the AVE for construct Instructional Improvement	224
Table 4.52 Loading values for each indicator and the AVE for each construct	225
Table 4.53 Loading values for each indicator and the AVE for construct Learning Outcome, TypeTraining and FreqTraining	226

Table 4.54 Loading values for each indicator and the AVE for Constructs Implementation Phase and Implementation	227
Table 4.55 Loading values for each indicator and the AVE for Constructs School Climate and Overall Impact	228
Table 4.56 Fornell Larcker criterion for CPD, Collaboration, Feedback, Instructional Improvement, leadership, learning outcome, reflect, support and trust	229
Table 4.57 Fornell Larcker criterion for construct feedback, Frequency of training, Reflect, support, Trust, type of training and collaboration	230
Table 4.58 Fornell Larcker criterion for collaboration, feedback, implementation phase, support, reflect, trust and implementation of practice	230
Table 4.59 Fornell Larcker criterion for climate, collaboration, feedback, overall impact, reflect, support and trust	231
Table 4.60 Cross loadings between Construct CPD, Collaboration, Feedback, INSIMP, Leadership, LO, Reflect, Support and Trust	232
Table 4.61 Cross Loadings for construct Feedback, Frequency of Training, Reflect, Support, Trust, Type of Training and Collaboration	234
Table 4.62 Cross Loadings for Construct Collaboration, feedback phase, support, reflect, trust and implementation	235
Table 4.63 Cross Loadings for construct Climate, Collaboration, Feedback, Overall Impact, reflect, support and Trust.....	236
Table 4.64 HTMT for construct Collaboration, instructional improvement, reflect, support and Trust	238
Table 4.65 HTMT inference for construct Collaboration, instructional improvement, reflect, support and Trust	239
Table 4.66 HTMT for construct Feedack, Freq.Training, reflect, Support, Trust, TypeTraining and Collaboration	240
Table 4.67 HTMT inference for construct Feedback, Freq.Training, reflect, Support, Trust, TypeTraining and Collaboration	240

Table 4.68 HTMT for construct Collaboration, Feedback, ImplementPhase, support, reflect, Trust and ImplementPractices	241
Table 4.69 HTMT inference for construct Collaboration, Feedback, ImplementPhase, support, reflect, Trust and ImplementPractices	241
Table 4.70 HTMT for construct Climate, collaboration, feedback, overall impact, reflect, support and trust	242
Table 4.71 HTMT inference for construct Climate, collaboration, feedback, overall impact, reflect, support and trust	243
Table 4.72 R ² Predictive Power (Chin, 1988)	244
Table 4.73a Regression Between Variables Related to Coaching	247
Table 4.73b Regression between All the Constructs Related to Coaching	250
Table 4.74 Relationship between Coaching Sub-Constructs and Instructional Improvement	253
Table 4.75 T-statistics, standardized regression weight, (β) and R ² of path coefficients of coaching constructs towards Leadership	255
Table 4.76 T-statistics, standardized regression weight, (β) and R ² of path coefficients of coaching constructs towards CPD	257
Table 4.77 T-statistics, standardized regression weight, (β) and R ² of path coefficients of coaching constructs towards Learning Outcome	259
Table 4.78 T-statistics, standardized regression weight, (β) and R ² of path coefficients of coaching constructs towards FreqTraining and TypeTraining	262
Table 4.79 T-statistics, standardized regression weight, (β) and R ² of path coefficients of coaching constructs towards Climate, Implementation Level and Overall Improvement	266
Table 4.80 Summary of most significant and least significant relationship between independent variables and coaching sub-constructs	269
Table 4.81 Total effects of constructs coaching, CPD, LO and Leadership with INSIMP	272
Table 4.82 The Muijs's Beta Value and Strength of Effect Size	273

Table 4.83 Hypothesis Testing on Coaching Mediation Effect between construct CPD, LO and Leadership with INSIMP	276
Table 4.84 Total effects between constructs Coaching, CLIM, IMPLEM and OVIMP	277
Table 4.85 Hypothesis Testing on Coaching Mediation Effect between construct CLIM and IMPLEM with OVIMP	280
Table 4.86 Beta Value and T-statistics value for Moderating Effect of Teaching Experience on the Relationship between Coaching and Instructional Improvement	282
Table 4.87 Beta Value and T-statistics value for Moderating Effect of Training Frequency on the Relationship between Coaching and Instructional Improvement	283

Universiti Malaysia

LIST OF ABBREVIATIONS

CPD	: Continuous Professional Development
LADAP	: Latihan Dalam Perkhidmatan
PPD	: Pejabat Pendidikan Daerah
MOE	: Ministry of Education
SISC+	: School Improvement Specialist Coach
SPSS	: Statistical Package for Social Science
PLS	: Partial Least Squares
SEM	: Structural Equation Modelling

Universiti Malaya

LIST OF APPENDICES

APPENDIX 1: Questionnaire for Teacher	367
APPENDIX 2: Questionnaire for Coach	386
APPENDIX 3: Letter of Approval from EPRD	406
APPENDIX 4: Letter of Approval from JPN Sabah and Selangor	407
APPENDIX 5: Letter for District Education Department	409
APPENDIX 6: Full report on Skewness and Kurtosis Analysis	410
APPENDIX 7: Full Report on Harman Single Factor Analysis	413

Universiti Malaya

CHAPTER 1

INTRODUCTION

1.1 Introduction

Change is necessary in education to provide the best quality of educational opportunities and to maximize the potential of human development. Improving the quality of teaching is central in producing quality educational experience for students. In fact, one of the most promising strategies in improving education is by improving teacher quality (Darling-Hammond, 2010). This means that the focus should first be set on improving the quality of teachers' instructional practices which would then lead to increase learning outcomes.

One of the key elements in helping teachers to develop their practices and to improve teacher effectiveness is by providing quality teacher professional development. This is because teacher effectiveness is seen as a crucial component in school improvement (Darling-Hammond, 2010). Thus, by providing professional learning and support, it would increase teachers' instructional knowledge and skills. As suggested by Wurtzel (2007), improvement of practice can only be done by teachers. Therefore, it is of utmost importance for teachers to upgrade their knowledge and skills. This would later allow effective teaching and learning to take place. Therefore, teacher professional development should be designed in the direction of helping teachers to improve professionally.

Barber and Mourshed (2007) also suggest that the only way to improve teaching and learning outcomes is through instructional improvement. This means that teacher effectiveness is necessary in improving student learning. In fact, it could be a significant means that the school can rely on so as to increase learning outcomes (Darling-Hammond & Rothman, 2011). In the attempt to improve professionalism

standards of teachers, various trainings at all levels were given to them through professional development (Balan, Manko & Phillips, 2011).

Teachers were encouraged to practice the knowledge obtained from the various training given to improve their practices. However, without proper encouragement and support, all the knowledge and theories gained could not be translated to meet the learners' needs or improve learning (Richlin, 2001). This has caused many professional development programs to go unsuccessful and ineffective (Balan, Manko & Phillips, 2011). When this happens, it contradicts the objective of having teachers' professional development. Important changes that could lead to improving instructional practices and learning outcomes could not take place. Therefore, these teachers need support to help them utilize the knowledge and skills to improve themselves.

As mentioned earlier, although teachers were encouraged to practice the theories obtained from the various training received in the classroom but there are occasions when teachers failed to do so. It is empirically evident that approximately only 10% of the skills and strategies learned in the traditional professional development were implemented in the classroom (Cassidy et al., 2009). Thus, to overcome this problem, in certain districts, a group of instructional coaches were established to provide support to teachers (Cornett & Knight, 2009).

Coaching is a job embedded approach that supports teachers' learning (Denton & Hasbrouck, 2009). Teachers received knowledge and skills from collaborative professional learning to help teachers develop professionally but what really happens in reality is that what they learned rarely spread beyond their classroom (Wurtzel, 2007). It was even reported that many traditional professional developments were ineffective (Cassidy, Garret, Maxfield & Patchett, 2009). This

created more reason for the need of collaborative professional learning among teachers and instructional coaches within an organization to be carried out. A coach primary role is to work directly with teachers to help them implement best practices and improve pedagogy in the classroom (Knight, 2007; Bean & Swan Dagen, 2012). Thus, with the implementation of coaching, teachers will receive the right support for them to improve.

Coaching also encourages teacher leadership which is also an important element in improving instructional practices. This refers to the idea of professional collaboration or engagement among teachers in the attempt to achieve certain agenda related to instructional practices and school improvement as a whole (Harris & Muijs, 2005; Knight, 2007). In fact, teacher leadership is another way of describing collaboration, partnership and networking among teachers (Harris & Muijs, 2005; Cornett & Knight, 2009). It has been empirically proven that teacher leadership is associated with teachers' collective efforts towards professional initiative and learning which focused on improvement at various levels including classroom, departments or even the school level (Harris & Muijs, 2005).

Therefore, in the attempt implement effective coaching as a form of support towards instructional improvement, every teacher should take proactive actions by working together in a collegial team and help each other. It must be aimed at improving instructional practices, which can lead to increasing students' achievement and school performance as a whole.

1.2 Background of The Study

In the attempt to help improve school performance, teachers need to improve their instructional practices. As Sergiovanni and Starrat (1979) and Knight, (2007) points

out that in order to improve classroom instruction, it has to begin with the teacher. In Malaysia, professional development is known as LADAP (Latihan Dalam Perkhidmatan) which means in-service training for teachers. Based on a circular produced by the Ministry of Education (MOE) or Kementerian Pendidikan Malaysia (KPM), it was decided that all government servants should attend professional courses for at least 7 working days (Ang & Balasandran, 2013). However, due to capital constraints, school leaders especially had to use all means and resources to create a “one size fits all” program. Since meaningful learning would only take place when teachers are given the opportunity to learn and to develop professionally through courses which are related to their field (Dunne, 2002). Providing professional learning which is not catered for teachers’ needs would only result in the ineffectiveness of teacher professional development program as teachers could not directly relate the trainings received to their professional field.

Thus, under the new Malaysian Education Blueprint (MEB), also known as Pelan Pembangunan Pendidikan Malaysia (PPPM 2013-2025), it was stated that teachers would receive more support to help exploit their full potential in teaching (MOE, 2013). In fact, under the District Transformational Program (DTP) as outlined in the PPPM 2013-2025, the professional development component will include those training related to teachers’ own field and the focus is given towards individual needs. It will also be school based as job-embedded professional learning is believed to be more successful in teacher professional development. It will also include the involvement of others such as peer teachers as well as the administrator (MOE, 2013).

Teachers also receive support to enhance their continuous professional development trainings from pedagogy expert known as SISC+ (School Improvement

Specialist Coach). These coaches are assigned to help and guide teachers professionally through a series of classroom observation apart from conducting Professional Learning Community (PLC) program for teachers (MOE, 2013). As known by many, PLC could help to foster professional interactions among teachers, thus enhanced their knowledge and skills in teaching and learning (DiPaola & Hoy, 2008). This also applies to the situation in Malaysia. Through PLC, collaboration among teachers are nurtured by sharing of ideas and views and experience related to classroom practices. Through coaching, the knowledge and skills gained through professional development will be transformed into new classroom practices.

Coaching would lead to more skilful shared decision making among teachers apart from gaining new knowledge and skills which are needed for self-perpetuating change in their professionalism (Joyce & Showers;1996 Joyce & Showers, 1980; Knight, 2007; McCombs & Marsh, 2009; Bright, 2011). Through coaching, teachers are able to reflect on their own instructional practices, thus making improvement needed to create changes in learning outcomes. This is made possible with the help received from other colleagues (or coach) who shared similar instructional experience or situation.

In Malaysia, The Ministry of Education (MOE) decided to assign instructional coaches known as SISC+ to provide direct assistance and support to teachers. The coaching program implemented in Malaysia is being placed under the District Transformational Programme. (DTP) (MOE, 2013). These coaches are being supervised by the district education officer to monitor the development of coaching program in public schools within each district. Classroom observations carried out by coaches serve as a support to teacher professional growth through systematic and cyclical processes which involves teacher receiving constructive feedback to improve

classroom practices (DiPaola & Hoy, 2008). Apart from improving school performance, it would also reflect on the type of educational system as well as school climate which existed in Malaysian schools.

1.3 Statement of Problem

In teaching students for 21st century learning, teachers should be seen not as purveyors of knowledge, but instead as facilitators of knowledge (Hussain et al., 2000). In Malaysia, it is a common phenomenon that teachers focus on completing the syllabus for the purpose of preparing students for examination (McTighe & Brown, 2005; Caine & Caine, 2001). In fact, the evaluation system for education in Malaysia is based on public or summative assessment (Abdul Halim Abdullah, Nurul Hadiyani Ahmad, Nor Amilawani Ahmad Sukri, Nurhasyimah Ismail & Vicki Artika, 2016). Generally, lessons revolve around the conventional teacher-centred chalk and talk method, which involves teacher explaining and students jotting down notes, followed by lots of exercises and drilling practices (Lim, Fatimah & Tan, 2002; Maimunah, 2002). Thus, the class activity seems rather rigid and mundane. The students were passive, lack of interest to learn and it does not allow room for creativity (Tan & Arshad, 2014).

A study done by Higher Education Leadership Academy or Akademi Kepimpinan Pengajian Tinggi (AKEPT) in 2011 found that only fifty percent of the teaching and learning were effective which goes to show that the some of the students were left behind and teaching and learning was centred on teacher-talk (MOE, 2013). This is all the more reason why teachers need professional development in order to improve their practices. When teachers are fed with appropriate skills and knowledge which is focused on developing teacher

instructional practices, they would be able to apply the newly learnt skills and knowledge to improve students' learning outcomes (Poskitt, 2014; Knight, 2007). In this situation, coaching help to support teachers in applying theories into practice because with the presence of a coach in the classroom, it would act as a “mirror” for teachers to reflect on their own teaching (Knight, 2007).

A proactive teacher would likely to change his/her approach in teaching which can be done through coaching. Through coaching, classroom observation, which is a part of coaching practices takes place when teachers require help to deal with their instructional problem (Sullivan& Glanz, 2000) and that the teacher-coach relationship is collegial (Knight, 2011). However, since teachers vary widely personally and professionally, not everyone would be able to identify their own instructional needs or are willing to accept support from others (Knight, 2011). However, a coach can help teachers to overcome this problem if the teachers are willing to share. The question is whether coaches are able to implement the elements of coaching e.g. collaboration, trust, support, feedback and reflect.

Another obstacle in teacher improving their instruction is the traditional classroom observation which the teacher received from their superior or also referred to as clinical supervision. The aim of clinical supervision is to help teachers improve their practices for the purpose of improving students' learning outcome (Glickman et al., 2005). It is usually done by the administrator and it is a form of guidance to teachers so they could refer to the feedback or report made by the supervisor in order to find out which area of their practices require improvement (Glickman et al., 2005; Mohd Zawawi, 2002). A good and effective supervision report would contain suggestions to teachers to focus on the students learning outcomes, the teaching strategies and engage in discussion with the colleague (Sullivan & Glanz, 2000). It

should also encourage a positive working environment among teachers which allow them to collaborate and respect each other (Pajak, 2001). However, as reported by the school inspectorate, Ministry of Education (2007) the most obvious weakness in the management of clinical supervision in school is that the administrator failed to produce constructive supervision report of good quality. This has resulted in the failure of improving instructional practices among teachers.

Based on the school inspectorate's report (MOE, 2010), another reason on the ineffectiveness of the clinical supervision implementation is that the principal did not give proper training to the senior assistant as well as the head of department on how to carry out effective supervision which would help the teacher to develop professionally. Not only that, the principal is most of the time too occupied with other responsibilities that includes managing school discipline, PTA, curriculum and sports management and other matters pertaining to schools and students' welfare (MOE, 2010). Thus, the study seeks to explore how coaching could offer such support to teachers. Additionally, since coaching is a form of curriculum reform, the level of changes was also looked at.

A study conducted by Sharifah (2001) reveals that the classroom observation conducted by the administrator does not show a confident level of supervision competency. This is because, the administrators were given trainings on school management but there were no specific trainings given on how to conduct classroom supervision in order to support teacher instructional practices (Mardhiah & Rabiatul Adawiyah, 2016). This goes to show that ideally, clinical supervision should be carried out to improve teacher practices but in reality, what the leaders are actually doing defeats the purpose of clinical supervision. However, with the existence of coaching, it would help to provide support for teachers to improve their teaching and

to increase learning outcomes. Therefore, the study will also look at the kind of coaching skills applied by coaches while coaching teachers as well as the kind of training received by coaches.

In reality, supervision is usually carried out as a means of teacher evaluation and is considered as a threat to some teachers (Malm, 2009; Toll 2009). In fact, it does not encourage instructional improvement and teachers are reluctant to share due to lack of trust (Malm, 2009; Toll 2009). There is little evidence to show that traditional clinical supervision improves instructional practices (Donaldson, 2009). In fact, some teachers often do not feel supported because there is a lack of time for administrators to offer their full attention to help teacher develop their instructional practices (Sergiovanni, 1995; Knight, 2007). Even if the classroom observation took place, it was never focused at developing teachers practices since there were no further actions taken once the classroom observation was over, although in certain cases it is followed with the observer giving feedback about the process of teaching and learning and a justification why the teacher only managed to score certain marks as provided in the observation form (Veloo et al., 2013). The classroom observation which was carried out was rather bureaucratic and autocratic (Haliza, 2005; Baharom 2002). This seems to contradict the objective of improving instructional practices which is aimed at increasing learning outcomes. Thus, the study also looked at the element of trust in the implementation of coaching where teachers were able to share their problems with the coach in order to improve their practices.

As mentioned earlier, the traditional classroom observation may create a negative impression to some teachers (Malm, 2009; Toll, 2009), but the implementation of coaching would give teachers opportunities to develop professionally, thus improving students' performance. Several studies reveal that

coaching is an important element in increasing the practice of new skills gained through the process of professional development (Bush,1984; Knight, 2007). Another study suggests that new teachers and teachers with low achievement will benefit the most from coaching (Ainscow, Hopkins & West, 1994; Knight, 2007). However, it still depends on teacher willingness to learn and their commitment to reflect on their own practices and create changes (Knight, 2007). Any form of changes that is supposed to take place in the classroom depends on the level of teacher motivation and their willingness to change and improve professionally. Any form of support and assistance received from their peers would be a plus point for the change to take place. Nevertheless, coaching should be treated as a form of professional development to bring about instructional improvement (Glickman, Gordon & Gordon, 2007) which would result in improved students' learning and understanding (Griffin, 1983; Darling-Hammond & Rothman, 2011; Isaac& Magnuson, 2011).

Apart from that, the lack of support that teachers receive after each professional learning session is also one of the reasons why instructional improvement could not take place. Although teachers were given trainings related to improving their instructional practices but some studies suggested that the implementation of professional development program is ineffective. Evidence shows that some professional learning is implemented as a “one-shot” deal and therefore is not integrated with any plan to achieve both individual or organizational goals (Tetenbaum & Mulkeen, 1987; MOE, 2013; Dunne, 2002). In other words, it is not catered for individual or organizational needs. Additionally, for professional learning to be effective, it was suggested that administrative follow-up and continuous discussion should be transferred to practice in order for development to take place

(DiPaola & Hoy, 2008). It is also empirically evident that modelling can help teachers to develop their practices, however, it should be done within the context on their classroom (DiPaola & Hoy, 2008). All the elements mentioned such as follow up, continuous discussion as well as modelling are the attributes of coaching. Therefore, the study will look at how coaching affects teacher professional development.

It is also evident that if a model of concept is being given outside the classroom context, less than 15 percent transfer would take place as opposed to 80 percent transfer if it is given within the classroom context (Joyce & Showers, 2003). Therefore, by allowing teachers to employ newly learnt skills within the context of their own classroom it would ensure that they would be able to have meaningful learning experience apart from meeting the objective of professional development. In return, teachers would be able to improve their instructional practices as well as students' learning outcomes. Therefore, this study also looked at how coaching could affect instructional improvement and learning outcome.

Prince, Snowden and Matthews (2010) suggest that coaching allows significant change to take place in professional development among teachers where they are more reflective and collaborative towards the development of their classroom practice. These teachers were more than willing to implement new ideas into their own teaching as compared to those who were not involved in coaching (Showers & Joyce, 1996; Cornett & Knight, 2008). This shows that, coaching helps to better teacher professional skills and thus increase learning in the classroom. This notion is further supported by empirical evidence that shows coaching provides the opportunity for teachers to share various ideas of classroom practice and develop new skills. Therefore, when being implemented in the classroom, teachers were able

to break the norms of the classroom practices with their new ideas (Joyce & Showers, 1984; Knight, 2007). This is suggesting that through the support and direct assistance received, it could lead to improved classroom practice as well as learning outcomes. Overall, in this study, the attributes of coaching such as collaboration, feedback, reflect, trust and support are being studied by looking at the effect of each attribute on the various aspects such as leadership, professional development, instructional improvement and others.

In relation to that, several factors such as professional development, leadership, types of training received and several others serve an important role in the effectiveness of coaching and instructional improvement. This is why coaching is considered as a form of support. The role of coaching is to provide a form of assistance to support other factors in helping teachers to improve their practices as well as learning outcomes. Therefore, in this study, coaching is also proposed as a mediator which leads to improved instructional practices and learning outcome. Additionally, although instructional coach roles have recently steal the limelight and has much been discussed but the qualifications and professional preparation of these coaches have also been questioned (Marsh et al., 2008) due to the paucity of literature which examine coaches' professional learning (Galluci et al., 2010; Reed, 2015). To ensure effective coaching, coaches need appropriate skills and knowledge to guide others, therefore, it is also important to consider coaching qualification as an important element to ensure effective coaching.

As coaching increased in popularity, much has been debated about the type of education and credentialing which these coaches have received in order to become a coach (Ciporen, 2015; Knight, 2006). In helping teachers to develop professionally, it is important that the coach possesses personal and professional abilities to provide

guidance to teachers (Vangrieken, Meredith, Packer & Kyndt, 2017). Thus, every coach should have not only the knowledge as a coach but also technical and interpersonal skills as a coach so that he/ she would be able to confidently assist and support teachers in improving instructional practices. Therefore, in this study, coaching skills applied by the coach while coaching others were looked at. Additionally, the training related to coaching as well as teaching experience, are also proposed as factors that moderates the effects coaching towards instructional improvement.

Previous researchers of coaching models have focused their studies on teacher and administrator perceptions about coaching experience and its impact on instructional practices. They have also typically relied on observations, questionnaires, and surveys to gather data from both teachers and leaders, reporting generally positive findings (Hill & Rapp, 2012; Johnson & Fiarman, 2012; Kohler, Crilley, Shearer, & Good, 1997; Sparks & Bruder, 1987). Several current studies have mostly focused on the implementation of literacy coaching (Reed, 2015; Frye, 2015; Eismin, 2015; Dugan, 2010 & Parman, 2015). Each of the studies however only examined a small sample size, limiting the generalizability of the results; and limited attention was directed towards measuring students' performance. None of the studies have been conducted with regards to the local Malaysian context. Based on all the problems mentioned earlier, there is a need for a study to be conducted with regards to the implementation of coaching in the Malaysian public schools.

1.4 Theoretical Framework

There are multiple theories underpinning the study. The model of instructional coaching for example suggested that teachers need support in creating change in their

classroom practices. Through coaching, changes that takes place are in not only imposed on individual teachers and students but also on changing the culture of the organization. Therefore, theory of change is also another important theory in this study. In order to ensure effective coaching, teachers need to play several leadership roles interchangeably (i.e. distributed, transformational and teacher leadership).

Since coaching focuses on enhancing and supporting teacher professional learning, the theory of adult learning, transformational and experiential learning becomes the basis of coaching. Finally, the Model of professional development for improvement (PDI Model) is also the backbone of coaching as it focuses on teacher professional learning which focuses on building teacher capacity (knowledge and skills) for instructional improvement. The elaboration of the mentioned relevant theories is presented in the following sub-sections:

1.4.1 Instructional Coaching Model

Coaching is a multifaceted concept and has not a single definition (Ciporen, 2015; Ellinger & Kim, 2014; Grant, 2008). Adult learning, experiential learning, and transformative learning theory provide a necessary relevant theoretical base for coaching (Cox, Bachkirova, & Clutterbuck, 2014). It is a partnership which involves a process of individual development either personally or professionally through guidance from others (Ciporen, 2015; Knight, 2006).

Coaching supports learning initiatives with its central focus on learner, goal setting and equality. It allows individuals to reflect and create links between individual specific learning even to their professional or even personal life (Ciporen, 2015). In this research, we will be able to see how Instructional Coaching Model support teacher learning by transforming the knowledge and skills gained through professional development and transform it into classroom practices. With the

knowledge of adult learning theories enables the teachers to regard coaching as a learning process. With every coaching engagement, the teachers would be able to reflect, and become more intentional of his/her own behaviour (Ciporen, 2015; Elsenberg, 2016). Through the process of coaching, teachers would be able to reflect on their own teaching and decide on the best practices that would help them improve their classroom practices that would increase learning outcomes.

In creating changes in the classroom, teachers should be given voice and choice as this will allow teachers to transform their thoughts related to students, the curriculum and their practices into reality (Elmore, 2004; Knight, 2006). At this stage, coaching becomes a conduit that will allow changes in the classroom to take place (Fullan & Knight, 2011). Coaches are given a powerful position as agent of change (Deussen et al., 2007; Fullan & Knight, 2011; Killion, 2009; L'Allier et al., 2010) by carrying out various responsibilities such as discussing curriculum with the teachers, modelling and observing classroom practices and making sure that teachers implement new initiatives in their classroom (Fullan & Knight, 2011). All in all, coaching takes place when teachers share their expertise to facilitate change to take place in the classroom for the purpose of improving learning outcomes (Brown, Stroh, Fouts, & Baker, 2005) and it is empirically evident that coaches help teachers grow professionally (Joyce & Showers, 1980; Knight, 2007; McCombs & Marsh, 2009; Bright, 2011, Elsenberg, 2016).

Coaches help teachers to facilitate learning, provide them with feedback and support as well as overcoming challenges in implementing new strategies (Borman & Feger, 2006; Deussen et al., 2007; Joyce & Showers, 2002; Killion, 2008; Toll, 2005; Veenman & Denessen, 2001; Walpole & Blamey, 2008, Elsenberg, 2016). By having a clear job description for coaches, it will be easier for them to prioritize the

responsibilities thus maximize the impact of coaching ((Killion, 2009; L'Allier et al., 2010; Marsh et al., 2009). All in all, coaching is a form of adult learning which focuses on teacher collaboration to help teachers develop professionally while making positive changes to instructional practices, learning outcomes and school improvement as a whole.

Various models of coaching have been developed over the past decades. One of the contemporary model is Instructional Coaching which was developed by Knight (2003). It is based on the theoretical framework of partnership approach (Knight, 2003). Knight (2007) in his work, listed the attributes of instructional coaching which are overcoming fear, collaboration, modelling, observation and providing feedback, support as well as building emotional connection (Knight, 2007). Another element which becomes the grounded theory of instructional coaching is partnership (Cornett & Knight, 2009). It focuses on the quality of ongoing relationship between coach and teacher which is the most noted characteristics of instructional coaching (Knight, 2011). Instead of being told what to do, the ideal context of instructional coaching is teachers engage as equal partner in their professional development activities (Thomas, Bell, Spelman, & Briody, 2015; Knight, 2011). Due to these attributes of coaching, the instructional coaching theory has been chosen as one of the underpinning theory of the study.

Since the model is also based on the theory of adult learning, as participants of a learning process and equal partner, teachers need to feel their experience and opinions appreciated, valued and respected and be actively involved in their learning process that help them to grow and change (Knowles, 1990; Knight, 2011). Thus, collaborative nature of learning is most effective in engaging teachers in the learning process as opposed to top down learning model where teachers were told what to

believe and do (Knight, 2011). This is because in collaborative learning, teachers were able to reflect on their practices whereas in top down learning model, teachers were told what to do without being able to understand the decision made or able reflect on their own practices. Thus, the study looks at several elements of coaching i.e. support, reflective, collaboration, feedback and trust which are essential in creating instructional improvement.

1.4.2 Theory of Change

Change theory is a powerful force responsible for creating change and school improvement (Fullan, 2007). One of the popular attributes of the theory currently in vogue is connected to providing incentives as well as the establishment of various standards and qualification requirements in the attempt to attract and retain the interest in teaching profession as well as leadership position. This is very much in line with what has been outlined in Malaysian Education Blueprint (MEB 2013-2025) specifically shift four which is aimed at changing teaching into a profession of choice. Based on the theory, it is believed that by getting the best human expertise in the profession, positive change to the system could take place (Fullan, 2007). Nevertheless, any changes that occur with the implementation of any new educational reform would take place in three different stages namely initiation, implementation and institutionalization (Fullan, 2007).

With regards to instructional improvement, the theory of change focuses on improving teaching and learning through which teachers direct the change process in a community of trust and collaboration (Fullan, 2007). Thus, this theory goes hand in hand with the theory of coaching as it supports similar elements i.e. trust and collaboration. However, the theory of change also suggests that any strategy of change must focus on changing not only the individuals but also the culture or the

systems simultaneously (Fullan, 2006). This theory extends individual practices into a broader scope. Creating change or school improvement becomes a culture which is practiced at the school level. This is one of the reasons why theory of change has been included in the study.

Thus, the implementation of coaching practices in school to help support teachers should not be regarded as a one-off program, rather it should become as part of the organization. It should become a culture among teachers to help them grow professionally. However, without motivation, any effort put in creating changes will be effortless and improvements will not take place. (Fullan, 2006). Therefore, this is one the reasons why teachers need a form of support to motivate them towards improving their practices.

One of the important elements of theory of change is capacity building which focuses on collective effort of a group to improve students learning. This includes helping to develop individual knowledge and competencies, resources as well as motivation (Fullan, 2006). One can expect greater performance when more investments are being made on capacity building (Fullan, 2006). Motivational leverage on the other hand can be achieved when one focuses on improving the results. (Fullan, 2006). To avoid getting the same result that they have always gotten, teachers and coaches should have a common vision how changes can take place as this will help them towards similar goals (Darling-Hammond & Friedlaender, 2008; Fullan, 2008a; Knight, 2009; Reeves, 2006). This means that in order to allow change to take place, teachers and coaches must be able to collaboratively play the role of change agent.

Creating changes within the classroom is complex because teachers usually have the autonomy in making the decisions in their own classroom. However,

coaches can help teachers to grow by focusing on their practices. Building their capacity by focusing on instructional improvement would eventually lead to the increase in students' learning outcomes (Senge, 1990; Knight, 2007). By providing support to teachers, it would be easier for them to reflect on their own practices and make decision for best practices.

1.4.3 Leadership Theories

Leadership is important in securing sustainable school improvement and it has been evident in various research and practices (Harris & Bennett, 2001). A traditional idea of leadership would focus on an individual managing a hierarchical system. However, this type of hierarchical structure poses a significant barrier for teachers to work together. Teachers are not given the autonomy of a leader since the roles and responsibilities have been demarcated (Harris, 2004). However, in coaching, teachers should be able to play the different roles of leaders. For the purpose of the study, three types of leadership have been chosen namely transformational leadership, distributed leadership as well as teacher leadership.

The first theory used for this study is transformational leadership. The theory of transformational leadership is one of the principals that guides the study. Transformational leadership does not focus on the leader or the organization according to their demarcated roles but rather at developing individuals in terms of feelings, attitudes and beliefs. The central focus is set upon transforming the school culture by empowering the teachers (Harris, 2004; Bush 2011, 2013,). This theory is being included in the study because there is a need for teachers to share the responsibility of transforming the school culture which is aimed at improving instructional practices.

In transformational leadership, the changes that happen within the classroom will eventually influence the transformation of the school (Fullan, 2011; Bush 2011, 2013). Teacher collegiality and collaboration generates positive change in schools (Rosenholtz,1989; Vangrieken et al., 2017; Jones et al., 2013). It allows teachers to become leaders at various time apart from having a stronger drive for improvement (Harris & Muijs, 2002; Bush, 2011)). These drives will empower teachers to create changes within their classroom within their own chosen time. Above all, it focuses on building culture which is aimed at developing school norms, values, beliefs and assumptions and support teacher professional development (Harris, 2003; Bush 2011, 2013). Overall, transformational leadership encourages teachers to collaborate with each other apart from being reflective towards their own practices.

The second leadership theory used in this study is distributed leadership which focuses on collective leadership with teachers working together to develop their expertise and given the responsibilities to lead and create improvement and development in the classroom and to the school in general. (Harris, 2004; Bush 2011, 2013). Thus, given the responsibility to create instructional improvement, teachers will be more committed towards their own practices. The role of a coach is to provide teachers with a sense of support to help teachers focus on their aims and responsibilities in instructional improvement to meet both individual and organizational needs.

The theory of distributed leadership suggests that everyone in the organization shared the responsibility with the leader (Golemann, 2002). It is about maximizing human capacity (skills and abilities) within the organization to achieve common expectations (Harris, 2004). Recent studies prove that distributed leadership have created positive impact on school improvement primarily on students'

attainment and achievement (Harris, 2004; Bush, 2011). This also implies that interdependency among multiple leaders through interaction while stretching the function of leadership over a number of individuals could lead to a significant result (Spillane, 2002).

The third leadership theory used in this study is teacher leadership. Teacher leadership focuses on peer control rather than hierarchical control with the emphasis on collegiality among teachers. Mutual trust and support are important in the effectiveness of teacher leadership. Since coaches are also teachers, they would be more open to share their problems or seek help from the coach. Teacher trust the coach and in return, the coach would provide support in helping teachers improving their practices. Teacher leadership engages everyone within the school organization in a collective action that leads to meaningful changes (Harris, 2003; Bush, 2011, Killion et al., 2016). Various studies have been conducted in the last decades show how teacher leadership contributes towards school improvement (Little, 1990, 2003, Killion et al., 2016). Both teacher leaders and coaches are regarded as agents of change in an organization. It is important that teachers and coaches work together as one could provide support to the other.

The role teacher leadership is relatively new, thus there is paucity of research being done on the subject (York-Barr & Duke, 2004). Therefore, the findings of the study would also contribute towards the empirical evidence of teacher leadership. Nevertheless, as change agents, coaches are supposed to work closely with the principles to create educational reform and their roles are closely interconnected to one another (Spillane et al., 2001). Collaboration among these change agents will eventually lead to the improvement in students' learning outcomes. Thus, it is important that teachers and coaches work together.

All the three theories were included in this study because in ensuring the effectiveness of the implementation of coaching, both the coach and the teacher should play the various roles interchangeably. Through distributed leadership, the roles and responsibilities in achieving the school vision is equally being shared to all the teachers and it is not the responsibility of the principle alone. Teacher leadership would ensure teachers to be more committed in improving their practices. Based on transformational leadership, both teachers and coaches could collaborate towards transforming the working culture of the school for instructional improvements.

1.4.4 Theory of Instructional Improvement

Changing instructional practices is not an easy job. Teachers need help and support in order to create changes in their practices. These help and support could be offered through meaningful professional development which integrates new knowledge and skills needed for any instructional changes to take place. Teachers could allow changes to happen by increasing their knowledge and skills, the content as well as the relationship among teachers as well as the students (Elmore, 2004; Guskey & Yoon, 2009). The failure of getting the appropriate support will hinder the process of changes from taking place (Cornett & Knight, 2009). For example, if teachers were asked to improve the result of their students but the district educational department did not provide them with the right support such as providing professional development program, then, changes within the learning outcomes could not be improved.

Therefore, coaching is seen as another way of providing support to teachers in improving their practices. In coaching, one way for coaches to obtain focus on improving instruction is by concentrating on behaviour, content knowledge, direct instruction and formative assessment (Knight, 2007). By focusing on these areas,

teachers would be able to set their focus of their instructional improvement.

There are several attributes of instructional coaching which focus on helping teachers to improve instructional practices and learning outcomes i.e. trust, collaboration, commitment, and reflection. With the presence of trust, conflicts and disagreement are easier to be controlled. When teachers developed trust among each other, it is easier for them to share problems and views pertaining to their professional practices. Conflicts however, need not necessarily be perceived as negative. In fact, it could help to stretch people's ideas and collaborative learning opportunities (Attard, 2012; Snow-Gerono, 2005; Vause; 2009). With the presence of conflicts, teachers learn to admit weaknesses in their practices while at the same time trying to break free from their comfort zone (Brodie, 2014). Collaboration between coach and teacher would lead to reflective decision making that would involve changes in instructional practices to take place. Thus, the reason why this theory is also part of theories underpinning the study.

1.4.5 Professional Development for Instruction Model

Professional Development for Instruction Model focuses on instructional improvement (Vangrieken, Meredith, Packer & Kyndt, 2017). This is because through professional learning, teachers were able to gain new knowledge and skills which can help them to improve their practices. Professional learning is part of teacher professional development. Professional learning is an approach commonly used for teachers to develop instructional knowledge and skills (Poskitt, 2014). In professional learning, teachers are centred as learners (Poskitt, 2014). The strong connection between the role of coaching in supporting teacher professional development is the reason why the theory of professional development has also become one of the theories underpinning the study.

As learners, teachers are empowered to develop self-ownership through continuous learning to meet the beliefs, values and knowledge (Easton, 2008). Through professional learning, teachers were able to gain new knowledge and skills which will be applied in their classroom practices for the purpose of improving learning outcomes. Guskey (2009) and Timperley et al. (2007) suggest that in order to improve instructional practices, teachers should spend enough quality time learning new knowledge and skills during professional development. For the purpose of teacher professional development, multiple professional learning activities such as coaching, mentoring and peer observation were carried out. They are also accompanied by follow up sessions, constructive feedback and associated coaching knowledge and skills which could improve teacher knowledge and instructional practices (Ingvarson, Meiers & Beavis, 2005). It is up to teachers to selectively choose the knowledge and skills to be applied to effectively improve their practices.

For a professional learning to be effective, teachers should be allowed to voice out their own views and take full responsibility of the results and the decision they have made (Vangrieken, Meredith, Packer & Kyndt, 2017). Allowing teachers to make their own decision would increase teachers' sense of responsibility, sharing of knowledge and the motivation to succeed (Vangrieken et al., 2017). It is empirically evident that teacher interaction with the coach is the most influential factor in changing teachers' views and instructional practices as well as their commitment towards professional development (Akerson et al., 2009; Aubusson et al., 2007; Graham, 2007). It is also important to make teachers realize that during professional development, safe yet challenging learning environment is present so as to allow teachers to engage in collective enquiry. At the same time, it would also

create the need for teachers to change and thus, the reason to participate in teacher learning (Vangrieken et al., 2017).

Collaboration and cooperative effort among teachers are the basis for effective work among teachers. However, cooperative interaction and collegiality among teachers should be a part of openness climate which means that teachers should be open to share their practices with other people which would eventually help teachers to arrive at the level of maturity (Vangrieken et al., 2017). This openness would encourage teachers to be more confident in sharing their experience and practices beyond superficial level (Gallagher et al., 2011; Nelson, 2009; Parker et al., 2012). Teacher collegiality and open climate may appear to be challenging (Wells & Feun, 2007) but these are the core aspects of teacher professional development (Vangrieken et al., 2017). Teacher collaboration in professional development would take away teachers' autonomy and freedom in making decisions related to their individual lessons and practices (Jones et al., 2013). Not only that, weak rapport and problematic interpersonal relationship between teachers and coach would also affect teacher professional development (Jones et al., 2013; Attard, 2012). Thus, it is very important that coaches should apply the right knowledge as well as interpersonal and technical skills of a coach.

The PDI Model was chosen to be included in the study as it was believed that the right knowledge and skills (teacher capacity) are among the most valuable factors in helping teacher to improve their practices apart from effective leadership. It is up to individual teachers to decide on the right knowledge and skills needed to address problems related to their practices. Overall, The PDI Model is in line with the Instructional Coaching Model.

1.4.6 Theory of Adult Transformational Learning

The theory of adult learning is closely related to transformational learning and both theories support the PDI model. The idea of transformative learning was found by John Mezirow in 1978 which is based on experience, critical reflection and development (Kitchenham, 2008). It is one perspective on how adults learn by transforming less adequate perspectives into a more adequate one to generate beliefs and opinion that is most suitable to guide action (Mercer, 2006). The study looks at how coaching provides support towards adult learners (i.e. Malaysian schools teachers) and how coaching help support the learning of these adult learners as they transform their practices to create instructional improvement.

Transformative learning takes place when adult learn from reasoning out and form new meaning and interpretation which changes prior understanding and beliefs of their experiences (Merriam & Bierema, 2014). This is where paradigm shifts occur (Mezirow, 2003). In terms of instructional practices, teachers transform prior practices with new ones based on their beliefs on what works and vice versa (Thomas, Bell, Spellman, & Briody, 2015). Thus, being transformative helps teachers to revise instructional beliefs and practices by providing a focus for teachers to develop their knowledge, behaviour and skills (Nelson, 2009). This would result in improved instructional practices that is focused on positive changes in learning outcomes. The theory is included in the study as it focuses on the transformation of new knowledge and skills gained from professional development into new believes and values which would influence teacher classroom practices. It also focuses on the ability of teachers to plan and act according to the relevancy of their problem which is very much in line with the theory of coaching.

1.4.7 Mediation and Moderation Model

Generally, moderating variables function as independent variables and specify when certain effects will hold, whereas mediating events shift roles from effect to causes, depending on the focus of the analysis and explain how or why such effects occur” (Baron & Kenny, 1986). Based on Mediation Model proposed by Baron and Kenny (1986) as illustrated in Figure 1.1, the mediating effect is the product of a and b based on the mediation model of Baron & Kenny (1986). In this study, it is proposed that coaching is a significant mediator for the relationship between leadership, CPD, learning outcome, training, implementation and climate towards instructional improvement and overall school improvement.

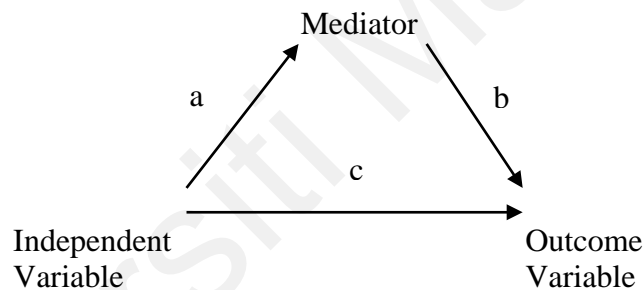


Figure 1.1 Mediator Model (Baron and Kenny,1986)

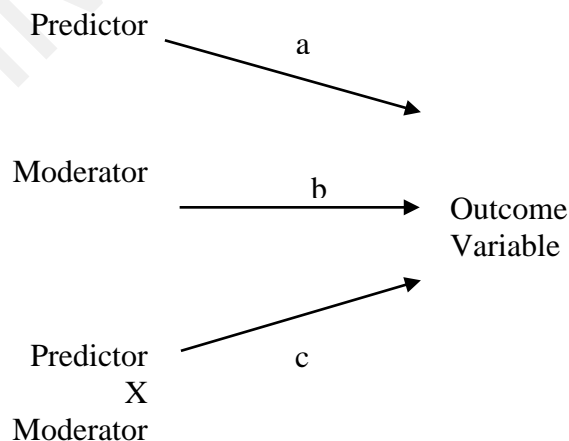


Figure1.2 Moderator Model (Baron & Kenny, 1986)

On the other hand, the moderation model of Baron & Kenny (1986) is as shown in Figure 1.2. Based on the moderator model it is proposed that frequency of training and teaching experiences are the significant moderator for the relationship between coaching and instructional improvement.

Table 1.1
Summary of Theories and the Attributes

Theories/Models	Attributes	Attributes used in the Study
Instructional Coaching Models (Knight, 2011)	Partnership and equality between coach and teacher, collaborative learning Supports learning initiatives Feedback on practices Reflect on their practices Professional development support Teachers are given voice and choice Building rapport, trust and emotional connection	Collaboration, Feedback, Support, Trust, Reflective
Theory of Change (Fullan, 2007)	Creating organizational change and school improvement, Positive change is influenced by best human expertise, Improve teaching and learning through capacity building within a community of trust and collaboration, Focus on changing both individual and organization Motivation Capacity building focusing on result A basis for reflective action Changing context Learning in context Persistence and flexibility	Organizational change and school improvement Improve teaching and learning through capacity building within a community of trust and collaboration Increases motivation
Theory of Leadership (Bush, 2013)	Transformational Leadership: Transforming school culture and individuals (feelings, attitudes and beliefs) Collegiality and collaboration creates positive change Strong drive for improvement- building culture and school norms, values beliefs and support professional development Distributed Leadership: shared vision and responsibilities	Creating Social Change Shared Vision and Responsibilities Collegiality and Collaboration Trust and Support

	<p>Collective leadership (teachers working together developing expertise, leading and creating improvement and development)</p> <p>Interdependency among multiple leaders through interaction creates significant result</p> <p>Teacher Leadership: Shared leadership, teachers' knowledge building, teachers' voice</p> <p>Collegiality, mutual trust and support</p> <p>Collective action leading to meaningful changes towards school improvement</p> <p>Teachers and coaches as agent of change</p>	
<p>Theory of Instructional Improvement (Balan et al., 2011)</p>	<p>The core elements of effectual curriculum are based on learner needs, effective instructional methods and improved assessment practice.</p> <p>Teacher needs to identify instructional goals and develop appropriate instructional objectives.</p> <p>Teacher needs to carry out appropriate instructional delivery, teaching strategies and assessment method.</p>	<p>Learning Objectives, Lesson Plan, Classroom Activities</p> <p>Content Knowledge, Direct Instruction, Classroom Management, Assessment</p>
<p>Professional Development for Instruction (PDI) Model (Poskitt, 2014)</p>	<p>Teachers are learners</p> <p>An approach to develop instructional knowledge and skills to be applied to classroom practices for the purpose of improving learning outcomes. (teacher capacity)</p> <p>Teachers should spend enough quality time during CPD.</p> <p>Leadership, collaboration and collegiality</p> <p>Teachers gain and share knowledge, resources and experiences regarding their practices</p> <p>Safe and motivating learning environment</p>	<p>Teachers gain knowledge and competencies, resources and motivation</p> <p>Effective Leadership</p>
<p>Theory of Adult Transformational Learning (Thomas, Bell, Spellman & Briody, 2015)</p>	<p>Transformative learning: Critical reflection and critical discourse</p> <p>Involves planning, experience, immediate relevance and impact as well as problem based</p> <p>Change their practices into new ones.</p>	<p>Transform new knowledge and ideas into believes, values and practices to replace the old ones.</p> <p>Allows teachers to plan and act according to relevancy of their problem</p>

In conclusion, the models and theories discussed were chosen to be included in the study due to their significant attributes. Table 1.1 illustrates the summary of the theories mentioned for the study while the theoretical framework of the study is illustrated in Figure 1.3.

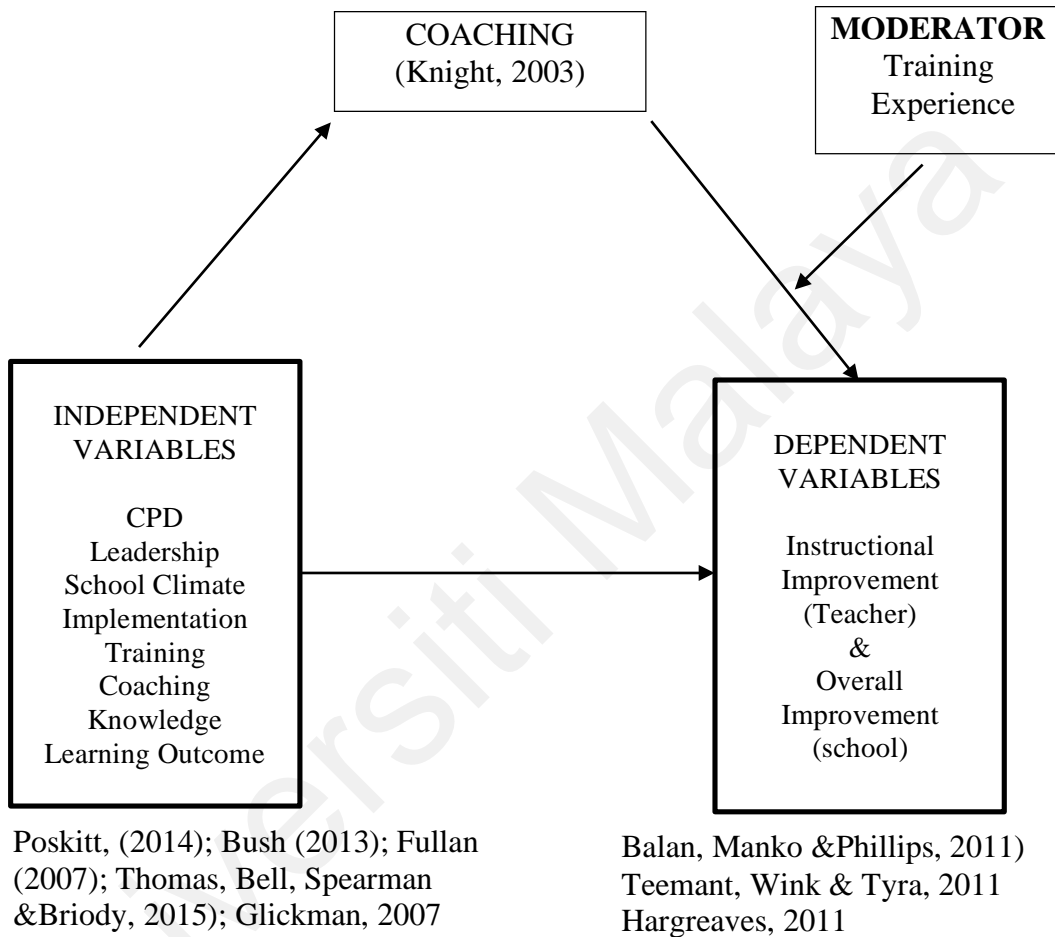


Figure 1.3. Theoretical Framework

1.5 Research Purpose

Since the study is an exploratory research, it is focusing on establishing a broad understanding of the nature of coaching implemented in Malaysian schools and its relation to instructional improvement. This study aims to look at general insight of the implementation of coaching in Malaysian schools (specifically in Selangor and Sabah) by looking at the impact of coaching several variables associated with

coaching and such as instructional improvement, learning outcome, coaching knowledge and skills, professional development, school climate as well as implementation effort shown by teachers. The responses gathered were based on the perceptions of teachers and coaches, in responding to the set of questionnaire given to them. Overall, the study looked at elements of coaching such as collaboration, trust, feedback, reflection and support, while at the same time analysing the relationship of coaching with various aspects such as instructional improvement, role of leadership and learning outcomes etc.

1.6 Research Rationale

This study was conducted in order to understand the nature of the implementation of coaching in Malaysian schools in order to improve the current state of coaching implementation and to provide solutions to existing situation. The study explores the implementation of coaching by looking at various aspects such as the level of implementation, the elements of coaching implemented, coaching skills and knowledge applied by coaches as well as other variables which are related to coaching which contributed towards instructional improvement.

Coaching was pioneered in 2013 in Sabah and Kedah. However, it has been implemented in all the states in Malaysia since 2014. In this study, two states namely Selangor and Sabah has been chosen for the purpose of data collection. The reason why all the districts in Selangor were chosen to be included in the study was because the districts are representative of all the types of schools in Malaysia which are urban, sub urban and rural. It is very important that samples from various types of schools to be included in the research in order to see the impact of coaching in

different types of schools since coaching has been implemented by MOE as a national program and as part of the national curriculum.

On the other hand, Sabah was chosen for the study because Sabah is one out the two states chosen to be the pioneer of the coaching program in 2012. In addition, Sabah was among the states with a low performance (MOE, 2013). Thus, it was chosen to be the pioneer in the effort to improve the performance of the state.

The effectiveness of the program has been questioned since the first day it was implemented. Now, after several years, the implementation of the program has been questioned apart from other debates pertaining to coaches' qualifications and trainings received. Therefore, the findings from this study would offer some insight which would help to answer some of the queries related to the nature of the implementation of coaching and instructional improvement in Malaysian context. The findings of the study could be used as a guide to provide solutions in improving the current practice of coaching in Malaysian schools.

1.7 Research Objectives

The objectives of the study are:

1. to identify the perception and attitude of teachers and coaches in Selangor and Sabah towards a) the level of coaching elements practiced b) the level of instructional improvement due to coaching; c) the level of leadership in coaching; d) the level of teacher professional development due to coaching; e) the level of training due to coaching; f) the level of learning outcomes due to coaching; g) the level of school improvement due to coaching

2. to determine the level of knowledge, technical and interpersonal skills applied by coaches while coaching and to investigate the type of training coaches should attend to improve coaching skills?
3. to investigate the phase of coaching implementation in schools (pre-start, implementation, institutionalization) and the level of coaching practices implemented in schools
4. to analyse the significant factors related to coaching
5. to analyse the significant relationship between coaching sub-constructs (trust, collaboration, support, and reflection) on a) instructional improvement; b) role of leadership c) professional development; and d) learning outcomes
6. to analyse if there is any mediating effect of coaching on a) role of leadership, professional development (CPD), learning outcomes and instructional improvement; b) school climate, coaching implementation and overall improvement
7. to analyse if there is any moderating effect of working experience and frequency of training towards instructional improvement.

1.8 Research Questions

Research questions to be addressed in the study are:

1. What are the perception and attitude of teachers and coaches in Selangor and Sabah towards a) the level of coaching elements practiced b) the level of instructional improvement due to coaching; c) the level of leadership in coaching; d) the level of teacher professional development due to coaching;

- e) the level of training due to coaching; f) the level of learning outcomes due to coaching; g) the level of school improvement due to coaching?
2. What is the level of coaching knowledge, technical skills and interpersonal skills applied by the coach and what kind of training should coaches attend to improve coaching skills?
 3. What is the phase of coaching implementation (initiation, implementation, institutionalization) and how is it reflected in the level of coaching practices implemented and school climate of Malaysian schools?
 4. What are the significant factors related to coaching?
 5. Is there a significant relationship between coaching sub-constructs such as trust, collaboration, support, and reflection with a) instructional improvement; b) role of leadership c) professional development; and d) learning outcomes?
 6. Is there any mediating effect of coaching towards a) role of leadership, professional development (CPD), learning outcomes towards instructional improvement; b) school climate, coaching implementation towards overall improvement
 7. Is there any moderating effect of working experience and frequency of training on instructional improvement?

1.9 Conceptual Framework

Based on previous studies and the theoretical framework as well as the mediator and moderator model of Baron and Kenny (1986), a conceptual framework for the study has been established as shown in Figure 1.4. Based on the conceptual framework of the study, the independent variables of this study are Continuous Professional Development (CPD), Leadership, Climate, Implementation, learning outcome,

coaching phase as well as Training. On the other hand, the dependent variables of the study are instructional improvements well as school improvement.

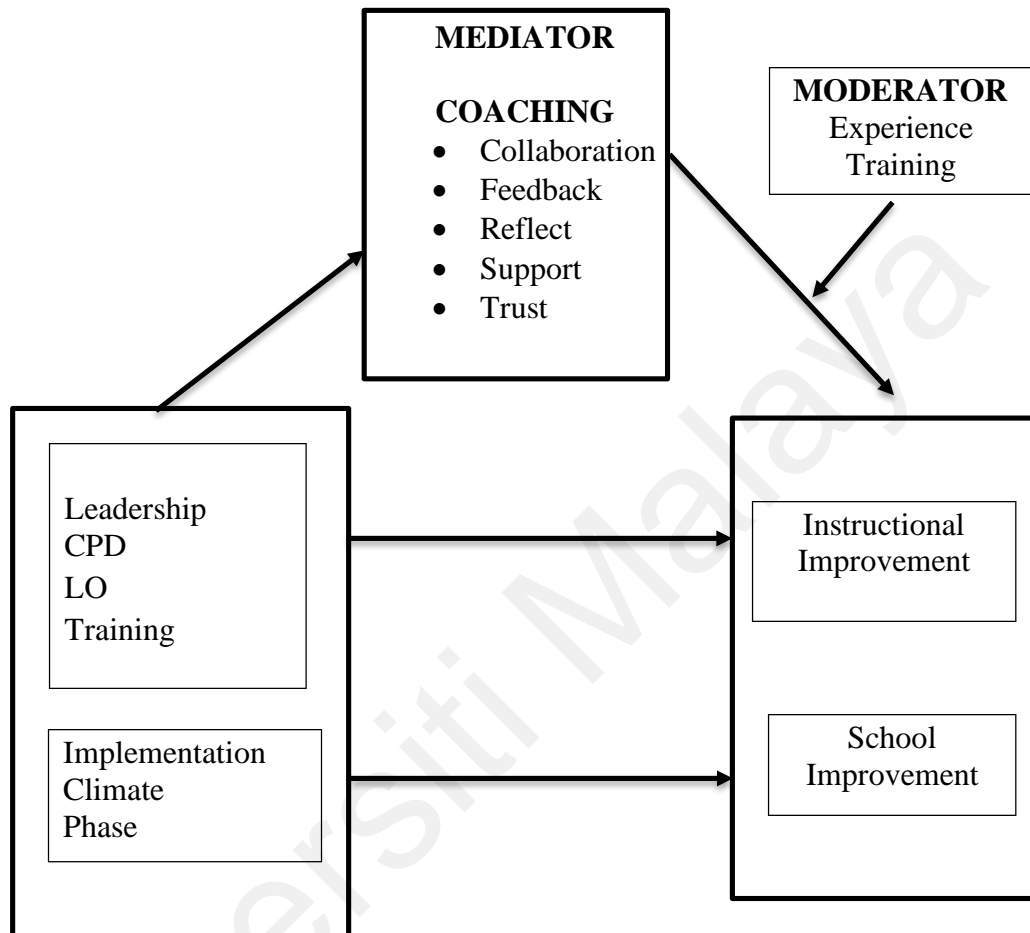


Figure 1.4. Conceptual Framework for the Study

Based on the extensive review of the literature, there are several attributes of instructional coaching but in this study, it is only focused on five elements of coaching namely collaboration, feedback, reflect, trust and support as these are the common elements which are also shared by other models of coaching. The Professional Development for Instruction (PDI) model suggests that effective leadership (of coaches) is an important aspect in professional development which influences teacher professional learning. In this study, it is measured based on how

coaching contributed towards teacher professional learning in terms of providing support to teachers in aspects such as classroom management, changes in instructional practices and decision making regarding professional development process. Apart from effective leadership, the PDI Model also suggest that the professional development received will also affect instructional practices as it focuses on building teacher capacity (skills and knowledge). Thus, in this study the type and frequency of training received are also looked at.

Next, the theory of leadership suggest that coaching encourages leadership not only among coaches but also among teachers. It encourages individual teachers to be more committed and motivated towards their own practices in the attempt to increase students' learning outcome. In this study, the role of leadership is measured based on coaches' role during coaching.

Based on the theory of change, coaching is a form of educational reform which takes time. Therefore, the study looks at the implementation phase of coaching based on the three stages of change namely institutionalization, implementation and institutionalization. The theory of change also highlights the element of working climate as well as the implementation of a certain school reform which reflects the school culture. In terms of implementation of school reform, coaching encourages school leaders and teachers to work together to help implement a certain new curriculum, in this case, coaching. Therefore, without proper support from leaders and teachers, it is impossible for coaching to be implemented effectively. When this happens, it prevents any improvements from taking place be it in terms of classroom practices, learning outcome or school improvements. Other than that, based on the theory of change, coaching also helps to improve the school climate. With the implementation of coaching, teachers work collaboratively while at the same time

become more reflective towards their own practices. Moreover, coaching encourages the practice of providing support and feedback to help teachers improve professionally. Indirectly, coaching encourages change of behaviour as well as norms and practices.

In terms of the theory of instructional improvement, coaching provides support for teachers to make improvements in their practices by transforming knowledge and skills into new practices. In this study, the changes made on teacher practices are based on the learning objectives, lesson plan, classroom activities content knowledge, direct instruction, classroom management as well as assessment. Improvement in teachers' practices reflects not only students' learning outcome but also school improvement as a whole. Coaching is seen as a conduit in creating school changes. Based on the Mediation model, coaching is proposed as a mediating variable that affects relationship between CPD, leadership, climate and implementation with instructional improvement, learning outcomes and school improvement. In addition, based on Moderation Model, frequency of training and working experience are suggested as the moderator of the relationship between the independent variables and the dependent variables.

1.10 Significance of the Study

Coaching is a newly implemented programme in Malaysia, under the new Malaysian Education Blueprint (2013-2025). In fact, coaching program is one of the important elements being mentioned in the Blueprint and is closely related to Shift 4, (changing teaching into a profession of choice) and Shift 5 (empowering State and District Education Department) (MOE, 2013). Therefore, the result of this study provide insight to various stakeholders such as teachers, administrators and policy makers on

the implementation of coaching program in all the public schools in Malaysia. They would be able to look at the nature of coaching implementation and identify the various variables which are important in creating effective coaching. They would also be able identify problems or challenges based on the findings of the study which will be used a form of guideline for future improvement. It would also enable these stakeholders to get a clearer picture of the perception and attitude of those who are directly involved in the coaching programme (i.e. teachers and coaches) towards the implementation of the programme. Not only that, the overall findings would verify the theoretical and conceptual framework based on the consistency of the data gathered and the theories which were selected to be used in the study.

The findings of the study illustrate the implementation of the elements of coaching i.e. collaboration, feedback, reflect, support and trust in helping teachers to improve their practices. It would also provide in depth insights on the implementation of coaching programme i.e. to what extent it is being applied in the classroom as a means to provide support and assistance to teachers in the attempt to improve instructional practices and learning outcomes.

It also shows the impact of coaching on various aspects as such as leadership, instructional improvement, CPD, training, learning outcome and others. The findings would also determine the level of coaching implementation after several years (i.e. whether it is still at the pre-start level or has it been institutionalized in some schools). This would especially provide insights to the policy makers so changes to the coaching program could be made. They would also be able to gain perspectives on the strengths and weaknesses of the program and thus would be able to offer various measures to improve the effectiveness of the coaching programme as a whole.

The findings also show the level of coaching skills and knowledge applied by coaches while coaching teachers. It provides reasons and suggestions for stakeholders to consider appropriate strategies of improvement to the implementation of the programme, especially in relation to trainings and qualifications provided to coaches so as to further enhance the impact of coaching on improving teacher professionalism and learning outcomes.

The study also provides insights on the various significant factors which are related to coaching and are deemed important in helping teachers to improve their practices. Additionally, the study also looked at the impact of individual elements of coaching on these various factors such as CPD, leadership, learning outcomes and school performance etc. The result of data analysis shows which elements of coaching need more focus depending on the relationship with each individual factor. This would enable teachers, the school authority or even district and state education officers to plan on further activities that would enhance the implementation of the coaching programme to enhance improvements of learning outcomes and school performance.

Analysis of coaching as a mediator provides insight that coaching strengthens the beliefs that coaching is a form of support to instructional improvement. It also shows that in order for changes to happen, there are other factors which are equally responsible in creating such changes i.e. leadership, CPD, training etc. On the other hand, the analysis of moderation shows that working experience and frequency of training are not the moderating factors which would affect instructional improvement.

1.11 Limitation of the Study

The study is only limited to the schools in Selangor and Sabah which are involved in the coaching programme. Since the programme is being carried out in all the districts in every state throughout Malaysia, thus the sample and population of the study are only a representation of a small percentage of the whole population in Malaysia. However, demographically the schools in Selangor represent the different types of school which are present all over Malaysia i.e. rural, urban, sub urban etc. Therefore, findings on the impact of coaching in the different types of schools available in the state would be able to be gathered and could be applied based on the different types of schools. Sabah on the other hand was selected due to the fact that it was one of the two pioneer school selected for the coaching program. It is also able to represent the population of teachers and coaches from east Malaysia.

Another limitation of the study is that due to the limited time given, it is impossible to see how a teacher evolve or change during the implementation of the coaching programme. The delimitation of this study is that elements like age, gender and experience of the teachers will depend on who are assigned to work with the selected coach. The decision is made by the administrator at the start of the implementation of the coaching programme in respective school. Therefore, the proportion of the respondents based on those categories could not be pre-determined.

The study only looks at certain constructs of coaching i.e. collaboration, feedback, reflection, support and trust while some other elements of coaching are not looked at. The study only looks at the perspectives of selected group of teachers who are involved in the coaching practices under the District Transformation Programme and does not involve the whole school. The number of coaches involved were limited because the population of coaches (SISC+) in the District Education Department are

very small. Thus, although the whole population of SISC+ were involved in the study but data analysis for coaches were based on the limited number of the completed and returned instruments.

Last but not least, the instrument used for the study has 150 items and it is assumed that the respondents read and understand each of the items included in the instrument. The respondents might had been under pressure to provide 'positive' opinions for coaching and therefore created a limitation to the study. Nevertheless, it is assumed and believed that the respondents would provide their honest answer.

1.12 Operational Definition

To provide a clear understanding of the terms used in this study, the relevant terms are defined as follows:

1.12.1 Instructional support

Direct assistance or guidance provided to teachers either by administrator, pedagogical expert or peers for the purpose of improving classroom practices. The support comes either in the form of supervision of coaching but with the same goal i.e. to assist teachers in improving their practices for the benefit of the students and the school as a whole.

1.12.2 Coaching

Coaching is an interaction between the coach and teacher that leads to changes in instructional practices (Knight, 2007). Denton and Hasbrouck (2009) defines coaching as a form of professional development which provides technical assistance to improve teacher skills. It is an interaction between the coach and teacher that leads to changes in instructional practices. (Parman, 2015). For the purpose of this study,

coaching is defined as an activity which supports both professional development and instructional improvement. It involves coaches helping teachers to reflect and improve on their classroom practices in order to improve learning outcomes. In addition, it also looked at coaching relationship with other variables such as leadership, professional development, training, learning outcome, school climate, implementation effort and overall improvement.

1.12.3 Instructional Improvement

Instructional improvement involves the development of expertise, which means the increase of knowledge and skills on instructional practices. This could be achieved by concentrating on selected aspects, which needs improvement and refinement through feedback (Ericsson, 2006). Instructional improvement in this study refers to any positive changes being made to teachers' classroom practices. The changes that takes place is seen on various aspects of teaching and learning such as classroom management, planning of lessons, content knowledge as well as assessment used (Cornett & Knight, 2007).

1.12.4 Professional Development

Professional development involves activities that develop an individual's skills, knowledge, expertise, and other characteristics as a teacher (Lemke, 2010). For the purpose of this study, professional development refers to professional learning activities which involves teachers gaining new knowledge and skills for the purpose of improving their professional practices (Poskitt, 2014).

1.12.5 Supervision

Supervision is a form of support given to teachers focusing on improving instruction. Improving instruction is identified as a dominant need for teachers in order to resolve other needs. Supervision is a process which allows teachers to be more adaptive,

thoughtful and more cohesive towards their practices (Glickman, Gordon & Ross-Gordon, 2007). Supervision in this study refers to traditional classroom observation made by the administrator in order to evaluate teachers' instructional practices. Unlike coaching, the traditional supervision tends to be evaluative and non-supportive in helping teachers to develop their instructional practices (Veloo et al., 2013).

1.12.6 Coach

The term coach refers to any teacher who is not in the classroom and whose main job responsibility is to assist teachers in improving their instruction with the outcome of increasing student achievement (Parman, 2015). A coach is master teacher who assists teachers as they strengthen their ability to make more effective use of knowledge and skills and provide support to them by helping them to recognize what they know and can do (Strahan, Geitner, & Lodico, 2010). For the purposes of this research, the term coach refers to any teacher who is not in the classroom and whose main job responsibility is to assist teachers in improving their instruction with the outcome of increasing student achievement (Knight, 2007). In this study, it refers to SISC+.

1.12.7 School Improvement Specialist Coach+ (SISC+)

SISC+ in this study refers to teachers who are selected by the Malaysia Ministry of Education to become coaches to other teachers in school according to their respective subjects (MOE, 2013).

1.12.8 Leadership Roles

In this study, leadership roles refer to the roles played by both teachers and coaches in the attempt to allow instructional improvement to take place (Harris & Muijs, 2002). Teachers and coaches would play the role of transformational, distributed and

teacher leadership roles interchangeably while making decision about transformation of instructional practices and learning outcomes (Cooper, 2012).

1.12.9 Learning Outcomes

Learning outcomes can be seen as overall students' achievement level which increased due to the improvement of teacher effectiveness. Ensuring teachers are capable of improving student learning is considered as the most significant step a school can take to increase achievements of all students (Darling-Hammond & Rothman, 2011). In this case, the quality of individual teacher is a significant variable which impacts student learning (Isaac & Magnuson, 2011). A highly effective teacher would demonstrate high expectations for the students, modifies classroom practices based on learners' needs, uses best practices and collaborate with other stakeholders to improve learning outcomes (Goe, Bell & Litle, 2008). Learning outcomes in this study refers to the changes that take place as a result of teacher instruction. These learning outcomes serve as data used by teachers to guide decision making to improve student learning and instructional effectiveness.

1.12.10 School Improvement

The success of coaching could be seen in how it affects teachers and the school as a whole (Russo, 2004). In order to achieve such change, coaching alone will not be able to produce effective result, but it must also be paired with quality professional development, resources and strong leadership as well as school capacity building which would result in increased students' achievement (Russo, 2004). For the purpose of this research, school improvement refers to the changes that takes place within the institution at various levels.

1.13 Summary

This chapter discusses on the background of the study, statement of problem, theoretical and conceptual framework, research objectives, research questions, significance of the study, limitation, as well as operational definition. These are the main elements of the study while the objectives and the research questions outline the main aims of the study. However, the limitation of the study draws the scope and the perimeter of how the study will be conducted. The next chapter will discuss on the literature review related to the study.

Universiti Malaysia

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will discuss on the review of literature on the main areas of the research i.e. the relationship between coaching, professional development, leadership, instructional improvement as well as learning outcomes. The chapter will also discuss on the conceptual definition of all the elements which are essential in influencing the effectiveness of the implementation of coaching. Some of the theories related to coaching and instructional improvement will also be presented. Several previous studies related to the impact of coaching on instructional improvement, role of leadership, continuous professional development as well as learning outcomes will also be discussed.

2.2 Conceptual Definition of Coaching

There are various definitions of coaching. Toll (2005) defined coaching as helping teachers identify what they know and able to do, provide assistance to teachers to strengthen their ability to make effective use of their existing knowledge as well providing support as teachers learn new things and experience. Vogt and Shearer (2007) on the other hand defined coaching as providing support to teacher through either individual or in groups' professional development as well as to model, coach, confer and observe teachers for the purpose of improving instructional practices. Coaching is also defined as an interaction between the coach and teacher that leads to changes in instructional practices (Knight, 2007). Denton and Hasbrouck (2009) on the other hand, defines coaching as a form of professional development which provides technical assistance to improve teacher skills. It is an interaction between

the coach and teacher that leads to changes in instructional practices. (Parman, 2015). For the purpose of this study, coaching is defined as an activity which supports both professional development and instructional improvement. It involves coaches helping teachers to reflect and improve on their classroom practices in order to improve learning outcomes.

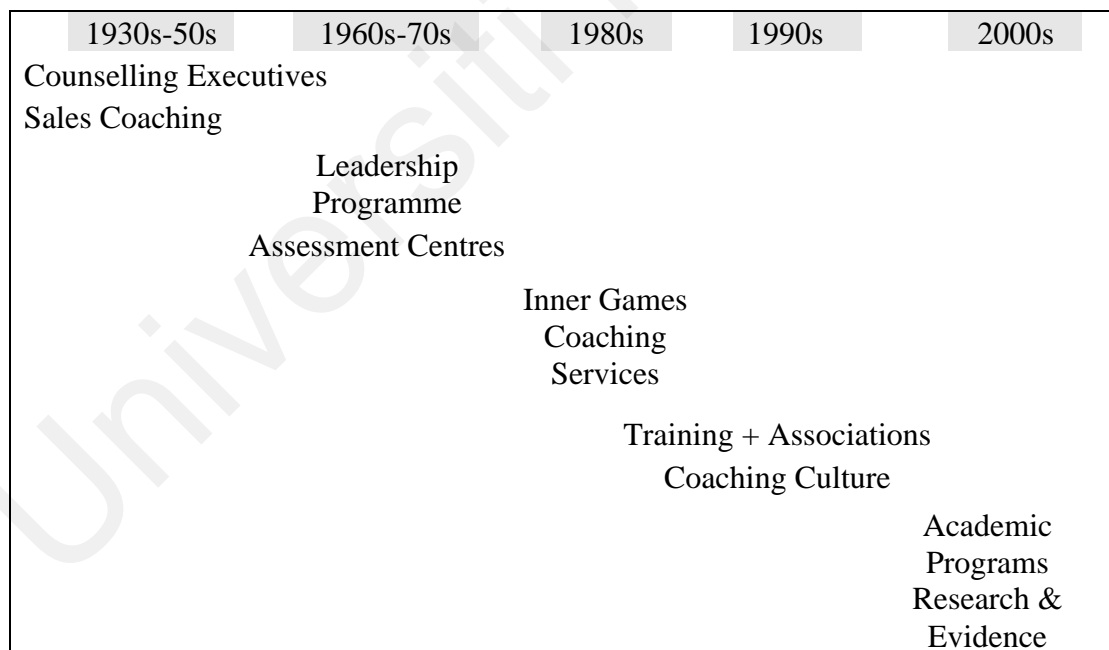
To some, the term 'coaching' might be confused with the term 'coaching supervision'. Coaching is a kind of support given by a pedagogy expert (also a teacher, non-administrator) in the attempt to improve classroom practices (Knight, 2011). Coaching supervision on the other hand happens when a coach engages with the supervisor (another coach) to receive support for the development of their coaching practice. International Coach Federation (2018) defines Coach Supervision as "the interaction that occurs when a coach periodically brings his or her coaching work experiences to a coaching supervisor in order to engage in reflective dialogue and collaborative learning for the development and benefit of the coach and his or her clients." This means that coaching and coaching supervision are supports given at different levels to different group of individuals.

2.3 Brief History of Coaching

Coaching is an emerging and evolving field which is also complex and dynamic. For the past decades, it has been integrated with the substance of various different fields as well as the innovative thinking of several great pioneers (Brock, 2012). However, many coaches failed to understand the rich and eclectic history of coaching. They have mistakenly thought that coaching had only sprung up in the 1980s or 90s. In fact, the roots of coaching go much farther back into the past decades (Brock, 2012).

Figure 2.1 illustrates on the development of coaching in various fields over the past decades.

Coaching has dated back in the 1930s and have been used in the field of counselling and sales. The use of coaching in leadership programs and assessment centres were popular in the 60s and 70s. In the 1980s, coaching gained its popularity in inner game as well as coaching services. However, the use of coaching in educational field had also been established in the 80s when Joyce and Showers first introduced peer coaching in teaching and learning (Joyce & Showers, 1983). Various types of coaching have sprung up ever since to assist teachers in their practices (refer to Table 2.2). However, coaching became more popular in educational field in the 2000s and until today it has been used in many countries as a form of instructional support (Fullan & Knight, 2011).



(Source: Brock, 2010)

Figure 2.1. The Development of Coaching in Various Fields.

Since coaching is relatively new in the educational field, the term coaching might be confusing to some practitioners. One might be confused with the term coach over mentor. The term coach and mentor are used interchangeably in some

literature despite the fact that both term carries different meaning. The word mentor originates from the Greek word which means “wise advisor” (Harper, 2001). Although mentor might be knowledgeable and wise, but it focuses on developing mentee in terms of needs to learn and discover things. On the other hand, a mentor is not a person who would focus on moving the work forward (Lipton, Wellman & Humbard, 2003). In fact, a coach is just the opposite of a mentor. A coach maybe assigned to an organization for a short-term but for immediate improvement and has a narrow or specific focus (Pearson, 2001).

Table 2.1
The Differences between Supervision and Coaching

Supervision	Coaching
Supervisor sets the vision, goals or agenda.	The one being coached sets the vision, goals or agenda. A good coach must lay aside their goals and allow the person being coached to develop their own goals.
A supervisor will tell the other person what to do (directive)	A coach helps the other person to discover what they are able or not able to do.
A supervisor decides for the subordinates	The role of coach is to help the one being coached being reflective and make decision on where they are going and what they need to do
The supervisor has power over the subordinate in relation to their job, often tied very closely to expectations of performance.	The coach does not have power over the one being coached
The subordinates hesitate to share their struggle	The person being coached trusts the coach and shares their problems openly with the coach

(Source: Slater, 2017)

Another confusion related to the terminology of coaching is whether it is similar to supervision. The nature of coaching is in fact the antithesis to supervision

(Slater, 2017). Table 2.1 illustrates the differences between coaching and supervision.

Nevertheless, both supervision and coaching are a form of instructional support for teacher professional learning (Glickman et. al., 2013; Lofthouse and Towler, 2010; Slater, 2017). According to Wurtzel (2007) what teachers received from their professional learning may help the teachers to develop themselves professionally but what really happen in reality is that what they learned rarely spread beyond their classroom. Thus, there is a need of teacher leaders or coaches to lead the collaborative professional learning of an individual school to ensure that teachers could create changes in their classroom practices.

In Malaysia, majority of the classes were carried out gearing students towards examination, despite various effort which has been implemented to change classroom practices (Yong, 1989; Faizah, 2011). Teachers are also keen to use teacher-centred approach since the focus is to produce students with higher examination results (Toh, 2003). Because of this, it has also become a culture among teachers that those who managed to produce the highest number of students with excellent result would be considered as effective teacher (Toh, 2003). In this case, there is a need for teachers to change their practices in order to increase learning outcomes. Thus, the practice of continuous professional development enables teachers to develop their knowledge and skills in order to improve their practices. However, in reality, teachers still need a form of support to help transform the knowledge and skills gained into new classroom practices.

In Malaysia, prior to the implementation of coaching, one of the types of support implemented to help improve instructional practices is clinical supervision. The traditional clinical supervision acts as catalyst in improving classroom practice,

learning outcomes and school performance. However, research show that clinical supervision failed to help teachers in improving their practices (Abd. Razak, 2005, Mardhiah & Rabiatal Adawiah, 2016). Thus, it is teachers' responsibility to acknowledge this issue and carry out an intervention or actions to increase students' learning through effective instructional practice (Casey, 2006).

Therefore, teachers need meaningful professional development in order to increase their professional knowledge and create change in their practices (Elmore, 2004; Guskey & Yoon, 2009). Thus, coaching has been introduced as part of Malaysian education system which can help teachers to address the need for change in the relationship between teachers, students and content. This is because coaching can help to provide appropriate intensive support for teachers (Knight, 2006). By helping teachers to reflect on their own teaching, the coach indirectly helps teachers to conduct research-based instructional practices (Cornett & Knight, 2009). Since coaches have a firm understanding of research-based instruction, they can help to explain the practices to teachers (Knight, 2006). With the help and support from the coach, the process of transferring knowledge and skills gained through teacher professional learning into their practices would be easier and more meaningful.

Similarly, many states and school districts in the US have reformed their teacher evaluation systems to hold teachers more accountable for their performance and to provide more detailed feedback which involves coaching. These systems hold tremendous promise for supporting teacher development as long as they provide teachers with detailed principals received substantial training and support as they carried out cycles of teacher observation followed by feedback. Another model similar to coaching is Peer Assistance and Review (PAR) programs, which exist in a few dozen school systems across the country and have proven effective at improving

the instructional skills of low-performing veteran teachers (Papay & Johnson, 2012). In this model, expert consulting teachers provide intensive support and conduct high-stakes evaluations for low performing experienced teachers and novices.

Another problem related to supervision is that teachers prefer seeking advice from their colleagues rather than their superior (Zepeda, 2007). To overcome this problem, teachers can work collaboratively to improve each-others' classroom practice to meet individual's goals and shared vision of the school (Cornett & Knight, 2009; Harris, 2004). Since coaches are also teachers, this is where they can play their role in helping teachers to improve classroom instruction (Knight, 2007). This is because the coach would be able to relate to similar experience faced by teachers.

2.4 Role of Coaching

With the belief that collaboration with coaches can help improve instructional practices, coaching has become a method to increase students' achievement (Ippolito, 2010). The role of coach is crucial in helping teachers because sometimes the changes that takes place in a school might not penetrate the instructional aspects of the classroom (Borman & Feger, 2006). With coaching, teachers would receive support which encourages them to implement new initiatives which are needed for instructional improvement to take place. In fact, due to the support given towards teacher professional development shown by the coach, many schools and districts have used coaching as a means to bring about changes in classroom practices that will lead to the increase in learning outcome (Marsh et al., 2009).

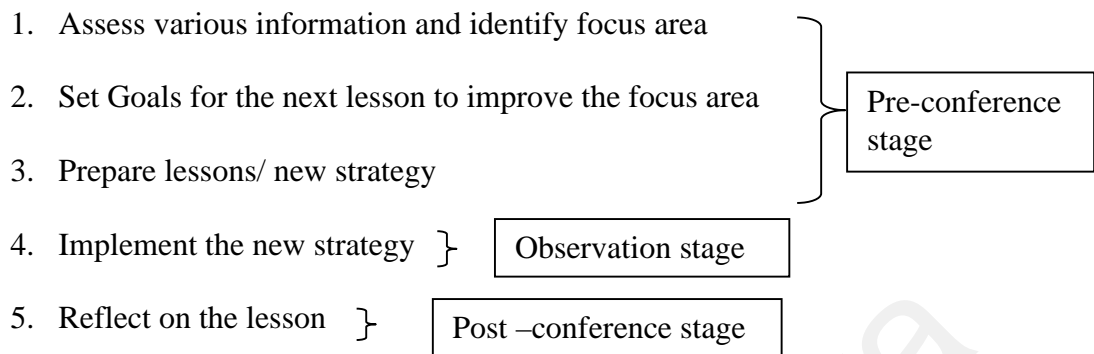
It is evident that there are various debates regarding how coaching could improve instructional practices (Cornett & Knight, 2009; Ippolito, 2010; Marsh et al.,

2009). However, what many of us are not aware of is the fact that improvement of instructional practices is closely linked to teacher effectiveness and it is considered as one of the most important school-based factor in increasing student achievement (Wenglinky, 2000). In fact, the extent of instructional improvement that a teacher is able to make is measured based on the effects of coaching on teachers instead of the effect on students (Toll, 2009). It affirms the idea that coaching is indeed meant as a support for the improvement of teacher instructional practices which leads to improved learning outcomes.

Additionally, coaching also helps to develop school norms that support the improvement of teaching. In this case, coaching helps to create change in teacher practices which leads to school transformation (Showers, 1984). As such, coaching helps to reduce the sense of isolation within teachers (Joyce & Showers, 1984, 2002) and this can be achieved by creating collegial relationship among teachers (Showers, 1984). Some of the function of collegial coaching is in providing companionship for teachers to discuss about their success and frustration in the classroom. Apart from reducing the sense of isolation, it also helps teachers to learn from each other by providing feedback related to their instructional practices (Joyce & Showers, 1984, 2003).

Moreover, coaching helps teachers to overcome problems in their instructional practices through several stages which would enable them to reflect and understand things better. It provides opportunity for them to learn through pre-observation discourse followed by observation and reflection session. This process offers teachers a non-threatening professional engagement besides creating awareness and improving professional practice which leads to long term change (Moss, Sloan &

Sandor, 2009). In fact, there are several stages of coaching cycle that the teacher has to go through in implementing any changes to the classroom teaching and learning:



Neufeld and Roper (2003) and Toll (2009) suggest that a non-threatening nurturing environment as well as (continuous support from the teachers and administrations are pertinent in order to ensure a successful coaching program. Vidmar (2006) suggests that reflective coaching is a form of reciprocal relationship between peers which is collaborative, non-threatening working relationship between two teachers. The coach would encourage the conversation by listening carefully while building trust and at the same time would not correct, suggest or talk over the other teacher.

Thus, collaborative effort is more likely to allow teachers to share their ideas with one another as compared to directive method which is currently being practiced in the clinical supervision in Malaysia. In fact, according to Prince, Snowden and Matthews (2010), collegial coaching offers teachers to have a dialogue to discuss about their practice but most of all the use of questioning technique by the coach to probe and stimulate teachers for further thoughts and reflection. In fact, collegiality is a condition considered as necessary for professional development which encourage teachers to work collaboratively rather than in isolation (Clement & Vandenberghe, 2000; Vangrieken et al., 2017).

Much has been debated about teacher autonomy and collegiality (Rosenholtz, 1989; Clement & Vandenberghe, 2000; Kelchtermans, 2006). However, to some others collegiality and autonomy complements each other (Hargreaves, 1993; Kelchtermans, 2006). Through collegial collaboration, teachers still have their autonomy as they are allowed to express their own voice related to their practices but through collaboration they will be able to make their own decision pertaining to the changes that they think is needed in order to allow improvement to take place in the classroom (Knight, 2011).

2.5 Elements of Coaching

There are various elements of coaching which influence coaching effectiveness in helping teachers to improve learning outcomes. Konza and Michaels (2010) in their 2-year multiple-case study over 20 schools reported several factors associated with effective and ineffective practices of coaching. Factors affecting effective coaching are school leadership, school literacy planning, literacy implementation for all content areas, collegial trust, collaboration and risk taking. On the other hand, factors that leads to ineffective coaching would be teacher resistance (related to perception of coach's experience and expertise), lack of understanding of coach's role and shortage of staff (Konza & Michaels, 2010). Regardless of the types of coaching and the different categories they fell into or what aspects of improvement that they focus on, coaching in general has common attributes which are trust, collaboration, reflection, feedback, commitment, support and a few other attributes.

2.5.1 Trust

Trust is important to ensure effective coaching. Shaw (2009) suggested that building trust should be the first step that a coach should do by communicating one-to-one

with the teacher. This includes valuing the instruction that teachers are practicing as well as modelling some new examples of instructional practices (Shaw, 2009). Establishing relationship between the coach and the teacher is important to ensure effective coaching. Therefore, to ensure that happens, the roles and responsibilities of a coach can be clarified during initial meeting with the teachers as suggested by Bean & Swan Dagen (2012). This is because it is equally important for collaborating teachers to define their roles so that they understand their responsibilities. Both partners must understand and act on their individual and collective responsibilities for coaching to be effective (Les Foltos, 2015). In relation to that, Bean and Swan Dagen (2012) suggested three guidelines that a coach should follow in order to build and support coach-teacher relationship which includes clarifying coach and teacher roles and identify trust.

Another important aspect which should be considered when establishing trust is effective communication. Establishing trust can be done by valuing teacher's experience and expertise and by assuring the teachers that conversations between coach and teachers would be confidential. In terms of effective communication, coach should practice facilitation, consultation as well as collaboration (Bean & Swan Dagen, 2012). Nevertheless, building trust is not easy. The result of a study conducted on perceptions of critical characteristics coaches need for success, shows that teachers needed several months to develop trust towards their coach (Ertmer et al., 2005). However, based on the same study, it was also found that once trust has been established, teachers will continue to ask support from coaches (Ertmer et al., 2005). A study by Gyllensten and Palmer (2007) also found that teachers are open to share sensitive information once trust is present. Ford et.al. (2008) on the other hand,

found that violation of trust is usually shown in teacher resistance towards change as well as lower level of satisfaction.

In addition, in building trust, a coach should not be judgmental or evaluative. The result of a longitudinal study carried out on three reforming schools suggested that in the attempt to build and sustain trust, coach should not be evaluative and must remain mindful of their status or relationship with the school. Their role is to provide an impact on instructional practices based on teacher trust, collaboration and reciprocal process (Gallucci, DeVogt Van Lare, Yoon & Boatright, 2010). Evidence from another study also shows that it is important for coaches to create awareness towards the importance of coaching towards teacher professionalism as it will help to build teacher trust. This evidence is based on the result of a multiyear exploratory qualitative study involving 29 schools which suggested that apart from the principal's behaviour, being able to understand the process of coaching had a significant influence on how teachers work and their acceptance towards coaching as an option of professional development (Matsumura & Wang, 2014). This shows that once trust is built, teachers would be able to accept and work with a coach to improve instructional practices.

Fullan and Hargreaves (1996) and Toll (2009) suggest that coaching should be done in a non-threatening environment where teachers could feel at ease discussing their instructional problem with the coach. This is especially important to avoid teachers from developing the feeling of vulnerability (Malm, 2009). It is likely that teachers would feel their professional identity and moral integrity as a teacher are being questioned, thus creating a threatening environment (Kelchtermans, 2006). Smith (2008) points out that coaching could help teachers to identify their needs apart from providing professional support at their workplace without feeling

threatened. In relation to that a study by National Reading Technical Assistance Centre (Bright & Hensley, 2010) also found evidence which show that in order to build teacher trust, it is pertinent that coaches should be non-judgmental, non-evaluative, or nonthreatening in providing assistance or support towards teachers.

Neufeld and Roper (2003) also supported this idea by suggesting that coaches can create safe environment for the teachers by avoiding negative criticism, which is usually associated with evaluation given for the purpose of improving teacher's practices. This could be done by engaging teachers in various coaching activities such as planning and implementing lessons, encourage conversations which is centred on the practice of best practices, demonstrate certain teaching strategies, observing classroom and providing feedback as well as providing small group professional development (Neufeld & Roper, 2003). However, a study conducted by Geok and Chin (2015) found that teacher trust towards coaches does not significantly associated with coaching effectiveness. This shows that a positive working climate would help to build trust among teachers and help them to improve professionally however, it may not necessarily be the sole factor of coaching effectiveness.

2.5.2 Collaboration

Teacher collaborative learning culture is the opposite of the traditional models of supervision where teacher is seen as having a problem to be fixed (Waite, 1995, Veloo et al., 2013) whereas supervisor is seen as an expert which can prescribe a corrective measure to rectify the problem. Hargreaves (1998) and Knight (2011) suggests that a teacher who felt emotional connection with the students would feel the need to become a better teacher in order to help the students learn more effectively. This drive would motivate teachers to improve their instructional practices through various means that would increase learning outcomes. This

includes working collaboratively with other teachers (Little, 1988, 2003; Knight, 2007; Anderson et al., 2014) such as that found in coaching.

With appropriate duration of the training given during professional development, teachers would be able to gain as much appropriate knowledge needed to improve classroom practices (Little, 1988; 2003) and by working collaboratively with an instructional coach, it could help to accelerate changes taking place in the classroom which could lead to improved learning outcomes. In fact, one of the important features related to effective staff development is that it must be collaborative with collective participation and while focusing on aspects related to curriculum and instructions. The duration of this collaborative learning culture should be long enough so as to allow gaining of knowledge, skills and confidence to take place (Little, 1988, 2003; Miller, 2003). Moreover, the more time coach spent collaborating with teachers would also improve their professional relationship. This would also influence the level and rate of instructional improvement made by the teacher (Anderson et al., 2014). The commitment shown by the coach in spending more time with the teacher would create trust and a safe environment for teachers, thus, allowing for improvement in classroom practices to take place.

Empirical evidence suggests that a positive relationship of teacher collaboration leads to positive students' achievement. (Bolam et al., 2005, Goddard et al., 2007). The studies suggest that the level of teacher collaboration could lead to the increase in the quality of instruction, which resulted in increased students' achievement (Kezar, 2006; Wald & Castleberry, 2000). In addition, a five-year study carried out by Anderson et al., (2014) proved a strong correlation between the time coach spent with teachers and improvement in classroom practices. This shows that the increased contact hour between coach and teachers spent collaborating would

improve teacher instructional practices as well as learning outcomes (L'Allier et al., 2010).

Not only that, it was also empirically evident that when teachers collaborate they show strong ownership and involvement in improving instructions (Harris & Muijs, 2005). This is because when teachers are given significant responsibility to bring change to the school, the teachers' decision can have positive impact on instructional practices and the school improvement as a whole (Harris & Muijs, 2005; Knight, 2011). With regards to professional development, teachers are considered as active learners who construct their own understanding of what happens in their own classroom. Therefore, changes are made when teachers felt obliged to improve not only for their own sake, but also for the benefit of the students.

In the effort to prove that teacher collaboration with coaches could improve teacher practices, Binkley, Keiser and Strahan (2011) carried out a research involved three social studies teachers working with their instructional coach. The findings of the research suggest that teacher instructional practices improved in different ways. Another study was carried out by Teemant, Wink and Tyra (2011) on 21 teachers who took part in various coaching sessions after a workshop on effective instructional strategies. The findings also suggested significant improvements in terms of the pedagogy used, classroom organization as well as patterns of teacher growth.

2.5.3 Reflect

In order to maximize the impact of coaching on teacher instructional improvement, a coach must have the knowledge and experience working with adults, strong literacy background, credibility of a successful teacher and most importantly coaching skills that would help teachers to reflect on their own practices (Bean, 2010). Collet

(2012) in her study found that teachers improved their practices through reflections led by coaches. The reflection session includes coach making recommendations, asking probing questions, affirming teachers' decision as well as giving praises. Additionally, Lucas (2011) supports the idea of how a coach can affect the knowledge and practices of teachers when the coach consistently engages them in reflective conversation. This is suggesting the importance of reflection or the ability to reflect in order for teachers to improve their practices.

Having said that, the reflection session is one of the most important parts of coaching as it allows teachers to reflect and make improvement based on their own practices. Nevertheless, the other stages prior to reflection are equally important in order to allow teachers to reflect successfully. During observation, the coach should look at strategies used by teachers and that teachers should be able to justify the choice of their teaching strategy (Pitler & Goodwin, 2008). In order to facilitate teacher learning, a coach must know how to adapt to different leadership roles interchangeably. During the feedback session, coaches should take off his/ her hat as an expert of that field, and allow teachers to reflect on their own practices by inquiring rather than informing (Tschannen-Moran & Tschannen-Moran, 2011). The one-on-one session that the coach has with teachers is vital in helping teachers improve their practices. At this stage teachers are allowed to reflect on their own practices and the coach provides meaningful constructive feedback (Blasé & Blasé, 1999; Knight, 2011).

In relation to that there are other aspects which are equally important to help teachers reflect effectively. One of it is by establishing a trusting environment and relationship with teachers, a coach could help teachers to honestly reflect their own practices (Netolicky, 2016). It allows teachers to overcome challenges and

discomfort through the support given by the coach, which leads to professional learning and growth of a teacher (Costa & Garmston, 2003; Knight, 2011). This is suggesting that the right environment would enable teachers to reflect and make improvement towards their own practices.

2.5.4 Feedback and Support

Coaching not only allow teachers to receive support and encouragement needed, but also enables them to fine tune their skills and strategies in the classroom based on technical support and feedback received (Callahan, 2014). In fact, discussion between the coach and teachers should be focused on allowing teachers to receive feedback regarding the outcomes of the classroom observation (Radi, 2007) which would enable the teacher to analyse his/her practice and make decisions for the change needed or to modify certain skills and practices (Callahan, 2014).

As such, coaching provides collegial support for teachers in the form of real-time feedback (Sturtevant, 2003; Knight, 2011). This happens when coaches work collaboratively with teachers while assisting them to develop and refine their teaching strategies. Teachers can continuously refine their instructional practices by maintaining a good relationship and collegiality (Sturtevant, 2003; Jones, et al.,2013). Therefore, it is very important that coaches build a good rapport by building trust among teachers so that teachers would value feedback given by the coach. As suggested by Hattie and Timperley (2007) in order for feedback to have a strong powerful impact, there must be a learning context to which feedback is addressed. In the context of coaching, it is but part of the teaching process where feedback would have the most impact.

Coaching also offers support for teachers so that they will have confidence in delivering new approaches in the classroom. Since professional development is an

ongoing process, the knowledge gained from professional development is deeply embedded in teachers' practice as they indulge themselves in discussion among peers (also coach) as well as self-reflection of their own teaching practice (Russo, 2004; Knight, 2011). As such, the support mentioned is offered through collegial coaching sessions which allows them to be more persistent and confident in discussing their practices (Creasy & Paterson, 2005) and more open to ideas from others (Cordingley, 2008). Such support will help teachers to be more reflective towards their own teaching practices (Prince, Snowden & Matthews, 2010). This shows that coaching supports teacher professional development through reflective dialogue which offers new insight for teachers to improve instructional practices in order to increase students' learning outcome.

Therefore, feedback and support is important to ensure teacher effectiveness. Since coaching is based on the analysis of teaching and learning (Nidus & Sadler, 2011), the role of coach is to set up a focus on instruction for the teacher to work on. Interaction between the coach and teachers would help them to unfold the problems faced through the learning and growth process (Downey, 2004). This collegial relationship between coach and teachers is very important. If both the coach and teachers are committed to see instructional improvement to take place in an organization, they are likely to change the culture of the organization (Downey, 2004) Repetition and drilling alone will not ensure improvement in learning outcomes (Downey, 2004). In order to allow improvements to happen, it has to be accompanied with a good feedback from the coach while allowing teachers to reflect on their own teaching (Knight, 2011).

2.6 Models of Coaching

Instructional coaches may be known by other terms in various literature such as literacy coach, cognitive coach, content coach, peer coach, mentor, etc. Regardless of the term used, instructional coach is a group of teachers employed by the educational department to help teachers strengthen their instructional practices in the attempt to increase students' achievement or learning outcomes (Walpole & McKenna, 2004). One of the many activities of coaching that support effective professional development, among many is through classroom observation and feedback (Ball, 1996; 2000, Knight, 2011). Thus, with the implementation of coaching in the classroom, it will help teachers to optimize the knowledge and skills gained from all the trainings given to them in the hope of improving their instructional practices thus improve learning outcomes. In addition, teacher collegial culture promotes the sharing of good practice among teachers (Harris & Muijs, 2005; Jones et al., 2013; Vangrieken et al., 2017). It provides opportunities for teachers to share problems and experiences with each other.

Through coaching, teachers also hold full responsibility in shaping their own professional development by showing a sense of commitment towards their own instructional practices (Ball, 1996, 2000; Poskitt, 2014; Knight, 2011). Teachers will be committed to improve students learning outcomes by improving classroom practices. They will try to apply new knowledge and skills gained through their professional development program into their practices. This way, all the knowledge and skills given during their professional development program will not go to waste. The following sub-sections will discuss on the different models of coaching.

2.6.1 Cognitive Coaching

In 1980s, Costa and Garmston developed cognitive coaching model by blending the perspective of supervision model of Piaget as well as motivational perspectives of Maslow and Rogers (Costa & Garmston, 2002). The basic idea of cognitive coaching is that humans are able to change as they grow and develop cognitively. A cognitive coach plays the role of a mentor who supports teacher development and thinking growth (Costa & Garmston, 2002). It supports the thinking and self-directedness of teachers. It directs teachers to be more reflective towards their practice by going deep within themselves (Costa & Garmston, 2002). A skilful cognitive coach would enhance teachers' cognitive processes in order to produce the desired learning outcomes (Costa & Garmston, 2002).

Cognitive coaching focuses on increasing teacher efficacy and student achievement (Edwards, 2008). It is usually based on seven coaching methods which are modelling, explaining, coaching, scaffolding, reflection, articulation and explorations (Dennen, 2004). Most of the studies on cognitive coaching were done in qualitative method focusing on teacher efficacy and support of cognitive coaching and the result were positive (Dennen, 2004). In fact, today, cognitive coaching is one of the most common model of coaching being used in American schools (Knight, 2006).

2.6.2 Literacy Coaching

Literacy coaching focuses on increasing literacy within schools and districts. Often, literacy coaching provides support in literacy-based instruction to teachers of all subject areas (Shanklin, 2007). It is similar to peer and cognitive coaching in a sense that it provides general support and has the same belief on collegiality among teachers in helping each other to develop skills. However, it is different in a sense

that it focuses on literacy based instruction and in increasing the numbers of students who graduate. (Shanklin, 2007).

Literacy coaching has quite a broad potential in terms of providing support to teachers. It is not connected to any particular theory, responsibilities or methodology. The role is often defined broadly as compared to other models of coaching (Cornett & Knight, 2009). However, literacy coaching is most effective when used to support the implementation of research based intervention used by teachers in developing students' vocabulary, fluency and comprehension. (Taylor, Moxley, Chanter & Boulware, 2007). Overall, it is empirically evident that literacy coaching does help teachers to improve instructional practices and teachers are able to accept the use of literacy coaching model as their practice (Buly, Coskie, Robinson & Egawa, 2006).

2.6.3 Peer Coaching

Peer coaching was first introduced by Joyce and Showers (1980; 2003) as a strategy for staff development. Coaching is a means to bring about changes and school improvement (Showers, 1984). It is a medium that not only allows teachers to create better learning environment (Joyce & Showers, 1995, 2003) but also meaningful professional dialogue to take place among teachers (Vidmar, 2006). Joyce and Showers (2003) argue that if the focus of professional learning is to help teachers create instructional improvement, the school should consider adopting the most effective means to monitor and evaluate professional development activities which would affect students' learning outcome. A quantitative study done by Cornett and Knight (2009) also supported Joyce and Showers' earlier work which supports the idea of using coaching to help knowledge and skills transfer to ensure effective professional development that leads to improved practices.

Peer coaching may have been defined in many different ways (Fletcher, 2007; Griffiths & Campbell, 2009; Ives, 2008). It is different from the traditional unidirectional coaching model as it eliminates the authoritative differentiation. Instead of the coach being seen as having power over teachers, the peers were given the opportunity to coach each other (Showers & Joyce, 1996, Knight, 2011). This will allow partnership among teachers and coach to evolve (Merian & Snyder, 2015) apart from the chance to build trust and respect for one another (Zeus & Skiffington, 2000; Knight, 2011).

2.6.4 Instructional Coaching

Instructional coaching which is founded by Knight (2007) is based on seven qualities: equality, choice, voice, dialogue, reflection, praxis and reciprocity (Knight, 2007). This model also highlights that modelling as one of the key component. Knight (2007) classifies coaching activity into three categories: technical (helping teachers with training), challenge (collaborative problem solving) as well as collegial (providing support for reflection). Based on his study on the effectiveness of coaching on instructional practices, Knight (2007) reported a 70% increase in the practice of classroom activities demonstrated during coach modelling session. This shows that coaching is able to provide strong investment in teaching.

Instructional coaching has become professional development practice which is responsible for improving the level of teachers' skill (Knight, 2011). Due to empirical evidence on how instructional coaching affected instructional practices, it has recently been promoted as having the essential role in improving teachers' effectiveness (Croft, Coggshall, Dolan, Powers, & Killion, 2010). It was also empirically reported that instructional coaching can increase student achievement as it complies to the principles of professional development framework (Darling-

Hammond & Rothman, 2011). The Consortium for Policy Research in Education has outlines eight guiding principles of effective professional development (Corcoran, 1995):

- Stimulate and support site-based initiatives.
- Support teacher initiatives.
- Focus on pedagogy and instructional design.
- Model constructivist teaching.
- Create collaborative forums to offer intellectual, social, and emotional engagement.
- Demonstrate respect for teachers as professionals and adults as learners.
- Provide time and follow-up support for teachers to master new content and strategies.
- Professional development is an integral part of teachers' work and must be accessible and inclusive for all students.

Instructional coach addresses all aspects of curriculum in helping teachers to improve instructional practices (Taylor, 2008). Instructional coaching supports districts' effort to improve students' learning (Knight, 2008). It is a form of non-supervisory and non-evaluative guidance, which is provided directly in the classroom setting. This is to encourage teacher learning and application of instructional expertise (Taylor, 2008). In fact, instructional coach is defined as on-site developer who works in school in order to provide teachers with on the spot professional development (Knight, 2007, 2011).

Basically, coaching program is based on voluntarily participation from teachers. It also requires coaches to focus on content and provide modelling of best

practices (Knight, 2004). It is of utmost importance that coaches build a significant relationship with teachers before and during coaching (Knight, 2004).

Table 2.2
Variations of Coaching

Variations of coaching	Categories	Theories
Technical coaching	Focus on incorporating new curriculum and instructional techniques into teachers' routine	Ackland, 1991 Becker, 1996 Showers and Joyce, 1996
Team coaching		Kent 1985, Neubert and Bratton 1987, Rogers 1987)
Collegial coaching	Improving instructional practices by refining techniques, developing collegiality, increasing professional dialogue, and assisting teachers to reflect on their teaching	Ackland, 1991 Becker, 1996 Showers and Joyce, 1996
Cognitive coaching		Garmston et al. 1993
Challenge coaching	Identifying and treating a specific problem Can be used in larger context than the classroom	Ackland, 1991 Becker, 1996
Instructional Coaching	Encourage teacher learning, improve students' learning Focus on content and provide model of best practices	Knight, 2004
Literacy Coaching	provides support in literacy based instruction, similar to peer and cognitive coaching (support and collegiality) most effective when used to support the implementation of research based intervention used by teachers in developing students' vocabulary, fluency and comprehension	Shanklin, 2007

(Source: Wong & Nicotera, 2003; Knight, 2004)

Since coaching is very much related to the theory of adult learning and Fullan's theory of change, they key in relationship establishment between coach and teachers prior to collaboration is a foundation of trust (Shanklin, 2007). Apart from developing a non-evaluative relationship, it should also be collegial. During

coaching, the coach should be able to listen carefully and speak less (Buly et al., 2006). This would allow teachers to reflect on their own teaching.

Table 2.2 summarises the different types and categories of coaching. Regardless of the terms used, coaching is regarded as professional development strategy which is aimed at engaging teachers collaboratively for the purpose of improving instructional practices (Neufeld & Roper, 2003).

2.7 Factors Related to Effective Coaching

There are various aspects related to the implementation of coaching and its effectiveness in helping teachers to improve instructional practices. This includes the impact of coaching on instructional improvement, continuous professional development, role of leadership as well as learning outcomes. In fact, all these aspects are inter-related to each other either directly or indirectly.

2.7.1 Conceptual Definition of Leadership in Coaching

The role of leadership plays a vital role in ensuring the effectiveness of coaching. Both the coach and teacher could play the different roles interchangeably in order to implement coaching successfully. In this study, they can interchangeably switch from the roles of distributed leadership, transformational leadership to teacher leadership. Distributed leadership is a practice which requires effort from people at all levels rather than focusing on the attributes and personal characteristics of people at the top (Fletcher & Kaufer, 2003). This means that the responsibilities in ensuring school improvement is shared to all teachers at different levels.

2.7.1.1 The Impact of Leadership on Coaching

Different leadership style yield different impact. There are two types of distributed leadership, which are additive and holistic (Gronn, 2002). The additive form of

distributed leadership focuses on dispersing the tasks among members across organization. This means that everyone in the organization is a leader (Manz & Sims, 1980; Bush, 2011). On the other hand, holistic form of distributed leadership focuses on the interdependence between two or more organizational members which may be based on overlapping roles or complementary of their knowledge and skills (Gronn, 2002). This type of leadership emerges from dynamic, multidirectional and social processes, which later would allow learning to take place within individuals and the organization involved. (Gronn, 2002; Bush, 2011)

Distributed leadership concentrates on engaging the experts in an organization without taking into consideration their formal position or role (Harris, 2004; Bush, 2011). This means that any teacher can become a leader based on their expertise as long as it can contribute towards benefiting the organization. It is empirically evident that teacher leaders can become agent of change in an organization by improving teaching and learning practices (Poerkert, 2012). However, there are some teachers who chose not to become leaders and are comfortable with their position and condition. They will not show the willingness to change or may choose to have minimal engagement in professional development activities (Phelps, 2008).

In a 3-year longitudinal studies conducted by Heck and Hallinger (2009) on third grade students studying Mathematics, which examines the impact of distributive leadership on academic performance, the findings show that there was a reciprocal relationship between collaborative and distributed form of leadership and that there were significant improvements in mathematics achievement among the students. This type of collaborative approach among teachers is important in helping them to integrate theory with practice as well as in analysing the impact of teaching

on learning (Poskitt, 2014). Other than that, it also helps teachers to critically discuss and adapt their teaching strategies while deconstructing and reconstructing their pedagogical practices through reflective yet supportive environment (Poskitt, 2014). As such, teacher collegiality and collaboration generates positive change in schools (Rosenholtz, 1989; Madhiha, 2012; Jones, et al.; Vangrieken et. al., 2017). It allows teachers to become leaders at various time apart from having a stronger drive for improvement (Harris & Muijs, 2002; Bush 2011, 2013). Thus, distributed leadership is important in coaching because every teacher is a leader as long as they focus on creating change not only for themselves but also for the school as a whole.

Another type of leadership which focuses on collegiality among teachers is transformational leadership. The focus is on empowering teachers to be actively involved in the process of improving teaching and learning (Bush, 2011; Cooper, 2012). In transformational leadership, collaboration among teachers is vital in realizing instructional transformation within the school (Cooper, 2012; Anderson, Feldman & Minstrell, 2014). Teachers are encouraged to be transparent and self-reflective towards their classroom practices. Through collaboration, teachers can transform theory into practice which would create impact on students' learning (Poskitt, 2014). Having said that, transformational leadership theory is in line with the goals and objectives of coaching. By being reflective, teacher could become critical in discussing their own practices with others in a supportive environment (Poskitt, 2014; L'Allier et al, 2010).

Above all, transformational leadership's ultimate goal is the social transformation of the school (Cooper, 2009). Table 2.3 presents the orientation themes of Transformational Leadership which becomes the driving force in creating changes within the school (Roueche, Baker & Rose, 1989).

Table 2.3

Transformational Leadership.

Theme	Attributes
Vision	<ul style="list-style-type: none"> Possesses a future orientation Demonstrates a positive orientation toward change Takes appropriate risks to bring about change Demonstrates commitment to making appropriate changes Is mission oriented Perceives a shared vision
Influence Orientation	<ul style="list-style-type: none"> Places responsibility with authority Is action oriented Causes followers to feel powerful Employs appropriate decisional style Demonstrates willingness to be influenced by followers Builds a collaborative environment Encourages open communication Is in touch with followers Demonstrates high energy
People Orientation	<ul style="list-style-type: none"> Understands the organizational ethos Rewards appropriately Demonstrates respect toward others Considers individual needs Is student-centred Values others
Motivational Orientation	<ul style="list-style-type: none"> Is flexible in dealing with issues and people Encourages creativity Assists in the development of others Helps clarify expectations Attempts to inspire others
Values Orientation	<ul style="list-style-type: none"> Demonstrates commitment to learning Advocates quality education Demonstrates high standards Demonstrates sound judgment Demonstrates openness and trust Demonstrates sense of humor Leads by example

(Source: Roueche, Baker, George & Rose, 1989).

Teacher leadership is yet another theory, which encourages teachers to become responsible for their own instructional improvement. Based on a study conducted in three schools with three different levels of leadership, Muijs and Harris (2007) concluded that there are three factors which could support teacher leadership

which are initiative by the principal, school culture as well as school structure. Teachers should be given the opportunity by the principal to lead teacher leadership development. Since there are various form of support which could cultivate teacher leadership, it could be done through modelling, sharing power, providing resources, overcoming barriers as well as listening to teachers' views and opinion (Katzenmeyer & Moller, 2009; Killion et al., 2016).

When trust becomes the culture among teachers, it is even easier for teacher leadership to thrive. Katzenmeyer and Moller (2009) suggested several other forms of culture which support teacher leadership to thrive such as collegiality, open communication, having positive environment, recognition, autonomy as well as developmental focus. In terms of school structure, teachers could be given certain responsibilities or task to be achieved so that they could exercise their role in teacher leadership and contribute to the improvement of the organization (Muijs & Harris, 2007; Killion et al., 2016).

Research has also proven that activities which encourages teacher leadership such as teacher collaboration, partnership as well as professional networking provides positive impact on teacher's morale and self-efficacy (Harris & Muijs, 2005; Knight, 2007). Thus, teacher leadership could further be enhanced through professional development programmes which could encourage more collaboration among teachers to improve classroom practices and learning outcome and thus school performance.

Reeves (2008) also suggested several other forms of support which could encourage teacher leadership. Among a few are allowing teachers to make their own judgment and decision, encourage innovation, provide feedback, value teachers as individuals as well as listen to their problem, views and ideas. However, in order for

all these to take place and for teacher leadership to thrive, teachers should be given time and opportunities to collaborate with their colleagues. Apart from improving self-confidence as leaders, they should also be given the right knowledge through professional development including training on leadership (Harris, 2003, Killion et al., 2016).

Another theory which also supports coaching and teacher professional learning is leadership for learning (LfL) which focuses on five principles namely focusing on learning, creating favourable learning condition to learning, engaging in dialogue, sharing accountability and sharing leadership (MacBeath & Dempster, 2008; Swaffield, & MacBeath, 2009). Leadership for learning involves maintaining a focus on learning as an activity in which everyone is a learner and learning relies on the effective interplay of social, emotional and cognitive processes. The efficacy of learning is highly sensitive to context and to the differing ways in which people learn (MacBeath, 2012). In addition, the capacity for leadership arises out of powerful learning experiences while opportunities to exercise leadership would enhance learning. (MacBeath & Dempster, 2008; Swaffield, & MacBeath, 2009). Therefore, in leadership for learning, the whole school community is regarded as learners including teachers and school leaders which is in line with the theory of coaching and adult learning.

In addition, LfL involves creating conditions favourable to learning as an activity in which it cultures nurture the learning of everyone as everyone has opportunities to reflect on the nature, skills and processes of learning (MacBeath, 2012). It also focuses on physical and social spaces which stimulate and celebrate learning. In addition, safe and secure environments enable everyone to take risks, cope with failure and respond positively to challenges (MacBeath & Dempster, 2008;

Swaffield, & MacBeath, 2009). Leadership for learning practice also involves creating a dialogue about LfL in which LfL practice is made explicit, discussable and transferable and there is active collegial inquiry focussing on the link between learning and leadership. Coherence in dialogue is achieved through the sharing of values, understandings and practices (MacBeath, 2012). Factors which inhibit and promote learning and leadership are also examined and addressed. In fact, the link between leadership and learning is a shared concern for everyone in which different perspectives are explored through networking with researchers and practitioners across national and cultural boundaries (MacBeath & Dempster, 2008; Swaffield, & MacBeath, 2009). Setting the right condition would encourage dialogue between teachers as well as with coaches which leads to improved practices.

It also involves the sharing of leadership in which it supports teacher participation in developing the school as a learning community. Everyone is encouraged to take the lead which is appropriate to task and context (MacBeath, 2012). In addition, the experience and expertise of staff, students and parents are drawn upon as resources. Leadership for learning also values and promotes collaborative patterns of work and activity across boundaries of subject, role and status (MacBeath & Dempster, 2008; Swaffield, & MacBeath, 2009). In terms of shared sense of accountability, leadership for learning involves a systematic approach to self-evaluation which is embedded at different levels (classroom, school and community levels). A shared approach to internal accountability is a precondition of accountability to external agencies and national policies are in accordance with the school's core values. In addition, leadership for learning also focuses on continuous sustainability and succession (MacBeath & Dempster, 2008; Swaffield, & MacBeath, 2009). All in all, the principles of leadership for learning

supports the initiative of coaching which focuses on professional development and instructional improvement.

Regardless of the different theories on leadership, as an effective leader, one must be able to listen and observe with an open mind (Greenber-Walt & Robertson, 2001). Being a leader also means that one should not be judgmental or cynical in order to ensure sustainable effectiveness of coaching (Scharmer, 2009). The principles of creative leadership are also important in implementing instructional coaching as it will affect adult learners' motivation and effort in making changes. It is empirically evident that adults are highly motivated to learn or change when they are able to relate through experience and purpose, given the opportunities for mastering skills and knowledge, having a sense of autonomy and able to collaboratively solve a problem (Pinks, 2009).

Scholars have revealed that coaches practice good leadership by helping teachers to develop understanding of instruction by co-designing units and lessons (Atteberry & Bryk, 2011; Coburn & Woulfin, 2012; Kersten & Pardo, 2007). For example, Kersten and Pardo (2007) in their study, portrayed coaches' role in developing teachers' understanding of a new reading program which is done through consultations on how to adapt instructional materials to meet the needs of students as well as the teacher. In another study, Marsh et al. (2009) reported that coaches showed their leadership by being involved in data-driven decision making to help teachers make improvement.

Other studies also show that coaching supports leadership among coaches by showing evidence on coaches' role in translating policy (Coburn & Woulfin, 2012; Kutash & Nico, 2010; Woulfin, 2015). In addition, some other studies show that coaches can catalyze implementation of coaching by prioritizing elements of a

reform (e.g., specific ways of teaching or monitoring student progress) and promote instructional practices in helping teachers to make improvements to classroom practice (Coburn & Woulfin, 2012; Huguet et al., 2014; Teemant, 2014). As such, these are some of the various examples of how coaching promoted leadership among teachers and coaches.

2.7.2 Conceptual Definition of Coach Competency

Apart from the role of leadership, coach competency is another factor which contributes towards effective coaching. It is no doubt that coaching could improve teacher performance (Bailey, 2006). However, in order to be an effective coach, one must have the right skills and the appropriate qualifications (Antonioni, 2000). With the right skills and qualification, a coach can help teachers to improve their instructional practices, which would result in immediate improvement that the organization hoped for. There are several characteristics of effective coaching as described by Shanklin (2006) which are collaborative teacher dialogues of various levels and knowledge, facilitation of the development of school vision related to literacy and district goals, data oriented (of teacher and student learning), a continuous job-embedded professional learning and it should also be non-evaluative and supportive. Additionally, there are three broad categories of skills that an effective coach should possess namely pedagogical knowledge, content expertise as well as interpersonal capabilities (Kowal & Steiner, 2007).

2.7.2.1 Pedagogical Knowledge

The available literature almost unanimously suggest that coaches should be experienced teachers who have demonstrated success in the classroom. Effective coaches should have thorough understanding of how children learn and are skilled in developing and implementing various instructional strategies (Feger, Woleck &

Hickman, 2004). Empirical evidence shows that coaches with pedagogical knowledge not only have a larger toolbox of instructional strategies to draw upon but they also are more likely to earn teachers' trust (Dole, 2004). Apart from that, in order to ensure effective coaching, teachers and coaches should know certain pedagogical strategies which should be implemented in the process of coaching. Friend and Cook (2010) for example suggested that there are 6 models of co-teaching. In the implementation of coaching in Malaysian school, coaches and teachers adopted the "one teaching, One Observing Model". The purpose of this model is to collect data which are essential for improving practices. In this model, one teacher leads the instruction while the other would gather data, observes classroom behaviour related to teaching and learning. As such, by providing various trainings would allow coaches to have the right pedagogical knowledge and skills in order to effectively support teachers.

2.7.2.2 Content Expertise.

Effective instructional coaches, regardless of their subject area, have a thorough understanding and familiarity of the subject they are coaching as well as the curriculum that teachers are currently using (Feger, Woleck & Hickman, 2004; West & Staub, 2003). This is particularly important for coaches who focus on a subject area who work at the middle or high school level, which is due to the demand for in-depth understanding of the complexities of the content area at higher grade levels (Kowal & Steiner, 2007). Process-oriented coaches whose task is to improve classroom strategies must also have experience and a deep understanding of critical instructional strategies and methods.

2.7.2.3 Interpersonal Skills

The existing research on effective coaches makes clear that along with content and pedagogical expertise, coaches must possess strong interpersonal skills and competencies (Dole, 2004; Ertmer, et al. 2005; Knight, 2004; Neufeld & Roper, 2003).). In a 2003 survey of 31 professional development coaches, the most frequently mentioned characteristic of an effective coach was “people skills,” including the ability to build relationships, establish trust and credibility, and tailor assistance to individual educators’ needs (Ertmer, et al, 2005). Researchers at the Centre for Research on Learning at the University of Kansas have similarly found that successful coaches possess not only strong content knowledge but also an “infectious personality” that helps them encourage and inspire teachers to improve their practices (Knight, 2004). Coaches themselves ranked interpersonal capabilities higher in importance than content and pedagogical knowledge; they believed they could improve their content expertise through training but people skills would be more difficult to acquire (Ertmer, et al., 2005).

2.7.2.4 The Impact of Coach Competency on Coaching

To be an effective coach, one must possess the common skills which are categorized into pedagogical knowledge, technical and interpersonal skills as well as content expertise (Kowal & Steiner, 2007). It is important for a coach to be able to draw upon pedagogical knowledge as well as instructional strategies in order to help improve learning outcomes (Dole, 2004). Based on a study carried out by Dole (2004), it was found that one of the important part of coaching that teachers felt a coach should understand in order to lead them is classroom structure which encourages students’ learning. Another skill which is equally important is the coach’s ability to develop and implement instructional strategies. This would enable

the coach to earn the trust of teachers, thus providing the opportunity for teacher to develop their practices and students learning outcome as they start to trust the coach. (Dole, 2004).

Wren and Reed (2005) suggests that in order to become an effective coach one must have the competency in the subject area or content and the pedagogy as well as understand what coaching is all about such as knowing how to use the right questioning strategies, offering support to teachers, collaborating with teachers to learn new information and strategies instead of simply sharing information. This will give a sense of assurance to teachers that the coach is there to encourage and support their practices (Toll, 2009). Therefore, it is important to earn teachers' trust so that the coach will be seen as an advocate, a resource and someone who would help teachers in meeting their needs (Toll, 2009).

In helping teachers to create changes in the classroom, a coach acts as a partner by being non-judgmental and by applying the skills of inquiry allow teachers to enhance their abilities, knowledge and skills (Vander, 2000; Knight, 2009). This means that a coach must have all the required skills such as listening skills, analytical skills, observation techniques, effective questioning techniques as well as giving and receiving feedback (Bolch, 2001; Gene 2001; Knight, 2011). At the same time, the coach also needs to provide a supportive environment where teachers feel at ease to discuss things with the coach (Thomas & Smith, 2004, Knight, 2011). Not only that, a coach need to develop appropriate strategies in helping individual teachers learn through constructive feedback, while at the same time helping teachers to develop plan in improving their classroom practices (Gene, 2001; Cornett & Knight, 2008; Knight, 2011). A good collaboration between the coach and teachers will result in the improvement of instructional practices that leads to increased learning outcomes.

Since coaching is new to a school culture, some teachers are resistant towards the implementation, thinking that the coach might be there to supervise and evaluate them instead of helping them (Toll, 2009). Therefore, even a small action of a coach acting like a supervisor could eventually compromise the implementation of coaching in school (Toll, 2009). Therefore, the right interpersonal skills of being a coach could stop this from happening. Knight (2007, 2009, 2011) also stresses the element of building relationship with teachers in coaching. It is equally as important as developing teacher instructional practices (Knight, 2007, 2009, 2011). In fact, “people skills” is unanimously considered as important element that a coach should have in various research (Knight, 2004, 2007; Ertmer, et al, 2005). Therefore, to be an effective coach, one of the skills that a coach should have is interpersonal skills. Based on a study carried out on 107 teachers who had one year experience with coaching, Knight (2004) found that teachers are more encouraged and inspired to improve their practices if the coach was able to communicate clearly as well as establish strong relationship, trust and credibility with teachers.

It is also empirically evident that coaches perceived interpersonal skills as an important element to ensure effective coaching. Based on a study carried out on the perception of 31 coaches, Ertmer et al (2005) identified interpersonal skills is rated as the most important element as compared to knowledge, skills and personal characteristics. It is important in order to establish trust and relationship among teachers towards the coach. This is mostly helpful for coaches as it enables them to use their expertise to facilitate changes in teachers’ instructional practices (Ertmer et al., 2005). To sum up, the role of leadership plays a vital role in ensuring effective implementation of coaching. Due to that, teachers and coaches should be committed

enough to continuously switch between the different leadership roles in the process of instructional improvement.

2.7.3 Conceptual Definition of Continuous Professional Development (CPD)

Continuous professional development is important in determining the success of improving teacher instructional practices through coaching. Teacher professional development was first introduced by Gardner in the 1970s (Ang Jit Eng & Balasandaran, 2012). It was later developed by Fullan (1991) which emphasised on teacher working experience which is gained either formally or informally. Gran (1990) however suggest that professional development should also include technological skills, which could further develop individual's professionalism. In the attempt to improve the professionalism standards of the teacher, various trainings were given to teachers for the purpose of professional development (Ang Jit Eng & Balasandran, 2013) which includes both knowledge related to content as well as understanding on how students learn (Hiebert et al., 1996; Malm 2009). With related knowledge and skills, teachers would be able improve their instructional practices and thus improve learning outcomes as well as school performance.

Professional development which is given to teachers in various forms are meant to help teachers in improving instructional practices and students learning outcomes. It is not just about developing a learning community but it can help to develop teacher leadership. It is an ongoing learning process (Russo, 2004) which helps teachers to develop knowledge and skills in the attempt to create instructional vision for the classroom and it is continuously assessed to make sure that the vision is achieved (Dunne, 2002). In fact, professional development not only help teachers to build the culture of collaborative learning but it also presents teachers with

opportunities to make choices about their life-long learning as it focuses on teachers' real work (Dunne, 2002).

Nevertheless, professional development is still considered as the best way to allow changes to take place as compared to other alternative methods such as implementation of new policies and programs related to changing teacher behaviour (Smylie, 1996; Malm, 2009). In fact, one of the importance of professional development to teachers is to produce superior teaching that could be translated to achieve higher students' achievement as proven by plethora of recent studies related to professional development and teaching practice (Supovitz & Turner, 2000, Allen and Ledermen, 1998; Malm, 2009). This could be achieved if the knowledge and skills received through their trainings are related to teachers' professional field.

Since teacher quality is not a fixed quality, there are professional development practices that can help improve teacher practices, thus increase teacher effectiveness. Therefore, it is very important that schools implement effective professional development practices while at the same time making sure that teachers are given enough time and support to transfer knowledge into practice (Miller, 2003). However, there are many debates in relation to professional development received by teachers. Empirical evidence even shows that many professional developments given to teachers were unsuccessful. For example, a one-size fits- all type of training may not be able to help teachers to effectively develop professionally (Dunne, 2002). This is because professional development is considered as the ticket to educational reform that would take place in the classroom. This can be changes related to the performance of teachers or students as a whole (Wilson & Berne, 1999; Zuraidah, 2009; Malm, 2009). Therefore, there is a need for professional development plan to be revised in order to improve its effectiveness in helping teachers to improve.

Zuraidah (2009) in her studies states that effective and well-planned professional development is vital in helping teachers to develop professionally. Thus, it is best that professional development programmes given are designed based on teacher professional needs so as to allow changes and improvement to take place.

Table 2.4
Evaluating Professional Development

Evaluation Level	Questions Addressed
Participants' reactions	<ul style="list-style-type: none"> • Did they like it? • Was their time well spent? • Did the material make sense? • Will it be useful? • Was the leader knowledgeable and helpful? • Were the refreshments fresh and tasty? • Was the room the right temperature? • Were the chairs comfortable?
Participants' learning	<ul style="list-style-type: none"> • Did participants acquire the intended knowledge and skills?
Organization support and change	<ul style="list-style-type: none"> • What was the impact on the organization? • Did it affect organizational climate and procedures? • Was implementation advocated, facilitated, and supported? • Was the support public and overt? • Were problems addressed quickly and efficiently? • Were sufficient resources made available? • Were successes recognized and shared?
Participants' use of new knowledge and skills	<ul style="list-style-type: none"> • Did participants effectively apply the new knowledge and skills?
Student learning outcomes	<ul style="list-style-type: none"> • What was the impact on students? • Did it affect student performance and achievement? • Did it influence students' physical or emotional well-being? • Are students more confident as learners? • Is student attendance improving? • Are dropouts decreasing?

(Source: Guskey, 2000)

In designing professional development for teachers, many things should be taken into consideration. Guskey (2000) listed out the components of professional development evaluation level which looks at participants' reaction, participants'

learning, organization support and change, participants' use of new knowledge and skills and student learning outcomes.

By carefully looking at the various components, this will increase the effectiveness of teacher professional development as a form of support for teachers, aimed at improving practices and learning outcomes. In order to see if professional learning given to teachers were effective, Guskey (2000) listed out several questions in relation to the evaluation towards professional learning as listed out in Table 2.4. These questions could help teachers or stake holders to reflect on the implementation of any professional development given to teachers.

2.7.3.1 Models and Theories of Professional Development

There are various professional development models developed in the past decades. Loucks-Horsely model (1998) suggested four easy steps in teacher professional development i.e. establish, aim, plan, implement and reflect. This model also suggested on the use of coaching as a strategy to improve teaching and learning (Loucks-Horsley et al., 1998). On the other hand, Guskey's (1984) Model of Professional Development reveals that a significant change in teachers' attitude and beliefs is only evident when improvement of learning outcomes takes place as explained in Figure 2.2.

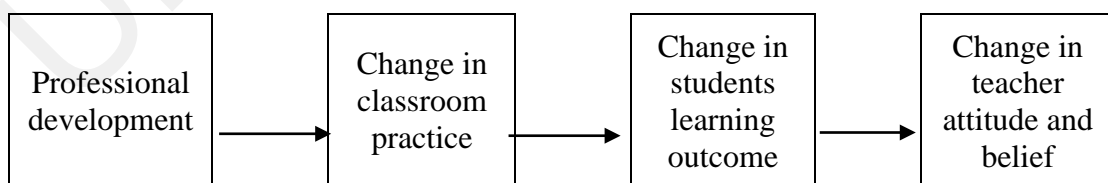


Figure 2.2. Guskey's Professional Development Model

Loucks-Horsley et. al. (1987) also suggested that professional development program should have the following criteria and attributes:

- opportunities for teachers to collaborate, plan and execute new practices
- opportunities for teachers to make decision on matters pertaining to teaching and learning: what to teach and how to teach and how to apply the knowledge learnt
- schools culture that support teachers' attempt and risks

Other attributes of professional development are related to duration of time spent on professional development program, incentives and rewards as well as management role in providing goals and support to teachers (Loucks-Horsley et al., 1987).

Feiman-Nemser model (2001) on the other hand suggested that professional development program should be offered based on teacher needs (based on their professional level) and teaching experience. In this model, six categories of teachers have been proposed. Joyce and Showers model (1980) on the other hand suggested the five components of the implementation of professional development as illustrated in Figure 2.3:

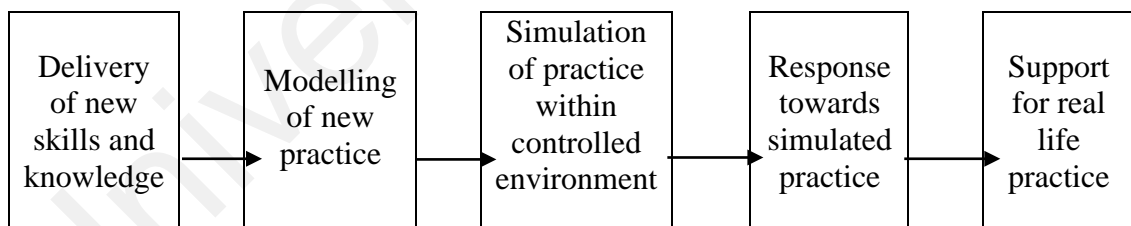


Figure 2.3. Joyce and Showers (1980) Model of Professional Development

Dunne (2002) also suggested a Professional Development Design Framework. In his framework, he suggested that in determining the strategies for professional development, three major factors that need to be considered are knowledge and beliefs, context as well as critical issues. This is because an effective professional development is a reflection of teachers' knowledge and beliefs about

teaching and learning, the various standards of professional development as well as the process of change (Dunne, 2002). Relevant professional development experiences which is effective and engaging can help teachers to provide learners with greater learning experience and achievement (Dunne, 2002). One of the most crucial factor in helping students achieve greater learning and achievement is to create a condition where teachers can teach well (Darling-Hammond, 2000).

Various studies have shown that although there are various models of professional development such as trainings, seminar and weekly professional development but they do not lead to the implementation of new initiatives or teaching strategies in the classroom (Cornett & Knight, 2009; Joyce and Showers, 2002; Kretlow & Bartholomew, 2010). However, through the implementation of coaching, it provides a platform for new knowledge and skills to be transformed into new strategies and initiatives in the classroom (Cornett & Knight, 2009, Joyce & Showers, 1981; Marsh, McCombs & Martorell, 2009). This is because coaches help teachers to better understand the skills and knowledge receive and apply them into their classroom practices.

There are various studies which shows how coaching could help support professional development. Neuman and Wright (2010) carried out a study over two groups of teachers receiving professional development in the attempt to improve their practices. About 148 teachers from six urban cities were randomly assigned to two groups, with one group received traditional professional development while the second group received similar content through embedded instructional coaching model. The result of the study shows that the embedded instructional coaching support resulted in short and long-term changes to instructional practices while the traditional professional development with no support from a coach did not give any

impact on teacher instructional practice. The finding suggests that coaching is a useful tool to improve learning outcomes because teachers receive support from the coach to transfer knowledge into their practices. It also suggests that the type of professional development administered to teacher will influence the changes in learning outcomes that will take place in the classroom.

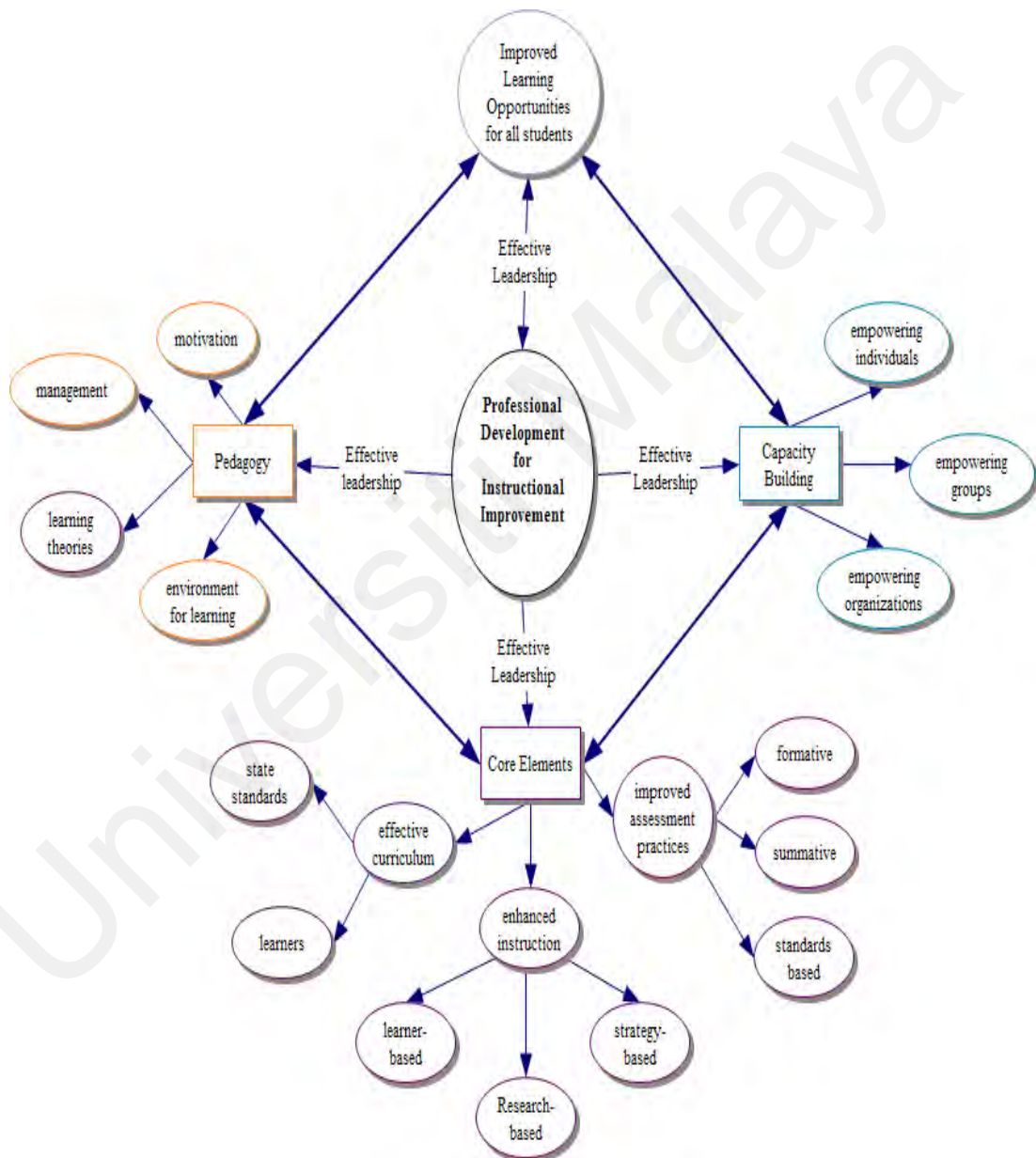


Figure 2.4: Professional Development for Instruction Model (PDI Model)
(Source: Balan, Manko, & Phillips, 2011)

Balan, Manko and Phillips (2011) in their study have suggested several models for professional development including Professional Development for Instruction

(PDI) model. In this model (Figure 2.4), leadership plays a vital role in helping teachers to improve instructional practices and develop their professionalism.

This model focuses on helping teachers to develop not only in terms of pedagogy but also curriculum, enhanced instruction, assessment practices as well as capacity building. By improving those elements, students' learning opportunities and outcomes would also be improved. There are various reasons which affected teachers' negative views towards professional development. Some are due to poor understanding of teachers' motivation while some others are related to environmental factors that could affect the process of change (Guskey, 1986; Phelps, 2008). Regardless of the reason, it only goes to show that teachers' perception and impression towards professional development are crucial in creating positive changes to their own practices.

Since professional development is a critical process in the attempt to bring about educational improvement, ineffective professional development therefore, could deter teachers' motivation to participate in professional learning (Supovitz & Turner, 2000). Teachers would have low commitment which would result in stagnant growth in their career development (Balan, Manko & Phillip, 2011). Some teachers even viewed in-service training as the least effective source of learning (Smylie, 1989; Balan, Manko & Phillip, 2011) because they do not know how to apply all the knowledge and skills into their instructional practices. This is due to the lack of appropriate support to help them transform knowledge into practice. However, all this could be avoided if teachers receive support from others such as an instructional coach to fully utilize the knowledge and skills gained in professional development sessions into classroom practices to produce effective teaching thus enhance learning outcomes.

2.7.3.2 Impact of Coaching on Continuous Professional Development

(CPD)

The objective of implementing professional development program is to improve instructional practices which leads to improved student learning and development. This is broadly defined but often operationalized narrowly as performance on standardized achievement tests (Devine et al., 2013; Desimone, 2009; Kennedy, 2016 & Kraft, Blazar Hogan, 2018). It is a medium for teachers to improve teacher capacity which is an important element in influencing effective teaching (Woolfolk & Hoy, 2013) and increasing learning outcome (Henson, 2002).

Ideally, coaching could serve as a form of guideline for teachers to advance professionally. Coaching is closely related to professional development and in fact, it is one of the current professional development practices which is in vogue. There has been a lot of research and studies related to coaching and professional development. Lofthouse and Towler (2010) suggest that coaching can provide a means to achieve the key principles of CPD and enhance learning. Coaching is a form of collaborative CPD and can thus be a strong dimension of teachers' professional learning in school. As such, it needs to be managed as part of a strategic approach to CPD (Lofthouse & Towler, 2010). It is therefore a genuine alternative to the rarely collaborative and passive- learning CPD which are also poorly embedded in work contexts (Pedder et al, 2008). As such, coaching could be regarded as a form of a mediation between CPD and classroom practices.

In the attempt to create changes which are promising in increasing teachers' competence and student learning, it would definitely require extra effort from teachers which however would result in additional workload (Guskey, 1986; Knight, 2007). It also would create a form of anxiety as teachers would feel threatened with

any form of radical changes to their current classroom practices (Mann, 1978; Malm,2009; Toll, 2009; Dole, 2004). Even if teachers decided to allow changes to happen, they would probably not be able to do it well (Doyle & Ponder, 1977; Knight, 2007). Thus, it was suggested that incremental changes (Sparks, 1983; Fullan, 2007) with minimal disruption or extra work (Fullan, 1985; 2007) is key in ensuring the success of any professional development program. Thus, teachers should be given less extra work and more time to concentrate on professional development which could lead to positive changes either in instructional practice or students learning outcome.

For example, after attending professional development sessions, teachers need to spend some time to receive support from coaches in order to effectively transfer the skills into practice. This is because without proper support and guidance, the teacher could wrongly interpret the information gained from professional development learning. In reality, teachers are usually left to figure out what to do and what not to do (Hargreaves, 2003). Since teachers prefer to work alone due to the autonomy that they have over their own classroom, they ended up fine tuning whatever knowledge given to them according to their own needs and understanding without considering whether or not they are doing it right (Hargreaves, 2003; Stein & Coburn, 2005). To avoid this from happening, the coach can help to support these teachers by helping out with the planning of the lessons and the implementation of new knowledge and skills into their practices (Knight, 2006). This shows that without support from the coach, teachers can misinterpret the knowledge and skills gained from professional development sessions. However, with coaching it can help with the transfer of teacher knowledge to develop effective teaching.

Various empirical evidence show that coaching contributes towards the success of professional development. Based on a study done by Joyce and Showers (1981, 2002), it is proven that teachers who were coached immediately after training were able to transfer the knowledge gained from the training into their classroom practices more effectively with mean score 14.80 (coached) as compared to 10.67 (uncoached). These findings were also supported by Cornett and Knight (2009) in their quantitative study which support the effective transfer of knowledge from professional development to classroom practices. Since it is known that coaching can help provide teachers with supportive professional development, therefore, schools and districts implement coaching to create instructional changes that they hoped for (Marsh et al., 2009). A more recent intervention related to providing individualized coaching were also undertaken to offer context-specific, narrowly tailored professional development to improve teacher effectiveness (Allen et al., 2011; Blazar & Kraft, 2015; Papay et al., 2018; Powell et al., 2010). A study carried out by Nurahimah and Rafisah (2010) on 850 teachers in Kedah reveals that there is a high correlation between teacher efficacy and instructional improvement as a result of the support and coaching received. Additionally, Linton (2014) carried out a study to determine if a relationship existed between the frequency of trainings received during professional learning and how does it impact teaching practices and student learning. The findings of study however, found that frequency of training was not a significant factor.

2.7.3.3 The Impact of Coaching on Transformation of Knowledge and Skills

Instructional coaching has been used as a form of professional development strategy for teachers to increase teacher competence and most of the research done

on instructional coaching has mostly been exploratory (Thomas, Bell, Spelman, & Briody, 2015; Elsenberg, 2016). It has been empirically proven that coaching has been able to increase the implementation or skill transfer (Cornett & Knight, 2009) which also closely related to increasing teacher professional growth (Elsenberg, 2016). Through instructional coaching, it has enabled the teachers to increase students' achievement by learning and implementing new ideas and practices in the classroom (Cornett & Knight, 2009). Armed with proper knowledge and skills, instructional coaching provides a form of support to teachers to implement best instructional practice.

Continuous professional development is also a form of adult learning which allows teacher to continuously develop professionally. There are six principles of adult learning (Zmeyov, 1998; Mercer, 2006; Cox, 2015). Adult learners are self-directed and internally motivated. They bring life experience and knowledge into their learning experience. Apart from goal oriented, they are also relevancy oriented. They are also practical and as adult learner they must be respected. These principles of adult learning or andragogy are important in the implementation of instructional coaching (Zmeyov, 1998; Mercer, 2006; Cox, 2015). They would allow extensive focus to be placed on the process and participants' requirements in order to allow maximum learning experience to take place. In fact, coaching is a form of adult learning which focuses on teacher collaboration to help teachers develop professionally while making positive changes to instructional practices, learning outcomes and school improvement as a whole. From the views of adult learning, coaching supports the movement of teachers, from where they are to where they want to be (Spellman, Ball, Thomas & Briody, 2016; Costa & Garmston, 2002).

The theory of adult learning is associated with Mezirow's transformational

learning which focuses on experience, critical reflection and development (Kitchenham, 2008). The two major elements of transformative learning are critical reflection and critical discourse (Kitchenham, 2008) which are also important elements in coaching. By being reflective and critical teachers are able to discuss and make the best decision (Mezirow, 2006). The theory of transformative learning was revised several times. In 1985, it focuses on three types of learning which are instrumental (learners ask how they could best learn the information), dialogic (when and where learning could take place) and reflective (why are they learning the information (Kitchenham, 2008).

Table 2.5
Principles of Adult Learning

Principles	Description
1. Adult must be involved in the planning of their learning	By getting teachers involved in the discussion or planning of their professional development would create a focus/ target for the teacher to work on
2. Experience provides the basis for the learning activity	Due to generation gap, experienced may have different philosophies and contact as compared to novice teachers. Also, they may have different background and experience in their teaching career. All these must be taken into consideration when planning for any form of professional development
3. The professional development must have immediate relevance and impact on teachers' life	Providing only the abstract theories to the teachers may not bring positive result in developing effective professional development. However, if the theories are practiced within the context of their professionalism, the outcome would be a definite positive improvement.
4. Adult learning is problem-centred	When presented with new skills or knowledge, as adult the teachers need time to analyse, think, reflect and assimilate the knowledge and skills to fit into their professional context. Active experimentation through problem-centred approach would lead to positive development of their knowledge and experience.

Source: Knowles, 1980

In his theory, Mezirow argues that the key element of transformation is critical self-reflection where learner rationalized his/her judgment (Kitchenham,

2008). However, in 2000 it was revised again into a more comprehensive explanation of the distinct elements of transformative learning theory and how it has effected adult learning (Kitchenham, 2008). Since coaching is closely interconnected to teacher professional development, it is usually associated with adult learning. Knowles (1980) suggested 4 principles of adult learning which is associated with planning, experience, immediate relevance and impact and problem based. Table 2.5 summarised the principles of adult learning.

Teachers should be given various training which are reflective of their own problems and experience (Kitchenham, 2008). Since teachers and coaches are adult learners, professional development should also include the study of the theory behind the skills and strategy, observation of skills being used in the classroom as well as the opportunity to apply or practice the skills in the classroom for feedback (Joyce & Showers, 1980, 2002). Classroom practice and observation thus requires the involvement of on-site coaching in the professional development training sequence (Joyce & Showers, 1980, 2002) in order to ensure its effectiveness. This way, it would enable teachers to reflect on their own practices and choose the appropriate knowledge and skills to be transferred into their classroom practices.

Based on the analysis of plethora of studies which investigated the effectiveness of various training method, Joyce and Showers (1980, 2002) concluded that there are several training elements which would improve teachers' ability to transfer new knowledge and skills into practice. Joyce and Showers (2002) in their research found that a one-time-in-service approach which is not accompanied by support from job-embedded professional development (in this case refers to coaching) is proven ineffective. This implies the importance of role of coaching in helping teachers to transform knowledge into practice.

To summarize, transformation of knowledge and skills into practice is essential in allowing effective teaching takes place. It is very much related to teacher professional learning. However, the knowledge and skills provided to teachers during professional learning should be based on individual teacher needs so that teachers would be able to reflect on their own practices. Coaching could provide teachers with the right support by strengthening their understanding of the new knowledge and skills gained through reflective dialogues and discussion while at the same time allowing teachers to reflect on their own practices, thus making meaningful necessary improvements.

2.7.4 Conceptual Definition of Instructional Improvement

Continuous improvement in instructional practices is about developing expertise which comes in the form of continuum (Ericsson, 2006). Development of expertise means the increase of knowledge and skills and this could be achieved by concentrating on selected aspects of instructional practices which needs improvement and refinement through feedback (Ericsson, 2006). Coaching allows teachers to develop their expertise in instructional practices by receiving feedback from the coach. However, instructional improvement is a long process which involves a lot of effort as a form of support that help to bind many aspects related to instructional improvement. In other words, the process of instructional improvement begins with professional development sessions, followed by transformation of knowledge and skills and end with producing effective instructional practices. All these contribute towards improving learning outcomes and school improvement.

In order to measure instructional improvement, the impact of several classroom factors such as teaching method, teacher expectations, classroom organization and classroom resources on students' performance are considered as important

(Campbell, 2004). This seems to suggest that, there are many things to take into consideration in order to measure teacher effectiveness because in implementing instructional practices, a teacher has to deal with not only one, but many aspects related to teaching and learning. By looking at a narrow parameter of instructional practices would only create partial indicator of teacher effectiveness (Sammons & Bakkun, 2012).

On the other hand, in order to achieve effective instructional improvement, effective communication is required which can be clearly illustrated by the input-process- output (IPO) model by Littlejohn and Foss (2008). The model explains about creating a closed-circuit communication system known as “Cybernetic systems of communication”. As suggested by Littlejohn and Foss (2008), group communication is an effective way to share information between members. The round robin theory is believed to be the best approach when dealing with circulating and bringing ideas forward. The three phases (input-process-output) are essential elements in effective communication. In this study, the model is used to explain how communication between coach and teachers through the practice of coaching could help in improving teacher instructional practices that would result in improved learning outcomes.

In the process of coaching, teachers and coaches play various leadership roles in the effort to create changes in instructional practices. Input is the form of resources which entered an educational system at the early stage (Littlejohn & Foss, 2008). In this study, the input are the various factors related to instructional improvement such as leadership roles, professional development, training, climate as well implementation efforts put forward by teachers. Coaching knowledge and skills are also essential elements at the input stage to enable effective coaching to take place.

The process phase consists of plan, organise, control and improve (Littlejohn & Foss, 2008) which are also part of coaching. In this study, the process stage allows teachers to transfer new knowledge and skills through coaching. By playing appropriate leadership roles, coaches are able to provide the right support to teachers by ensuring that the knowledge and skills gained from professional development are transformed into classroom practices. This shows that coaching is closely related to professional development. By transforming the skills and knowledge into new classroom practices, teachers would be able to produce effective teaching.

In the output phase, improved quality of education system is achieved (Littlejohn & Foss, 2008). The output can come in various forms such as data, documents or reports. At the same time, the output produced at the end of the stage can be used as input to start off a new cycle of the IPO model. Thus, in this study, the collaboration of all the elements in the input and process stage would result in improved learning outcomes and school performance. Littlejohn and Foss (2008) also stresses the element of feedback which is present at the end of the whole process. Feedback is essential for teachers and coaches before they could start a whole new IPO process. With the completion of the whole input process and output stages, a complete cybernetic system of communication among teachers and coaches have been established.

2.7.4.1 Impact of Coaching on Instructional Improvement

Several studies found that teacher quality is considered as the most important variable within an organization which could impact students learning (Isaacs & Magnuson, 2011; Marzano, 2003; Miller, 2003). Teacher effectiveness is closely related to successful professional development which provides support and adequate time to transfer the knowledge gained to improve instructional practices (Miller,

2003). By receiving substantial professional development, teachers can help boost learning outcome by 21 percentile points (Yoon, Duncan, Lee, Scarlos and Shapley, 2007). This implies the importance of teacher professional development in developing teacher effectiveness.

One of the most important factor in determining the impact of coaching in instructional improvement is the substantial amount of time the coach spent providing support and assistance to teachers in the classroom. At the same time, the coach must be knowledgeable about instruction (David, 2007). During classroom observation, the coach becomes a mirror to teachers so they can reflect on their own practices during post-observation conference or feedback session (Blasé & Blasé, 1999; Knight, 2007). This is where the transformation of knowledge takes place when teachers make use of the knowledge gain through professional development to improve their practices.

In US, instructional coaching becomes an effective option for K-12 schools in improving teacher quality. For that reason, it has also become a widely funded form of school-based teacher professional development (Ippolito, 2009). However, some studies have proven that one of the problem of instructional coaching is the inadequate amount of time the coach spent working directly with teachers in the classroom (McCombs & Marsh, 2009; Bean & Swan Dagen, 2012). As a matter of fact, many scholars agreed that if coaching is implemented correctly, it would improve teacher practices that would lead to improved learning outcomes (Joyce & showers, 1980; Knight, 2007; McCombs & Marsh, 2009; Bright, 2011). It is also evident that teachers were likely to try out new ideas to improve instructional practices when they receive support from a coach after attending professional development session (Neufeld & Roper, 2003). With the support received from the

coach, the knowledge transformation process would take place which allows teachers to make improvements in their teaching.

2.7.4.2 Impact of Coaching on Learning Outcome and School

Improvement

Instructional coaching is a process of providing support to teachers to create instructional changes. To invoke change, the coach needs to play a critical role in using the appropriate skills and knowledge such as knowledge in content, curriculum, pedagogy and coaching resources (Brady, 2007; Feger, Woleck, & Hickman, 2004). Coaches also need to be able to practice questioning technique and make reflection (Feger, et al., 2004). Not only that, coaches must be open minded and know how to respect others in terms of opinions, enthusiasm, optimism, confidence and decision (Ingersoll, 2007).

To become a good coach that could bring about changes in teacher instructional practices, one needs to be trained with all these skills and knowledge. Not only that, coaches also need to have trainings in presentation skills, data analysis, and curriculum planning (Ingersoll, 2007). It is also empirically evident that networking among coaches is also important. Coaches need to meet up and discuss various issues with each other and develop strategies to further enhance the implementation of coaching (Knight, 2007; Brady, 2007). All of these are necessary skills and competencies that coaches should possess in order to maximize the impact of the implementation of coaching that could bring about changes in the classroom and in school as a whole. This seems to show that teacher professional development has an indirect impact on instructional improvement. It is through coaching that the knowledge and skills are being translated to classroom practices. In this case it shows that coaching has direct effect on instructional improvement.

Coaching have changed the way teachers perceive best practices. (Hall, 2005; Knight, 2006). Instead of committing themselves in a top down practice, teachers prefer seeking new skills and information which are related to their instructional needs in order to meet learning goals. This can only be achieved with the help of a coach (Knight, 2006). Although working together with others could be difficult to some but collaboration is a necessity to build teacher and coach relationship (Jorissen, et al., 2008; Regge & Soine, 2008; Russo, 2004). This, however, could only be achieved with the right leadership skills (Lipton & Wellman, 2007; Steiner & Kowal, 2007). This shows that leadership and change are interrelated to each other. In order for change to take place, a coach must know how to play the appropriate leadership role.

Coaching allow discussion and conversation among teachers and coach in order to generate change and growth. The conversation is easier to take place if a teacher feels safe and have a clear goal, apart from focusing on developing individual needs, (Lipton & Wellman, 2007). This is suggesting that by providing a safe environment, teachers would be more open to change as the reflectively discusses their practice with the coach. This would also mean that coaching dismisses the idea of teacher working in isolation as it allows teachers to have an open discussion by sharing their experiences with the coach in order to generate change and growth. This clearly shows that coaching has a direct effect on improving teacher instructional practices.

Coaching not only focuses on the development of teacher practices but also the results and gaps in student learning (Cornett & Knight, 2009; Lofthouse & Towler, 2010). These learning outcomes could be a source for teachers to improve their practices. Nevertheless, learning outcomes come in a variety of forms such as

that gathered in the moment data, short-term data or long-term data (Cai, Hohensee & Hwang, 2018). In the moment data are those gathered as teachers engage in a complex interaction with students where they continuously assess their students' responses and make pedagogical decisions in the moment based on those assessments, their own knowledge, and their instructional plan. All the data gathered would provide a view into each student's understanding and allow them to use students' responses to immediately improve instruction or practices (Cai, Hohensee & Hwang, 2018).

On the other hand, analysing and using data in the short term refers to using data reflectively after a lesson or unit has been taught to inform subsequent instruction with the same students. Data recorded in the knowledge base on each student's strategy use, conceptions and misconceptions, and affective responses to a lesson could guide teachers and researchers as they decide what needs to be addressed in the next lesson and what new concepts are feasible for students given their current understanding. Similarly, teachers and researchers could access students' performance on previous instructional tasks to help them predict how those students would think about tasks in the next lesson (Cai, Hohensee & Hwang, 2018). While long-term data refers to the professional knowledge that teachers have that would provide teachers with a powerful tool suitable for a variety of needs ranging from large scale (across classrooms or schools) to small scale (across particular groups of students or individual students) (Cai, Hohensee & Hwang, 2018). Teachers could study data from their own classroom or a few classrooms in which students are trying to achieve the same learning goals which would provide new insights and decisions in helping them to improve their practices

The success of coaching could be seen in how it affects teachers and the school as a whole (Russo, 2004). In order to achieve such change, coaching alone will not be able to produce effective result, but it must also be paired with quality professional development, resources and strong leadership as well as school capacity building which would result in increased students' achievement (Russo, 2004). Therefore, coaching and professional development must work together to create an impact on instructional practices and learning outcomes.

A study by Rennick (2002) which examined literacy achievements of kindergarten students, found a significant increase in academic achievement among students whose teachers were coached compared to the achievement of students whose teachers did not receive any coaching treatment. However, a mixed method study conducted by Slinger (2004) on the impact of coaching on student literacy scores among first graders whose teachers been coaches or not, concluded that the practice of coaching did not result in any statistically significant difference based on students' data. However, the analysis of qualitative data showed there were significant outcomes coaching specifically in the change in focus from procedural to instructional.

Since coaching focuses on changing teacher practices, thus, it is intertwined with Fullan's work on educational improvement (Fullan, 2006). Thus, the core business of coaching is to change adult behaviour in the classroom. Although change in instructional improvement would involve both bottom up and top down decision but it is up to teachers to decide on how and when the changes would take place by making use of the appropriate resources. (Fullan, 2006, Knight, 2009). This stresses Knight's (2009) belief on teacher voice and choice in creating change in the classroom. It is only when teachers are able to see the importance of creating change

in the area of their choice that they would make the attempt to create such change and vice versa (Knight, 2007). This seems to suggest that by playing the right role of teacher leadership, enables teachers to make decision regarding the change in instructional improvement.

The role of a coach is not only in creating changes within the classroom but also in terms of school culture and climate (Davis, 2016; Matsumura et al., 2010; Porche et al., 2012). A study done by Steckel (2009), suggests that coaches, teachers and principals reported that there were observable changes in the overall school culture. They observe that teachers and coaches were able to conduct reflective dialogue openly. Apart from that, collaboration, problem solving and inquiry has also become part of teacher practices (Steckel, 2009). As such, school culture can change new values and behaviour and replace the old ones, which already existed in the system (Elmore, 2004). It is the coach responsibility to help create the change in the learning environment in school (Fullan, 2006; Elmore, 2004). However, when dealing with adult learners, creating change is often difficult. Without proper support and poor implementation, coaching can turn out to be ineffective (Knight, 2009). Thus, creating change involves collaboration of various aspects regardless if they are directly or indirectly related to one another.

2.7.5 Resistance Towards School Reform

Creating change is not an easy effort. Change involves people who can commit to change or even resist it (Fullan & Miles, 1992). Resistance comes in various forms, namely intransigence, entrenchment, fearfulness, reluctance to buy in, complacency, unwillingness to alter behaviour and failure to recognize the need for change. These are some of the traits usually attributed to teachers and other staff members but not to the administrator (Fullan & Miles, 1992).

Scholars have identified several problems and challenges to the implementation of change (e.g. diffuse objectives, lack of technical skills or insufficient resources for change (Fullan & Miles, 1992). Changes involves individual attitudes and behaviours as they naturally responded to transition, sometimes can be understood as resistance. During the transition, the individuals confront the loss of old beliefs and behaviours and embrace new ones. It involves a period of intense personal and organizational learning and problem solving (Fullan & Miles, 1992). Therefore, the individuals involved need support to be able to go through the transition time.

There are several factors which are associated with the implementation of change according to different stages. At the initiation stage, the factors include existence and quality of innovations, access to innovation, advocacy from central administration, teacher, among several others. Since change is a process, therefore, the time frame for change to take place from initiation to institutionalization could vary depending on the complexity of change. A moderately complex change takes from 3-5 years while a larger scale efforts can take 5 to 10 years (Fullan, 2007).

In this study, since coaching is a practice that supports professional learning and instructional improvement, therefore, the phases of coaching implementation in Malaysian school is being measured based on the 5 elements of professional learning community as suggested by Hipp & Huffman (2003) namely i) shared and supportive leadership; ii) shared values and vision; iii) collective learning application; iv) shared personal practices and v) supportive condition.

2.7.6 School Climate

There are various definitions of the concept of “school climate”. Sarason (1982) defines school culture as the beliefs, values and attitudes underlying and

supporting school structures and practices, such as school schedules, school size, course sequences, and instructional strategies. Some other literature defined it as “the ecology of the school,” “a safe and healthy school setting,” “classroom participation structures,” a “caring school environment,” and the “culture of the school” (Yonezawa, Jones, Mehan & McClure, 2009). In fact, recently school climate has even been equated with “personalization.” which specifically, reflects the condition of making the schools more personalized for students by transforming the learning environment through reduced class size, theme-based curricula, and newly developed advisory programs. (Yonezawa et.al., 2009).

Regardless of the definition, school climate is influenced by the change efforts that take place within an organisation. Therefore, school change efforts must address the political and cultural elements that supply the rationale for school decisions about what to change and how to implement reforms (Dole, 2004). Failure to address school culture only produces unintended discrepancies between school improvement efforts and intended outcomes for student achievement.

Plethora of studies on school and classroom cultures over the last twenty-five years focused on conditions of teaching and learning which is aimed at improving student performance including classroom interactions and school level participation and engagement. Empirical evidence suggests that efforts to improve schools must address and change educators’ beliefs, values and attitudes (Slavin, 2007). However, these elements of the “culture of the school” cannot be addressed in isolation. In order for robust educational change to take place, it requires educators to simultaneously focus on other factors such as school schedules, school size, course sequences, curriculum and instruction as well as the political relations between the school, the broader community, state and federal policies (Slavin, 2007). This is

suggesting that in order for a school culture to develop, it involves various efforts not only from teachers alone but also students, administrators and the broader community.

Various initiatives have been implemented to address the development of school culture or climate such as Comprehensive School Reform (CSR) models. The CSR models suggested that school climate or school culture as one dimension of educational reforms designed to impact academic achievement (Slavin, 2007). These models, address school climate as one of many facets of school reform nested within larger efforts at improving curriculum and pedagogy. CSR models tackle school climate by requiring educators to ensure that reforms are broadly supported by staff, parents and community members. They also link the cultural and political dimensions of school improvement by highlighting issues of shared governance or professional development in addition to changing teaching practices and curriculum (Slavin, 2007).

There are various sub-factors of school climate which have been found to exert a powerful impact on academic achievement. For example, academic emphasis (Goddard et al., 2000) academic optimism (Smith & Hoy, 2007), and strong teacher-student relationships (Crosnoe et al., 2004; Tschannen-Moran et al., 2006) have been found to be particularly influential. In fact, the school climate construct itself is described as complex and multi-dimensional. It has been described as the unwritten personality and atmosphere of a school, including its norms, values, and expectations (Petrie, 2014). Further, it has also been described as the “quality and character of school life” (Cohen et al., 2009). The dominant focus has been how staff perceptions of school climate affect staff's functioning (Heck, 2000). For example, staff perceptions have been measured against staff well-being (Boyd et al., 2005; Grayson

and Alvarez, 2008), staff morale and job satisfaction (Collie et al., 2012). The impact of staff perceptions on learning outcomes such as student achievement has been explored to a much lesser extent. Nevertheless, there is a general trend observed in the relationship between climate perception and student achievement (Maxwell, Reynolds, Lee, Subasic & Bromhead, 2017). Additionally, Goddard et al. (2000) found that collective teacher efficacy significantly predicted students' performance. Specifically, it was found that an increase in one unit of school's collective teacher efficacy score was related to the increase of "more than 40% of a standard deviation in student achievement. The findings stress on the need for teachers to improve their practices in order to improve learning outcomes.

Based on the school context, norms, values, and beliefs of the "school" group are embodied in the school climate construct. A common central goal of the school shared by everyone in the school is to achieve strong academic performance, supportive staff-student relations, and shared values and approach (Bizumic et al., 2009; Maxwell et al., 2017). All these are factors which are conducive to successful student learning. It is possible to conceptualize school climate as the facilitating factor for students' and teachers' identification. School identification on the other hand is the process through which school climate would affect students' and teachers' behaviour. As such school identification would affect students' academic performance. If the school climate is positive and supportive, then the student is more likely to reflect and embed the school values and norms, which is then reflected on students' learning and achievement as well as their behaviour (Maxwell et al., 2017).

Therefore, in implementing coaching as a culture, it would involve various efforts at various levels. The effort should not come from teachers and coaches alone,

but it also need support from school administrator. Teachers effort would not only affect their classroom practices but also students' behaviour. On the other hand, as school leader, the principal has to make an effort to check on teacher involvement in coaching and should encourage their full participation for the purpose of improving student learning outcome. The district and state education department should also put forward an effort in ensuring that coaching becomes a school culture by constantly monitoring the practices in school and provide appropriate training which could increase knowledge on coaching as well as awareness on the importance of coaching towards teacher professional development.

2.7.7 School Improvements

School improvement is a multi-faceted and complicated process with technical, cultural, and political dimensions (Jones, Yonezawa, Ballesteros, & Mehan, 2002; Hubbard, Mehan, & Stein, 2006). When reformers attempt to change or improve schools and student performance by leading with technical means (such as through the implementation of coaching) which is also cultural or political means, they act in terms of increasing resources. For instance, they add skill-based professional development to, hopefully, "upgrade" teachers' classroom instruction; Researchers concerned with school climate have been more likely to think about the ways in which "technical" considerations (adding resources for instance) improve schools and students' achievement.

With regards to the implementation of coaching in Malaysian schools, in order to encourage effective implementation of coaching, coaches need help and support not only from teachers but also the school administrator i.e. school principal (Toll, 2009, Knight, 2011). The principle should play an active role to inform teachers that the coach's presence is not to evaluate them but instead to support them

in improving their practices (Toll, 2009). In Malaysia, a team of School Improvement Partner (SIP+) has been established to help school leaders providing support to teachers in the attempt to improve learning outcome (MOE, 2013).

Since gaining trust from the teachers is not easy, some teachers might be reluctant to cooperate with the coach (Toll, 2009; Knight, 2011). Therefore, it is also the principle's role as a leader to encourage active participation from all the staff. In this case, consistent monitoring from the principal would be necessary in order to communicate the school's expectation for teachers to collaborate and cooperate with the coach (Toll, 2009). Adequate resources should be allocated to support the implementation of coaching such as providing enough fund and space for professional learning (Toll, 2009, Hipp & Huffman, 2003). The principal should also show support towards coaching by meeting frequently with coaches to obtain necessary information regarding the staff or to offer help to coaches for the purpose of school improvement (Toll, 2009). Although it may take some time for teachers to work comfortably with the coach, but with consistent effort put forward by both parties, gradual improvement will take place in teachers' instructional practices which benefits the students (Toll, 2009; Hipp & Huffman, 2003).

A study by Kraft and Papay (2014) found that teachers working in schools with strong professional environments improved much more than teachers in schools with weak professional environments. In their study, six measures were drawn from teacher surveys to characterize the professional environment: consistent order and discipline, opportunities for peer collaboration, supportive principal leadership, effective professional development, a school culture characterized by trust, and a fair teacher evaluation process providing meaningful feedback (Papay & Kraft, 2016). It

was concluded that those are elements which support teacher development and are similar to the elements of effective coaching

Although instructional coaching is proven to improve instructional practices but there are several studies that suggest some schools failed to implement coaching effectively. For example, research done by Atteberry and Bryk (2011) found an average of only 39% of coaches manage to complete their collaboration sessions with teachers. In another instance, Bean and Swan Dagen (2012) revealed that 70% of coaches in middle and high school spent less than 30% of their time working with teachers in the classroom. This is suggesting that the amount of time the coach spent with teachers is one of the determining factors of the successful implementation of instructional coaching.

Experience is another factor that affects teacher effectiveness in the classroom (Stronge et al., 2004). Most research on teacher licensure links teacher licensure to student achievement. Teachers with full certification, regardless of type, have more impact on student performance than those without certification (Darling-Hammond, 2000; Goldhaber & Brewer, 2000; Stronge et al., 2004). The percentage of teachers with full certification had a significant, positive relationship (r between .61 and .80) with student achievement for the mathematics and reading sections of the 1990, 1992, 1994, and 1996 NAEP tests (Darling-Hammond, 2000). The percentage of new teachers without certification had a significant, negative relationship (r between -.40 and -.63) with student scores on the NAEP tests (Darling-Hammond, 2000). Additionally, Goldhaber and Brewer (2000) reported on similar findings in a study of teacher certification and student achievement, twelfth grade students with teachers certified through a traditional program scored on average 1.3 points higher on a standardized math test compared to students whose

teachers held alternative certification or were certified outside of mathematics. The findings suggest that teaching experience and qualification are significant factors associated with learning outcomes.

2.8 The Implementation of Coaching in Malaysian Schools

In Malaysia, coaching is one of the elements which is being mentioned in the PPPM. The implementation of coaching program has taken place in all the public schools in Malaysia since 2013, focusing on three major subjects: Malay Language (Bahasa Melayu), English and Mathematics. In ensuring the effectiveness of the program, the Ministry of Education (MOE) has spent a huge amount of fund to train the coaches also referred to as School Improvement Specialist Coach (SISC+) who are selected from among Malaysian school teachers from all over the country (MOE, 2013). Since it has been more than 5 years, the effectiveness of the program should be evaluated for the purpose of improvement. Coaching is seen as the appropriate means to help teachers improve their instructional practices as it would involve teachers working together in the attempt to develop and improve instructional practices and learning outcomes (Harris & Muijs, 2005; Cornett & Knight, 2009). It is also empirically evident that teachers prefer seeking direct assistance from their colleagues rather than their superior (Zepeda, 2007; Glickman, Gordon & Ross Gordon, 2007). This is all the more reason why teachers need collegial support to help them achieve instructional improvements.

The main objective of the coaching program is to reduce the number of band 5, 6 and 7 school by improving the performance of respective schools (MOE, 2013). In fact, the effort is in line with what is suggested by DiPaola and Hoy (2008) that coaching is a common strategy used by many institutions in order to help teacher

improve their instructional practices. Under this program, it became mandatory that professional development is to take place among teachers in schools within the district especially in low performing schools (MOE, 2013). The performance of the schools within the district is being ranked from Band 1 to Band 7 with 1 being the highest performing school and 7 being the lowest performing school. However, one of the challenges that could crop up from this programme is to make sure that the development of teacher instructional practices takes place in the classroom (DiPaola & Hoy, 2008). This created a need for such programme to be monitored closely in order to ensure its' success.

2.8.1. Phases of Coaching Implementation

Coaching is new to many school culture (Toll, 2009) and creating change takes a lot of time and effort. Miles (1986) and Fullan (1991) suggest that the process of change consist of a series of overlapping phases: initiation, implementation and institutionalization (as illustrated in Figure 2.5) which develops across time.

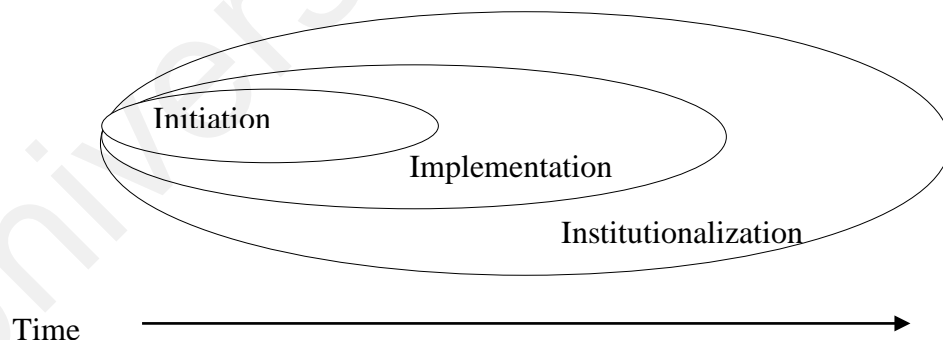


Figure 2.5 Phases of Change (Source: Miles et al., 1987)

In Malaysia, the implementation of coaching initially started in 2013 with 2 pioneer schools (in Kedah and Selangor) and was only implemented nationally to other states in Malaysia in 2013 (MOE, 2013). Similar to other curriculum reform, the changes which takes place based on to the implementation of coaching in

Malaysian schools takes time. In this study, the implementation of coaching is seen based on three stages namely initiation, implementation and institutionalization.

The initiation phase involves the decision to embark on innovation as well developing commitment towards the process of change. Key activities at this stage involves the decision to start and the review of school's current state (related to area of change). Miles (1986) lists out several factors which influence successful initiation:

- the innovation should be related to school agenda need
- a clear and well-structured approach to change
- requires an active advocate who understand the need of change and supports it
- active initiation to start the innovation
- a good quality innovation/change

The implementation phase usually received most attention since this is the phase of attempted use of the innovation (change). Key activities during implementation phase includes carrying out action plan, developing and sustaining of commitment, evaluation of progress and overcoming problems. According to Miles (1986), there are several factors which influence the success of implementation phase as listed below:

- Clear responsibility for coordination (those who lead or co-ordinate)
- Shared control over implementation
- Applying pressure and support to insist "doing it right"
- Adequate and sustained staff development and training
- Use of rewards in the early stage

Institutionalisation on the other hand is where change and innovation becomes the culture of the school where everyone regard what was once known as a pilot project as a school-wide initiative. The key activities at this stage includes:

- emphasising on embedding the change within the structure, organization and resources
- eliminating all contradictory practices
- making strong and purposeful links to other change effort, the curriculum and instructional practices
- change is widespread within the school
- having adequate source (facilitators) for skill training

2.8.2 School Improvement Specialist Coach (SISC+)

The implementation of coaching in Malaysia saw the need for empowering education officers which could offer a form of direct assistance or support to teachers. Due to that, a team of instructional coach known as School Improvement Specialist Coach (SISC+) was formed in 2013 by the Ministry of Education which is aimed at providing support to teachers in improving their instructional practices. The role of SISC+ is to provide guidance to teachers in 3 aspects, which are closely interconnected to each other namely curriculum, pedagogy as well as assessment (MEB, 2013-2025).

In terms of roles and responsibilities, SISC+ is supposed to report to the Head of Department, which is the District Educational Officer as they are being placed at the District Education Office. They are supposed to guide teachers in implementing interesting, creative and innovative pedagogical practices in the attempt to improve the impact of instructional practices. Because of that, these coaches are known as experts in curriculum and pedagogy.

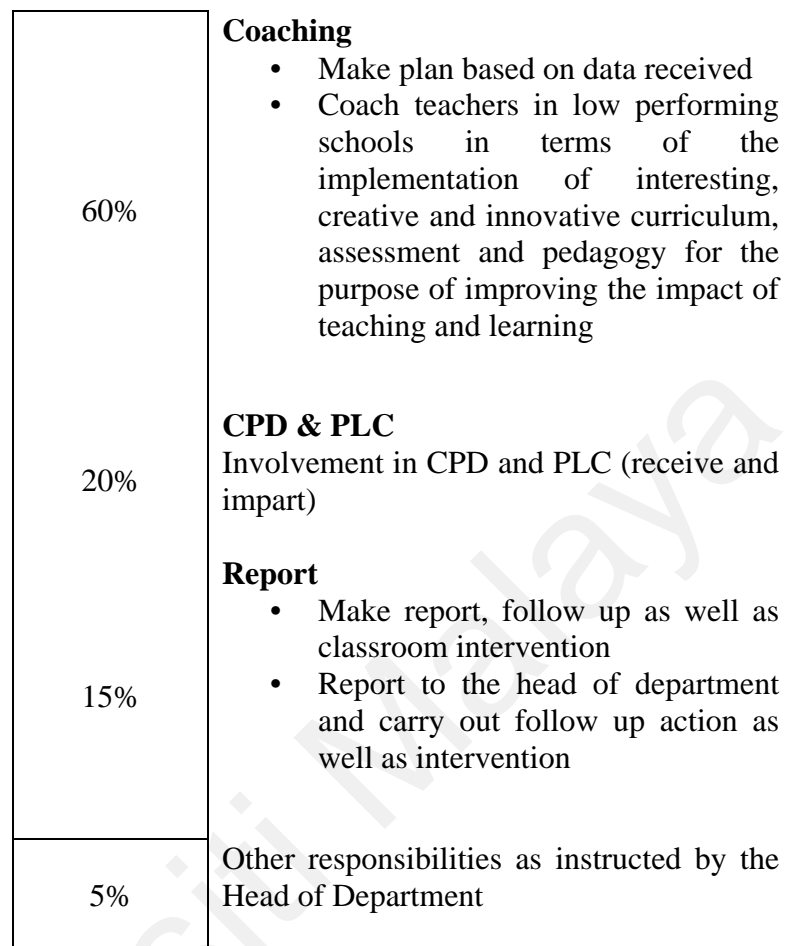


Figure 2.6 Roles and Responsibilities of SISC+ based on one year working days (Source: MOE, 2017)

The SISC+ is also expected to contribute towards Professional Learning Community within the district, between district and between the states. In addition, they are expected to provide intervention coaching to teachers, which requires them to work together with teachers in order to improve teacher classroom practices. The outcome of the intervention would be in the form of instructional improvement which is based on what has been outlined in the curriculum. It is also based on the performance result of the classes taught by the coached teacher or “Guru Yang diBimbing” (GDB). The roles and responsibilities of the coach is explained in Figure 2.6.

SISC+ plays the role of liaison officer between MOE and teachers. They are responsible in the implementation of curriculum and new form of assessment, improve teacher professional learning in pedagogical skills and observe the effectiveness of the implementation so that written curriculum would be able to be implemented effectively in the teaching and learning process. SISC+ is also to replace the role of existing pedagogical trainers which will reduce the stages in imparting new information and knowledge in the Ministry of Education, from five tiers to only three tiers of information delivery. The roles of SISC+ also helped to reduce the bureaucracy level in delivering curriculum and assessment while at the same time providing direct training to teachers (MOE, 2017). This is explained in Figure 2.7.

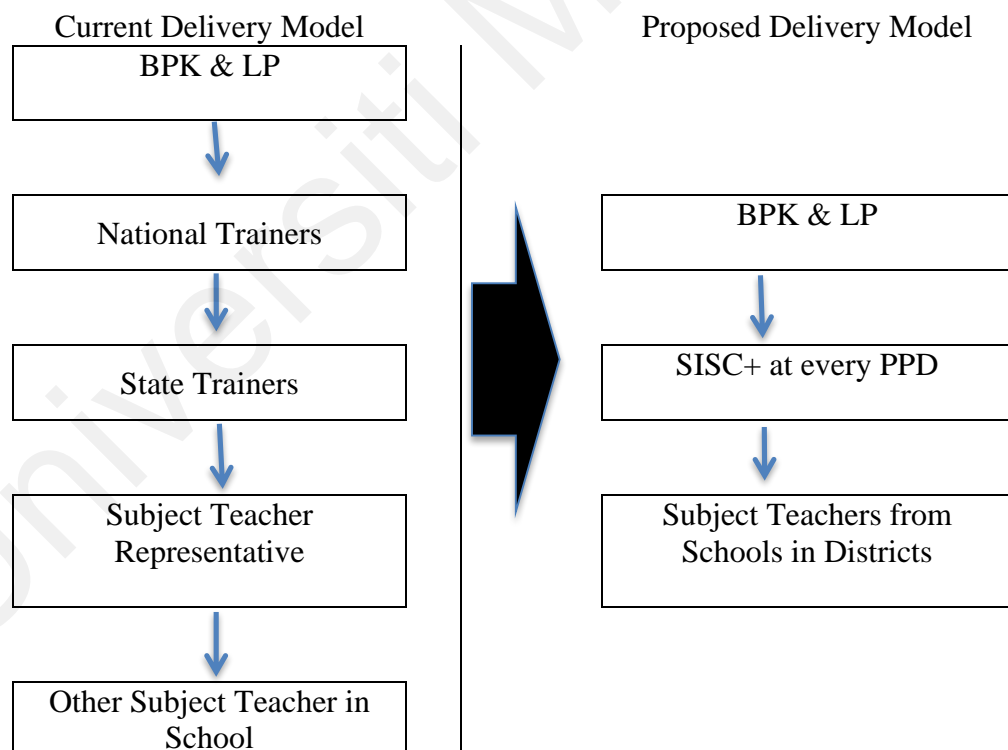


Figure 2.7. Roles and Responsibilities of SISC+ in Curriculum and Assessment.
(Source: MEB 2013-2025, MOE, 2013)

The implementation of coaching in Malaysian schools is divided into 3 phase which are selection of the teachers to be coached, implementation of coaching as

well the final phase where the coached teacher (GDB) completed the coaching program. The selection of teachers to be involved in coaching is done by the District Education Department. The Department is responsible in deciding which school should be involved in coaching depending on school performance within the district. Once the school has been identified, it is up to the principal to choose which teacher should be coached depending on the classroom observation report. Also, teachers selected are free from any health, psychological and emotional problems. In the implementation phase, the SISC+ are required to do the following according to three stages as illustrated in Table 2.6.

Table 2.6
Coaching Implementation Stage

Pre-Coaching	<ol style="list-style-type: none"> a) Prepare a profile of coachee or <i>Guru yang Dibimbing</i> (GDB) b) Prepare coaching plan and obtain approval from the District Education Officer c) Update GDB's profile at least once a year d) Build rapport with GDB e) Obtain Standard 4 SMOEG2 data from school, District Education office or State Education Department to be used as TOV (take of value)
Coaching	<ol style="list-style-type: none"> a) Classroom observation b) Discuss with GDB based on observation instrument or Borang Matriks Bimbingan (TCT) c) Coach GDB's development using Teacher Development Plan (TDP)
Post-Coaching	<ol style="list-style-type: none"> a) Prepare a report on coaching in the performance Dashboard (MOE) b) Prepare weekly reports c) Report to the administration consistently (fortnightly) d) The coaching report should include: <ul style="list-style-type: none"> • the implementation of coaching • issues which require intervention at District or state level e) implement intervention (if necessary)

Teachers who are involved with coaching (GDB) could be discontinued from the practice if they fulfil the following criteria:

- Reached a minimum achievement of coaching (8 aspects of teaching matrix (TCT) reached level 4 and 4 aspects reached level 3)
- Transferred between district/states
- Involved in long-term course/workshop
- Critical health problems or having family ties

Nevertheless, the implementation of coaching has seen many instances of teachers making improvements in their practices and thus increased school performance.

2.9 Summary

This chapter discusses various aspects related to coaching. Although there are many types coaching which have emerged over time, but there are several main elements that becomes the backbone of coaching i.e. collaboration, trust, support, feedback and reflect. These elements of coaching are vital for effective coaching to take place which is aimed at helping teachers to make improvements in their practices and therefore increase learning outcomes. The impact of coaching in improving instructional practices has also been explained. It also discusses on how coaching could become a supporting element in teacher continuous professional development. The role of leadership has also been discussed to show its importance to ensure the effectiveness of coaching. Last but not least, this chapter also discusses on how the implementation of coaching could bring about changes in learning outcomes and school improvement. Various empirical evidence supported the relationship between all these variables and the impact on instructional improvement. This study will look at how coaching could become a medium or a form of support to these variables and

to create impact on instructional improvements based on the implementation of coaching in Malaysian context. The next chapter will discuss on the methodology of the research.

Universiti Malaya

CHAPTER 3

METHODOLOGY

3.1 Introduction

Chapter three presents how the research is being carried out. It discusses on research epistemology and ontology, research design, population and sampling, instrumentation, data collection procedure, data analysis procedure as well as validity and reliability. The purpose of the research is to investigate on the nature and the impact of the implementation of coaching program in Malaysian schools in Selangor and Sabah and also to explore the relationship between coaching, role of leadership, continuous professional development, learning outcome, training as well as instructional improvement.

3.2 Research Epistemology and Ontology

The ontology (the understanding of what is) of this study is based on positivism. Positivist believed that the knowledge is “out there” in the real world. Thus, in order to gain understanding, research has to be carried out (Crotty, 1998). The study seeks to investigate on the implementation of coaching in the real world specifically in the context of Malaysian schools.

The epistemology (what it means to know) of the study is based on objectivism. Epistemology provides a philosophical background in deciding the kinds of knowledge which are legitimate and adequate to be gathered from a research (Crotty, 1998). Therefore, in this study, the knowledge to be gained is on the nature of the implementation of coaching based on Malaysian context and curriculum. The study also explored the relationship between all the variables related to coaching

which are present in the study. Based on the type of epistemology and ontology of the study, a research design for the study was established.

3.3 Research Design

The study was conducted using a quantitative research design. Therefore, data in this study was collected and analysed using quantitative method which involves the use descriptive and inferential analysis using SPSS and Structural Equation Modelling (SEM). The objective of using a quantitative research design is to gain a complete understanding while focusing on the breadth and depth of the study (Morgan, 2012). The strengths and limitations of quantitative method will be discussed further in this section.

The quantitative method used in the study allows the researcher to evaluate the extent to which coaching is being implemented in Malaysian schools and to see the extent how coaching helps to improve teacher instructional practices. A quantitative method was chosen for the study as it is a more definitive approach to research. It allows the researcher to rely on classification and statistical analysis to explain the findings of the study (Creswell, 2013).

Since quantitative method relies on scientific method, it focused on testing and verifying hypotheses and statistically measures the findings of the study (Creswell, 2013). The strength of quantitative method is that it has high standards of validity and reliability, it provides unbiased approach to collecting and analysing data and it allows the researcher to make generalization of the findings (Creswell, 2013). The research design of the study is summarized in Figure 3. 1 as follows:

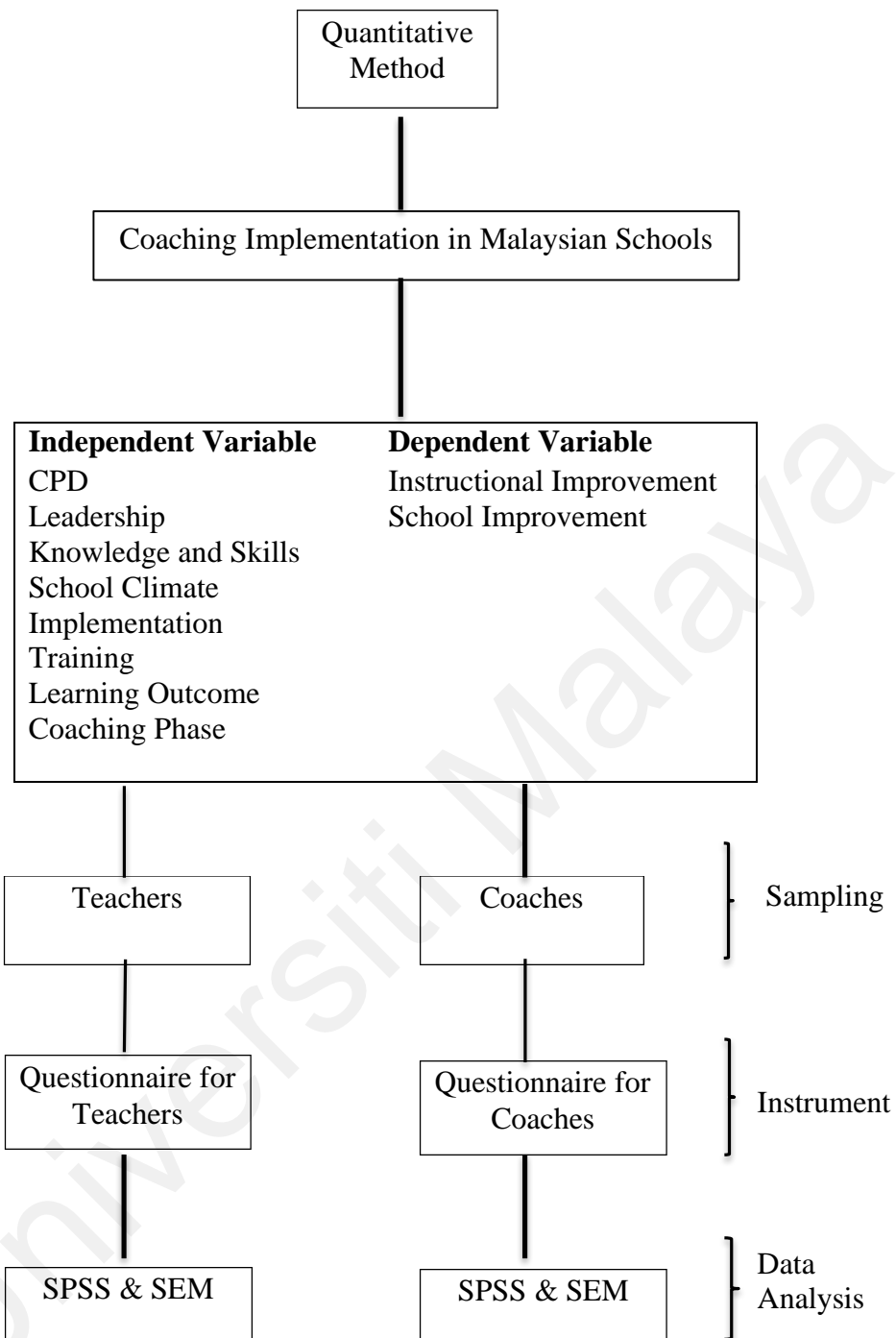


Figure 3.1 Quantitative Research Design

It was decided a survey would be used for this study as it provides quantitative data on various aspects such as trends, attitudes or opinions of the population, which allows the researcher to make a generalization of the findings over a larger population (Creswell, 2013). In this study, it allows the researcher to make a

generalization of the implementation of coaching program in Malaysian public schools. A survey tool is therefore very important in determining the collection of data of the study. The construction of the survey is of utmost importance so that it would measure what it intends to measure (Fowler, 2014). The three main components which are important in shaping the survey design are the sampling, data collection and questions design (Fowler, 2014). Since these three components are interrelated, technical failures of either one of these components would affect the collection of data of the study (Fowler, 2014).

3.4 Population and Sampling

The population of the participants of the study are teachers and coaches (SISC+) from public schools in Selangor and also Sabah who are involved in the District Transformation Programme (DTP) coaching programme. Teacher respondents are from various schools in Selangor and Sabah who are involved or have experienced the coaching programme. On the other hand, coach respondents are SISC+ who are stationed at the District Education Office or Pejabat Pendidikan Daerah (PPD) and are assigned to a minimum of 25 teachers (GDB) from various schools for them to coach (MOE, 2013).

The following information regarding samples of the study were gained from the website of the State Education Department or Jabatan Pendidikan Negeri (JPN) of Selangor. In Selangor, there were about ten districts. For the purpose of this research, all the SISC+ in PPD in Selangor were chosen as samples for the study. As of 2018, there were about 99 SISC+ being assigned to various PPD throughout Selangor. Whereas in Sabah there were 24 districts with a total of 177 SISC+

assigned to the PPD in Sabah. Thus, the total population of SISC+ selected as respondents of the study was 276.

However, the selection of GDB was included as respondents of the study was based on Krejcie and Morgan (1970) random sampling table. According to Cohen et al. (2013), when using probability sampling, everyone in the population has equal opportunity to be included or excluded as sample. Based on the statistics of the number of SISC+ gathered from the website of Sabah State Education Department, there were about 177 coaches attached to all the 24 districts in Sabah. Thus, the total number of SISC+ from both states would be 276. Based on the minimum number of teachers assigned to each SISC+ (minimum 25 teachers), the total population of teachers involved in the study from both states would be 6900.

Based on the random sampling table (Krejcie & Morgan, 1970) with confidence level 0.05, the minimum sample of teacher respondents would be 357. Thus, the total number of sample (both teachers and SISC+) for the study would be 677. The summary of the sampling method used for the study is illustrated in Table 3.1.

Table 3.1
Summary of Sampling of the Study

Method	State	Selangor	Sabah	Total	Overall Total
Purposive	Coaches	99	177	276	276
Random	Teachers	(min 25 teachers) 2250 teachers	(min 25 teachers) 3500	5750 teachers Random sample =357	357
				TOTAL	633

3.5 Instrumentation

The instruments used in the study were adopted from five different instruments to measure various elements and variables related to the study (Reed, 2015; Frye, 2015; Eismin, 2015; Dugan, 2010 & Parman, 2015). However, some amendments have been made to the selected items to suit with Malaysian school context and curriculum.

Since the study is looking at the coaching program implemented under the supervision of Malaysian Ministry of Education (MOE), the instruments were also constructed based on the Teacher Observation Tools (TOT), an instrument used by the SISC+ in classroom observation to help teachers improve their classroom practices.

With regards to the level of implementation of coaching in school, the items were built based on literature review, specifically referring to Hipp & Huffman (2003) and Fullan (1991). Since the research also seeks to measure the impact of coaching from both teachers and coaches point of view, two sets of instruments were constructed to meet the objective of the research.

The instrument both for teachers (Appendix 1) and coaches (Appendix 2) are divided into two parts (Part 1 & Part 2). Part 1 consists of demographic information regarding age, qualification and working experience. Part 2 on the other hand, consists of 150 items, which is divided into several sections according to the constructs and domains: Section A, B, C, D, E, F, G, H, I and J. Details of the items in Part 2 of both instruments are summarized in Table 3. 2.

Table 3.2
Summary of Instrument Items in Part 2

Section	Construct	Item	No of Items
A	COACHING PRACTICE		
	1. Collaboration	1-8	8
	2. Feedback	9-11	3
	3. Reflection	12-16	5
	4. Support	17-20	4
	4. Trust	21-25	5
B	INSTRUCTIONAL IMPROVEMENT		
	1. Planning	26-37	12
	2. Content Knowledge	38-41	4
	3. Assessment	42-45	4
	4. Classroom Management	46-48	3
C	ROLE OF LEADERSHIP		
	1. Collegiality and Collaboration	49-52	4
	2. Trust and Support	53-57	5
	3. Shared Vision and Responsibilities	58-62	5
	4. Creating Social Change	63-64	2
D	CONTINUOUS PROFESSIONAL DEVELOPMENT		
	1. Knowledge and Competencies	65-70	6
	2. Motivation and Support	71-74	4
	3. Creating Change	75-76	2
E	LEARNING OUTCOMES	77-81	5
F	TRAINING FOR COACHING	82-91	10
		92-99	8
G	FREQUENCY OF TRAINING	88-95	8
H1	IMPLEMENTATION OF COACHING PHASE	96-100	5
H2	IMPLEMENTATION OF COACHING		
	1. Coaching Practices	101-108	8
	2. Skills and Knowledge	109-120	12
I	SCHOOL CLIMATE	121-135	15
J	OVERALL SCHOOL IMPROVEMENT		
	1. Content Knowledge	136-139	4
	2. Learning Strategy	140- 144	5
	3. Classroom Management	145-147	3
	4. Assessment	148	1
	5. Aims and Objectives	149-150	2

3.6 Likert Scale

Both instruments use 3 types of Likert scale. The first scale, ranging from 1 to 5 is used in Section A, B, C, D, E, F, and G as follows:

- 1 Strongly Disagree
- 2 Disagree
- 3 Moderately Agree
- 4 Agree
- 5 Strongly Agree.

The second Likert scale is used in Section H1 which looks at the level of implementation of coaching in schools. This section uses 3 point Likert scale as follows:

- 1 Initiation
- 2 Implementation
- 3 Institutionalization

The third Likert Scale is used in Section H2, I and J also ranging from 1 to 5 but focusing on the options of frequency as follows:

- 1 Never
- 2 Rarely
- 3 Sometimes
- 4 Often
- 5 Always

Ordinal scale was decided to be used for this study because the numbers used in the study looks at respondents' perceptions and views on the implementation of coaching in schools based on the items included in the instruments. This would also ease the researcher to analyse the data of the study (Chua, 2008). For descriptive

analysis, the researcher used mean values and standard deviation to make comparison based on the quantity of data gained for each category (Chua, 2008).

3.7 Data Collection Process

Data collection process for the study commenced once written consent was obtained from the Educational Planning and Research Department (EPRD), in February 2018 (Appendix 3). Since data collection for the studies involved teachers and coaches from public school, consent letter from the State Education Department was also obtained (Appendix 4). For the purpose of data collection, two different sets of survey were given to teachers and coaches respectively. Since coaches (SISC+) were supposed to report to the District Education Officer (PPD Officer), a letter of permission to carry out the research was also sent to each PPD selected for the study to acknowledge them about the research (Appendix 5).

Data collection process began in the first week of February. A total of 400 questionnaires were sent to 10 PPD in Selangor within 2 days. Subsequently, 900 questionnaires were mailed to 24 PPD in Sabah. The decision to deliver extra number of instrument beyond the targeted number of respondents was based on what is suggested by Bartlett et al., (2001) which stresses that the response rates for educational and social science research studies are normally below 100%. Thus, Salkind (2012) proposed that oversampling by 40% or 50 % to be distributed to respondents to account for lost or uncooperative respondents.

Initially, the instrument for both coaches and teachers were administered to coaches in the PPD. Coaches (SISC+) responded to coach instrument while at the same time chose teachers under their supervision (GDB) to answer the instrument for teachers. The principal of each respective school involved in the study was also

informed prior to the process of data collection. After 2 months, only 160 questionnaires were returned. Eventually, by mid of June, a total of 470 questionnaires were returned and the process of data entry begun. Figure 3.2 illustrates the data collection procedure.

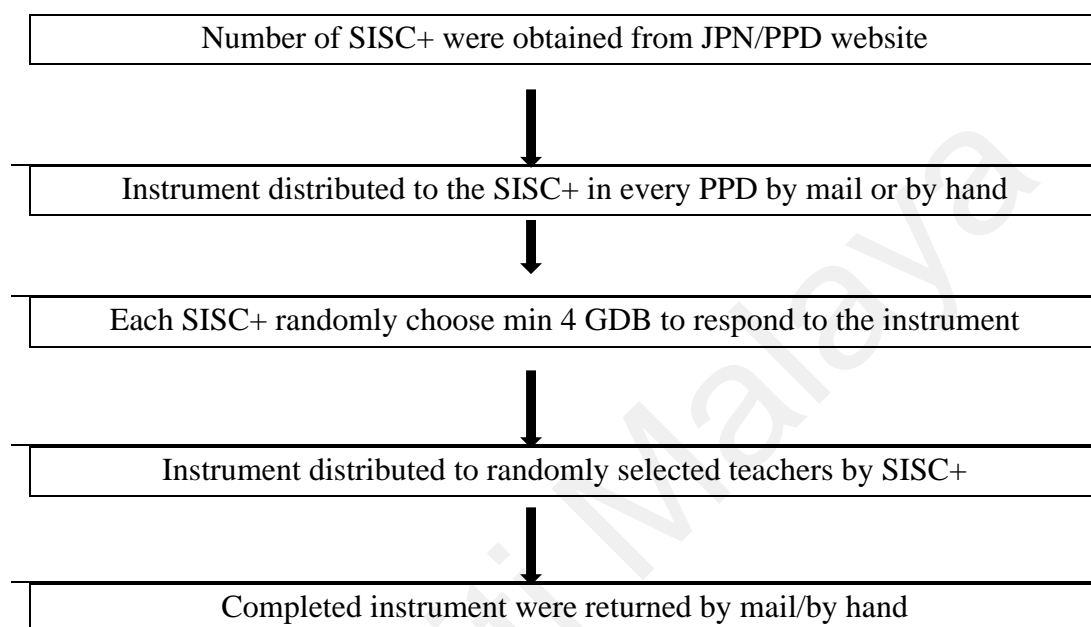


Figure 3.2 Data Collection Procedure

3.8 Data Analysis Procedures

For data analysis, all the data collected in the study were analysed collectively. Data were first addressed separately for each research question, and results from each phase determine the subsequent phases. The data were viewed to explain the level of coaching elements implemented in Malaysian schools in terms of helping teachers in improving instructional practices. Subsequently, data analysis also explained the level of coaching impact on related variables such as professional development, learning outcome, leadership, climate, implementation effort etc. In addition, it also explained coaching implementation phase as well as the level of coaching knowledge practiced by coaches before further analysis were carried out to explain the relationship of the different variables involved in the study.

All the data collected for the study were initially analysed using the Statistical Package for the Social Sciences 23.0 (SPSS). Since the study involves multivariate analytical techniques, a preliminary analysis will be carried out to check for missing values, outliers, normality as well as homogeneity of variances and co-variances. Since the research involved ordinal data, non-parametric tests will be used to analyse all the data according to individual research questions.

For RQ1, descriptive statistics looking at the mean values and standard deviation were used because it involves ordinal data which is data gathered using Likert Scale. Descriptive analysis was used to measure the perceptions and attitude of teachers and coaches on the implementation of coaching in schools. In this study, the researcher was able to look at the response from both group of respondents on the implementation of coaching in Malaysian schools based on the responses of the samples involved in the study.

Similarly, the same approach for data analysis was applied for RQ2 and RQ3. Descriptive analysis using mean values and standard deviation was applied to look at the level of implementation of coaching program as well as the level of the application of coaching skills and knowledge by the coach. By employing descriptive analysis, the researcher will able to see what is going on in the data collected just by looking at the mean or median (Shamsuritawati, 2017). Again, data analysed for the study derived from two groups assigned which are teachers and coaches. For RQ2 and RQ3 it was sufficient to just look at the mean values of the response from both independent groups since the focus of the research questions is merely to look at the level of the implementation of coaching as well as the level of the coaching skills and knowledge applied by the coach. Thus, it wasn't necessary to run a different test to answer both RQ2 and RQ3.

For the purpose of this study, it was also decided that all the data collected should be analysed using SEM PLS specifically for inferential analysis for research questions 4, 5, 6 and 7. Structural Equation Modelling (SEM) enables the researcher to test a set of regression equation simultaneously (Hoyle & Panter, 1995). It is a technique that allows researcher to test whether or not a model is established upon an underlying theory and fits the data collected. PLS which is short for Partial Least Squares or Analysis of mean and covariance structures (Byrne, 2001) is a program designed to assist SEM. Using the tools in PLS enables researcher to create and work with SEM path diagram.

SEM SMART PLS was chosen for the purpose of inferential data analysis of this study because of its ability to deal with variables, which are not directly observable (latent variables). According to Chua (2008), there are two functions of SEM i) tools for identification and ii) as a means to develop a model. For the purpose of this study, SEM is used to identify the relationship between the variables involved. In this research, research Questions 4, 5 6 and 7 requires inferential statistics in order to provide the answer for each individual question. Consequently, these research questions require hypotheses testing.

3.9 Research Hypotheses

Research Question 4 seek to explore the significant factors related to coaching, therefore the following hypotheses were tested:

H4.1: Climate is a significant factor related to coaching

H4.2: Continuous Professional Development is a significant factor related coaching

H4.3: Implementation is a significant factor related coaching

H4.4: Instructional improvement is a significant factor related coaching

H4.5: Leadership is a significant factor related to coaching

H4.6: Learning Outcome is a significant factor related to coaching

H4.7: Overall improvement is a significant factor related to coaching

Research question 5 seek to explore the relationship that coaching sub-constructs have with different variables, therefore the following hypotheses were tested:

H5.1a: There is a significant relationship between sub-construct collaboration and Instructional Improvement.

H5.1b: There is a significant relationship between sub-construct feedback and Instructional Improvement

H5.1c: There is a significant relationship between sub-construct reflect and Instructional Improvement

H5.1d: There is a significant relationship between sub-construct support and Instructional Improvement

H5.1e: There is a significant relationship between sub-construct trust and Instructional Improvement

H5.2a: There is a significant relationship between sub-construct collaboration and role of leadership.

H5.2b: There is a significant relationship between sub-construct feedback and role of leadership

H5.2c: There is a significant relationship between sub-construct reflect and role of leadership

H5.2d: There is a significant relationship between sub-construct support and role of leadership

H5.2e: There is a significant relationship between sub-construct trust and role of leadership

H5.3a: There is a significant relationship between sub-construct collaboration and CPD

H5.3b: There is a significant relationship between sub-construct feedback and CPD

H5.3c: There is a significant relationship between sub-construct reflect and CPD

H5.3d: There is a significant relationship between sub-construct support and CPD

H5.3e: There is a significant relationship between sub-construct trust and CPD

H5.4a: There is a significant relationship between sub-construct collaboration and learning outcome

H5.4b: There is a significant relationship between sub-construct feedback and learning outcome

H5.4c: There is a significant relationship between sub-construct reflect and learning outcome

H5.4d: There is a significant relationship between sub-construct support and learning outcome

H5.4e: There is a significant relationship between sub-construct trust and learning outcome.

H5.5a: There is a significant relationship between sub-construct feedback and training frequency

H5.5b: There is a significant relationship between sub-construct reflect and training frequency

H5.5c: There is a significant relationship between sub-construct support and training frequency

H5.5d: There is a significant relationship between sub-construct trust and training frequency

H5.5e: There is a significant relationship between sub-construct collaboration and training type

H5.6a: There is a significant relationship between sub-construct feedback and training type

H5.6b: There is a significant relationship between sub-construct reflect and training type

H5.6c: There is a significant relationship between sub-construct support and training type

H5.6d: There is a significant relationship between sub-construct trust and training frequency

H5.6e: There is a significant relationship between sub-construct collaboration and training type

H5.7a: There is a significant relationship between sub-construct collaboration towards climate

H5.7b: There is a significant relationship between sub-construct feedback towards climate

H5.7c: There is a significant relationship between sub-construct trust towards climate

H5.7d: There is a significant relationship between sub-construct support towards climate

H5.7e: There is a significant relationship between sub-construct reflect towards climate

H5.8a: There is a significant relationship between sub-construct collaboration towards implementation

H5.8b: There is a significant relationship between sub-construct feedback towards implementation

H5.8c: There is a significant relationship between sub-construct trust towards implementation

H5.8d: There is a significant relationship between sub-construct support towards implementation

H5.8e: There is a significant relationship between sub-construct reflect towards implementation

H5.9a: There is a significant relationship between sub-construct collaboration towards overall improvement

H5.9b: There is a significant relationship between sub-construct feedback towards overall improvement

H5.9c: There is a significant relationship between sub-construct trust towards overall improvement

H5.9d: There is a significant relationship between sub-construct support towards overall improvement

H5.9e: There is a significant relationship between sub-construct reflect towards overall improvement

Research question 6 seek to analyse the mediating effect of coaching on different variables, therefore, the following research hypotheses were tested:

H6.1: There is a significant mediating effect of coaching between role of leadership and instructional improvement

H6.2: There is a significant mediating effect of coaching between learning outcome and instructional improvement

H6.3: There is a significant mediating effect of coaching between CPD and instructional improvement

H6.4: There is a significant mediating effect of coaching between climate and overall improvement

H6.5: There is a significant mediating effect of coaching between implementation and overall improvement

Research question 7 seek to analyse the moderating effect of working experience and frequency of training on instructional improvement, therefore, the following hypotheses were tested:

H7.1: There is a significant moderating effect of working experience between coaching and instructional improvement

H7.2: There is a significant moderating effect of training frequency between coaching and instructional improvement

RQ4 seeks to identify the significant factors or variables related to coaching i.e. instructional improvement, role of leadership, professional development as well as learning outcomes. Therefore, data for RQ4 will also be analysed using SEM in order to look at the relationship between dependent and independent variables. Data for the study were analysed using PLS algorithm to obtain Beta value as well as the value of R square and f square. Bootstrapping analysis were also carried out to obtain the significance of the values by looking at t- statistics.

Since the study looks at the perception and attitude of teacher and coaches towards coaching, the construct could not be measured directly like counting chickens or number of kids in a family. This is because it is dealing with only hypothetical concept of something. Zainuddin (2015) stated that observed variable is referred to the variable which could be measured directly whereas latent construct is used for variables which could not be measured directly. In this case, these latent constructs could only be measured through a set of items in a questionnaire (Zainuddin, 2015). In answering RQ4, 7 hypotheses were tested (H4.1, H4.2, H4.3, H4.4, H4.5, H4.6 and H4.7)

Similarly, SEM PLS analysis was used to answer RQ5 which looked at the relationship between coaching sub constructs (i.e. collaboration, feedback, reflect, trust and support) on other variables such as a) instructional improvement; b) role of leadership c) professional development; and d) learning outcomes e) training, f) climate, g) implementation and h) overall improvement. By using SEM, the significant or non-significant effects of coaching sub-constructs were clearly analysed based on path analysis and the t-statistics. To answer RQ5, 9 hypotheses (H5.1, H5.2, H5.3, H5.4, H5.5, H5.6, H5.7, H5.8 and H5.9) were tested and each individual hypothesis will be divided into 5 sub-hypotheses for the purpose of looking at the effect of 5 sub-constructs of coaching on each dependent variable.

Inferential Statistics using PLS SEM was also undertaken to analyse data for RQ6 which is to determine if there is any mediating effect of coaching on the relationship between independent and dependent variables. The data were analysed based on the same procedures as RQ4 and RQ5. At first, the direct, indirect and total effects of the relationship between the variables were obtained through PLS Algorithm procedure. Next, the significance of the values was analysed based on t-

statistics obtained through bootstrapping procedure. The values shown will determine the answer to the research question. In answering RQ6, 5 hypotheses were tested (H6.1, H6.2, H6.3, H6.4, and H6.5).

For RQ7, the moderating effect of frequency of training as well as working experience were analysed to see if they affect the relationship between coaching and instructional improvement. Again, PLS Algorithm procedure was undertaken to obtain the R square value followed by moderating effect procedure as well as bootstrapping procedure. The result would be able to explain if the two variables have a moderating effect between coaching and instructional improvement. In answering RQ7, 2 hypotheses were tested (H7.1 & H7.2). The overall summary of research objectives, research questions and types of data analysis is illustrated in Table 3.3.

Table 3.3
Summary of Research Questions and Types of Data Analysis

Research Question	Data Analysis
<p>Research Question 1: What are perception and attitude of teachers and coaches in Selangor and Sabah towards a) the level of coaching elements practiced b) the level of instructional improvement due to coaching; c) the level of leadership in coaching; d) the level of teacher professional development due to coaching; e) the level of training due to coaching; f) the level of learning outcomes due to coaching; g) the level of school improvement due to coaching</p>	Descriptive Statistic- Mean value and Standard Deviation
<p>Research Question 2: What is the level of coaching knowledge, technical skills and interpersonal skills applied by the coach while coaching and what kind of training should coaches attend to improve coaching skills?</p>	Descriptive Statistic Mean value and Standard Deviation
<p>Research Question 3: What is the phase of coaching implementation (initiation, implementation, institutionalization) and how does it reflect the level of coaching practices implemented and the school climate of Malaysian schools?</p>	Descriptive Statistic- Mean value and Standard Deviation

<p>Research Question 4: What are the significant factors related to coaching?</p> <p>Hypotheses tested: H4.1, H4.2, H4.3, H4.4, H4.5, H4.6 and H4.7</p>	<p>SEM- SMARTPLS Path Analysis Beta value, t- statistics PLS Algorithm and Bootstrapping</p>
<p>Research Question 5: Is there a significant relationship between coaching sub-constructs such as trust, collaboration, support, and reflection with a) instructional improvement; b) role of leadership c) professional development; d) learning outcomes; e) training and f) climate; g) implementation and h) overall improvement</p> <p>Hypotheses tested: H5.1, H5.2, H5.3, H5.4, H5.5, H5.6, H5.7, H5.8 and H5.9</p>	<p>SEM- SMART PLS Path Analysis Beta value, t- statistics and p- value: PLS Algorithm and Bootstrapping</p>
<p>Research Question 6: Is there any mediating effect of coaching on a) role of leadership, professional development (CPD), learning outcomes and instructional improvement; b) school climate, coaching implementation and overall improvement</p> <p>Hypotheses tested: H6.1, H6.2, H6.3, H6.4, and H6.5</p>	<p>SEM- SMART PLS Direct, indirect, Total effect, mediator: PLS Algorithm and Bootstrapping</p>
<p>Research Question 7: Is there any moderating effect of working experience and frequency of training on instructional improvement?</p> <p>Hypotheses tested: H7.1 and H7.2</p>	<p>SEM- SMART PLS Moderator: PLS Algorithm and Bootstrapping</p>

3.10 Pilot Study

To test on the reliability of the instrument used for the study, a pilot study was carried out. A pilot study refers to a mini-scale of the actual study which is used for specific pre-testing of research instrument (Van Teijlingen & Hundley, 2001). A good study design would include a pilot study. Conducting a pilot study increases the likelihood of the success of a study though it may not necessarily provide any guarantee. In addition, it fulfils several important functions related to the study as well as providing insights for other researchers (Van Teijlingen & Hundley, 2001).

Connelly (2008) suggested that a pilot study sample should be 10 percent of the projected sample of the actual study. Hill (1998) on the other hand, suggested 10-30 respondents for pilot study using survey method. For this study, the instrument was administered to 250 respondents from several schools in Wilayah Persekutuan Kuala Lumpur. However, only 204 questionnaires were returned.

3.11 Validity and Reliability

The items in the instrument of the study were adopted from several instruments of previous researchers in the same field. Therefore, the validity check of the original survey still applies for this study. However, some amendments have been made to the original item. Thus, for the purpose of this study, a panel of experts have been asked to review the instrument. Comments received from all the panels have been used to make improvements to the research instrument.

Since not everyone in the sampling group would be able to comprehend English, thus, the instruments were also translated back to back to avoid any misunderstanding towards the items in the survey. The participants were also given the options to either choose English or Bahasa Melayu in answering the survey as all of the items were presented in dual language. For that purpose, a panel of language experts have also been asked to check for the accuracy of the language used and validate the translation work. Table 3.4 provides an example of the adaptation process of the items.

Table 3.4

Example of the adaptation process of the items in the instrument for the study as part of the validation process.

Actual Items	Expert Check	Adapted Items
	Collaboration between teachers and coach helps teachers to:	
26. Discussions with my coach about inquiry or discovery based learning	implement inquiry strategies in the classroom <i>melaksanakan strategi penyoalan dalam kelas</i>	implement inquiry strategies in the classroom <i>melaksanakan strategi inkuiri di dalam kelas</i>
29. Discussions with my coach about formative assessments	change teacher's instructional practices in ways that benefit students learning <i>mengubah amalan (amalan) pengajaran saya dan akan memberi kebaikan kepada pembelajaran pelajar (murid)</i>	change teacher's instructional practices in ways that benefit students learning <i>mengubah amalan pengajaran guru yang akan memberi kebaikan kepada pembelajaran murid</i>
30. My coach and I discussed ways to encourage students to pursue intellectual rigor and/or challenging of ideas.	discuss ways to increase academic rigour <i>bersama-sama membincangkan tentang cara-cara untuk meningkatkan cabaran mengatasi masalah dalam bidang akademik</i>	discuss ways to increase academic quality <i>bersama-sama membincangkan cara untuk meningkatkan kualiti akademik</i>
31. My coach and I discussed ways to increase more concept development into the lessons.	discuss ways to increase more concept development into the lessons <i>bersama-sama mebincangkan (membincangkan) tentang cara-cara untuk meningkatkan pembentukan konsep dalam pengajaran saya</i>	discuss ways to increase more concept development into the lessons <i>bersama- sama membincangkan cara untuk meningkatkan pembentukan konsep dalam pengajaran saya</i>
32. My coach and I discussed ways to increase more problem solving into my	discuss ways to increase more problem solving into the lesson <i>bersama-sama membincangkan (membincangkan)</i>	discuss ways to increase more problem-solving technique into the lesson <i>bersama-sama membincangkan cara untuk</i>

lessons.	tentang cara-cara untuk meningkatkan teknik penyelesaian masalah dalam pengajaran	meningkatkan teknik penyelesaian masalah dalam pengajaran
33. My coach and I discussed ways to improve the use of questioning strategies.	discuss ways to improve the use of questioning strategies (such as, but not limited to, higher order questions, open-ended questions or wait time) bersama-sama membincangkan tentang cara-cara bagaimana untuk memperbaiki strategi penyoalan (menyoal) (tidak terhad kepada soalan aras tinggi, soalan terbuka, dan waktu menunggu soalan untuk dijawab)	discuss ways to improve the use of questioning strategies (such as higher order questions, open-ended questions and wait time) bersama-sama membincangkan cara untuk memperbaiki strategi menyoal (seperti soalan aras tinggi, soalan terbuka, dan waktu menunggu untuk menjawab)
34. My coach and I set goals and objectives aimed at implementing ideas and addressing issues we discussed.	set goals and objectives aimed at implementing ideas and addressing issues discussed bersama-sama meletakkan sasaran dan objektif dalam melaksanakan idea- idea dan menangani isu yang dibincangkan	set goals and objectives aimed at implementing ideas and addressing issues discussed bersama-sama meletakkan sasaran dan objektif dalam melaksanakan idea- idea dan menangani isu yang dibincangkan
35. My coach and I discussed ways to increase student participation in mathematics lessons.	discuss ways to increase students' participation in lessons bersama-sama membincangkankn (membincangkan) cara-cara untuk meningkatkan penglibatan pelajar(murid) dalam kelas	discuss ways to increase students' participation in lessons bersama-sama membincangkancara untuk meningkatkan penglibatan murid dalam kelas
36. My coach and I discussed ways to encourage students to pursue intellectual rigor and/or challenging of ideas.	discuss ways to encourage students to pursue intellectual rigor and/or challenging ideas bersama-sama membincangkan cara-cara untuk menggalakkan penglibatan pelajar (murid) dalam idea / aktiviti pembelajaran (pembelajaran) yang	discuss ways to encourage students to pursue intellectual quality and challenging ideas bersama-sama membincangkan cara-cara untuk menggalakkan penglibatan murid dalam meningkatkan kualiti intelektual dan idea yang

	<i>mencabar</i>	<i>mencabar</i>
37. My coach and I discussed ways to create an environment where students collaborate and listen to one another's ideas.	discuss ways to create an environment where students collaborate and listen to one another's ideas <i>bersama-sama membicarakan cara-cara untuk mewujudkan suasana di mana untuk pelajar(murid) bekerjasama dan mendengar pandangan idea masing-masing</i>	discuss ways to create an environment where students collaborate and listen to one another's ideas <i>bersama-sama membicarakan cara untuk mewujudkan suasana untuk murid bekerjasama dan mendengar idea masing-masing</i>
38. My coach and I discussed significant and worthwhile content.	discuss significant and worthwhile content <i>bersama-sama membicarakan isi kandungan mata pelajaran yang penting dan berguna</i>	discuss significant and worthwhile content <i>bersama-sama membicarakan isi kandungan subjek yang penting dan berguna</i>
39. My coach and I discussed the content that I teach.	discuss the content of the subject taught <i>Coach bersama-sama membicarakan isi kandungan subjek yang diajar</i>	discuss the content of the subject taught <i>bersama-sama membicarakan isi kandungan subjek yang diajar</i>
40. My coach and I discussed content beyond the grade level I teach.	discuss content beyond the grade level taught <i>bersama-sama membicarakan isi kandungan melebihi tahap yang diajar/ bersama-sama membicarakan isi kandungan pengajaran sehingga jelas</i>	discuss content beyond the grade level taught <i>bersama-sama membicarakan isi kandungan diluar tahap yang diajar</i>
41. My coach and I discussed ways to make meaning.	discuss ways to make meaning/understand the content <i>bersama-sama membincangkan berbincang cara untuk pemahaman memahami isi kandungan pengajaran</i>	discuss ways to reinforce understanding of the content taught <i>bersama-sama membincangkan cara untuk meningkatkan pemahaman terhadap isi kandungan yang diajar</i>

Since the instrument used for this study has been constructed by adapting and adopting the item from several instruments used in previous studies, the reliability of the instruments was looked at. The previous researchers have applied various means in the attempt to test the reliability and validity of their instrument. However, two out of the five previous researchers have tested their reliability using Cronbach's Alpha. Reed (2015) and Dugan (2010) in their study have listed out the Cronbach's Alpha value for the instruments used in their study as shown in Table 3.5.

Table 3.5
Cronbach's Alpha from Reed (2015) and Dugan (2010)

Reed (2015)	Dugan (2010)
Relationship (.915)	.931 (overall)
Coaching approach (.959)	
Impact on instruction (.964)	

However, the reliability of the instrument for this study was also determined by obtaining the Cronbach's alpha values based on data collection of pilot study which consist of responses from 204 samples from schools in Kuala Lumpur. The value of Cronbach's alpha was determined based on individual constructs as summarised in Table 3.6

Table 3. 6
Reliability Statistics

Categories	Cronbach's Alpha
Practices of Coaching Elements	.937
Instructional Improvement	.934
Role of Leadership	.882
Continuous Professional Development	.898
Learning Outcome	.849
Training	.916
Overall Impact	.937
Implementation	.851
Coaching Skills and Knowledge	.901
School Climate	.926

3.12 Construct Validity

Apart from reliability, the construct validity of a research instrument should also be looked at. This is to find out if the instrument is able to measure what it is supposed to measure (Creswell, 2013). Construct validity refers to the extent to which the results obtained from the use of certain instruments conform to the theory or concept used and evaluated through convergent validity and discriminant validity (Hair et al, 2010). Based on measurement model assessment, Confirmatory factor analysis (CFA) needs to be carried out. For the purpose of this study, the construct validity of the instrument was looked at in two stages i.e. using exploratory factor analysis and in the later stage is based on the analysis of construct validity using Structural Equation Modelling Partial Least Square (SEM PLS).

3.13 Factor Analysis

Factor analysis refers to a set of multivariate statistical techniques that can be used to explore, or confirm the underlying structure among a set of items/variables to determine those items/variables that tap a factor, or latent construct (Hair et. al., 2006). The technique also allows the researcher to condense a large set of variables, or scale items down to a smaller, more manageable number of dimensions, or factors (Pallant, 2013).

In this research, factor analysis under the extraction method of principal component analysis with the rotation method of Varimax with Kaiser Normalization was applied to analyse the scale. Varimax rotation was favoured since it minimizes the correlation across factors while maximizing correlation within the factors and helped to yield clear and definite factors (Nunnally, 1978).

Factor loading indicates the strength of the relationship between the item and the latent construct and thus, is used to ascertain the convergent and discriminant validity of the scale (Hair et al, 2006). Nunnally (1978) suggests that items with loadings higher than 0.50 on one factor are retained for further analysis. However, some other scholars suggested 0.4 instead (Samuels, 2016). Since the analysis was meant for item reduction for the purpose of establishing a set of measurement instrument, thus 0.4 cut off point was taken into consideration for the purpose of data analysis for this study. In the data analysis, items with highest factor components much less than 0.4 were removed.

The outcomes of factor analysis of several of the constructs are demonstrated in Table 3.7. The values of factor loadings were based on rotated component matrix. The KMO values exhibit satisfactory results of 0.80 and above. This indicates that the variables share a high magnitude of common variance. Similarly, values of Bartlett's test display a significance of 0.00 for each of the construct. Outcomes from Bartlett's and KMO indicate the suitability of the factor model.

The result of factor analysis in Table 3.7 shows the for sub-construct collaboration KMO= .837 Bartlett's: Sig= .000 and all the loading were above .40. Therefore, all the items in sub construct collaboration were retained. For sub construct Feedback and Reflect- KMO= .911 Bartlett's: Sig= .000 and factor loading for coaching construct were above .40. Therefore, none of the items in sub construct Feedback and Reflect were deleted.

For sub-construct Support and Trust- KMO= .898 Bartlett's: Sig= .000 and factor loading for coaching construct were above .40. Therefore, all the items in sub construct Support and Trust were deleted except for item 19 which loads at .284. Thus, item 19 were deleted.

Table 3.7

Factor loading, KMO and Bartlett's value for sub-constructs Collaboration, Feedback, Reflect, Trust and Support

Component/Items	Factor Loading
Collaboration- KMO= .837 Bartlett's: Sig= .000	
Component 1	
Collab1	.796
Collab4	.592
Collab6	.740
Collab7	.850
Collab8	.793
Component 2	
Collab2	.860
Collab3	.614
Collab5	.781
Feedback and Reflect- KMO= .911 Bartlett's: Sig= .000	
Component 1	
Fback9	.825
Fbck10	.813
Fbck11	.870
Rflct12	.841
Rflct13	.880
Rflct14	.816
Rflct15	.781
Support and Trust- KMO= .898 Bartlett's: Sig= .000	
Component 1	
Trust21	.758
Trust 22	.877
Trust 23	.891
Trust 24	.788
Trust 25	.809
Component 2	
Supp16	.741
Supp17	.674
Supp18	.819
Supp19	.284
Supp20	.723

For sub-construct Continuous Professional Development- KMO= .902 Bartlett's: Sig= .000 and factor loading for coaching construct were above .40. Therefore, none of the items in sub construct Continuous Professional Development were deleted except for item 68 with factor loading = .263. For sub construct Learning Outcome- KMO= .857 Bartlett's: Sig= .000 and factor loading for coaching

construct were above .40. Therefore, none of the items in sub construct Learning Outcome were deleted.

Table 3.8

Factor loading, KMO and Bartlett's value for sub-constructs instructional improvement, Leadership, CPD and Learning Outcome

Instructional Improvement- KMO= .934 Bartlett's: Sig= .000		Leadership- KMO= .940 Bartlett's: Sig= .000	
Component 1		Component 1	
Item 30	.591	Item 49	.738
Item 31	.564	Item 50	.730
Item 32	.634	Item 51	.685
Item 33	.602	Item 52	.779
Item 34	.610	Item 53	.702
Item 35	.582	Item 54	.757
Item 37	.623	Item 55	.728
Item 38	.784	Item 56	.762
Item 39	.744	Item 57	.707
Item 40	.708	Item 60	.777
Item 41	.684	Item 61	.733
Component 2		Item 63	.815
Item 26	.774	Item 64	.675
Item 27	.762	Item 58 (deleted)	
Item 28	.705	Item 59 (deleted)	
Item 29	.539	Continuous Professional Development- KMO= .902 Bartlett's: Sig= .000	
Item 36	.545	Component 1	
Item 46	.570	Item 65	.827
Item 47	.495	Item 66	.860
Component 3		Item 67	.739
Item 42	.827	Item 72	.699
Item 43	.874	Item 73	.630
Item 44	.756	Item 74	.714
Item 45	.784	Item 75	.790
Item 48	.694	Item 76	.648
Learning Outcome- KMO= .857 Bartlett's: Sig= .000		Component 2	
Component 1		Item 68 (Deleted)	.263
Item 77	.904	Item 69	.884
Item 78	.868	Item 70	.805
Item 79	.898	Item 71	.752
Item 80	.891		
Item 81	.918		

Table 3.8 shows the KMO Bartlett's and factor loading for construct Instructional Improvement, Leadership, Continuous Professional Development and Learning Outcomes. The result of factor analysis in Table 3.8 shows the for construct Instructional Improvement- KMO= .934 Bartlett's: Sig= .000 and all the loading were above .40. Therefore, all the items in construct Instructional Improvement were retained.

For sub construct Leadership- KMO= .940 Bartlett's: Sig= .000 and factor loading for coaching construct were above .40. Therefore, none of the items in sub construct Leadership were deleted except for item 58 and 59 which were deleted based on suggestions by expert as it does not match with the job specification of a coach in Malaysian context.

Table 3.9 shows the KMO Bartlett's and factor loading for construct Training, Coaching Implementation, Climate and Overall Impact. The result of factor analysis in Table 3.8 shows the for sub-construct Training- KMO= .910 Bartlett's Sig= .000 and all the loading were above .40. Therefore, all the items in sub construct Training were retained.

For construct Coaching Implementation, KMO= .900 Bartlett's Sig= .000 and factor loading for coaching construct were above .40. Therefore, none of the items in sub-construct Coaching Implementation were deleted. For construct School Climate, KMO= .892 Bartlett's Sig= .000 and factor loading for coaching construct were above .40. Therefore, none of the items in sub construct School Climate were deleted. For construct Coaching Overall Impact, KMO= .953 Bartlett's Sig= .000 and factor loading for coaching construct were above .40. Therefore, none of the items in sub construct Coaching Overall Impact were deleted.

Table 3.9

Factor loading, KMO, Bartlett's value and factor loading for construct Training, Coaching Implementation, Climate and Overall Impact.

Training- KMO= .910 Bartlett's: Sig= .000

Component 1		Component 2	
82	.724	92	.692
83	.873	93	.764
84	.798	94	.852
85	.903	95	.876
86	.916	96	.815
87	.897	97	.804
88	.848	98	.786
89	.865	99	.870
90	.886		
91	.696		

Coaching Implementation- KMO= .900 Bartlett's: Sig= .000

Component 1		Component 2	
105	.678	122	.886
106	.892	123	.873
107	.780	124	.649
108	.564		
113	.752	Component 2	
114	.832	109	.890
115	.551	110	.866
116	.764	111	.627
117	.633	112	.806
118	.557	Component 3	
119	.603	100	.747
120	.455	101	.731
121	.817	102	.422
		103	.823
		104	.827

School Climate- KMO= .892 Bartlett's: Sig= .000

Component 1		Component 2	
131	.692	125	.725
132	.645	126	.663
133	.709	127	.820
135	.771	128	.815
136	.831	129	.872
137	.880	130	.795
138	.703		
139	.698		

Coaching Overall Impact- KMO= .953 Bartlett's: Sig= .000

Component 1		147	.874
140	.557	148	.831
141	.818	149	.875
142	.856	150	.842
143	.858	151	.797
144	.877	152	.763
145	.826	153	.751
146	.842	154	.837

To summarise, based on the EFA results, 2 items had to be taken out due to low loadings i.e. item 19 with communalities value at .092 and loading value at .284. Another item is CPD68 with communalities value at .086 and loading value at .263. Both items did not meet the minimum value of communalities at .2 and factor loading 0.4. Another 2 items which were item 58 and 59 were also taken out from the instrument because they did not meet with the job specification of instructional coaches (SISC+) of Malaysian curriculum or context. Meanwhile, all other items were retained after the EFA procedure. As a result, the number of items in the research instrument have been reduced from 154 to 150 items. After all the process took place, the instrument was ready to be distributed to the actual sample of the study. Once data collection was completed, data screening was administered before the process of data analysis could take place.

3.14 Data Screening

Before data analysis could be carried out, data cleaning procedure was conducted to check on missing data, outliers as well normality of data distribution (Hair et al, 2010). In this study IBM SPSS version 23 was used to test on missing data, outliers and normality.

3.14.1 Analysis of Missing Values and Outliers

Analysis of missing values and outliers is an important aspect which needs to be carried out prior to data analysis (Tabachnik dan Fidell, 2007). In the study, the

manual approach using SPSS was administered through missing data imputation. Detection of outliers is another step to be undertaken before data analysis could be carried out. In general, there are four types of outliers; a) data entry fault or error in coding; b) outliers because of unexpected event; c) unusual observations for which the scholar has no clarification; and d) observations that fall inside the ordinary series of values on each of the variables (Hair et al., 2006). Therefore, it is important to make a difference between outliers that should be removed and those that should not be.

In this study, several outliers were detected which came from a technical fault which consisted of wrong data entry or error in coding. The data was then cleaned by running the frequencies and obtaining the descriptive tables. From the result of the descriptive tables, all the items in every section of the questionnaires were investigated to ensure that all the responses were within the scope of the items or scales. The final result showed that no faults were identified in the data set of the study.

3.14.2 Normality Test

Univariate normality tests of each item are carried out to ensure that the data is normally distributed for each variable where it is the underlying assumption of multivariate analysis. Based on this test, researchers should report on the univariate normality of each item based on the level of skewness and kurtosis on PFA analysis. In fact, normality test should be carried out before any further data analysis could be conducted. This is because normality is one of the assumption that must be fulfilled when using multivariate analysis.

Normality test is conducted to see whether there is a disturbing or residual variable having normal distribution. This test can be done in a variety of ways i.e.

visually or statistically. Visual testing can be done by looking at boxplots and histogram diagrams, while statistical test can be done by looking at the value of skewness and kurtosis or test Kolmogorov-Smirnov and Shapiro-Wilk. Data with normal distributions are usually more desirable by researchers, especially when working with CB-SEM. In contrast, PLS-SEM generally does not consider any assumptions regarding data distributions. However, it is nevertheless worthwhile to consider the distribution when working with PLS-SEM to assess to the extent to which the data deviate from normality (Hair et al., 2010).

The determination of univariate data normality is shown in Table 3.10 which illustrates the skewness and kurtosis for each item as well as the dimensions of the variables used in the study. Hair et al. (2014) suggested that the normal variable value is when the items are close to the value of zero. If the skewness value is greater than +1 or lower than -1, then it has a skewness problem. For kurtosis testing, if the kurtosis value is more than +1 then it is too peaked, if otherwise lower than -1, then it is too flat. For the purposes of this study, researchers have used some approaches such as normal probability plot, histogram and checking the skewness and kurtosis value of each item as suggested by Pallant (2007) and Hair et al. (2010). Based on the analysis of the skewness and gradient values in Table 3.10, it is found that all items have a low skewness and slope value of ± 2 in normal scattered conditions and therefore meet the requirements for analysis (Tabachnick & Fidell, 2007; Hair et al., 2010; Ramlan, 2017).

The test looks at the symmetric nature (peaked or flatness) for the data set using the shape descriptors, skewness and kurtosis. The skewness values for measurement items range much within the recommended range of -1 to +1 (Hair et

al., 2006). Kurtosis ranges are well within the recommended limit of -2.0 to +2.0 (Coakes & Steed, 2003).

Table 3.10
Skewness and Kurtosis values for individual item

Collaboration					
Item	Skewness	Kurtosis	Item	Skewness	Kurtosis
Collab1	-.609	-.089	Collab5	-.733	.363
Collab2	-.451	-.214	Collab6	-.808	.656
Collab3	-0.820	.743	Collab7	-.910	.815
Feedback					
Item	Skewness	Kurtosis	Item	Skewness	Kurtosis
Fbck1	-.932	1.042	Fbck3	-1.109	1.583
Fbck2	-.966	1.250			
Reflect					
Item	Skewness	Kurtosis	Item	Skewness	Kurtosis
12	-.796	.500	14	-.731	.898
13	-.827	.560	15	-.914	1.678
Learning Outcome					
Item	Skewness	Kurtosis	Item	Skewness	Kurtosis
1	-.860	1.193	4	-.677	.628
2	-.615	.557	5	-.856	1.161
3	-.707	.972			
Training					
Item	Skewness	Kurtosis	Item	Skewness	Kurtosis
1	-.619	.478	10	-.711	.199
2	-.842	1.012	11	-.064	-.299
4	-.877	.968	13	-.173	-.238
5	-.771	.665	14	-.148	-.400
6	-.776	.615	15	-.072	-.641
7	-.832	.780	16	-.288	.066
8	-.722	.684	17	-.324	-.118
9	-.608	.457	18	-.114	-.301
Coaching Implementation					
Item	Skewness	Kurtosis	Item	Skewness	Kurtosis
1	.356	-1.689	14	-.496	.135
2	-.603	-1.368	15	-.491	.089
3	-.581	-1.480	16	-.513	.254
4	.116	-.675	17	-.448	.264
5	-.84	-.379	18	-.535	.433
6	-.494	.048	19	-.241	-.574
7	-.621	.486	20	-.505	-.165
8	-.559	.212	21	-.419	-.006
9	-.546	.076	22	-.388	-.356
10	-.263	-.446	23	-.657	.293

By referring to the statistical tests suggested by Hair et al. (2006), the result of the analysis of calculated skewness values in Table 3.9 meets the suggested range of skewness and kurtosis. (For full analysis result of skewness and kurtosis, please refer to Appendix 6).

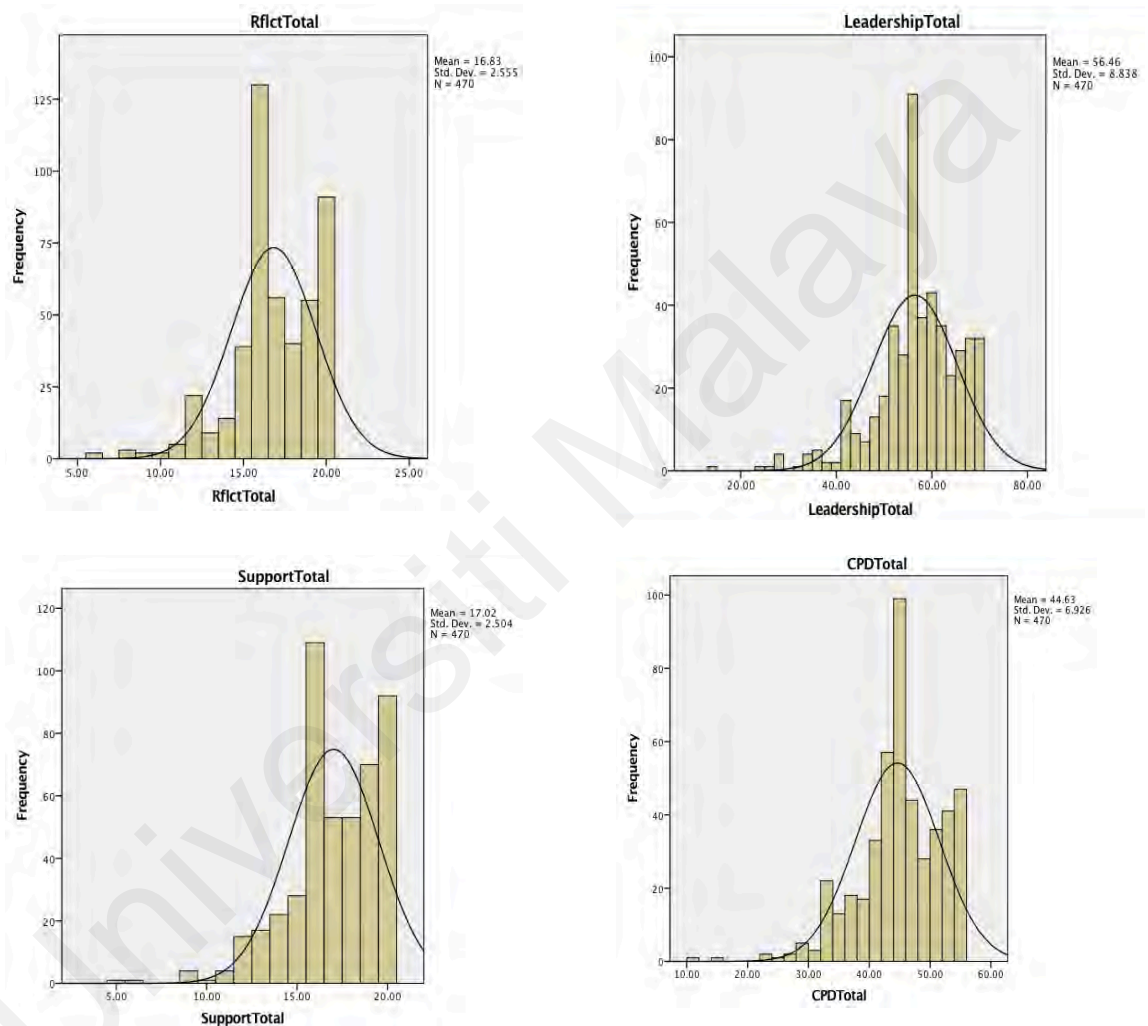


Figure 3.3. Histogram on Data Distribution of Construct Reflect, Leadership, Support and CPD

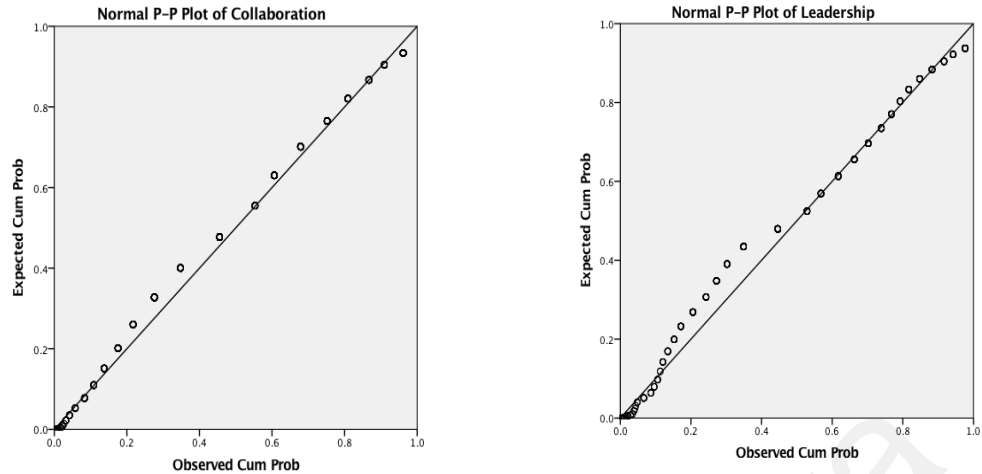


Figure 3.4. P-P plot for Construct Collaboration and leadership

Additionally, the visual testing can be seen by looking at the histogram diagrams of some of the constructs used in the study as shown in Figure 3.3. Next, the linearity is also checked using P-P plots to check the relationship between variables (Hair et al, 2007). The result shows that the plotted data did not deviate much from the straight diagonal line indicating that the data of the study were normally distributed (Pallant, 2007) as shown in Figure 3.4.

3.14.3 Multicollinearity Test

Multicollinearity test is conducted to determine whether the independent variables of the study are redundant to one another. It is also seen when there is a higher correlation between independent variables (Field, 2009). There are several tests that can be done: Variance Inflation Factor (VIF) and Tolerance. Multicollinearity problems exist when the VIF reading value exceeds the value of 10 (Field, 2009).

While the tolerance value is 0 to 1. The presence of multicollinearity can be detected if tolerance reading is equal to 1 or -1 (Field, 2009; Meyers et al., 2006). Multicollinearity existed when there is a high degree of correlation between two or more explanatory variables. Table 3.11 provides a multicollinearity analysis between construct collaboration and other variables. Based on the table, all VIF values are

less than 10 and the tolerance value is less than 1. This shows that all data are free from multicollinearity problems.

Table 3.11
Multicollinearity Test

Model	Coefficients	
	Tolerance	Collinearity Statistics VIF
Support	.208	4.814
Fbck	.233	4.285
Rflct	.232	4.306
Trust	.346	2.891
Improv	.167	5.992
Leadership	.164	6.080
CPD	.207	4.834
LngOutcm	.267	3.749
Training	.615	1.627
Implemnt	.228	4.390
Climate	.235	4.251
Impact	.321	3.115

a Dependent Variable: Collaboration

3.14.4 Homoscedasticity Test

In addition to the above tests, other multivariate tests that need to be tested are homoscedasticity tests. Homoscedasticity is a test to identify whether the residual variance is stable under assumptions (Field, 2009). This test is fulfilled if the plot graph shows a random array of dots to show that it satisfies homoscedasticity assumptions, and if it is funnel out then it is known that there is a heteroscedasticity problem. Figure 3.5 is an example of the assumption of homoscedasticity (of construct Collaboration and construct Instructional Improvement). The randomly scattered point shows that both constructs satisfied the homoscedasticity assumptions.

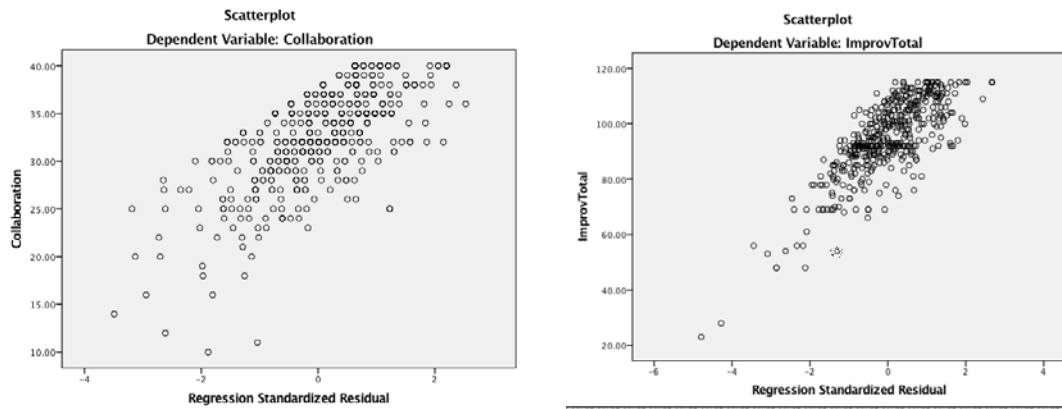


Figure 3.5 Homoscedasticity Test on Variable Collaboration and Instructional Improvement

3.14.5 Common Method Bias (Harman Single Factor Test)

In order to test if the instrument used for the study has created bias in the data gathered, a test of common method bias was administered using Harman Single Factor Test. Common method bias refers to bias that occurs in the measurement method. However, by applying the Harman Single Factor Test, the researcher would be able to detect if the variance of the study was focused on certain factors. If the majority of the variances of the study were explained by a single factor, the data is considered as having a common bias problem as suggested by Podsakoff, MacKenzie and Podsakoff (2012).

The Harman single factor test could be administered through factor analysis without rotation. Thus, all the items will load on one common factor. If the total variance for a single factor is less than 50% (Chen & Chengalur-Smith, 2015), it is suggesting that the CMB does not exist and therefore is not affecting the data of the research. Table 3.12 shows sample result of Harman Single Factor analysis (refer Appendix 1 for full result).

Table 3.12
Harman Single Factor Analysis

Component	Total Variance Explained			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	62.416	41.611	41.611	62.416	41.611	41.611
2	9.456	6.304	47.915			
3	5.998	3.999	51.914			
4	4.959	3.306	55.219			
5	3.935	2.623	57.843			
6	3.128	2.086	59.928			
7	2.320	1.547	61.475			
8	2.102	1.401	62.876			
9	1.989	1.326	64.202			
10	1.796	1.198	65.400			
11	1.604	1.069	66.469			
12	1.516	1.011	67.480			
13	1.352	.902	68.381			
14	1.303	.869	69.250			
15	1.229	.820	70.069			
16	1.179	.786	70.855			
17	1.167	.778	71.633			
18	1.079	.719	72.353			
19	1.031	.687	73.040			
20	.996	.664	73.705			
21	.953	.636	74.340			
22	.928	.619	74.959			
23	.898	.599	75.558			
24	.877	.585	76.143			
25	.851	.567	76.710			
26	.826	.551	77.261			
27	.816	.544	77.805			
28	.778	.519	78.323			
29	.756	.504	78.827			
30	.732	.488	79.315			

3.15 Summary

This chapter states the purpose of the study which is to determine whether coaching had an impact on instructional practices and learning outcomes. The quantitative research design was explained and five research questions were presented. The

population and samples of the study were coaches and teachers involved in the coaching program from the state of Selangor and Sabah. Random sampling as well as proportionate stratified sampling is used for the purpose of data collection. A survey containing 150 items were distributed to both teachers and coaches. Data analysis and hypothesis were also explained.

Universiti Malaya

CHAPTER 4

FINDINGS

4.1 Introduction

This chapter discusses on the findings of the study. The chapter includes descriptive statistics of details related to demographic information of the respondents as well as descriptive analysis which provides the answer to research questions 1, 2 and 3. In addition, inferential analysis of the findings will be discussed using Smart Partial Least Square (Smart PLS) to provide answers to research questions 4, 5 and 6.

4.2 Descriptive Statistics

Descriptive analysis of the study is aimed at getting an overall picture regarding the demographic information of the respondents involved in the study (Loeb, Dynarski, Mcfarland, Morris, Reardon, & Reber, 2017). The information related to the samples of the study includes role, gender, age, standard/form taught, types of school, subject taught, state, grade of post and years of teaching experience, certification, highest qualification as well as involvement in coaching as illustrated in Table 4.1.

Table 4.1 shows the number of coaches and teachers who were involved as sample of the study based on roles, gender and age. Coaches and teachers involved in the study were purposive sampling. A total of 77 coaches out of 267 coaches from Selangor and Sabah responded to the questionnaire. Whereas only 393 teachers out of 1200 teachers responded to the questionnaire which adds to the total of 470 respondents.

A total of 131 of the respondents were male whereas 339 of the respondents were female. In terms of age group, 149 of them were between 23-25 years of age,

201 of them were between 36-45 years of age whereas 120 of them were between 46-60 years of age. Majority of the respondents were from 36-45 years age group.

Table 4.1
Demographic Information of Respondents

		Role			
		Frequency	Percent	Valid Percent	Cumulative
Percent					
Valid	Coach	77	16.4	16.4	16.4
	Teacher	393	83.6	83.6	100.0
	Total	470	100.0	100.0	

		Gender			
		Frequency	Percent	Valid Percent	Cumulative
Percent					
Valid	Male	131	27.9	27.9	27.9
	Female	339	72.1	72.1	100.0
	Total	470	100.0	100.0	

		Age			
		Frequency	Percent	Valid Percent	Cumulative
Percent					
Valid	23-35	149	31.7	31.7	31.7
	36-45	201	42.8	42.8	74.5
	46-60	120	25.5	25.5	100.0
	Total	470	100.0	100.0	

Table 4.2
Number of Respondents from Selangor and Sabah

	Teacher		Coach		TOTAL	%
	Frequency	Percent	Frequency	Percent		
Selangor	200	50.9	37	48.1	237	50.4
Sabah	193	49.1	40	51.9	233	49.6
Total	393	100.0	77	100.0	470	100.0

Table 4.2 shows the number of respondents involved in the study based on states. The respondents were teachers and coaches from two states namely Selangor and Sabah. Based on the descriptive analysis from the table, there were about 237 of respondents from Selangor and 233 respondents from Sabah. There were almost

equal distributions of the number of respondents from both states except that Selangor had an extra 4 respondents as compared to Sabah which brought to the total of 50.4 percent of respondents from Selangor and 49.6 of respondents from Sabah. The number of teacher respondents from Selangor was 200 (50.9 %) while the number of teacher respondent from Sabah was 193 (49.1%). Whereas the number of coach respondents from Selangor was 37 (48.1%) while the number of coach respondents from Sabah was 40 (51.9%).

Table 4.3

Type of school, Standard and Subject Taught by Respondents

	Type of school					
	Teacher		Coach		TOTAL	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Sub-Urban	49	12.5	23	29.9	72	15.3
Urban	138	35.1	17	22.1	155	32.9
Rural	187	47.6	34	44.2	221	47.0
Remote	19	4.8	3	3.9	22	4.8
Total	393	100.0	77	100.0	470	100.0

Standard/Form	Standard/ Form Taught					
	Teacher		Coach		TOTAL	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Standard 1,2, 3	72	18.3	17	22.1	89	18.9
Standard 4,5,6	148	37.7	19	24.7	167	35.5
Lower Secondary	78	19.8	15	19.5	93	19.8
Upper Secondary	50	12.7	17	22.1	67	14.2
Lower and Upper Secondary	45	11.5	9	9	54	11.5
Total	393	100.0	77	100.0	470	100.0

	Subject					
	Teacher		Coach		TOTAL	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Language	190	48.3	51	66.2	241	51.3
Sc. & Maths	152	38.7	24	31.2	176	37.5
Humanities	32	8.1	2	2.6	34	7.2
Tech & Vocational	19	4.8	0	0	19	4.0
Total	393	100.0	77	100.0	470	100.0

Table 4.3 shows the type of school, standard and subject taught or assigned to the respondents. Teachers and coaches involved in the study were attached to various types of schools. The result of the analysis shows that 72 of them were based in suburban schools (49 teachers and 23 coaches), 155 of them were based in urban schools (136 teachers and 17 coaches), 221 of them were based in rural schools (187 teachers and 34 coaches) whereas 22 of them were based in schools in remote areas (19 teachers and 3 coaches).

In terms of the form or standard taught, 72 of the teacher respondents taught lower primary (standard 1,2 & 3) and 148 of them taught upper primary (standard 4, 5 & 6). On the other hand, 17 coaches were assigned to teachers in primary while 19 coaches were assigned to teachers in upper primary. Whereas 78 of teacher respondents taught lower secondary and 50 of them taught upper secondary. In the meantime, 45 of them taught both lower and upper secondary. On the other hand, 15 coaches were assigned to teachers in lower secondary, 17 coaches were assigned to teachers in upper secondary and another 9 coaches were assigned to teachers teaching both lower and upper secondary.

In terms of the subjects taught, 190 of teacher respondents taught language subjects, 152 taught Science and Mathematics, 32 of them taught humanities subjects and 19 teachers taught technical and vocational subjects). On the other hand, 51 coaches were assigned to coach language teachers, 24 of them coached Science and Mathematics teachers (also Technical and Vocational subjects), and 2 of them coached teachers teaching humanities subjects.

Table 4.4. shows the analysis of respondents' position as well as working experience. The result of the analysis for position and years attached involved both teachers and coaches. In terms of position, 41 of the teachers were under DG41, 167

of them in DG44, 145 of them in DG48 whereas 18 of them in DG52. A total of 22 teachers were below DG41. As for coaches, only one of them was in DG44. A total of 25 of the coaches were in DG48, 43 of them were in DG52 while eight of them were in DG54.

In terms of years attached 74 of the respondents were below 5 years of teaching experience, 183 of them were attached between 6 to 15 years and 136 of the were attached more than 16 years. As for coaches, 18 of them had served between 6-15 years while 59 of them had already served more than 16 years.

Table 4.4
Respondents' Position and Working Experience

	Position					
	Teacher		Coach		TOTAL	
	Frequency	%	Frequency	%	Frequency	%
DG41	41	10.4	0	0	41	8.7
DG44	167	42.5	1	1.3	168	35.7
DG48	145	36.9	25	32.5	170	36.2
DG52	18	4.6	43	55.8	61	13.0
Others	22	5.8	8	10.4	30	6.4
Total	393	77	77	100.0	470	100.0

Years	Years Attached					
	Teacher		Coach		TOTAL	
	Frequency	%	Frequency	%	Frequency	%
0-5 years	74	18.8	0	0	74	15.7
6-15 years	183	46.6	18	23.4	201	42.8
> 16 years	136	34.6	59	76.6	195	41.5
Total	393	100.0	77	100.0	470	100.0

It was reported that teachers gradually reach a plateau after 3–5 years on the job (TNTP, 2012). Gates (2009) asserted that once somebody has taught for three years, their teaching quality does not change thereafter. However, Papay & Kraft (2015) suggested that that teachers can continue to improve substantially after the first five years. Based on 10 years of data from a large urban U.S. school district and looking at teachers' contributions towards student standardized test scores

changed as they gained experience, it was evident that teachers do continue to improve over the course of their careers (Papay & Kraft, 2015).

Next, Table 4.5 shows the involvement of respondents with coaching, their certified field and qualification. In terms of involvement of teachers with coaching, 321 of the teachers were recommended according to the result of teaching evaluation based on Malaysian Standard of Education Quality or known as Standard Kualiti Pendidikan Malaysia Gelombang2 (SKPMg2).

Table 4.5
Respondents' Involvement with Coaching, Certified Field and Qualification

	Involvement					
	Teacher		Coach		TOTAL	
	Frequency	%	Frequency	%	Frequency	%
Recommend/ Chosen by committee	321	81.7	26	33.8	347	73.8
Volunteer/ Apply	72	18.3	51	66.2	123	26.2
Total	393	100.0	77	100.0	470	100.0

	Field Certification					
	Teacher		Coach		TOTAL	
	Frequency	%	Frequency	%	Frequency	%
Language	180	45.8	48	62.3	228	48.5
Sc & Maths	152	38.7	24	24	176	37.4
Humanities	41	10.4	5	5	46	9.8
Technical & Vocational	20	5.1	0	0	20	4.3
Total	393	100.0	77	100.0	470	100

	Highest Qualification					
	Teacher		Coach		TOTAL	
	Frequency	%	Frequency	%	Frequency	%
Diploma	26	6.6	0	0	26	5.5
Bachelor	342	87.0	39	50.6	381	81.1
Masters	25	6.4	35	45.5	60	12.7
PhD	0	0	3	3.9	3	0.7
Total	393	100.0	77	100.0	470	100.0

However, 72 of the teachers volunteered themselves to be coached. As for coaches, a total of 26 coaches were chosen by a committee based on certain criteria which made them eligible for the post whereas 51 of them volunteered by responding to coaching post announced by the Ministry of Education. These teachers and coaches possessed different background, qualification and years of teaching experience.

In terms of certified field, 180 of the teachers had a degree in language while 152 of them graduated with a degree in science and Mathematics. A total of 41 of them certified in humanities subjects while 20 of them graduated with a degree in technical and vocational field. As for coaches, 48 of the them graduated in the field of language while 24 of them graduated in the field of science and Mathematics. Five of them certified in humanities subjects.

In terms of highest qualification, 26 of the teachers obtained a diploma, 342 of them obtained a bachelor degree and 25 of them held Master Degree. On the other hand, 39 of the coaches held a bachelor degree while 35 of them held a master degree. Three of the coach respondents graduated with a PhD.

Table 4.6 on the other hand, shows the number of schools assigned to each individual coach. The coaches (SISC+) were being assigned to various number of schools, which depend on several factors such as geographical factor, needs of school based on performance band etc. Therefore, Table 4.6 shows that majority of the coach respondents were assigned between 9-11 schools and some were assigned more than 11 schools (17 coaches), 1-5 school (16 coaches) and 6-8 schools (12 coaches). Nevertheless, the number of teachers assigned to them were within the prescribed range as outlined in the job description of a coach.

Table 4.6
Number of Schools attached to Individual SISC+

Number of Schools	Number of Schools Attached (SISC+)		
	Frequency	Percent	Valid Percent
1-5	16	20.8	20.8
6-8	12	15.6	15.6
9-11	32	41.6	41.6
>11	17	22.1	22.1
Total	77	100.0	100.0

4.3 Descriptive Analysis

Descriptive analysis of the research data involving the calculation of mean values and standard deviation was employed to answer RQ 1, 2 and 3. The descriptive analysis of the study involves the calculation of mean value and standard deviation. It was used to provide an overview on the perception of teachers and coaches on the implementation of coaching in Malaysian schools which was measured based on 5-point Likert scale (1-Strongly Disagree, 2-Disagree, 3-Moderately Agree, 4-Agree and 5-Strongly Agree). The use of mean scores and standard deviations is a widely used method to illustrate the responses of all participants to the item in an instrument (Creswell, 2008; Parmjit et al., 2009; Rosnah, 2013; Nik Mustaffa, 2016).

For the purpose of interpreting the perception of teachers and coaches on the implementation of coaching in schools, the interpretation of modified value from Nunally (1978) was used in this study. Analysis of data of research questions 1, 2 and 3 was also based on the mean values and standard deviation of teachers and coaches based on roles (teacher/coaches) and states (Selangor/Sabah).

Table 4.7
Formulae for Calculating Interpretation

Mean Value	=	$\frac{\text{Highest mean value} - \text{lowest mean value}}{\text{No of interpretation level}}$	=	$\frac{3-1}{3} = 0.666$
Range				

Nunally (1978)

The interpretation of each construct was based on the following formulae as illustrated in Table 4.7.

For the purpose of the result of the study, the mean interpretation in Table 4.8 was used to interpret Coaching Implementation phase which was rated with a 3 point Likert Scale with 1= Initiation, 2= implementation and 3= institutionalization. The interpretation of data analysis for research question 3 was based on the interpretation as presented in Table 4.8. On the other hand, Table 4.9 was used to interpret all the items which were based on 5 point Likert Scale. The interpretation of findings would be as follow:

Table 4.8
Mean Interpretation for 3-point Likert Scale

Mean Scale	Interpretation
1-1.66	Initiation
1.67- 2.32	Implementation
2.33-3.00	Institutionalization

Nunally (1978)

Table 4.9
Mean Interpretation for 5-point Likert Scale

Min Scale	Interpretation
1.00- 2.00	Very Low
2.01 – 3.00	Low
3.01 – 4.00	Moderate
4.01- 5.00	High

(Nunally,1978; Syafinaz, 2016)

The analysis of findings in the following section will be based on the seven research questions listed on pages 33-34.

4.3.1 The Practice of Coaching and The Impact

Data analysis in this section attempts to provide the answer for research objective 1 based on the following research question:

Research question 1:

What are the perception and attitude of teachers and coaches in Selangor and Sabah towards the level of a) the level of coaching elements practiced b) the level of instructional improvement due to coaching; c) the level of leadership in coaching; d) the level of teacher professional development due to coaching; e) the level of training due to coaching; f) the level of learning outcomes due to coaching; g) the level of school improvement due to coaching?

To answer research question 1, descriptive analysis was chosen for the purpose of data analysis which was carried out based on the perception of 237 respondents from Selangor (teachers and coaches) and 233 respondents from Sabah teachers (total 470 respondents) of which 77 of them were coaches while 393 of the respondents were teachers from secondary and primary schools.

a) The practice of Elements of Coaching

The items related to coaching looked at several sub constructs namely, collaboration, feedback, reflect, support and trust. Result of data analysis is presented in Table 4.10. Table 4.10 shows the analysis of teachers and coaches perception on coaching. The items were divided into five sub constructs namely collaboration, feedback, reflect, support and trust.

Descriptive analysis on collaboration sub-construct shows that the mean values are between 3.54 (SD .972) to 4.33 (SD.665). The result reveal that teachers and coaches agreed that collaboration during coaching existed at high level. However, there were instances where collaboration existed at moderate level specifically for item 2 (The coach and teacher provide tutoring to individual students) and 5 (The coach helps teacher to administer assessment (e.g. benchmark,

test, etc.). Data analysis based on roles was also carried out to see if there was any difference between teachers' and coaches' perception on collaboration which existed during coaching as illustrated in Table 4.11.

Table 4.10
Mean and Standard Deviation of sub construct Collaboration

Coach encourages the following activities:				
No	Item	Mean	SD	Level
1	The coach observes and identifies areas of strength and needs as it relates to teaching	4.33	.665	High
2	The coach and teacher provide tutoring to individual students.	3.54	.972	Moderate
3	The coach and teacher plan and present a shared lesson.	4.03	.845	High
4	The coach model lessons or particular instructional techniques in the classroom.	4.03	.916	
5	The coach helps teacher to administer assessment (e.g. benchmark, test, etc.	3.83	.925	Moderate
6	The coach works collaboratively with teachers at all levels.	4.14	.813	High
7	Coaches work directly with teachers.	4.28	.746	High
8	The coach and teachers work together to identify professional development activities based on identified academic students' needs.	4.12	.787	High

SD= Standard Deviation

Table 4.11 shows the perception of teachers and coaches on collaboration during coaching based on states. Coaching is practiced at a national level, so the findings would reveal if there was a uniformity or differences in the practice of coaching specifically on sub-construct collaboration in both states.

The findings in Table 4.11 shows that the mean value of all the items in sub-construct collaboration between the states were almost the same with minimal difference between mean value 3.18 (SD= .964) to 4.36 (SD= .606). This indicates that teachers and coaches in both states agreed that collaboration between coaches and teachers existed during coaching mostly at high level except for a few instances where the items show moderate level of practice specifically item 2 and 5. However,

the analysis also shows that teachers also agreed that item 3 (The coach and teacher plan and present a shared lesson) was also practiced at a moderate level.

Table 4.11

Perception of Teachers and Coaches on Collaboration Sub-Construct Based on States

Coach encourages the following activities:						
No	Item	State	N	Mean	SD	Level
1	The coach observes and identifies areas of strength and needs as it relates to teaching	Selangor	237	4.36	.606	High
		Sabah	233	4.29	.718	High
2	The coach and teacher provide tutoring to individual students	Selangor	237	3.61	.898	Moderate
		Sabah	233	3.46	1.038	Moderate
3	The coach and teacher plan and present a shared lesson	Selangor	237	4.08	.774	High
		Sabah	233	3.98	.898	Moderate
4	The coach model lessons or particular instructional techniques in the classroom	Selangor	237	4.01	.890	High
		Sabah	233	4.06	.943	High
5	The coach helps teacher to administer assessment (e.g. benchmark, test, etc	Selangor	237	3.84	.876	Moderate
		Sabah	233	3.81	.964	Moderate
6	The coach works collaboratively with teachers at all levels	Selangor	237	4.14	.718	High
		Sabah	233	4.15	.888	High
7	Coaches work directly with teachers	Selangor	237	4.30	.719	High
		Sabah	233	4.26	.773	High
8	The coach and teachers work together to identify professional development activities based on identified academic students' needs	Selangor	237	4.16	.703	High
		Sabah	233	4.09	.852	High

N= Number, SD= Standard Deviation

Next, Table 4.12 shows the mean values and standard deviation of teachers and coaches perception on collaboration sub-construct based on roles. Based on the results in Table 4.12, coaches' perception on item 1 (the coach observes and identifies areas of strength and needs as it relate to teaching) was the highest with mean value 4.68 as compared to teacher with mean value 4.26. It can be interpreted

that coaches thought that they had observed and identified the strength and needs of teachers, however, teachers had lower views of similar practice.

Table 4.12
Means and Standard Deviation Teachers and Coaches perception on Collaboration sub construct based on Role

Coach encourages the following activities:						
Item	Role	N	Mean	SD	Level	
1	The coach observes and identifies areas of strength and needs as it relates to teaching	Coach	77	4.68	.549	High
	Teacher	393	4.26	.664	High	
2	The coach and teacher provide tutoring to individual students	Coach	77	2.83	1.044	Low
	Teacher	393	3.68	.895	Moderate	
3	The coach and teacher plan and present a shared lesson	Coach	77	3.97	.778	Moderate
	Teacher	393	4.04	.850	High	
4	The coach model lessons or particular instructional techniques in the classroom	Coach	77	4.16	.812	High
	Teacher	393	4.01	.934	High	
5	The coach helps teacher to administer assessment (e.g. benchmark, test, etc)	Coach	77	3.58	1.018	Moderate
	Teacher	393	3.88	.893	Moderate	
6	The coach works collaboratively with teachers at all levels	Coach	77	4.36	.626	High
	Teacher	393	4.10	.830	High	
7	Coaches work directly with teachers	Coach	77	4.53	.620	High
	Teacher	393	4.23	.759	High	
8	The coach and teachers work together to identify professional development activities based on identified academic students' needs	Coach	77	4.31	.712	High
	Teacher	393	4.09	.789	High	

N= Number, SD= Standard Deviation

However, for item no 2 (The coach and teacher provide tutoring to individual students), coach perception has a low mean value with 2.83 as compared to teachers with mean value 3.68. This shows that coaches only focus on providing support to individual teachers and not to students. On the other hand, providing tutoring to individual students is part of teacher job specification, thus explains the major difference between coach and teacher views on item 2. Nevertheless, data analysis

suggests that it is moderately practiced. Overall, it can be concluded that, the level of collaboration element practiced during coaching in Malaysian school is generally high except for few instances where the level is either low or moderate.

Table 4.13
Mean and Standard Deviation on Feedback and Reflective sub construct

		Feedback		
No	Item	Mean	SD	Level
9	Coach provides meaningful feedback regarding teacher inquiry on teaching practices	4.31	.717	High
10	Coach feedback will help teachers improve students' understanding of the concept taught	4.27	.750	High
11	Self-reflection on teacher teaching practice is valuable	4.37	.709	High
		Reflective		
12	The coach and teacher were reflective about students' learning	4.25	.728	High
13	The coach and teacher were reflective about the teaching practices	4.32	.700	High
14	Teacher felt comfortable with the coach reflection on his/her teaching practice	4.10	.755	High
15	The coach assists teachers in being reflective about their own professional learning	4.15	.757	High

N= Number, SD= Standard Deviation

Table 4.13 shows the data analysis for sub-construct Feedback. For feedback sub construct, the mean values are between 4.27 (SD=.750) to 4.37 (SD=.709). Teachers agree that feedback is being highly practiced in coaching. Whereas for sub-construct reflective, the mean values are between 4.09 (SD= .845) to 4.37 (SD=4.37). This shows that teachers and coaches agrees that reflective and feedback elements are highly practiced in coaching.

Next, Table 4.14 illustrates the mean values of feedback and reflective sub-construct based on states. The results show that the mean values between the two states were almost the same in all the items between mean value 4.17(SD=.637) to 4.34 (SD=.655). This indicates that both teachers and coaches agree that feedback and reflective practice were highly exercised in coaching. Table 4.15 on the other

hand shows that mean values of the same sub-construct based on roles (teachers and coaches).

Table 4.14

Mean Values on sub-constructs Feedback and Reflective based on States

Item	State	N	Mean	SD	Level
Feedback					
9	Selangor	237	4.34	.655	High
	Sabah	233	4.29	.776	High
10	Selangor	237	4.31	.710	High
	Sabah	233	4.22	.772	High
11	Selangor	237	4.38	.636	High
	Sabah	233	4.37	.761	High
Reflective					
12	Selangor	237	4.31	.660	High
	Sabah	233	4.19	.789	High
13	Selangor	237	4.37	.628	High
	Sabah	233	4.27	.764	High
14	Selangor	237	4.17	.637	High
	Sabah	233	4.02	.853	High
15	Selangor	237	4.20	.650	High
	Sabah	233	4.12	.825	High

N= Number, SD= Standard Deviation

Based on the result in Table 4.15, for sub construct feedback, both teachers and coaches strongly agree that feedback is an important element which is highly practiced in coaching with the mean value between 4.22(SD= .755) to 4.66(SD = .528). This suggests the uniformity of opinion between teachers and coaches on feedback sub construct. Similarly, for sub-construct Reflective, the minimal difference in the mean values between teachers and coaches in all the items also show that teachers and coaches agree that reflective element is being practiced in coaching. The mean values are between 4.11 (SD= .755) to 4.38 (SD.670). However, between the two groups, coaches have a slightly higher agreement in most of the items as compared to teachers.

Table 4.15

Mean values on Feedback and Reflective Sub-construct based on Roles

No	Item	Role	N	Mean	SD	Level
Feedback						
9	Coach provides meaningful feedback regarding teacher inquiry on teaching practices	Coach	77	4.62	.586	High
		Teacher	393	4.25	.726	High
10	Coach feedback will help teachers improve students' understanding of the concept taught	Coach	77	4.51	.620	High
		Teacher	393	4.22	.755	High
11	Self-reflection on teacher teaching practice is valuable	Coach	77	4.66	.528	High
		Teacher	393	4.32	.716	High
Reflective						
12	The coach and teacher were reflective about students' learning	Coach	77	4.38	.670	High
		Teacher	393	4.23	.738	High
13	The coach and teacher were reflective about the teaching practices	Coach	77	4.45	.680	High
		Teacher	393	4.29	.702	High
14	Teacher felt comfortable with the coach reflection on his/her teaching practice	Coach	77	4.05	.759	High
		Teacher	393	4.11	.755	High
15	The coach assists teachers in being reflective about their own professional learning	Coach	77	4.38	.563	High
		Teacher	393	4.11	.766	High

N= Number, SD= Standard Deviation

Table 4.16 shows the mean values and standard deviation of sub-construct support were between 4.09 (SD= .845) to 4.37 (SD=.705). This indicates that teachers and coaches strongly agreed that the element of support highly existed between teachers and coaches while coaching. Similarly, for sub-construct trust, they strongly believe that the element of trust highly existed in their practice of coaching. This can be seen in the mean value between 4.27 (SD= .756) to 4.36 (SD= .677). This indicates that teachers and coaches strongly agreed that the element of trust highly existed between teachers and coaches during coaching.

Table 4.16
Mean and Standard Deviation on Coaching based on Support and Trust Sub-Construct

		Support		
No	Item	Mean	SD	Level
16	The coach supports teachers in their reflection and analysis of their practices	4.20	.762	High
17	The coach supports teachers' implementation of best practices	4.36	.721	High
18	The coach should communicate and emphasize their role as a support rather than an evaluator	4.37	.705	High
19	Coaches provide modelling, practice and feedback of instructional strategies to teachers	4.09	.845	High
		Trust		
20	It is important that teacher trusts the coach	4.35	.754	High
21	Teacher felt comfortable communicating with the coach	4.29	.713	High
22	Teachers felt coach respects their opinion, understands the situation, and the challenges faced	4.27	.756	High
23	Teacher values coach's input	4.36	.677	High
24	The coach maintains confidentiality	4.31	.744	High

SD= Standard Deviation

Table 4.17 illustrates teachers' and coaches' perception on sub-constructs support and trust based on two states to see if there are any differences of the perception towards the element of trust and support in the practice of coaching.

Table 4.17
Mean values and Standard Deviation on Sub construct support and trust Based on States

No	Item	State	N	Mean	SD	Level
		Support				
16	The coach supports teachers in their reflection and analysis of their practices	Selangor	237	4.21	.679	High
		Sabah	233	4.21	.826	High
17	The coach supports teachers' implementation of best practices	Selangor	237	4.33	.640	High
		Sabah	233	4.39	.763	High
18	The coach should communicate and emphasize their role as a support rather than an evaluator	Selangor	237	4.35	.650	High
		Sabah	233	4.39	.742	High
19	Coaches provide modelling, practice and feedback of instructional strategies to teachers	Selangor	237	4.13	.815	High
		Sabah	233	4.06	.862	High

		Trust				
20	It is important that teacher trusts the coach	Selangor	237	4.35	.736	High
		Sabah	233	4.34	.773	High
21	Teacher felt comfortable communicating with the coach	Selangor	237	4.35	.664	High
		Sabah	233	4.23	.757	High
22	Teachers felt coach respects their opinion, understands the situation, and the challenges faced	Selangor	237	4.29	.726	High
		Sabah	233	4.25	.787	High
23	Teacher values coach's input	Selangor	237	4.41	.636	High
		Sabah	233	4.31	.714	High
24	The coach maintains confidentiality	Selangor	237	4.33	.733	High
		Sabah	233	4.28	.757	High

N= Number, SD= Standard Deviation

Based on the result in Table 4.17, it is clear that teachers and coaches in both Selangor and Sabah have similar opinion that the element of support was highly practiced in coaching with mean value between 4.06 (SD= .862) to 4.39 (SD=. 742). In addition, teachers and coaches in Selangor and Sabah similarly agreed that the element of trust was also highly practiced in coaching with mean value between 4.28 (SD=.757) to 4.35 (SD=.664).

Table 4.18 on the other hand illustrates teachers' and coaches' views on both sub constructs support and trust based on roles. The results show that for sub construct support coaches have a higher mean value between 4.30 to 4.62 as compared to teachers with mean value between 4.15 to 4.31. Nevertheless, both groups strongly agree that support highly existed in the practice of coaching. For sub-construct trust, again coaches' views have higher mean values between 4.38 to 4.74 as compared to teachers with mean values between 4.23 to 4.36. However, both group strongly agree that trust highly existed during coaching.

Table 4.18
Mean and Standard Deviation on Sub Construct Support and Trust based on Roles

No	Item	Role	N	Mean	SD	Level
Support						
16	The coach supports teachers in their reflection and analysis of their practices	Coach	77	4.49	.599	High
		Teacher	393	4.15	.770	High
17	The coach supports teachers' implementation of best practices	Coach	77	4.62	.563	High
		Teacher	393	4.31	.717	High
18	The coach should communicate and emphasize their role as a support rather than an evaluator	Coach	77	4.73	.529	High
		Teacher	393	4.30	.705	High
19	Coaches provide modelling, practice and feedback of instructional strategies to teachers	Coach	77	4.30	.745	High
		Teacher	393	4.05	.851	High
Trust						
20	It is important that teacher trusts the coach	Coach	77	4.74	.497	High
		Teacher	393	4.27	.772	High
21	Teacher felt comfortable communicating with the coach	Coach	77	4.42	.593	High
		Teacher	393	4.26	.733	High
22	Teachers felt coach respects their opinion, understands the situation, and the challenges faced	Coach	77	4.44	.596	High
		Teacher	393	4.23	.780	High
23	Teacher values coach's input	Coach	77	4.38	.608	High
		Teacher	393	4.36	.690	High
24	The coach maintains confidentiality	Coach	77	4.64	.583	High
		Teacher	393	4.24	.756	High

N= Number, SD= Standard Deviation

b) The impact of coaching on instructional improvement

Table 4.19 presents mean values and standard deviation of teachers' and coaches' perception on the impact of coaching towards instructional improvement.

The analysis in Table 4.19 shows that both teachers and coaches agree that coaching help to improve instructional improvement in various aspects. The mean scores were between 3.91 (SD= .786) to 4.30 (SD=. 791). Majority of the practices were highly practiced although some practices were of moderate level. This shows

the importance of coaching in helping to improve different aspects of classroom practices.

Table 4.19
Mean and Standard Deviation for Construct Instructional Improvement

Collaboration among teachers and coach helps teachers to:

No	Item	Mean	SD	Level
25	implement inquiry strategies in the classroom	4.01	.730	High
26	improve teacher's ability to implement inquiry instruction in the classroom	4.09	.725	High
27	identify desired students' learning outcomes for the classroom	4.18	.730	High
28	change teacher's instructional practices in ways that benefit students learning	4.32	.702	High
29	discuss ways to increase academic quality	4.30	.719	High
30	discuss ways to increase more concept development into the lessons	4.24	.738	High
31	discuss ways to increase more problem-solving technique into the lesson	4.23	.741	High
32	discuss ways to improve the use of questioning strategies (such as higher order questions, open-ended questions and wait time)	4.21	.747	High
33	set goals and objectives aimed at implementing ideas and addressing issues discussed	4.11	.764	High
34	discuss ways to increase students' participation in lessons	4.25	.734	High
35	discuss ways to encourage students to pursue intellectual quality and challenging ideas	4.20	.758	High
36	discuss ways to create an environment where students collaborate and listen to one another's ideas	4.17	.743	High
37	discuss significant and worthwhile content	4.12	.782	High
38	discuss the content of the subject taught	4.13	.791	High
39	discuss content beyond the grade level taught	3.97	.822	Moderate
40	discuss ways to reinforce understanding of the content taught	4.15	.728	High
41	Improved grades	3.97	.794	Moderate
42	Improved standardized test scores	3.91	.786	Moderate
43	Discussion on formative assessment	3.94	.786	Moderate
44	Improved school performance	3.94	.806	Moderate
45	Improved teaching strategies	4.26	.741	High
46	More students centred classrooms	4.29	.782	High
47	Increased time spent on independent learning	4.03	.787	High

N= Number, SD= Standard Deviation

Next, the analysis in Table 4.20 shows the mean values and standard deviation of teachers and coaches perception on the impact of coaching on

instructional improvement based on states. Based on Table 4.20, mean values of respondents from Selangor ranges between 3.91 to 4.35 while mean values of respondents from Sabah ranges between 3.92 to 4.30. Therefore, teachers and coaches from both states have similar views regarding the impact of coaching on instructional improvement (moderate to high).

Table 4.20
Mean and Standard Deviation on the impact of coaching on instructional improvement based on States

Collaboration among teachers and coach helps teachers to:						
No	Item	State	N	Mean	SD	Level
25	implement inquiry strategies in the classroom	Selangor	237	4.00	.634	Moderate
		Sabah	233	4.02	.817	High
26	improve teacher's ability to implement inquiry instruction in the classroom	Selangor	237	4.08	.629	High
		Sabah	233	4.09	.812	High
27	identify desired students' learning outcomes for the classroom	Selangor	237	4.18	.626	High
		Sabah	233	4.19	.809	High
28	change teacher's instructional practices in ways that benefit students learning	Selangor	237	4.35	.644	High
		Sabah	233	4.30	.756	High
29	discuss ways to increase academic quality	Selangor	237	4.29	.686	High
		Sabah	233	4.31	.754	High
30	discuss ways to increase more concept development into the lessons	Selangor	237	4.26	.676	High
		Sabah	233	4.22	.782	High
31	discuss ways to increase more problem-solving technique into the lesson	Selangor	237	4.23	.682	High
		Sabah	232	4.24	.784	High
32	discuss ways to improve the use of questioning strategies (such as higher order questions, open-ended questions and wait time)	Selangor	237	4.22	.692	High
		Sabah	233	4.19	.800	High
33	set goals and objectives aimed at implementing ideas and addressing issues discussed	Selangor	237	4.14	.702	High
		Sabah	233	4.09	.809	High
34	discuss ways to increase students' participation in lessons	Selangor	237	4.28	.650	High
		Sabah	233	4.23	.796	High
35	discuss ways to encourage	Selangor	237	4.22	.672	High

	students to pursue intellectual quality and challenging ideas	Sabah	233	4.19	.809	High
36	discuss ways to create an environment where students collaborate and listen to one another's ideas	Selangor	237	4.16	.666	High
		Sabah	233	4.17	.802	High
37	discuss significant and worthwhile content	Selangor	237	4.16	.732	High
		Sabah	233	4.09	.815	High
38	discuss the content of the subject taught	Selangor	237	4.16	.717	High
		Sabah	233	4.11	.847	High
39	discuss content beyond the grade level taught	Selangor	237	3.99	.748	Moderate
		Sabah	233	3.96	.880	Moderate
40	discuss ways to reinforce understanding of the content taught	Selangor	237	4.14	.692	High
		Sabah	233	4.16	.748	High
41	Improved grades	Selangor	237	3.96	.752	Moderate
		Sabah	233	3.99	.823	Moderate
42	Improved standardized test scores	Selangor	237	3.90	.747	Moderate
		Sabah	233	3.92	.813	Moderate
43	Discussion on formative assessment	Selangor	237	3.92	.754	Moderate
		Sabah	233	3.97	.804	Moderate
44	Improved school performance	Selangor	237	3.91	.776	Moderate
		Sabah	233	3.99	.823	Moderate
45	Improved teaching strategies	Selangor	237	4.25	.673	High
		Sabah	233	4.27	.797	High
46	More students centred classrooms	Selangor	237	4.33	.714	High
		Sabah	233	4.25	.845	High
47	Increased time spent on independent learning	Selangor	237	4.10	.739	High
		Sabah	233	3.97	.817	High

N= Number, SD= Standard Deviation

In addition, Table 4.21 shows the mean values and standard deviation of teachers and coaches perception on the impact of coaching on instructional improvement based on roles. Based on table 4.21, the results show the mean value of coach are between 4.00 to 4.57 while mean values that of teachers ranges between 3.89 to 4.27. This shows that coaches have a slightly higher perception towards the impact of coaching on instructional improvement as compared to teachers. Overall,

teachers' and coaches' perception on the level of coaching impact on instructional improvement based on roles is also moderate to high.

Table 4.21
Mean Values and Standard Deviation of Coaching Impact on Instructional Improvement Based on Roles

Collaboration among teachers and coach helps teachers to:						
No	Item	Role	N	Mean	SD	Level
25	implement inquiry strategies in the classroom	Coach	77	4.18	.756	High
		Teacher	393	3.98	.721	Moderate
26	improve teacher's ability to implement inquiry instruction in the classroom	Coach	77	4.23	.667	High
		Teacher	393	4.06	.733	High
27	identify desired students' learning outcomes for the classroom	Coach	77	4.43	.616	High
		Teacher	393	4.13	.732	High
28	change teacher's instructional practices in ways that benefit students learning	Coach	77	4.57	.548	High
		Teacher	393	4.27	.718	High
29	discuss ways to increase academic quality	Coach	77	4.49	.620	High
		Teacher	393	4.26	.732	High
30	discuss ways to increase more concept development into the lessons	Coach	77	4.38	.650	High
		Teacher	393	4.21	.742	High
31	discuss ways to increase more problem-solving technique into the lesson	Coach	77	4.47	.620	High
		Teacher	392	4.19	.746	High
32	discuss ways to improve the use of questioning strategies (such as higher order questions, open-ended questions and wait time)	Coach	77	4.47	.598	High
		Teacher	393	4.16	.763	High
33	set goals and objectives aimed at implementing ideas and addressing issues discussed	Coach	77	4.30	.650	High
		Teacher	393	4.08	.772	High
34	discuss ways to increase students' participation in lessons	Coach	77	4.49	.599	High
		Teacher	393	4.21	.739	High
35	discuss ways to encourage students to pursue intellectual quality and challenging ideas	Coach	77	4.48	.641	High
		Teacher	393	4.15	.749	High
36	discuss ways to create an environment where students collaborate and listen to one another's ideas	Coach	77	4.35	.703	High
		Teacher	393	4.13	.737	High
37	discuss significant and worthwhile content	Coach	77	4.18	.790	High
		Teacher	393	4.11	.772	High
38	discuss the content of the subject	Coach	77	4.22	.700	High

	taught	Teacher	393	4.11	.798	High
39	discuss content beyond the grade level taught	Coach	77	4.04	.818	High
		Teacher	393	3.96	.815	Moderate
40	discuss ways to reinforce understanding of the content taught	Coach	77	4.27	.681	High
		Teacher	393	4.13	.726	High
41	Improved grades	Coach	77	4.06	.713	High
		Teacher	393	3.95	.800	Moderate
42	Improved standardized test scores	Coach	77	4.00	.707	Moderate
		Teacher	393	3.89	.793	Moderate
43	Discussion on formative assessment	Coach	77	4.16	.689	High
		Teacher	393	3.90	.789	Moderate
44	Improved school performance	Coach	77	4.06	.732	High
		Teacher	393	3.92	.811	Moderate
45	Improved teaching strategies	Coach	77	4.44	.639	High
		Teacher	393	4.22	.750	High
46	More students centred classrooms	Coach	77	4.45	.699	High
		Teacher	393	4.26	.794	High
47	Increased time spent on independent learning	Coach	77	4.13	.714	High
		Teacher	393	4.02	.792	High

N= Number, SD= Standard Deviation

c) The impact of coaching on role of leadership

In carrying out coaching, one needs to have certain leadership skills. A good coach would show their leadership when coaching others for improvement. Table 4.22 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Leadership.

Based on the results of the analysis in Table 4.22, teachers and coaches agree on that the practice of leadership shown by coaches were mostly high although there were instances where leadership practices shown were moderate. Based on the findings, the mean values were between 3.77 (SD = .907) to 4.25 (SD = .738). This indicates that the practice of leadership in the implementation of coaching were

between moderate to high which is suggesting a need for improvements in certain aspects of leadership in coaching.

Table 4.22
Mean values and Standard Deviation on the impact of coaching on construct Leadership

The coach exercises leadership skills by doing the following:				
No	Item	Mean	SD	Level
48	Help teachers analyse the content, strategy, and quality of their lessons	4.06	.786	High
49	Model lessons or particular instructional techniques in the classroom	3.98	.893	Moderate
50	Meet with other coaches or curriculum specialists for planning purposes	3.87	.864	Moderate
51	Collaborate with teachers to improve students' learning	4.19	.747	High
52	Facilitate department level planning	3.77	.907	Moderate
53	Deliver school-wide professional development	3.98	.822	Moderate
54	Support the decision made by teachers	4.04	.745	High
55	Observe classroom teaching	4.25	.738	High
56	Engage in pre-and post-conferencing with teachers	4.21	.817	High
57	Help teachers use assessment data to improve instruction	3.93	.869	Moderate
58	Help teachers plan lessons together	3.97	.857	Moderate
59	Working with teachers towards the same objectives	4.13	.788	High
60	Allow teachers to make their own decision pertaining to improving practices	4.16	.730	High
61	Help teachers implement a particular curriculum	3.89	.841	Moderate

N= Number, SD= Standard Deviation

Table 4.23 on the other hand, presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Leadership based on states. Based on the results in Table 4.23, the mean values of respondents from Selangor are between 3.70 to 4.30 while mean value of respondents from Sabah are between 3.82 to 4.20. Judging from a slightly bigger range of the mean value, teachers and coaches in Selangor have varied opinions on coach leadership. Sabah on the other hand have a tighter range indicating a less varied opinion and more uniformity. Table 4.24 on the other hand, presents the mean and standard deviation

of teachers' and coaches' perception on the impact of coaching on construct Leadership based on roles.

Table 4.23.

Mean values and Standard Deviation on Coach Leadership Based on States

The coach exercises leadership skills by doing the following:						
No	Item	State	N	Mean	SD	Level
48	Help teachers analyze the content, strategy, and quality of their lessons	Selangor	237	4.12	.729	High
		Sabah	233	4.01	.825	High
49	Model lessons or particular instructional techniques in the classroom	Selangor	237	4.00	.871	Moderate
		Sabah	233	3.98	.893	Moderate
50	Meet with other coaches or curriculum specialists for planning purposes	Selangor	237	3.88	.810	Moderate
		Sabah	233	3.86	.906	Moderate
51	Collaborate with teachers to improve students' learning	Selangor	237	4.20	.712	High
		Sabah	233	4.18	.767	High
52	Facilitate department level planning	Selangor	237	3.70	.907	Moderate
		Sabah	233	3.86	.891	Moderate
53	Deliver school-wide professional development	Selangor	237	3.95	.801	Moderate
		Sabah	233	4.01	.830	High
54	Support the decision made by teachers	Selangor	237	4.03	.713	High
		Sabah	233	4.06	.763	High
55	Observe classroom teaching	Selangor	237	4.30	.681	High
		Sabah	233	4.20	.775	High
56	Engage in pre-and post-conferencing with teachers	Selangor	237	4.24	.740	High
		Sabah	233	4.18	.875	High
57	Help teachers use assessment data to improve instruction	Selangor	237	3.94	.797	Moderate
		Sabah	233	3.93	.926	Moderate
58	Help teachers plan lessons together	Selangor	237	4.05	.749	High
		Sabah	233	3.89	.938	Moderate
59	Working with teachers towards the same objectives	Selangor	237	4.15	.691	High
		Sabah	233	4.11	.864	High
60	Allow teachers to make their own decision pertaining to improving practices	Selangor	237	4.16	.659	High
		Sabah	233	4.16	.782	High
61	Help teachers implement a particular curriculum	Selangor	237	3.96	.747	Moderate
		Sabah	233	3.82	.912	Moderate

N= Number, SD= Standard Deviation

Table 4.24
Mean values and Standard Deviation on Coach Leadership Based on Roles

The coach exercises leadership skills by doing the following:						
No	Item	Role	N	Mean	SD	Level
48	Help teachers analyse the content, strategy, and quality of their lessons	Coach	77	4.29	.704	High
		Teacher	393	4.02	.787	High
49	Model lessons or particular instructional techniques in the classroom	Coach	77	4.22	.661	High
		Teacher	393	3.94	.911	Moderate
50	Meet with other coaches or curriculum specialists for planning purposes	Coach	77	4.18	.739	High
		Teacher	393	3.81	.867	Moderate
51	Collaborate with teachers to improve students' learning	Coach	77	4.42	.570	High
		Teacher	393	4.15	.761	High
52	Facilitate department level planning	Coach	77	3.81	.974	Moderate
		Teacher	393	3.77	.888	Moderate
53	Deliver school-wide professional development	Coach	77	4.05	.902	High
		Teacher	393	3.96	.798	Moderate
54	Support the decision made by teachers	Coach	77	4.21	.675	High
		Teacher	393	4.01	.746	High
55	Observe classroom teaching	Coach	77	4.51	.620	High
		Teacher	393	4.20	.740	High
56	Engage in pre-and post-conferencing with teachers	Coach	77	4.49	.700	High
		Teacher	393	4.15	.819	High
57	Help teachers use assessment data to improve instruction	Coach	77	4.22	.681	High
		Teacher	393	3.88	.884	Moderate
58	Help teachers plan lessons together	Coach	77	4.08	.739	High
		Teacher	393	3.95	.870	Moderate
59	Working with teachers towards the same objectives	Coach	77	4.35	.664	High
		Teacher	393	4.09	.795	High
60	Allow teachers to make their own decision pertaining to improving practices	Coach	77	4.40	.591	High
		Teacher	393	4.12	.736	High
61	Help teachers implement a particular curriculum	Coach	77	4.10	.788	High
		Teacher	393	3.84	.838	Moderate

N= Number, SD= Standard Deviation

Based on the analysis in Table 4.24 the mean values for coach were between 3.77 to 4.51 while mean values for teachers are between 3.81 to 4.20. This indicates

that coaches have higher views and opinions regarding their leadership in coaching while teachers tend to have a lower opinion on coaches' leadership in carrying out the practice of coaching.

d) The impact of coaching on continuous professional development

Table 4.25 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Continuous Professional Development (CPD).

Table 4.25

Mean and Standard Deviation on the impact of coaching on construct CPD

Coaching impacted continuous professional development by helping teachers in the following ways:

No	Item	Mean	SD	Level
62	focus closely on classroom improvement	4.27	.748	High
63	provide guidance and support	4.20	.778	High
64	engage teachers in professional dialogue and development	4.03	.783	High
65	apply pressure at the implementation stage to ensure adherence to the programme	3.55	1.022	Moderate
66	utilize explicit instructional strategies as prescribed by teacher	4.00	.817	High
67	plan the implementation of the strategies suggested into lessons	4.06	.790	High
68	value coaching as useful part of professional development process	4.10	.773	High
69	identify the competency of the coach in the subject matter taught	4.04	.764	High
70	acknowledge that coaching is a cyclical activity building knowledge over time	4.12	.764	High
71	reflect on their own teaching and make improvements	4.21	.734	High
72	identify individual teachers needs and interest	4.04	.829	High

SD= Standard Deviation

Based on the analysis in Table 4.25, in terms of the impact of coaching on Continuous Professional Development, teachers and coaches highly agree that

coaching have impacted them in areas related to CPD. The mean values from descriptive analysis were between 3.55 (SD= 1.022) to 4.27 (SD= .748). This is suggesting that teachers and coaches agree that coaching impact on teacher professional development are high.

Table 4.26
Mean values and Standard Deviations of Continuous Professional Development based on States

Coaching impacted continuous professional development by helping teachers in the following ways:

No	Item	State	N	Mean	SD	Level
62	focus closely on classroom improvement	Selangor	237	4.30	.687	High
		Sabah	233	4.24	.806	High
63	provide guidance and support	Selangor	237	4.22	.719	High
		Sabah	233	4.18	.821	High
64	engage teachers in professional dialogue and development	Selangor	237	4.06	.762	High
		Sabah	233	4.01	.804	High
65	apply pressure at the implementation stage to ensure adherence to the programme	Selangor	237	3.69	.923	Moderate
		Sabah	233	3.42	1.092	Moderate
66	utilize explicit instructional strategies as prescribed by teacher	Selangor	237	4.07	.698	High
		Sabah	233	3.93	.907	Moderate
67	plan the implementation of the strategies suggested into lessons	Selangor	237	4.09	.698	High
		Sabah	233	4.03	.861	High
68	value coaching as useful part of professional development process	Selangor	237	4.15	.666	High
		Sabah	233	4.05	.854	High
69	identify the competency of the coach in the subject matter taught	Selangor	237	4.04	.709	High
		Sabah	233	4.06	.805	High
70	acknowledge that coaching is a cyclical activity building knowledge over time	Selangor	237	4.11	.686	High
		Sabah	233	4.14	.824	High
71	reflect on their own teaching and make improvements	Selangor	237	4.21	.668	High
		Sabah	233	4.21	.783	High
72	identify individual teachers needs and interest	Selangor	237	4.05	.754	High
		Sabah	233	4.02	.888	High

N= Number, SD= Standard Deviation

Next, Table 4.26 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Continuous Professional Development (CPD) based on states. The mean values of respondents from Selangor ranges between 3.69 to 4.30 while mean values of respondents from Sabah range between 3.42 to 4.24. This shows that teachers and coaches from Selangor have a higher perception on the impact of coaching on professional development compared to teachers and coaches from Sabah.

Table 4.27
Mean values and Standard Deviation of the Impact of Coaching on Continuous Professional Development Based on Roles

Coaching impacted continuous professional development by helping teachers in the following ways:						
No	Item	Role	N	Mean	SD	Level
62	focus closely on classroom improvement	Coach	77	4.52	.598	High
		Teacher	393	4.22	.765	High
63	provide guidance and support	Coach	77	4.56	.618	High
		Teacher	393	4.13	.779	High
64	engage teachers in professional dialogue and development	Coach	77	4.26	.768	High
		Teacher	393	3.99	.779	Moderate
65	apply pressure at the implementation stage to ensure adherence to the programme	Coach	77	3.16	1.298	Moderate
		Teacher	393	3.63	.936	Moderate
66	utilize explicit instructional strategies as prescribed by teacher	Coach	77	3.96	.924	Moderate
		Teacher	393	4.01	.787	High
67	plan the implementation of the strategies suggested into lessons	Coach	77	4.10	.867	High
		Teacher	393	4.05	.766	High
68	value coaching as useful part of professional development process	Coach	77	4.23	.826	High
		Teacher	393	4.08	.752	High
69	identify the competency of the coach in the subject matter taught	Coach	77	4.22	.700	High
		Teacher	393	4.01	.764	High
70	acknowledge that coaching is a cyclical activity building knowledge over time	Coach	77	4.38	.670	High
		Teacher	393	4.07	.764	High
71	reflect on their own teaching and make improvements	Coach	77	4.47	.620	High
		Teacher	393	4.16	.736	High
72	identify individual teachers needs and interest	Coach	77	4.23	.742	High
		Teacher	393	4.00	.833	High

N= Number, SD= Standard Deviation

Next, Table 4.27 shows the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Continuous Professional Development (CPD) based on roles. Based on the findings in Table 4.27, the result of data analysis shows that the mean values of coach are between 3.16 to 4.52 while mean values of teachers ranges between 3.63 to 4.26. This shows that coaches have a more varied opinion towards the impact of coaching on professional development as compared to teachers. Nevertheless, both groups agree that the impact of coaching on professional development in Malaysian school is high.

e) The Impact of coaching on Training

Table 4.28 presents the mean and standard deviation of teachers' and coaches' perception on frequency of training. The analysis in Table 4.28 shows the mean value of frequency of training given to teachers and coaches. Based on data analysis it shows that sometimes teachers were given trainings related to coaching. However, teachers rarely received training related to theories of adult learning.

Table 4.28

Mean values and Standard Deviation on Frequency of Training

How often did you attend trainings on the following?				
No	Item	Mean	SD	Level
88	Content knowledge	3.35	.919	Moderate
89	Coaching knowledge	3.17	.939	Moderate
90	Interpersonal skills	3.08	.962	Moderate
91	Coaching Technical skills	3.01	1.046	Moderate
92	Adult learning theory	2.66	1.051	Low
93	Best practices	3.39	.912	Moderate
94	Conducting professional development	3.21	.994	Moderate
95	Problem solving	3.05	1.037	Moderate

SD= Standard Deviation

The mean values from data analysis are between 2.66 to 3.39 which shows that the frequency of trainings is moderate except for adult learning theory which is low. As such, Adult learning theory is the least frequent training received and best

practices being the most frequent. This is suggesting that there is a need to revise the type training or professional development given to teachers in order to provide better knowledge and skills to improve their professionalism.

Next, Table 4.29 presents the mean and standard deviation of teachers' and coaches' perception on the frequency of training based on states. Table 4.29 shows the mean values on frequency of training provided to teachers based on states. The mean value of teachers and coaches in Selangor are between 2.70 to 3.49 while mean value for teachers and coaches in Sabah are between 2.61 to 3.31. Item 92 (adult learning theory) has the lowest mean for both Selangor and Sabah with 2.70 and 2.61 respectively.

Table 4.29
Mean values and Standard Deviation on Frequency of Training Based on States

How often did you attend trainings on the following?						
No	Item	State	N	Mean	SD	Level
88	Content knowledge	Selangor	237	3.38	.883	Moderate
		Sabah	233	3.31	.955	Moderate
89	Coaching knowledge	Selangor	237	3.28	.951	Moderate
		Sabah	233	3.06	.900	Moderate
90	Interpersonal skills	Selangor	237	3.21	.973	Moderate
		Sabah	233	2.95	.920	Low
91	Coaching Technical skills	Selangor	237	3.16	1.055	Moderate
		Sabah	233	2.86	.990	Low
92	Adult learning theory	Selangor	237	2.70	1.033	Low
		Sabah	233	2.61	1.070	Low
93	Best practices	Selangor	237	3.49	.923	Moderate
		Sabah	233	3.29	.891	Moderate
94	Conducting professional development	Selangor	237	3.29	.998	Moderate
		Sabah	233	3.14	.986	Moderate
95	Problem solving	Selangor	237	3.15	1.034	Moderate
		Sabah	233	2.95	1.033	Moderate

N= Number, SD= Standard Deviation

This result suggests that there was the lack of training on adult learning theory for teachers and coaches in Selangor and Sabah. However, in Sabah, other skills which are also lacking or low are interpersonal skills as well as coaching technical skills. This is suggesting a need to provide coaches with those training which they lacked in.

In addition, Table 4.30 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on frequency of training based on roles. Data analysis shows that the mean values for coaches for all the items are between 2.71 to 3.49 with adult learning theory being the least frequent training received and best practices being the most frequent. While the mean values for teachers ranges between 2.64 to 3.37, also with adult learning theory being the least frequent training received and best practices being the most frequent.

Table 4.30
Mean values and Standard Deviation on Frequency of training Based on Roles

How often did you attend trainings on the following?						
No	Item	Role	N	Mean	SD	Level
88	Content knowledge	Coach	77	3.45	.953	Moderate
		Teacher	393	3.33	.912	Moderate
89	Coaching knowledge	Coach	77	3.47	.804	Moderate
		Teacher	393	3.11	.945	Moderate
90	Interpersonal skills	Coach	77	3.25	1.002	Moderate
		Teacher	393	3.05	.944	Moderate
91	Coaching Technical skills	Coach	77	3.23	1.037	Moderate
		Teacher	393	2.97	1.029	Low
92	Adult learning theory	Coach	77	2.71	1.134	Low
		Teacher	393	2.64	1.035	Low
93	Best practices	Coach	77	3.49	.955	Moderate
		Teacher	393	3.37	.903	Moderate
94	Conducting professional development	Coach	77	3.47	1.021	Moderate
		Teacher	393	3.17	.982	Moderate
95	Problem solving	Coach	77	3.05	1.146	Moderate
		Teacher	393	3.05	1.016	Moderate

N= Number, SD= Standard Deviation

In addition, for Item 91 (coaching technical skills), there is a difference in the mean values that of coaches and teachers with 3.23 (moderate) and 2.97 (low) respectively. This is suggesting coaches received more training on coaching skills as compared to teachers. Overall, the findings suggest that in there is a need to revise the type training or professional development given to teachers in order to provide better knowledge and skills to improve their professionalism.

f) The impact of coaching on learning outcomes

This research question will look at the output of coaching process which will come in the form of students' learning outcome as well as changes in teacher classroom practices and other matters pertaining to instructional practices and school improvement as a whole. Table 4.31 presents the mean value and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Learning outcomes.

Table 4.31
Mean values and Standard Deviation of Impact of coaching on learning outcome

Coaching has resulted in the following learning outcomes:

No	Item	Mean	SD	Level
73	changes teacher instructional practices in ways that benefit student learning	4.17	.778	High
74	helped teacher to implement inquiry strategies in the classroom	4.03	.769	High
75	improved teacher's ability to implement inquiry instruction in the classroom	4.03	.768	High
76	helped teacher identify desired students' outcomes for each classroom	4.12	.759	High
77	helped teacher to improve instructional practices	4.19	.762	High

SD= Standard Deviation

Based on the result shown in Table 4.31, the mean values of learning outcome ranges between 4.03 to 4.19. This means that teachers and coaches highly agree that coaching help to improve learning outcomes of the students. The highest mean is item 77 followed by item 73 with mean value 4.19 and 4.17 respectively,

which are related to changes in instructional practices which benefits students' learning outcomes.

Table 4.32
Mean Values and Standard Deviation of Impact of Coaching on Learning Outcome Based on States

Coaching has resulted in the following learning outcomes:						
No	Item	State	N	Mean	SD	Level
73	changes teacher instructional practices in ways that benefit student learning	Selangor	237	4.22	.685	High
		Sabah	233	4.13	.848	High
74	helped teacher to implement inquiry strategies in the classroom	Selangor	237	4.09	.689	High
		Sabah	233	3.97	.827	Moderate
75	improved teacher's ability to implement inquiry instruction in the classroom	Selangor	237	4.08	.675	High
		Sabah	233	3.99	.838	Moderate
76	helped teacher identify desired students' outcomes for each classroom	Selangor	237	4.14	.686	High
		Sabah	233	4.10	.813	High
77	helped teacher to improve instructional practices	Selangor	237	4.27	.684	High
		Sabah	233	4.12	.814	High

N= Number, SD= Standard Deviation

Table 4.32 on the other hand, presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Learning Outcome based on states. Based on the result shown in Table 4.32, the mean value of respondents from Selangor ranges between 4.08 to 4.27 whereas the mean value of respondents from Sabah ranges between 3.97 to 4.13. This suggests that teachers and coaches in the state of Sabah have a lower perception pertaining to the impact of coaching on learning outcomes. Nevertheless, item 73 (coaching changes instructional practices in ways that benefit learning outcome) has the highest mean value with 4.13 followed by item 77 (coaching helped teacher to improve instructional practices) with mean value 4.12.

Table 4.33 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on learning outcome based on roles. Based on the result shown in Table 4.33, the mean values of learning outcome that of coach ranges between 4.16 to 4.44 which means coaches highly agree on the impact of coaching towards learning outcomes. The item with the highest mean as perceived by coaches is that "coaching helped teacher to improve instructional practices" (item 77) and the item with the lowest mean as perceived by coaches is that "coaching helped teacher to implement inquiry strategies in the classroom" (item 74).

Table 4.33

Mean Values and Standard Deviation of Impact of Coaching on Learning Outcome Based on Roles

Coaching has resulted in the following learning outcomes:

No		Role	N	Mean	SD	Level
73	changes teacher instructional practices in ways that benefit student learning	Coach	77	4.42	.695	High
		Teacher	393	4.13	.777	High
74	helped teacher to implement inquiry strategies in the classroom	Coach	77	4.16	.727	High
		Teacher	393	4.01	.768	High
75	improved teacher's ability to implement inquiry instruction in the classroom	Coach	77	4.21	.732	High
		Teacher	393	4.00	.763	High
76	helped teacher identify desired students' outcomes for each classroom	Coach	77	4.34	.681	High
		Teacher	393	4.08	.758	High
77	helped teacher to improve instructional practices	Coach	77	4.44	.639	High
		Teacher	393	4.14	.766	High

N= Number, SD= Standard Deviation

Meanwhile, the mean values of teachers range between 4.00 to 4.14. The item with the highest mean as perceived by teachers is also "coaching helped teacher to improve instructional practices" (item 77) and the item with the lowest mean as

perceived by teachers is that “coaching improved teacher’s ability to implement inquiry instruction in the classroom” (item 75). The result indicates that teacher have a lower perception pertaining to the impact of coaching on learning outcome as compared to coaches

g) The Impact of coaching on School Improvement

Table 4.34, 4.35 and 4.36 illustrates the impact of coaching on overall school improvement which is measured using frequency scale from “Never” to “Always”. Table 4.34 presents the mean and standard deviation of teachers’ and coaches’ perception on the impact of coaching on construct Overall Improvement.

Table 4.34

Mean values and Standard Deviation on construct Overall School Improvement

Coaching has impacted school improvement as follows:				
No	Item	Mean	SD	Level
136	Changes in the content of the subject taught	3.70	.967	Moderate
137	Changes in ways to increase more concept development into the lessons	3.94	.760	Moderate
138	Changes in ways to infuse more conceptual understanding into the lessons	3.96	.801	Moderate
139	Changes in ways to make meaning	4.00	.747	Moderate
140	Changes in ways to infuse more problem solving into the lesson	3.95	.742	Moderate
141	Changes in inquiry or discovery based learning	3.89	.757	Moderate
142	Changes in ways to encourage students to pursue intellectual rigor or challenging ideas	3.81	.765	Moderate
143	Changes in ways to improve the use of questioning strategies	3.98	.775	Moderate
144	Changes in teaching practices	4.11	.750	High
145	Changes in ways to increase students’ participation in lessons	4.11	.764	High
146	Changes in ways to create an environment where students	4.06	.756	
147	Changes in students' learning	3.99	.753	Moderate
148	Changes in formative assessment	3.87	.750	Moderate
149	Changes in the goals and objectives	4.06	.752	High
150	Changes in the aims at implementing ideas and addressing issues discussed	4.04	.736	High

N= Number, SD= Standard Deviation

Based on the findings in Table 4.34, in terms of overall school improvement, both teachers and coaches believed that coaching brought about improvement in various aspects of school improvement. Based on data analysis, the mean values are between 3.70 (SD=.967) to 4.11 (SD=.750) which shows that the frequency of improvement which takes place due to coaching were moderate. This indicates a need for improvement with regards to coaching practices.

Table 4.35 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Overall Improvement based on states. Based on the findings in Table 4.35, the mean value of perception of respondents from Selangor ranges from 3.92 to 4.16 while the mean values of respondents from Sabah ranges from 3.70 to 4.10. This is suggesting that teachers and coaches from Selangor had a higher perception on impact of coaching on overall school improvement as compared to teachers and coaches of Sabah. Nevertheless, the result also reflects the practice of coaching in the two states.

Table 4.35
Mean values and Standard Deviation on the Impact of Coaching on Overall Improvement Based on States

Coaching has impacted school improvement as follows:

No	Item	State	N	Mean	SD	Level
136	Changes in the content of the subject taught	Selangor	237	3.78	.878	Moderate
		Sabah	233	3.62	1.044	Moderate
137	Changes in ways to increase more concept development into the lessons	Selangor	237	4.01	.698	High
		Sabah	233	3.86	.814	Moderate
138	Changes in ways to infuse more conceptual understanding into the lessons	Selangor	237	4.00	.745	Moderate
		Sabah	233	3.92	.855	Moderate
139	Changes in ways to make meaning	Selangor	237	4.07	.682	High
		Sabah	233	3.92	.803	Moderate
140	Changes in ways to infuse more problem solving into the lesson	Selangor	237	4.03	.669	High
		Sabah	233	3.87	.801	Moderate
141	Changes in inquiry or discovery based learning	Selangor	237	3.97	.712	Moderate
		Sabah	233	3.81	.794	Moderate

142	Changes in ways to encourage students to pursue intellectual rigor or challenging ideas	Selangor	237	3.92	.693	Moderate
		Sabah	233	3.70	.817	Moderate
143	Changes in ways to improve the use of questioning strategies	Selangor	237	4.05	.740	High
		Sabah	233	3.91	.804	Moderate
144	Changes in teaching practices	Selangor	237	4.16	.725	High
		Sabah	233	4.07	.774	High
145	Changes in ways to increase students' participation in lessons	Selangor	237	4.12	.733	High
		Sabah	233	4.10	.795	High
146	Changes in ways to create an environment where students	Selangor	237	4.11	.684	High
		Sabah	233	4.01	.823	High
147	Changes in students' learning	Selangor	237	4.07	.669	High
		Sabah	233	3.90	.822	Moderate
148	Changes in formative assessment	Selangor	237	3.95	.645	Moderate
		Sabah	233	3.80	.838	Moderate
149	Changes in the goals and objectives	Selangor	237	4.13	.677	High
		Sabah	233	3.99	.817	Moderate
150	Changes in the goals and objectives	Selangor	237	4.09	.661	High
		Sabah	233	3.99	.804	Moderate

N= Number, SD= Standard Deviation

Next, Table 4.36 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct Overall Improvement based on roles. Based on the findings in Table 4.36, the mean value of coach perception ranges from 3.70 to 4.39 while the mean value that of teachers' perception ranges from 3.70 to 4.06. Item with the highest mean value is item 144 (coaching impacted changes in teaching practices) while item with the lowest mean values are item 136 (Coaching impacted changes in the content of the subject taught) and 137 (Coaching impacted changes in ways to increase more concept development into the lessons). This is suggesting that the focus of coaching was not on the content or concept development but rather on changing teaching practices. The findings also suggest that while coaches' views of the impact of coaching on overall improvement is mostly high, teachers' views on overall improvement is mostly moderate.

Table 4.36

Mean values and Standard Deviation on Impact of Coaching on construct Overall Improvement Based on Roles

Coaching has impacted school improvement as follows:

No	Item	Role	N	Mean	SD	Level
136	Changes in the content of the subject taught	Coach	77	3.70	1.065	Moderate
		Teacher	393	3.70	.948	Moderate
137	Changes in ways to increase more concept development into the lessons	Coach	77	4.17	.637	High
		Teacher	393	3.89	.775	Moderate
138	Changes in ways to infuse more conceptual understanding into the lessons	Coach	77	4.18	.663	High
		Teacher	393	3.91	.819	Moderate
139	Changes in ways to make meaning	Coach	77	4.26	.637	High
		Teacher	393	3.94	.757	Moderate
140	Changes in ways to infuse more problem solving into the lesson	Coach	77	4.23	.647	High
		Teacher	393	3.90	.747	Moderate
141	Changes in inquiry or discovery based learning	Coach	77	4.01	.716	High
		Teacher	393	3.86	.764	Moderate
142	Changes in ways to encourage students to pursue intellectual rigor or challenging ideas	Coach	77	3.94	.635	Moderate
		Teacher	393	3.79	.786	Moderate
143	Changes in ways to improve the use of questioning strategies	Coach	77	4.18	.756	High
		Teacher	393	3.94	.773	Moderate
144	Changes in teaching practices	Coach	77	4.39	.610	High
		Teacher	393	4.06	.764	High
145	Changes in ways to increase students' participation in lessons	Coach	77	4.38	.650	High
		Teacher	393	4.06	.774	High
146	Changes in ways to create an environment where students	Coach	77	4.34	.700	High
		Teacher	393	4.01	.756	High
147	Changes in students' learning	Coach	77	4.30	.708	High
		Teacher	393	3.93	.747	Moderate
148	Changes in formative assessment	Coach	77	4.06	.695	High
		Teacher	393	3.84	.755	Moderate
149	Changes in the goals and objectives	Coach	77	4.26	.733	High
		Teacher	393	4.02	.751	High
150	Changes in the goals and objectives	Coach	77	4.27	.662	High
		Teacher	393	3.99	.742	Moderate

N= Number, SD= Standard Deviation

To conclude, based on the perception of teachers and coaches in Selangor and Sabah, the elements of coaching were highly practiced in Malaysian schools except for several instances where data suggest moderate or low practices. Additionally, teachers and coaches also perceived that coaching has high impact on instructional improvement, leadership, CPD, training, learning outcomes and school improvement.

4.3.2 Coaching Knowledge and Skills

Data analysis in this section attempts to provide an answer for research objective 2 based on the following research question:

Research Question 2:

What is the level of coaching knowledge, technical skills and interpersonal skills applied by the coach while coaching and what kind of training should coaches attend to improve coaching skills?

a) Level of Coaching Knowledge and Skills

Items related to the implementation of coaching skills were assessed based on 5 point Likert scale related to frequency of practices with 5 being Always and 1 being Never. Table 4.37 presents the analysis of findings based on mean values and standard deviation.

Based on the analysis in Table 4.37, the mean values of the implementation of coaching skills are between 3.28 to 3.93. This shows that the implementation of coaching skills is moderate with item 119 (Coach understand and respect teachers' decision) and 120 (Modelling a lesson) being the most often implemented practices while item 117 (Engaging the teacher in coaching cycle- pre-conference, observation and post conference) being the least frequently implemented practices. This is suggesting that the implementation of coaching skills needs improvement.

In order to see if there is a difference in the implementation of practices of coaching in the state of Selangor and Sabah, the mean values and standard deviation were compared between the states. Table 4.38 presents the mean and standard deviation of teachers' and coaches' perception on the frequency on the implementation of coaching skills based on states.

Table 4.37

Mean value and Standard Deviation on Implementation of Coaching skills

How often do you engage in the following activities?

No	Implementation of Coaching Knowledge and Skills	Mean	SD	Level
109	Collaborative problem solving	3.72	.894	Moderate
110	Reflective dialogue	3.79	.861	Moderate
111	Analyzing students' work	3.50	.890	Moderate
112	Observations	3.92	.773	Moderate
113	Providing professional development	3.56	.923	Moderate
114	Co-teaching	3.04	1.089	Moderate
115	Co-planning	3.35	1.058	Moderate
116	Attending collaboration meetings	3.28	1.019	Moderate
117	Engaging the teacher in coaching cycle-pre-conference, observation and post conference	3.69	.975	Moderate
118	Provides useful feedback to teachers in improving practices	3.93	.881	Moderate
119	Coach understand and respect teachers' decision	3.93	.873	Moderate
120	Modelling a lesson	3.55	1.051	Moderate

SD= Standard Deviation

Table 4.38 shows the mean value and standard deviation of the perception of teachers and coaches on the implementation of coaching skills based on states. Based on the result of the analysis in Table 4.38, it shows that the mean value of the respondents from Selangor is slightly higher than that of Sabah for all the items. The mean values of Selangor range from 3.15-4.03 while Sabah range from 2.92- 3.87. Nevertheless, the difference between the states mean values were not too significant. The result suggests that teachers and coaches in Selangor have higher views on the implementation of coaching skills. Overall, it can be concluded that, the practice of

coaching skills in both states is of moderate level except for a few instances where the practice is high which is “observation” (item 112) and “provides useful feedback to teachers in improving practices” (item 118). In addition, there is also in an instance where the practice is low which is “co-teaching” (item 114).

Table 4.38

Mean values and Standard Deviation on implementation of coaching skills based on states.

How often do you engage in the following activities?						
No	Item	State	N	Mean	SD	Level
109	Collaborative problem solving	Selangor	237	3.83	.802	Moderate
		Sabah	233	3.61	.968	Moderate
110	Reflective dialogue	Selangor	237	3.87	.778	Moderate
		Sabah	233	3.71	.932	Moderate
111	Analyzing students' work	Selangor	237	3.59	.806	Moderate
		Sabah	233	3.41	.961	Moderate
112	Observations	Selangor	237	4.03	.669	High
		Sabah	233	3.81	.852	Moderate
113	Providing professional development	Selangor	237	3.65	.877	Moderate
		Sabah	233	3.46	.960	Moderate
114	Co-teaching	Selangor	237	3.15	1.113	Moderate
		Sabah	233	2.92	1.053	Low
115	Co-planning	Selangor	237	3.53	1.019	Moderate
		Sabah	233	3.17	1.069	Moderate
116	Attending collaboration meetings	Selangor	237	3.38	1.041	Moderate
		Sabah	233	3.19	.991	Moderate
117	Engaging the teacher in coaching cycle- pre-conference, observation and post conference	Selangor	237	3.79	.866	Moderate
		Sabah	233	3.59	1.068	Moderate
118	Provides useful feedback to teachers in improving practices	Selangor	237	4.01	.781	High
		Sabah	233	3.85	.967	Moderate
119	Coach understand and respect teachers' decision	Selangor	237	4.00	.805	Moderate
		Sabah	233	3.87	.935	Moderate
120	Modelling a lesson	Selangor	237	3.64	1.059	Moderate
		Sabah	233	3.47	1.038	Moderate

N= Number, SD= Standard Deviation

Next, Table 4.39 presents the mean and standard deviation of teachers' and coaches' perception on the implementation of coaching skills based on roles. Based on data analysis in Table 4.39, the mean values of coach perception range between

3.23 to 4.45 whereas mean values of teacher perception range between 3.00 to 3.84. Nevertheless, the overall perception of coaches on their engagement in activities which involved coaching skills is moderate to high level.

Table 4.39

Mean values and Standard Deviation on the Implementation of Coaching Skills Based on Roles

<u>How often do you engage in the following activities?</u>						
No	Item	Role	N	Mean	SD	Level
109	Collaborative problem solving	Coach	77	4.10	.771	High
		Teacher	393	3.64	.898	Moderate
110	Reflective dialogue	Coach	77	4.17	.657	High
		Teacher	393	3.72	.877	Moderate
111	Analyzing students' work	Coach	77	3.69	.748	Moderate
		Teacher	393	3.46	.911	Moderate
112	Observations	Coach	77	4.32	.595	High
		Teacher	393	3.84	.780	Moderate
113	Providing professional development	Coach	77	3.95	.759	Moderate
		Teacher	393	3.48	.934	Moderate
114	Co-teaching	Coach	77	3.23	1.012	Moderate
		Teacher	393	3.00	1.101	Low
115	Co-planning	Coach	77	3.73	.837	Moderate
		Teacher	393	3.28	1.082	Moderate
116	Attending collaboration meetings	Coach	77	3.26	.965	Moderate
		Teacher	393	3.29	1.031	Moderate
117	Engaging the teacher in coaching cycle- pre-conference, observation and post conference	Coach	77	4.22	.837	High
		Teacher	393	3.59	.968	Moderate
118	Provides useful feedback to teachers in improving practices	Coach	77	4.40	.674	High
		Teacher	393	3.84	.888	Moderate
119	Coach understand and respect teachers' decision	Coach	77	4.45	.640	High
		Teacher	393	3.83	.877	Moderate
120	Modelling a lesson	Coach	77	3.88	.973	Moderate
		Teacher	393	3.49	1.055	Moderate

N= Number, SD= Standard Deviation

The analysis shows that coaches think that they have highly implemented collaborative problem solving (item 109), reflective dialogue (item 110), observations (item 112), engage teachers in coaching cycles (item 117), provide useful feedback to teachers (item 118) as well as understand and respect teacher's decision (item 119). Teachers on the other hand think that majority of the practices were moderately implemented except for "co-teaching" where the implementation is low.

b) Training for Coaches

Teachers and coaches also believed that coaches need to be given certain trainings as part of coaching prerequisite to ensure their competency as a coach. Table 4.40 shows the perception of teachers and coaches on their views if coaches need to attend the following trainings on coaching.

Table 4.40
Mean Values and Standard Deviation on Training for Coaching

Coaches should receive the following trainings:

No	Training for Coaching	Mean	SD	Level
78	Adult learning	3.92	.844	Moderate
79	Application of teaching and learning strategies related to content areas	4.16	.767	High
80	Assisting teachers with classroom management	4.01	.894	High
81	Coaching or mentoring adults	4.05	.845	High
82	Conducting effective professional development	4.14	.781	High
83	Effective practices based on content of the subject taught	4.14	.790	High
84	Learning how to manage time and job	4.02	.857	High
85	Specific intervention programs based on subject	4.09	.794	High
86	Use of assessment	4.06	.788	High
87	Working with resistant/uncooperative colleagues	4.03	.871	High

SD= Standard Deviation

Table 4.40 presents the mean and standard deviation of teachers' and coaches' perception on the appropriate training for coaching. Based on data analysis in Table 4.40, teachers and coaches highly agree that coaches should attend the

above listed trainings. The mean values are between 3.92 (SD= 0.844) to 4.16 (SD= .767) with item 79 (Application of teaching and learning strategies related to content areas) having the highest mean and item 78 (adult learning) having the lowest mean.

The findings also show that teachers see application of teaching and learning strategies is highly important to help them improve their practices. However, data analysis also suggests that teachers and coaches believe that trainings on adult learning is least relevant to their professional development. Overall, the findings suggest that the existence of awareness on the need of getting trainings on knowledge related to their responsibilities as coaches. The trainings are important in order for coaches develop their competency to help support teachers in their classroom practices and thus there is a need for a careful planning and consideration in providing the type of trainings for coaches.

Table 4.41 presents the mean and standard deviation of teachers' and coaches' opinion on the type of training for coaches based on states. Based on the analysis in Table 4.41, the results show that the perception of teachers and coaches in Selangor ranges between mean value 3.91 to 4.16 while the perception of teachers and coaches from Sabah ranges between mean value 3.93 to 4.21.

The finding indicates that teachers and coaches from Sabah has a slightly higher perception on the type of training for coaches as compared to teachers and coaches from Selangor. The analysis also indicates that the perception of respondents from Selangor were mostly moderate on majority of the item as compared to respondents from Sabah who voted high on all the items except for item 78 (adult learning).

Table 4.41

Mean values and Standard Deviation on Training for Coaching based on States

Coaches should receive the following trainings:

		State	N	Mean	SD	Level
78	Adult learning	Selangor	237	3.91	.842	Moderate
		Sabah	233	3.93	.848	Moderate
79	Application of teaching and learning strategies related to content areas	Selangor	237	4.16	.725	High
		Sabah	233	4.15	.809	High
80	Assisting teachers with classroom management	Selangor	237	3.97	.892	Moderate
		Sabah	233	4.04	.897	High
81	Coaching or mentoring adults	Selangor	237	3.99	.859	Moderate
		Sabah	233	4.10	.829	High
82	Conducting effective professional development	Selangor	237	4.08	.738	High
		Sabah	233	4.21	.818	High
83	Effective practices based on content of the subject taught	Selangor	237	4.09	.757	High
		Sabah	233	4.19	.821	High
84	Learning how to manage time and job	Selangor	237	4.00	.813	Moderate
		Sabah	233	4.04	.902	High
85	Specific intervention programs based on subject	Selangor	237	3.98	.776	Moderate
		Sabah	233	4.19	.800	High
86	Use of assessment	Selangor	237	3.98	.750	Moderate
		Sabah	233	4.15	.817	High
87	Working with resistant/uncooperative colleagues	Selangor	237	3.96	.872	Moderate
		Sabah	233	4.14	.816	High

N= Number, SD= Standard Deviation

Next, Table 4.42 presents the mean and standard deviation of teachers' and coaches' perception on training for coaches based on roles. Based on the result of the analysis, the mean values of coach perception range between 4.10 to 4.44 as compared to teachers with mean values range between 3.85 to 4.11. This seems to suggest that coaches realized the importance of training in helping them to carry out their roles and responsibilities as a coach. The top three training with the highest mean value is conducting effective professional development (4.44), followed by specific intervention program based on subject (4.43) and application of teaching and learning strategies related to content areas (4.40).

Table 4.42

Mean values and Standard Deviation on Training for Coaching Based on Roles

Coaches should receive the following trainings:

Item	Role	N	Mean	SD	Level
78 Adult learning	Coach	77	4.29	.825	High
	Teacher	393	3.85	.830	Moderate
79 Application of teaching and learning strategies related to content areas	Coach	77	4.40	.748	High
	Teacher	393	4.11	.762	High
80 Assisting teachers with classroom management	Coach	77	4.04	.966	High
	Teacher	393	4.00	.881	Moderate
81 Coaching or mentoring adults	Coach	77	4.29	.825	High
	Teacher	393	4.00	.842	Moderate
82 Conducting effective professional development	Coach	77	4.44	.678	High
	Teacher	393	4.09	.787	High
83 Effective practices based on content of the subject taught	Coach	77	4.31	.831	High
	Teacher	393	4.11	.778	High
84 Learning how to manage time and job	Coach	77	4.18	.899	High
	Teacher	393	3.99	.847	Moderate
85 Specific intervention programs based on subject	Coach	77	4.43	.658	High
	Teacher	393	4.02	.802	High
86 Use of assessment	Coach	77	4.34	.700	High
	Teacher	393	4.01	.794	High
87 Working with resistant/uncooperative colleagues	Coach	77	4.10	.954	High
	Teacher	393	4.01	.854	High

Note: N= Number, SD= Standard Deviation

However, trainings with the lowest mean based on perception of teachers is item 78 “adult learning” (mean=3.85) followed by item 80 “assisting teachers with classroom management” (mean= 4.00) and item 81 “coaching or mentoring adults” (mean= 4.00) which is suggesting that teachers perceive adult learning, assisting teachers with classroom management and coaching and mentoring adults as the least significant training should be given to coaches. To conclude, the level of coaching knowledge and skills demonstrated or applied by the coach were moderate to high.

However, coaches and teacher highly agree that coaches should receive majority of the trainings listed in order to improve coaching knowledge and skills.

4.3.3. Coaching Implementation

Data analysis in this section is for the purpose of answering research question 3 as follows:

What is the phase of coaching implementation (initiation, implementation, institutionalization) and how is it reflected in the level of coaching activities and school climate of Malaysian schools?

a) Coaching Implementation Phase

The implementation of coaching in school is measured based on the three phases of change as suggested by Fullan (1991) namely initiation, implementation and institutionalization. To answer this research question, the items were set based on 3 point Likert scale according to the phases of change with 1= initiation, 2=implementation and 3=institutionalization. Analysis of findings were based on mean and standard deviation. Additionally, analysis of mean and standard deviation was also carried to see if there is a difference in the level of implementation of coaching based on states and roles.

Table 4.43 presents the mean and standard deviation of teachers' and coaches' perception on the phase of coaching implementation in schools. Based on the findings in Table 4.43, coaching implementation phase was measured based on five elements: i) shared and supportive leadership; ii) shared values and vision; iii) collective learning application; iv) shared personal practices and v) supportive condition. Based on the result, the mean values of the phase of coaching implementation are between 1.82 (SD= .905) to 2.28 (0.887). The scores are

interpreted as follows: 1-1.66= initiation, 1.67- 2.32=implementation and 2.33-3.00 = institutionalization.

Table 4.43
Mean values and Standard Deviation on Phase of Coaching Implementation Phase

Phases of Implementation				
Item		Mean	SD	Phase
96	Shared and supportive leadership	1.82	.905	Implementation
97	Shared values and vision	2.29	.856	Implementation
98	Collective learning and application	2.28	.887	Implementation
99	Shared personal practice	1.89	.653	Implementation
100	Supportive condition	2.24	.615	Implementation

SD= Standard Deviation

Based on the findings, it can be concluded that all the five phases of the implementation of coaching in schools are still in the implementation phase and has not yet been institutionalized or become a culture within the school. This implies that teachers and coaches would have to work harder in the future to ensure that coaching finally become as part of teacher practices.

Table 4.44 presents the mean and standard deviation of teachers' and coaches' perception on the phase of coaching implementation in schools based on states. The result of the analysis indicates that there is not much difference in the mean value of the implementation of coaching between the two states based on all the items measured. However, the mean value of Sabah is slightly higher than that of Selangor although the difference is very small.

For shared and supportive leadership, the respondents from Selangor have slightly higher views (mean= 1.79, S=.899) as compared to respondents from Sabah (mean= 1.85, SD=.912). For shared values and vision, the respondents from Sabah have slightly higher views (mean= 2.30, S=.874) as compared to respondents from Selangor (mean= 2.28, SD=.839). For collective learning and application, the respondents from Sabah have slightly higher views (mean= 2.35, S=.868) as

compared to respondents from Selangor (mean= 2.22, SD=.902). Similarly, for supportive condition, the respondents from Sabah have slightly higher views (mean= 2.27, S=.630) as compared to respondents from Selangor (mean= 2.21, SD=.600). On the other hand, for Shared personal practice, Selangor has a slightly higher mean value with 1.93, SD=.614 as compared to Sabah with mean value 1.85, SD=.690.

Table 4.44

Mean values and Standard Deviation on Coaching Implementation Phase Based on States

No	Phase of Implementation	State	N	Mean	SD	Level
96	Shared and supportive leadership	Selangor	237	1.79	.899	Implementation
		Sabah	233	1.85	.912	Implementation
97	Shared values and vision	Selangor	237	2.28	.839	Implementation
		Sabah	233	2.30	.874	Implementation
98	Collective learning and application	Selangor	237	2.22	.902	Implementation
		Sabah	233	2.35	.868	Implementation
99	Shared personal practice	Selangor	237	1.93	.614	Implementation
		Sabah	233	1.85	.690	Implementation
100	Supportive condition	Selangor	237	2.21	.600	Implementation
		Sabah	233	2.27	.630	Implementation

Note: N= Number, SD= Standard Deviation

Therefore, it can be concluded that the implementation of coaching in both states are similar with minimal differences. Overall, it is still in the implementation phase and has yet to become a school culture.

b) Level of Coaching Practices Implemented in Malaysian Schools

The implementation phase of coaching is also reflected in the level of coaching practices which are implemented in Malaysian schools. Table 4.45 presents the mean and standard deviation of teachers' and coaches' perception on the implementation of coaching practices in schools.

Table 4.45
Mean Values and Standard Deviation on Implementation of Coaching Practices in School

How often do you perform any of the following activities:				
No	Item	Mean	SD	Interpretation
101	Working one-on-one with the coach focusing on lesson	3.61	.948	Moderate
102	Working one-on-one focusing on assessment planning	3.59	.919	Moderate
103	Working one-on-one with the coach focusing on instructional strategy	3.82	.857	Moderate
104	Working one-on-one with the coach focusing on classroom management	3.57	.957	Moderate
105	Plan whole staff development	3.14	1.090	Moderate
106	Deliver whole staff development	3.21	1.092	Moderate
107	Work with small groups of teachers focusing on teacher instructional practices	3.66	.943	Moderate
108	Work with small groups of teachers focusing on classroom management	3.46	1.017	Moderate
109	Collaborative problem solving	3.72	.894	Moderate
110	Reflective dialogue	3.79	.861	Moderate
111	Analyzing students' work	3.50	.890	Moderate
112	Observations	3.92	.773	Moderate
113	Providing professional development	3.56	.923	Moderate
114	Co-teaching	3.04	1.089	Moderate
115	Co-planning	3.35	1.058	Moderate
116	Attending collaboration meetings	3.28	1.019	Moderate
117	Engaging the teacher in coaching cycle- pre-conference, observation and post conference	3.69	.975	Moderate
118	Provides useful feedback to teachers in improving practices	3.93	.881	Moderate
119	Coach understand and respect teachers' decision	3.93	.873	Moderate
120	Modelling a lesson	3.55	1.051	Moderate

Note: N= Number, SD= Standard Deviation

The findings in Table 4.45 indicate that the implementation of coaching practices is moderate with mean value ranges from 3.04 to 3.82. Item 114 had the lowest mean value as they had not really been practiced whereas item 103 had the highest mean values indicates that majority of the time, teachers and coaches discuss on teaching strategy. Other items are almost similarly practiced with very minimal differences in the mean values.

Next, Table 4.46 illustrates the result of the analysis of the implementation of coaching practices based on states. Based in the analysis of findings in Table 4.46, the mean values of teachers and coaches in Selangor range between 3.15 to 4.03 whereas the mean value of teachers and coaches from Sabah range between 3.12 to 3.87. This is suggesting that the implementation of coaching practices in Selangor is slightly higher than the implementation of coaching practices in Sabah. The findings also show that collaboration (item 112) and providing useful feedback to teachers in improving practices (item 118) are highly practiced in the states of Selangor. However, the practice of co-teaching (item 114) in Sabah is low.

Table 4.46
Mean values and Standard Deviation on Implementation of Coaching Practices Based on States

How often do you perform the following activities?						
No	Item	State	N	Mean	SD	Level
101	Working one-on-one with the coach focusing on lesson	Selangor	237	3.76	.873	Moderate
		Sabah	233	3.46	1.000	Moderate
102	Working one-on-one focusing on assessment planning	Selangor	237	3.68	.872	Moderate
		Sabah	233	3.50	.956	Moderate
103	Working one-on-one with the coach focusing on instructional strategy	Selangor	237	3.88	.804	Moderate
		Sabah	233	3.75	.904	Moderate
104	Working one-on-one with the coach focusing on classroom management	Selangor	237	3.71	.865	Moderate
		Sabah	233	3.42	1.023	Moderate
105	Plan whole staff development	Selangor	237	3.15	1.057	Moderate
		Sabah	233	3.12	1.125	Moderate
106	Deliver whole staff development	Selangor	237	3.24	1.072	Moderate
		Sabah	233	3.18	1.114	Moderate
107	Work with small groups of teachers focusing on teacher instructional practices	Selangor	237	3.65	.915	Moderate
		Sabah	233	3.67	.973	Moderate
108	Work with small groups of teachers focusing on classroom management	Selangor	237	3.51	.959	Moderate
		Sabah	233	3.41	1.072	Moderate
109	Collaborative problem solving	Selangor	237	3.83	.802	Moderate
		Sabah	233	3.61	.968	Moderate

110	Reflective dialogue	Selangor	237	3.87	.778	Moderate
		Sabah	233	3.71	.932	Moderate
111	Analyzing students' work	Selangor	237	3.59	.806	Moderate
		Sabah	233	3.41	.961	Moderate
112	Observations	Selangor	237	4.03	.669	High
		Sabah	233	3.81	.852	Moderate
113	Providing professional development	Selangor	237	3.65	.877	Moderate
		Sabah	233	3.46	.960	Moderate
114	Co-teaching	Selangor	237	3.15	1.113	Moderate
		Sabah	233	2.92	1.053	Low
115	Co-planning	Selangor	237	3.53	1.019	Moderate
		Sabah	233	3.17	1.069	Moderate
116	Attending collaboration meetings	Selangor	237	3.38	1.041	Moderate
		Sabah	233	3.19	.991	Moderate
117	Engaging the teacher in coaching cycle- pre-conference, observation and post conference	Selangor	237	3.79	.866	Moderate
		Sabah	233	3.59	1.068	Moderate
118	Provides useful feedback to teachers in improving practices	Selangor	237	4.01	.781	High
		Sabah	233	3.85	.967	Moderate
119	Coach understand and respect teachers' decision	Selangor	237	4.00	.805	Moderate
		Sabah	233	3.87	.935	Moderate
120	Modelling a lesson	Selangor	237	3.64	1.059	Moderate
		Sabah	233	3.47	1.038	Moderate

Note: N= Number, SD= Standard Deviation

Therefore, based on the analysis, we could see the level of coaching practices implemented in Malaysian schools are moderate with one or two instances which a difference in the practice (either high or low) depending on the states. Next, the following data analysis reveals the effect of coaching practices on school climate in Malaysian schools based on the perceptions of teachers and coaches.

c) Malaysian School Climate

The phase of coaching implementation is also reflected in Malaysian school climate. Table 4.47 presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct School Climate.

Table 4.47

Mean values and Standard Deviation the Impact of Coaching on Construct School Climate

How often did you do the following activities?				
No	Item	Mean	SD	Level
121	Use best practices in the classroom	3.92	.770	Moderate
122	Share ideas and resources with each other	3.96	.792	Moderate
123	Hold all students to high expectations	4.03	.783	High
124	Work collaboratively with colleagues	4.02	.785	High
125	Reflective towards own practices	4.15	.720	High
126	Support innovative ideas in instruction	4.11	.753	High
127	Collaborative problem solving	3.83	.871	Moderate
128	Reflective dialogue	3.88	.875	Moderate
129	Analyzing students' work	3.52	.899	Moderate
130	Observations	3.88	.800	Moderate
131	Providing professional development	3.55	.940	Moderate
132	Co-teaching	3.06	1.083	Moderate
133	Co-planning	3.38	1.013	Moderate
134	Engaging teacher in coaching cycles (pre-conference, observation and post-conference)	3.64	1.002	Moderate
135	Modelling a lesson	3.38	1.066	Moderate

Note: N= Number, SD= Standard Deviation

Table 4.47 looks at the result of the analysis of school climate with the implementation of coaching. In terms school or working climate, the frequency of both teacher and coaches practice of the various activities related to coaching were moderate with the mean value between 3.06 (SD=1.083) to 4.15 (SD= .753). This is suggesting that there are room for improvement and both teachers and coaches could improve on the frequency of the various coaching practices to improve the school climate.

Table 4.48 on the other hand, presents the mean and standard deviation of teachers' and coaches' perception on the impact of coaching on construct School Climate based on states. Comparatively, by looking at the result of the analysis based on states as shown in Table 4.48, the mean values of Selangor range between 3.18 to 4.19 whereas the mean values that of Sabah range between 2.95 to 4.10. Again, this

is suggesting that the school climate in the state of Selangor has higher practice of coaching if compared to school climate in Sabah.

Table 4.48

Mean values and Standard Deviation of the impact of coaching on construct School Climate based on states

How often did you do the following activities?						
No	Item	State	N	Mean	SD	Level
121	Use best practices in the classroom	Selangor	237	4.03	.695	High
		Sabah	233	3.81	.826	Moderate
122	Share ideas and resources with each other	Selangor	237	4.00	.673	Moderate
		Sabah	233	3.91	.895	Moderate
123	Hold all students to high expectations	Selangor	237	4.04	.721	High
		Sabah	233	4.01	.843	High
124	Work collaboratively with colleagues	Selangor	237	4.09	.692	High
		Sabah	233	3.96	.865	Moderate
125	Reflective towards own practices	Selangor	237	4.19	.667	High
		Sabah	233	4.10	.768	High
126	Support innovative ideas in instruction	Selangor	237	4.13	.654	High
		Sabah	233	4.09	.844	High
127	Collaborative problem solving	Selangor	237	3.94	.770	Moderate
		Sabah	233	3.71	.951	Moderate
128	Reflective dialogue	Selangor	237	3.97	.770	Moderate
		Sabah	233	3.79	.963	Moderate
129	Analyzing students' work	Selangor	237	3.62	.791	Moderate
		Sabah	233	3.42	.989	Moderate
130	Observations	Selangor	237	4.00	.745	Moderate
		Sabah	233	3.76	.837	Moderate
131	Providing professional development	Selangor	237	3.62	.878	Moderate
		Sabah	233	3.48	.996	Moderate
132	Co-teaching	Selangor	237	3.18	1.075	Moderate
		Sabah	233	2.95	1.082	Low
133	Co-planning	Selangor	237	3.51	.985	Moderate
		Sabah	233	3.24	1.024	Moderate
134	Engaging teacher in coaching cycles (pre-conference, observation and post-conference)	Selangor	237	3.76	.955	Moderate
		Sabah	233	3.51	1.034	Moderate
135	Modelling a lesson	Selangor	237	3.45	1.087	Moderate
		Sabah	233	3.31	1.042	Moderate

Note: N= Number, SD= Standard Deviation

Based on the findings it can be interpreted that the school climate which is based on the practice of coaching is moderate to high in both states. However, the practice of co-teaching in schools in Sabah is moderately low. Comparatively, in Selangor co-teaching is the least practiced item with mean value 3.18, SD= 1.075. Similarly, in Sabah, co-teaching is the least practiced with mean value 2.95, SD=1.082 (low).

Thus, it can be concluded that the practice of coaching in Malaysian schools is at the implementation stage and has not yet become as part of the school culture. This is also reflected in the moderate level of coaching practices been implemented as well as the school climate.

4.4 Inferential Statistic

This section will discuss on the inferential statistics which will answer research question 4, 5, 6 and 7. The aim of applying inferential statistics is to explore the relationship between the different constructs. For that purpose, data analysis will be carried out using Partial Least Square Structural Equation Modelling (PLS SEM) as suggested by Hair et al (2014) and Ramayah et. al, (2018).

The study is an exploratory research as it involves exploring the relationship of various variables with the practice of coaching. It is not trying to confirm a specific theory neither a specific measurement model but rather a combination of several theories and several measurement models which are fitted into the conceptual framework of the study. In addition, it is also an attempt to explore if the measurement model used in foreign context or curriculum would yield a similar result if applied in the local Malaysian context or curriculum. Coaching is still new to the Malaysian curriculum and has only been implemented for 5 years and thus far

the existing local literature available is very little. Therefore, PLS SEM is most appropriate to be used for data analysis.

PLS-SEM is an exploratory methodology which does not require normal data distribution and accommodates both small sample sizes (Chin & Newsted, 1999) as well as bigger sample sizes (Hair et. al., 2014). The PLS approach is suitable for prediction-oriented objective. It also provides R^2 values and indicates the significance of relationships among constructs in order to demonstrate how well the model is performing. The study seeks to explore the relationship between the different variables involved in coaching either directly or indirectly.

One of the main advantages of PLS-SEM is that it can handle numerous independent variables at the same time, even when there is a display of multicollinearity (Hair, Ringle, & Sarstedt, 2011). It is appropriate to be used for the study for the following reasons:

- i. PLS SEM does not make assumption on data distribution, thus, the analysis could be carried out even though data is normally distributed
- ii. There are many constructs and many indicators involved in the study with more than 100 indicators involved. Due to the complexity of the model with 10 constructs and 150 indicators, it is most appropriate to use PLS SEM as suggested by Ramayah et al (2017)
- iii. The objectives of the study are prediction oriented (hypothesis)
- iv. Reporting of data analysis using PLS SEM includes the reporting on measurement and structural model (Hair, et. al., 2014; Ramayah et. al., 2017).

Another reason why PLS was chosen for the purpose of data analysis is because if the result of Mardia Multivariate Analysis. The cut off point for the Mardia Multivariate Analysis is Skewness ± 1 ; Kurtosis ± 20 . The result of Mardia

multivariate variable for the variables of the study shows that Skewness equals to Beta= 23.60023, p= 1848.6847 whereas kurtosis value equals to Beta=292.17435, p=34.9141. Since the multivariate analysis result is not normal, therefore it is appropriate to use PLS SEM for the purpose of data analysis.

4.5 Measurement Model

Analysis of measurement model and structural model are two important aspects which should be reported at the initial stage of data analysis (Henseler et al., 2010). This section will provide an explanation of what is measurement model. It is the first step to be taken in data analysis using PLS-Path Modelling approach which is carried out in the attempt to analyse the extent to which the research items would measure what it is supposed to measure, the accuracy of construct representation and fulfilling the validity and reliability. Assessment of measurement model involves internal consistency, indicator reliability, construct validity as well as convergent and discriminant validity.

4.5.1 Internal Consistency.

Since internal consistency is a very important aspect in instrument measurement, therefore it requires careful consideration. The internal consistency can be assessed based on the value of Cronbach's Alpha (Urbach, Smolnik and Riempp, 2010). The high alpha values indicate that the item in the construct has similar meaning and value in explaining a certain construct. The accepted value of alpha Cronbach should be more than 0.6 (Nunnally & Bernstein, 1994).

Based on the analysis in Table 4.49, the Cronbach's alpha value for all the constructs is between 0.617 to 0.975. Therefore, internal consistency for all the constructs have been achieved. Other aspects of internal consistency which needs to

be considered is the value of composite reliability (Chin, 1998; Hulland, 1999; Hair et al, 2014, Ramayah et al, 2018). The composite reliability value should exceed 0.7 as recommended by Nunnally, 1994.

Based on table 4.49, the Cronbach's alpha and composite reliability exceeds the specified threshold value except for construct implementation phase. Many other researchers have encountered similar problems with Cronbach's alpha for various assumptions (Ramayah, et al, 2018) For that matter, it is suggested to look at the value of composite reliability (CR) which is another measure for internal consistency reliability (McNeish, 2017, Ramayah et al, 2018). The guidelines in establishing CR would be: CR > 0.90 (Not Desirable), CR > 0.7- 0.9 (Satisfactory), CR >0.6 (for exploratory research). Based on the result in Table 4.49, the CR value for all the variable meets the satisfactory threshold except for implementation phase.

Table 4.49
Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) for all Constructs

	Cronbach's Alpha	rho_A	CR	AVE
Collaboration	0.903	0.909	0.923	0.634
Feedback	0.876	0.883	0.923	0.801
Reflect	0.897	0.898	0.928	0.764
Support	0.842	0.861	0.894	0.681
Trust	0.910	0.914	0.933	0.736
Instruc.Improv	0.975	0.975	0.976	0.643
Leadership	0.952	0.955	0.957	0.616
CPD	0.944	0.952	0.952	0.648
Learning Outcome	0.950	0.952	0.961	0.833
Coaching Implementation	0.957	0.959	0.961	0.609
ImplementationPhase	0.617	0.626	0.794	0.562
Working Climate	0.939	0.941	0.947	0.600
Overall Impact	0.969	0.971	0.972	0.701
Training for Coaching (type)	0.948	0.961	0.956	0.684
FreqTrainig	0.935	0.940	0.946	0.688

Note: CR= composite reliability, AVE= average variance extracted

4.5.2 Convergent Validity

Convergent validity is being assessed based on factor loadings and AVE. Convergent validity takes place when individual indicators reflect a construct in comparison to indicators measuring other constructs (Urbach & Ahleman, 2010). Hair et al., (2014), refers to the value of the construct as AVE. AVE is a grand mean value of the squared loadings of all the indicators which are associated with an individual construct. In other words, it is a degree to which a latent construct explains the variance of its indicators (Hair et al, 2017).

Table 4.50

Loading values for each indicator and the AVE for construct Collaboration, Feedback, Reflect, Support and Trust

Construct	Items	Loading	CR	AVE
Collaboration	Collab1	0.749	0.923	0.634
	Collab3	0.795		
	Collab4	0.765		
	Collab5	0.700		
	Collab6	0.855		
	Collab7	0.852		
	Collab8	0.843		
	Feedback	Fdbck10		
Fdbck11		0.865		
Fdbck9		0.903		
Reflect	Rflct12	0.879	0.928	0.764
	Rflct13	0.911		
	Rflct14	0.843		
	Rflct15	0.863		
Support	Supp16	0.883	0.894	0.681
	Supp17	0.871		
	Supp18	0.719		
	Supp20	0.815		
Trust	Trust21	0.811	0.933	0.736
	Trust22	0.875		
	Trust23	0.887		
	Trust24	0.863		
	Trust25	0.850		

Note: CR= composite reliability, AVE= average variance extracted

In order to achieve adequate convergent validity, each construct should account for at least 50 percent of the assigned indicators' variance ($AVE \geq 0.50$) (Hair et al, 2017, Ramayah et al, 2018). Table 4.50 illustrates the result of loading

values for all the indicators and the AVE for construct Collaboration, Feedback, Reflect, Support and Trust. For construct Collaboration, all the items load above 0.7 with CR 0.9 and AVE 0.634. As for construct Feedback, all the items load above 0.8 with CR above 0.9 and AVE 0.801 whereas for construct Reflect all the items load above 0.8 with CR above 0.9 and AVE 0.764.

As for construct Support all the items load above 0.7 with CR above 0.8 and AVE 0.681 whereas for construct Trust all the items load above 0.8 with CR above 0.9 and AVE 0.736. All the other items were above the acceptable value, therefore none of the items were deleted from the measurement model. Next, Table 4.51 illustrates the result of loading values for all the indicators and the AVE for construct Instructional Improvement.

Table 4.51
Loading values for each indicator and the AVE for construct Instructional Improvement

Construct	Items	Loading	CR	AVE
Instruc.Improv	ImproveClassMngmnt46	0.821	0.976	0.643
	ImproveClassMngmnt47	0.773		
	ImproveClassMngmnt48	0.736		
	ImprvAssmnt42	0.750		
	ImprvAssmnt43	0.748		
	ImprvAssmnt44	0.778		
	ImprvAssmnt45	0.761		
	ImprvContent38	0.830		
	ImprvContent39	0.802		
	ImprvContent40	0.745		
	ImprvContent41	0.818		
	ImprvPlanning26	0.725		
	ImprvPlanning27	0.786		
	ImprvPlanning28	0.844		
	ImprvPlanning29	0.818		
	ImprvPlanning30	0.842		
	ImprvPlanning31	0.851		
	ImprvPlanning32	0.863		
	ImprvPlanning33	0.816		
	ImprvPlanning34	0.801		
ImprvPlanning35	0.840			
ImprvPlanning36	0.840			
ImprvPlanning37	0.827			

Note: CR= composite reliability, AVE= average variance extracted

Table 4.51 illustrates the result of loading values for all the indicators and the AVE for construct Instructional Improvement. For construct Instructional Improvement, all the items load above 0.7 with CR 0.9 and AVE 0.643. All the items were above the acceptable value, therefore none of the items were deleted from the measurement model.

Table 4.52

Loading values for each indicator and the AVE for construct Leadership and CPD

Construct	Items	Loading	CR	AVE
Leadership	LeaderColegColab49	0.798	0.957	0.616
	LeaderColegColab50	0.748		
	LeaderColegColab51	0.739		
	LeaderColegColab52	0.861		
	LeaderSocialChange63	0.806		
	LeaderSocialChange64	0.744		
	LeaderTrustSupp53	0.687		
	LeaderTrustSupp54	0.795		
	LeaderTrustSupp55	0.819		
	LeaderTrustSupp56	0.798		
	LeaderTrustSupp57	0.768		
	LeaderVisionNRespon60	0.748		
	LeaderVisionNRespon61	0.805		
	LeaderVisionNRespon62	0.855		
CPD	CPDKnow65	0.833	0.952	0.648
	CPDKnow66	0.861		
	CPDKnow67	0.812		
	CPDKnow69	0.476		
	CPDKnow70	0.791		
	CPDMotivNsuppo71	0.826		
	CPDMotivNsuppo72	0.870		
	CPDMotivNsuppo73	0.825		
CPDMotivNsuppo74	0.840			

Note: CR= composite reliability, AVE= average variance extracted

Table 4.52 illustrates the result of loading values for all the indicators and the AVE for construct Leadership and CPD. For construct Leadership, all the items load above 0.6 with CR 0.9 and AVE 0.616. As for construct CPD all the items load above 0.7 with CR above 0.9 and AVE 0.648. However, loading for item CPD69 was 0.476 but the item was not deleted because loading above 0.4 is acceptable if the AVE scores of greater than 0.5 (Hulland, 1999). All the other items were above the

acceptable value, therefore none of the other items were deleted from the measurement model.

Table 4.53

Loading values for each indicator and the AVE for construct Learning Outcome, TypeTraining and FreqTraining

Construct	Items	Loading	CR	AVE
Learning Outcome	LngOutcome77	0.916	0.961	0.833
	LngOutcome78	0.891		
	LngOutcome79	0.912		
	LngOutcome80	0.919		
	LngOutcome81	0.925		
TypeTraining	Training82	0.743	0.956	0.684
	Training83	0.836		
	Training84	0.753		
	Training85	0.854		
	Training86	0.896		
	Training87	0.888		
	Training88	0.829		
	Training89	0.878		
	Training90	0.865		
	Training91	0.705		
FreqTrainig	FreqTraining92	0.720	0.946	0.688
	FreqTraining93	0.837		
	FreqTraining94	0.854		
	FreqTraining95	0.876		
	FreqTraining96	0.796		
	FreqTraining97	0.840		
	FreqTraining98	0.838		
	FreqTraining99	0.865		

Note: CR= composite reliability, AVE= average variance extracted

Table 4.53 illustrates the result of loading values for all the indicators and the AVE for construct Learning Outcome, TypeTraining and FreqTraining. For construct Learning Outcome, all the items load above 0.8 with CR 0.9 and AVE 0.833. As for construct Types of Training all the items load above 0.7 with CR above 0.9 and AVE 0.684. For construct Frequency of Training all the items load above 0.7 with CR above 0.9 and AVE 0.688. All the items were above the received value, therefore none of the items were deleted from the measurement model.

Table 4.54

Loading values for each indicator and the AVE for Constructs Implementation Phase and Implementation

Construct	Items	Loading	CR	AVE
ImplementationPhase (2 deleted items)	implementPhase102	0.784	0.794	0.562
	implementPhase103	0.707		
	implementPhase104	0.757		
Implementation	Implement105	0.789	0.961	0.609
	Implement106	0.787		
	Implement107	0.838		
	Implement108	0.788		
	Implement111	0.753		
	Implement112	0.744		
	Implement113	0.833		
	Implement114	0.833		
	Implement115	0.762		
	Implement116	0.735		
	Implement117	0.756		
	Implement119	0.734		
	Implement121	0.815		
	Implement122	0.823		
Implement123	0.774			
Implement124	0.710			

Note: CR= composite reliability, AVE= average variance extracted

Table 4.54 illustrates the result of loading values for all the indicators and the AVE for construct Implementation Phase and Implementation. For construct implementation phase, all the items load above 0.7 with CR 0.794 and AVE 0.562. Two items were below 0.4 and were deleted from the measurement model. As for construct coaching implementation, all the items load above 0.7 with CR above 0.9 and AVE 0.609. Therefore, all the items in coaching implementation were retained.

Table 4.55 illustrates the result of loading values for all the indicators and the AVE for construct School Climate and Overall Impact. For construct school climate, all the items load above 0.7 with CR 0.947 and AVE 0.600. Two items (item 136 & 137) were below 0.5 and were deleted from the measurement model to increase the value of AVE. As for construct overall impact, all the items load above 0.6 with CR above 0.9 and AVE 0.701. Based on the data analysis, some of the indicators were

deleted due to low loadings. Subsequently, all the indicators achieved the minimum value of the threshold and therefore convergent validity is achieved.

Table 4.55

Loading values for each indicator and the AVE for Constructs School Climate and Overall Impact

Construct	Items	Loading	CR	AVE
School Climate (2items deleted)	climate125	0.780	0.947	0.600
	climate126	0.814		
	climate127	0.746		
	climate128	0.823		
	climate129	0.790		
	climate130	0.798		
	climate131	0.820		
	climate132	0.798		
	climate133	0.721		
	climate134	0.737		
	climate135	0.704		
	climate138	0.748		
	Overall Impact	ImpactAims153		
ImpactAims154		0.871		
ImpactClassManag149		0.863		
ImpactClassManag150		0.860		
ImpactClassManag151		0.840		
ImpactContent140		0.686		
ImpactContent141		0.846		
ImpactContent142		0.841		
ImpactContent143		0.853		
ImpactStrategy144		0.862		
ImpactStrategy145		0.821		
ImpactStrategy146		0.828		
ImpactStrategy147		0.862		
ImpactStrategy148		0.869		
impactAssessment152		0.802		

Note: CR= composite reliability, AVE= average variance extracted

4.5.3 Discriminant Validity

Discriminant Validity is measured based on Fornell Larcker criterion, cross-loading as well as HeteroMonotrait (HTMT) assessment.

4.5.3.1. Fornell Larcker Assessment

For Fornell and Larcker’s criterion, a latent variable should explain better the variance on its own indicators than the variance of other latent variables. The AVE of a latent variable should be higher than the squared correlation between the latent variable and all other variables or the square root of AVE on the diagonal should be higher than the correlation on the off-diagonal (Ramayah et al., 2018).

Based on data analysis of the study as presented in Table 4.46, Table 4.47, Table 4.48, Table 4.49, Table 4.50, Table 4.51 and Table 4.52, some of the values of Fornell Larcker load higher on the latent variable. This is probably because the construct has smaller number of indicator (Henseler et al., 2014). Empirical evidence suggests that in certain circumstances, Fornell Larcker criterion is not effective in determining discriminant validity (Henseler et al. 2014; Ronkko & Evermann 2013).

Table 4.56

Fornell Larcker criterion for CPD, Collaboration, Feedback, Instructional Improvement, leadership, learning outcome, reflect, support and trust

	CPD	Coll	Fbck	Insim	Lead	LO	Ref	Supp	Trus
CPD	0.805								
Coll	0.726	0.796							
Fback	0.734	0.772	0.895						
Insim	0.827	0.783	0.783	0.802					
Lead	0.860	0.793	0.754	0.870	0.785				
LO	0.805	0.670	0.700	0.790	0.780	0.913			
Ref	0.725	0.767	0.815	0.764	0.755	0.674	0.874		
Supp	0.765	0.793	0.824	0.818	0.796	0.714	0.842	0.825	
Trust	0.720	0.683	0.749	0.742	0.721	0.654	0.731	0.757	0.858

CPD= Continuous Professional Development, Coll= Collaboration, Fbck= Feedback, Insim= Instructional Improvement, Lead- Leadership, LO= Learning Outcome, Ref= Reflect, Supp= Support, Trus= Trust

Based on the analysis in Table 4.56, Fornell Larcker criterion for leadership load higher on instructional improvement and not on its own construct. Similarly, construct Support loads the highest on construct Reflect. Cross-loadings and HTMT

values were also assessed in the next section in order to establish discriminant validity.

Based on the analysis in Table 4.57, Fornell Larcker criterion for construct Support load higher on construct Reflect and not on its own construct. Cross-loadings and HTMT values were also assessed in the next section in order to establish discriminant validity.

Table 4.57

Fornell Larcker criterion for construct feedback, Frequency of training, Reflect, support, Trust, type of training and collaboration

	Fback	FreqTr	Ref	Supp	Trust	TypeTr
Fback	0.895					
FreqTr	0.307	0.829				
Reflect	0.816	0.243	0.874			
Support	0.819	0.290	0.832	0.825		
Trust	0.747	0.280	0.728	0.752	0.858	
TypeTr	0.347	0.115	0.302	0.371	0.320	0.827

Fbck= Feedback, FreqTr= Frequency of Training, Ref= Reflect, Supp= Support, Trus= Trust, TypeTr= Type of Training

Table 4.58

Fornell Larcker criterion for collaboration, feedback, implementation phase, support, reflect, trust and implementation of practice

	Collab	Fbck	Phase	Supp	Ref	Trust	Implem
Collab	0.796						
Fback	0.773	0.895					
Phase	0.279	0.257	0.750				
Support	0.794	0.825	0.284	0.824			
Reflect	0.767	0.814	0.231	0.844	0.874		
Trust	0.681	0.749	0.206	0.757	0.731	0.858	
Implem	0.610	0.531	0.204	0.580	0.578	0.547	0.781

Coll= Collaboration, Fbck= Feedback, Ref= Reflect, Supp= Support, Trus= Trust, Implem= Implementation

Based on the analysis in Table 4.58, Fornell Larcker criterion for all the construct load highest on its own construct. Cross-loadings and HTMT values were also assessed in the next section in order to establish discriminant validity.

Based on the analysis in Table 4.59, Fornell Larcker criterion for reflect load higher on construct support and not on its own construct. Cross-loadings and HTMT values were also assessed in the next section in order to establish discriminant validity.

Table 4.59

Fornell Larcker criterion for climate, collaboration, feedback, overall impact, reflect, support and trust

	Climate	Coll	Fback	Impact	Ref	Supp	Trust
Climate	0.774						
Collab	0.586	0.796					
Fdback	0.571	0.777	0.895				
Ovim	0.727	0.623	0.622	0.837			
Reflect	0.574	0.769	0.814	0.629	0.874		
Support	0.582	0.797	0.825	0.644	0.844	0.824	
Trust	0.544	0.686	0.748	0.609	0.731	0.757	0.858

Coll= Collaboration, Fbck= Feedback, Insim= Instructional Improvement, Ref= Reflect, Supp= Support

As an alternative to Fornell Larcker criterion, cross-loading assessment has a more liberal nature in supporting discriminant validity (Henseler et al, 2014). The loadings of indicators on the assigned latent variable should be higher than the loadings on all other latent variables. The difference between loadings across latent variables must not be less than 0.1 (Chin, 1998; Snell & Dean, 1992). Table 4.60 and Table 4.61, Table 4.62 and Table 4.63 below illustrates the cross-loadings of all the indicators involved in Construct Collaboration, Feedback, Leadership, Reflect, Support and Trust.

Table 4.60 shows the cross-loading for construct Collaboration, Feedback, Leadership, Reflect, Support and Trust. The loadings for all the construct load the highest on its own construct within the satisfactory threshold of $> .70$. This shows that discriminant validity is achieved for all the construct

Table 4.60

Cross-loadings between Construct CPD, Collaboration, Feedback, INSIMP, Leadership, LO, Reflect, Support and Trust

	CPD	Colla	Fdbck	Insim	Lead	LO	Ref	Supp	Trust
CPD65	0.832	0.639	0.681	0.770	0.746	0.719	0.663	0.705	0.673
CPD66	0.860	0.643	0.662	0.744	0.769	0.702	0.643	0.696	0.643
CPD67	0.812	0.589	0.604	0.682	0.713	0.662	0.592	0.611	0.605
CPD69	0.479	0.337	0.230	0.324	0.405	0.327	0.305	0.248	0.258
CPD70	0.790	0.575	0.537	0.602	0.650	0.585	0.544	0.541	0.545
CPD71	0.825	0.627	0.582	0.646	0.714	0.617	0.610	0.622	0.567
CPD72	0.870	0.605	0.632	0.689	0.717	0.701	0.607	0.644	0.622
CPD73	0.824	0.601	0.615	0.677	0.723	0.662	0.625	0.654	0.599
CPD74	0.840	0.602	0.642	0.703	0.694	0.676	0.597	0.660	0.604
CPD75	0.824	0.562	0.601	0.686	0.693	0.691	0.601	0.639	0.586
CPD76	0.824	0.589	0.581	0.689	0.713	0.686	0.549	0.619	0.561
Collab1	0.583	0.755	0.705	0.625	0.602	0.575	0.652	0.666	0.600
Collab3	0.532	0.792	0.520	0.577	0.595	0.476	0.580	0.567	0.484
Collab4	0.517	0.760	0.492	0.563	0.601	0.478	0.561	0.587	0.443
Collab5	0.472	0.695	0.449	0.522	0.543	0.439	0.489	0.460	0.405
Collab6	0.614	0.856	0.659	0.654	0.664	0.535	0.622	0.667	0.553
Collab7	0.637	0.855	0.700	0.673	0.680	0.583	0.662	0.709	0.633
Collab8	0.661	0.845	0.721	0.722	0.714	0.620	0.681	0.723	0.642
Fbck10	0.681	0.696	0.915	0.738	0.707	0.645	0.762	0.767	0.693
Fbck11	0.606	0.617	0.867	0.626	0.595	0.573	0.691	0.674	0.591
Fbck9	0.679	0.752	0.901	0.729	0.713	0.657	0.733	0.766	0.717
Insim46	0.711	0.647	0.672	0.821	0.705	0.692	0.667	0.701	0.670
Insim47	0.696	0.597	0.635	0.774	0.673	0.671	0.613	0.638	0.652
Insim48	0.645	0.600	0.554	0.738	0.690	0.640	0.550	0.585	0.595
Insim42	0.662	0.615	0.586	0.752	0.660	0.623	0.533	0.590	0.554
Insim43	0.642	0.591	0.563	0.750	0.645	0.598	0.512	0.581	0.533
Insim4	0.651	0.607	0.594	0.779	0.662	0.611	0.563	0.616	0.548
Insim45	0.656	0.618	0.591	0.762	0.689	0.619	0.565	0.594	0.554
Insim38	0.692	0.656	0.649	0.831	0.751	0.636	0.646	0.692	0.598
Insim39	0.656	0.640	0.637	0.802	0.724	0.603	0.639	0.673	0.562
Insim40	0.596	0.550	0.537	0.746	0.649	0.566	0.544	0.576	0.498
Insim41	0.686	0.643	0.630	0.818	0.748	0.610	0.619	0.681	0.599
Insim26	0.561	0.583	0.559	0.723	0.598	0.568	0.565	0.615	0.538
Insim27	0.625	0.601	0.618	0.785	0.655	0.651	0.611	0.638	0.588
Insim28	0.686	0.674	0.706	0.843	0.716	0.687	0.684	0.721	0.642
Insim29	0.665	0.635	0.634	0.817	0.687	0.630	0.638	0.676	0.622
Insim30	0.683	0.648	0.689	0.841	0.718	0.636	0.661	0.714	0.651
Insim31	0.675	0.637	0.661	0.850	0.705	0.656	0.653	0.695	0.628
Insim32	0.681	0.676	0.661	0.862	0.730	0.632	0.643	0.696	0.632
Insim33	0.656	0.644	0.641	0.815	0.708	0.636	0.624	0.644	0.594
Insim34	0.653	0.627	0.622	0.801	0.743	0.625	0.623	0.655	0.573
Insim35	0.676	0.649	0.667	0.839	0.698	0.662	0.671	0.698	0.641

Insim36	0.681	0.649	0.654	0.839	0.727	0.656	0.626	0.697	0.602
Insim37	0.699	0.639	0.643	0.827	0.732	0.639	0.605	0.679	0.579
Lead49	0.673	0.654	0.613	0.742	0.797	0.642	0.636	0.686	0.625
Lead50	0.569	0.612	0.529	0.658	0.747	0.545	0.552	0.613	0.476
Lead51	0.598	0.545	0.498	0.625	0.740	0.558	0.503	0.552	0.501
Lead52	0.766	0.688	0.689	0.784	0.860	0.692	0.687	0.736	0.657
Lead63	0.723	0.639	0.676	0.706	0.806	0.646	0.621	0.659	0.638
Lead64	0.670	0.563	0.507	0.645	0.748	0.579	0.501	0.535	0.491
Lead53	0.550	0.525	0.404	0.559	0.689	0.496	0.448	0.498	0.388
Lead54	0.683	0.629	0.551	0.664	0.797	0.617	0.559	0.586	0.516
Lead55	0.706	0.687	0.650	0.688	0.818	0.625	0.629	0.651	0.587
Lead56	0.715	0.658	0.710	0.729	0.796	0.672	0.700	0.682	0.699
Lead57	0.655	0.615	0.629	0.680	0.767	0.620	0.590	0.623	0.599
Lead60	0.632	0.587	0.544	0.626	0.748	0.578	0.563	0.561	0.513
Lead61	0.686	0.615	0.535	0.676	0.806	0.589	0.570	0.602	0.522
Lead62	0.772	0.671	0.674	0.737	0.854	0.674	0.681	0.715	0.636
LO77	0.756	0.657	0.689	0.750	0.718	0.915	0.658	0.705	0.606
LO78	0.719	0.576	0.589	0.694	0.703	0.893	0.557	0.605	0.571
LO79	0.710	0.580	0.598	0.695	0.707	0.914	0.584	0.608	0.559
LO80	0.732	0.625	0.655	0.721	0.715	0.918	0.639	0.666	0.626
LO81	0.755	0.617	0.661	0.740	0.717	0.924	0.632	0.667	0.620
Rflct12	0.622	0.674	0.750	0.657	0.644	0.563	0.879	0.716	0.596
Rflct13	0.671	0.676	0.768	0.688	0.690	0.621	0.911	0.764	0.670
Rflct14	0.585	0.645	0.655	0.634	0.612	0.558	0.844	0.687	0.655
Rflct15	0.653	0.685	0.676	0.689	0.691	0.610	0.862	0.771	0.635
Supp16	0.713	0.720	0.746	0.755	0.724	0.669	0.807	0.885	0.672
Supp17	0.688	0.687	0.769	0.732	0.694	0.641	0.776	0.874	0.694
Supp18	0.465	0.482	0.561	0.521	0.478	0.413	0.498	0.721	0.516
Supp20	0.621	0.693	0.621	0.661	0.695	0.591	0.648	0.808	0.597
Trust21	0.549	0.534	0.586	0.557	0.577	0.488	0.556	0.595	0.807
Trust22	0.619	0.595	0.641	0.639	0.614	0.572	0.654	0.629	0.876
Trust23	0.644	0.630	0.681	0.693	0.660	0.600	0.679	0.712	0.888
Trust24	0.632	0.562	0.643	0.624	0.615	0.573	0.602	0.639	0.863
Trust25	0.637	0.601	0.655	0.660	0.621	0.564	0.638	0.664	0.852

CPD= Continuous Professional Development, Coll= Collaboration, Fbck= Feedback, Insim= Instructional Improvement, Lead- Leadership, LO= Learning Outcome, Ref= Reflect, Supp= Support, Trus= Trust

Table 4.61 shows the cross-loading for construct Feedback, Frequency of Training, Reflect, Support, Trust, Type of Training and Collaboration. The loadings for all the construct load the highest on its own construct within the satisfactory

threshold of $> .70$. This shows that discriminant validity is achieved for all the constructs.

Table 4.61

Cross-Loadings for construct Feedback, Frequency of Training, Reflect, Support, Trust, Type of Training and Collaboration

	Fbck	FreTr	Ref	Supp	Trus	TypTr	Collab
Collab1	0.705	0.187	0.651	0.663	0.599	0.249	0.744
Collab3	0.519	0.190	0.579	0.558	0.481	0.231	0.791
Collab4	0.491	0.173	0.559	0.577	0.440	0.246	0.762
Collab5	0.449	0.298	0.487	0.451	0.402	0.178	0.715
Collab6	0.661	0.298	0.622	0.664	0.553	0.222	0.856
Collab7	0.701	0.201	0.662	0.706	0.634	0.232	0.843
Collab8	0.723	0.295	0.681	0.720	0.642	0.293	0.848
Fdbck10	0.904	0.250	0.763	0.764	0.691	0.292	0.692
Fdbck11	0.873	0.233	0.695	0.672	0.590	0.322	0.613
Fdbck9	0.906	0.332	0.734	0.760	0.717	0.315	0.748
FreqTr92	0.290	0.720	0.247	0.273	0.258	0.105	0.269
FreqTr93	0.260	0.837	0.212	0.252	0.223	0.070	0.260
FreqTr94	0.225	0.854	0.157	0.195	0.216	0.108	0.215
FreqTr95	0.229	0.876	0.163	0.227	0.213	0.037	0.241
FreqTr96	0.138	0.796	0.127	0.149	0.127	0.082	0.207
FreqTr97	0.315	0.840	0.259	0.302	0.279	0.104	0.286
FreqTr98	0.262	0.838	0.197	0.241	0.249	0.146	0.234
FreqTr99	0.260	0.865	0.200	0.231	0.241	0.101	0.260
Rflect12	0.749	0.208	0.885	0.711	0.594	0.275	0.672
Rflect13	0.767	0.221	0.917	0.760	0.671	0.307	0.672
Rflect14	0.653	0.220	0.836	0.676	0.652	0.200	0.644
Rflect15	0.675	0.201	0.855	0.760	0.632	0.262	0.683
Supp16	0.745	0.267	0.805	0.876	0.670	0.321	0.717
Supp17	0.769	0.253	0.776	0.864	0.689	0.297	0.683
Supp18	0.560	0.188	0.501	0.753	0.517	0.311	0.477
Supp20	0.619	0.243	0.646	0.802	0.596	0.295	0.691
TypeTr82	0.214	0.136	0.180	0.231	0.193	0.743	0.165
TypeTr 83	0.319	0.152	0.268	0.318	0.282	0.836	0.245
TypeTr 84	0.218	0.100	0.218	0.247	0.215	0.753	0.238
TypeTr 85	0.260	0.074	0.245	0.338	0.260	0.854	0.242
TypeTr 86	0.366	0.056	0.329	0.397	0.308	0.896	0.318
TypeTr 87	0.356	0.110	0.332	0.375	0.338	0.888	0.305
TypeTr 88	0.245	0.102	0.212	0.247	0.223	0.829	0.198
TypeTr 89	0.311	0.056	0.253	0.335	0.278	0.878	0.283
TypeTr 90	0.294	0.106	0.234	0.303	0.285	0.865	0.258
TypeTr 91	0.211	0.088	0.149	0.180	0.204	0.705	0.139
Trust21	0.586	0.232	0.557	0.598	0.820	0.289	0.529
Trust22	0.640	0.259	0.651	0.623	0.875	0.261	0.592

Trust23	0.679	0.233	0.676	0.707	0.877	0.242	0.628
Trust24	0.641	0.242	0.600	0.639	0.863	0.276	0.558
Trust25	0.655	0.233	0.638	0.660	0.852	0.298	0.598

Coll= Collaboration, Fbck= Feedback, Ref= Reflect, Supp= Support, Trus= Trust
TypeTr=Typeof Training, FreqTr= Frequency of Training

Table 4.62 shows the cross-loading for construct Collaboration, Feedback, Implementation phase, Support, Reflect, Trust and Implementation Practices. The loadings for all the construct load the highest on its own construct within the satisfactory threshold of $> .70$. This shows that discriminant validity is achieved for all the constructs.

Table 4.62

Cross-Loadings for Construct Collaboration, Feedback Phase, Support, Reflect, Trust and Implementation

	Coll	Feed	Phase	Supp	Reflect	Trust	Implem
Collab1	0.755	0.706	0.187	0.666	0.652	0.599	0.506
Collab3	0.792	0.520	0.205	0.570	0.581	0.483	0.458
Collab4	0.758	0.493	0.182	0.591	0.562	0.442	0.431
Collab5	0.697	0.450	0.162	0.463	0.490	0.403	0.427
Collab6	0.859	0.660	0.282	0.667	0.623	0.553	0.516
Collab7	0.855	0.701	0.258	0.709	0.662	0.634	0.516
Collab8	0.843	0.723	0.256	0.723	0.680	0.642	0.534
Fdbck10	0.695	0.913	0.239	0.767	0.760	0.692	0.480
Fdbck11	0.617	0.864	0.243	0.672	0.688	0.591	0.396
Fdbck9	0.751	0.906	0.211	0.767	0.733	0.717	0.537
Implem105	0.511	0.436	0.200	0.487	0.482	0.420	0.789
Implemt106	0.550	0.449	0.189	0.486	0.505	0.452	0.787
Implemt107	0.530	0.491	0.219	0.525	0.526	0.489	0.838
Implem108	0.510	0.436	0.179	0.467	0.474	0.448	0.788
Implem111	0.448	0.396	0.132	0.416	0.399	0.403	0.753
Implem112	0.458	0.332	0.160	0.398	0.401	0.374	0.744
Implem113	0.493	0.441	0.189	0.447	0.454	0.445	0.833
Implem114	0.450	0.429	0.175	0.445	0.430	0.444	0.833
Implem115	0.435	0.378	0.177	0.381	0.420	0.376	0.762
Implem116	0.405	0.364	0.104	0.392	0.400	0.408	0.735
Implem117	0.401	0.320	0.041	0.351	0.373	0.331	0.756
Implem119	0.409	0.258	0.054	0.345	0.368	0.276	0.734
Implem121	0.492	0.482	0.204	0.512	0.482	0.457	0.815
Implem123	0.462	0.449	0.137	0.502	0.468	0.482	0.774
Implem124	0.507	0.366	0.161	0.458	0.429	0.411	0.710
Phase102	0.241	0.215	0.784	0.248	0.209	0.169	0.153
Rflect12	0.673	0.749	0.195	0.716	0.872	0.595	0.459

Rflect13	0.675	0.768	0.195	0.764	0.907	0.671	0.512
Rflect14	0.645	0.655	0.189	0.689	0.849	0.653	0.497
Rflect15	0.685	0.676	0.225	0.773	0.867	0.634	0.545
Supp16	0.720	0.747	0.237	0.886	0.808	0.671	0.545
Supp17	0.687	0.769	0.287	0.874	0.776	0.692	0.497
Supp18	0.481	0.560	0.192	0.713	0.496	0.518	0.312
Supp20	0.692	0.622	0.213	0.814	0.650	0.597	0.514
Trust21	0.534	0.588	0.122	0.595	0.556	0.818	0.490
Trust22	0.595	0.642	0.147	0.630	0.655	0.873	0.459
Trust23	0.630	0.682	0.183	0.713	0.680	0.884	0.490
Trust24	0.561	0.643	0.220	0.638	0.604	0.861	0.444
Trust25	0.600	0.655	0.211	0.664	0.638	0.851	0.460
Phase103	0.177	0.141	0.707	0.175	0.147	0.150	0.180
Phase104	0.201	0.210	0.757	0.206	0.156	0.144	0.133

Table 4.63 shows the cross-loading for construct Climate, Collaboration, Feedback, Overall Impact, Reflect, Support and Trust. The loadings for all the construct load the highest on its own construct within the satisfactory threshold of > .70. This shows that discriminant validity is achieved for all the constructs.

Table 4.63

Cross-Loadings for construct Climate, Collaboration, Feedback, Overall Impact, Reflect, Support and Trust

	Climate	Collab	Fdback	Imsim	Reflect	Support	Trust
Collab1	0.528	0.768	0.705	0.547	0.652	0.667	0.599
Collab3	0.425	0.786	0.520	0.447	0.581	0.569	0.484
Collab4	0.390	0.747	0.492	0.376	0.562	0.589	0.443
Collab5	0.352	0.686	0.450	0.414	0.489	0.462	0.404
Collab6	0.499	0.858	0.660	0.509	0.623	0.667	0.553
Collab7	0.511	0.859	0.700	0.546	0.662	0.709	0.633
Collab8	0.514	0.848	0.722	0.580	0.680	0.723	0.642
Fdbck10	0.523	0.700	0.913	0.571	0.761	0.767	0.692
Fdbck11	0.453	0.621	0.867	0.508	0.689	0.674	0.590
Fdbck9	0.550	0.757	0.903	0.587	0.733	0.767	0.717
Ovimp153	0.609	0.524	0.538	0.833	0.567	0.559	0.523
Ovimp 154	0.671	0.572	0.577	0.871	0.588	0.588	0.564
Ovimp 149	0.641	0.581	0.581	0.863	0.583	0.617	0.574
Ovimp 150	0.632	0.534	0.557	0.860	0.553	0.565	0.519
Ovimp 151	0.617	0.497	0.496	0.840	0.512	0.503	0.487
Ovimp 140	0.494	0.482	0.408	0.686	0.434	0.442	0.414
Ovimp 141	0.640	0.563	0.531	0.846	0.575	0.584	0.552
Ovimp 142	0.603	0.561	0.538	0.841	0.570	0.601	0.535
Ovimp 143	0.633	0.468	0.509	0.853	0.511	0.516	0.501

Ovimp 144	0.638	0.473	0.524	0.862	0.516	0.518	0.495
Ovimp 145	0.557	0.498	0.490	0.821	0.465	0.497	0.483
Ovimp 146	0.581	0.504	0.504	0.828	0.495	0.494	0.478
Ovimp 147	0.587	0.496	0.497	0.862	0.501	0.524	0.497
Ovimp 148	0.638	0.543	0.555	0.869	0.527	0.554	0.533
Rflct12	0.471	0.676	0.749	0.502	0.874	0.717	0.595
Rflct13	0.524	0.679	0.768	0.560	0.909	0.765	0.671
Rflct14	0.475	0.646	0.655	0.545	0.848	0.689	0.654
Rflct15	0.531	0.687	0.676	0.586	0.865	0.774	0.634
Supp16	0.531	0.722	0.746	0.610	0.808	0.887	0.671
Supp17	0.523	0.691	0.769	0.576	0.776	0.876	0.692
Supp18	0.333	0.487	0.560	0.363	0.497	0.713	0.517
Supp20	0.496	0.691	0.621	0.530	0.650	0.810	0.597
Trust21	0.470	0.538	0.587	0.488	0.557	0.595	0.814
Trust22	0.472	0.597	0.641	0.524	0.655	0.630	0.876
Trust23	0.481	0.633	0.681	0.550	0.680	0.713	0.885
Trust24	0.464	0.566	0.643	0.526	0.603	0.638	0.863
Trust25	0.445	0.605	0.655	0.522	0.638	0.665	0.848
climate125	0.780	0.456	0.456	0.624	0.470	0.452	0.463
climate126	0.814	0.522	0.499	0.606	0.476	0.505	0.452
climate127	0.746	0.437	0.458	0.517	0.454	0.475	0.455
climate128	0.823	0.522	0.504	0.583	0.510	0.524	0.490
climate129	0.790	0.450	0.510	0.516	0.470	0.489	0.478
climate130	0.798	0.481	0.521	0.591	0.492	0.540	0.482
climate131	0.820	0.496	0.441	0.581	0.448	0.442	0.411
climate132	0.798	0.432	0.408	0.582	0.431	0.425	0.417
climate133	0.721	0.435	0.376	0.532	0.441	0.403	0.341
climate134	0.737	0.322	0.336	0.534	0.362	0.342	0.354
climate135	0.704	0.380	0.306	0.488	0.327	0.314	0.271
climate138	0.748	0.474	0.444	0.583	0.420	0.451	0.398
Ovimp152	0.559	0.515	0.483	0.802	0.476	0.486	0.466

CPD= Continuous Professional Development, Coll= Collaboration, Fbck= Feedback, Insim= Instructional Improvement, Lead- Leadership, Ref= Reflect, Supp= Support, Trus= Trust

However, if neither Fornell-Larcker criterion nor the assessment of the cross-loadings allows determination of the discriminant validity of their measures, it was proposed that the heterotrait-monotrait ratio of correlations (HTMT) as a new approach to assess discriminant validity in variance-based SEM (Henseler et al., 2014). The next section discusses on HTMT analysis for the purpose of discriminant validity assessment.

4.5.3.2 Heterotrait-Monotrait Assessment (HTMT)

The cut off point for traditional HTMT would be .85 while a more liberal cut off point is .90. However, the result of the analysis shows that some of the constructs have the value of more than .90. Therefore, bootstrapping procedure has to be carried out to achieve HTMT inference which will confirm if discriminant validity is achieved. The result of HTMT inference should not be more than 1 in order for discriminant validity to be achieved. The result of HTMT and HTMT inference are as shown in Table 4.64.

Table 4.64 shows the HTMT values for construct Collaboration, Instructional Improvement, Reflect, Support and Trust. Some of the constructs exceed both the traditional and liberal HTMT value. Thus, bootstrapping procedure is carried out to achieve HTMT inference.

Table 4.64

HTMT for Construct Collaboration, Instructional Improvement, Reflect, Support and Trust

	CPD	Colla	Fdbck	INSIM	LEAD	LO	Ref	Supp
CPD								
Collab	0.781							
Fdbck	0.795	0.855						
INSIMP	0.855	0.831	0.843					
LEAD	0.902	0.852	0.816	0.901				
LO	0.844	0.719	0.765	0.820	0.818			
Ref	0.782	0.848	0.918	0.816	0.812	0.728		
Supp	0.835	0.891	0.950	0.893	0.874	0.784	0.951	
Trust	0.768	0.744	0.834	0.785	0.768	0.701	0.808	0.858

CPD= Continuous Professional Development, Coll= Collaboration, Fbck= Feedback, Insim= Instructional Improvement, Lead- Leadership, LO= Learning Outcome, Ref= Reflect, Supp= Support, Trus= Trust

Table 4.65 shows the HTMT inference results for construct Collaboration, Instructional Improvement, Reflect, Support and Trust. Based on the result of HTMT inference as shown in Table 4.65, all the values for construct Collaboration,

Instructional Improvement, Reflect, Support and Trust do not contain the value of 1, therefore, discriminant validity is established.

Table 4.65

HTMT inference for construct Collaboration, Instructional Improvement, Reflect, support and Trust

	Original Sample	Bias	5.0%	95.0%
Collaboration -> CPD	0.781	0.000	0.737	0.822
Feedback -> CPD	0.795	0.000	0.754	0.836
Feedback -> Collaboration	0.855	0.000	0.812	0.885
Insimp-> CPD	0.855	0.000	0.817	0.889
Insimp -> Collaboration	0.831	0.000	0.792	0.867
Insimp -> Feedback	0.843	0.000	0.800	0.872
Leadership -> CPD	0.902	-0.001	0.873	0.923
Leadership -> Collaboration	0.852	0.000	0.816	0.884
Leadership -> Feedback	0.816	0.000	0.778	0.856
Leadership -> Insimp	0.901	0.000	0.874	0.927
Learning Outcome -> CPD	0.844	-0.002	0.803	0.876
Learning Outcome -> Collaboration	0.719	-0.001	0.664	0.772
Learning Outcome -> Feedback	0.765	-0.002	0.715	0.810
Learning Outcome -> Insimp	0.820	-0.002	0.780	0.866
Learning Outcome -> Leadership	0.818	-0.002	0.775	0.857
Reflect -> CPD	0.782	0.000	0.739	0.827
Reflect -> Collaboration	0.848	-0.001	0.805	0.881
Reflect -> Feedback	0.918	-0.001	0.889	0.944
Reflect -> Insimp	0.816	0.000	0.776	0.856
Reflect -> Leadership	0.812	0.000	0.775	0.848
Reflect -> Learning Outcome	0.728	-0.003	0.666	0.784
Support -> CPD	0.835	-0.001	0.789	0.873
Support -> Collaboration	0.891	0.002	0.850	0.922
Support -> Feedback	0.950	0.000	0.923	0.976
Support -> Insim	0.893	0.000	0.859	0.925
Support -> Leadership	0.874	0.000	0.840	0.906
Support -> Learning Outcome	0.784	-0.003	0.734	0.831
Support -> Reflect	0.951	0.001	0.919	0.977
Trust -> CPD	0.768	0.002	0.697	0.818
Trust -> Collaboration	0.744	0.001	0.674	0.796
Trust -> Feedback	0.834	0.000	0.762	0.882
Trust -> Insimp	0.785	0.001	0.714	0.830
Trust -> Leadership	0.768	0.001	0.699	0.818
Trust -> Learning Outcome	0.701	0.001	0.633	0.747
Trust -> Reflect	0.808	0.000	0.741	0.857
Trust -> Support	0.858	0.000	0.791	0.907

CPD= Continuous Professional Development, Insimp= Instructional Improvement

Next, Table 4.66 shows the HTMT values for construct Feedback, Freq.Training, Reflect, Support, Trust, TypeTraining and Collaboration. Based on the result of the HTMT inference analysis in Table 4.66, some of the construct exceed both the traditional and liberal HTMT value. Thus, bootstrapping procedure is carried out to achieve HTMT inference.

Table 4.66
HTMT for construct Feedback, Freq.Training, Reflect, Support, Trust, TypeTraining and Collaboration

	Fdback	FreqTrg	Reflect	Support	Trust	Type.Trg
Feedback						
FreqTrainig	0.326					
Reflect	0.918	0.258				
Support	0.950	0.317	0.951			
Trust	0.834	0.295	0.808	0.858		
TypeTraining	0.371	0.126	0.315	0.403	0.336	
Collaboration	0.855	0.317	0.848	0.891	0.744	0.312

Table 4.67
HTMT inference for construct Feedback, Freq.Training, Reflect, Support, Trust, TypeTraining and Collaboration

	Original Sample	Bias	5.0%	95.0%
FreqTrainig -> Feedback	0.326	0.001	0.249	0.399
Reflect -> Feedback	0.918	0.000	0.886	0.941
Reflect -> FreqTrainig	0.258	-0.001	0.176	0.326
Support -> Feedback	0.950	0.001	0.920	0.974
Support -> FreqTrainig	0.317	-0.002	0.233	0.393
Support -> Reflect	0.951	0.001	0.919	0.977
Trust -> Feedback	0.834	0.001	0.772	0.882
Trust -> FreqTrainig	0.295	-0.002	0.216	0.357
Trust -> Reflect	0.808	0.002	0.747	0.853
Trust -> Support	0.858	0.002	0.794	0.906
TypeTraining -> Feedback	0.371	0.000	0.272	0.463
TypeTraining -> FreqTrainig	0.126	0.009	0.073	0.202
TypeTraining -> Reflect	0.315	0.000	0.216	0.402
TypeTraining -> Support	0.403	-0.001	0.305	0.498
TypeTraining -> Trust	0.336	0.001	0.233	0.427
collaboration -> Feedback	0.855	-0.001	0.815	0.883
collaboration -> FreqTrainig	0.317	-0.002	0.236	0.385
collaboration -> Reflect	0.848	0.001	0.802	0.882
collaboration -> Support	0.891	0.001	0.852	0.922
collaboration -> Trust	0.744	0.002	0.677	0.795
collaboration -> TypeTraining	0.312	-0.001	0.217	0.418

Table 4.67 shows the HTMT inference result for construct Feedback, Freq.Training, Reflect, Support, Trust, TypeTraining and Collaboration. Based on the result of HTMT inference as shown in Table 4.67, all the values for construct Feedback, Freq.Training, Reflect, Support, Trust, TypeTraining and Collaboration do not contain the value of 1, therefore, discriminant validity is established.

Table 4.68

HTMT for construct Collaboration, Feedback, ImplemPhase, Support, Reflect, Trust and ImplementPractices

	Collab	Fbck	Phase	Support	Reflect	Trust
Collaboration						
Feedback	0.855					
Phase	0.363	0.344				
Support	0.891	0.950	0.384			
Reflect	0.848	0.918	0.304	0.951		
Trust	0.744	0.834	0.274	0.858	0.808	
Implem	0.651	0.568	0.264	0.625	0.616	0.579

Table 4.69

HTMT inference for construct Collaboration, Feedback, ImplemPhase, Support, Reflect, Trust and ImplementPractices

	Original Sample	Bias	5.0%	95.0%
Feedback -> Collaboration	0.855	0.000	0.816	0.886
Implemphase -> Collaboration	0.363	0.002	0.272	0.448
Implemphase -> Feedback	0.344	0.004	0.244	0.435
Support-> Collaboration	0.891	0.000	0.848	0.924
Support -> Feedback	0.950	0.000	0.925	0.977
Support-> Implementphase	0.384	0.004	0.282	0.456
Reflect -> Collaboration	0.848	0.000	0.812	0.883
Reflect -> Feedback	0.918	-0.001	0.893	0.945
Reflect -> Implementphase	0.304	0.001	0.214	0.392
Reflect -> Support	0.951	0.000	0.923	0.977
Trust -> Collaboration	0.744	0.001	0.683	0.800
Trust -> Feedback	0.834	0.000	0.767	0.882
Trust -> Implemphase	0.274	0.004	0.183	0.369
Trust ->Support	0.858	0.000	0.785	0.904
Trust -> Reflect	0.808	0.002	0.749	0.858
implempractices -> Collaboration	0.651	-0.001	0.587	0.698
implempractices -> Feedback	0.568	-0.002	0.501	0.629
implempractices -> Implementphase	0.264	0.004	0.176	0.349
implempractices ->Support	0.625	-0.003	0.567	0.681
implempractices -> Reflect	0.616	-0.001	0.544	0.673
implempractices -> Trust	0.579	0.000	0.521	0.640

Table 4.68 shows the HTMT values for construct Collaboration, Feedback, ImplementPhase, Support, Reflect, Trust and ImplementPractices. Some of the construct exceed both the traditional and liberal HTMT value. Thus, bootstrapping procedure is carried out to achieve HTMT inference.

Table 4.69 shows the HTMT inference result for construct Collaboration, Feedback, ImplemenPhase, Support, Reflect, Trust and Implementation. Based on the result of HTMT inference as shown in Table 4.69, all the values for construct Collaboration, Feedback, ImplemPhase, Support, Reflect, Trust and ImplemPractices do not contain the value of 1, therefore, discriminant validity is established.

Table 4.70 shows the HTMT values for construct climate, collaboration, feedback, overall impact, reflect, support and trust. Based on the HTMT result in Table 4.70 all the values for construct Climate, Collaboration, Feedback, Overall Impact, Reflect, Support and Trust. Construct reflect exceed the liberal HTMT .90 value. Thus, bootstrapping procedure is carried out to achieve HTMT inference. Table 4.71 on the other hand shows the HTMT inference for construct climate, collaboration, feedback, overall impact, reflect, support and trust.

Table 4.70
HTMT for construct Climate, collaboration, feedback, overall impact, reflect, support and trust

	Clim	Collb	Fbck	Impac	Reflect	Supp	Trus
Climate							
Collab	0.625						
Feedback	0.622	0.855					
OvImpact	0.759	0.657	0.672				
Reflect	0.621	0.848	0.918	0.671			
Support	0.637	0.891	0.950	0.696	0.951		
Trust	0.584	0.744	0.834	0.647	0.808	0.858	

Clim= climate, Collab=collaboration, Fbck= Feedback, Supp= support, Trus= Trust

Table 4.71

HTMT inference for construct Climate, Collaboration, Feedback, Overall Impact, Reflect, Support and Trust

	Beta Value	Bias	5.0%	95.0%
Collab -> Climate	0.625	0.000	0.563	0.673
Feedback -> Climate	0.622	0.001	0.565	0.670
Feedback -> Collab	0.855	0.000	0.821	0.892
OvImpact -> Climate	0.759	0.002	0.704	0.803
OvImpact -> Collab	0.657	-0.002	0.596	0.714
OvImpact -> Feedback	0.672	0.001	0.610	0.717
Reflect -> Climate	0.621	0.001	0.545	0.673
Reflect -> Collab	0.848	-0.002	0.810	0.890
Reflect -> Feedback	0.918	0.001	0.886	0.943
Reflect -> OvImpact	0.671	-0.001	0.614	0.730
Support -> Climate	0.637	0.002	0.569	0.691
Support -> Collab	0.891	-0.001	0.851	0.929
Support -> Feedback	0.950	0.000	0.921	0.974
Support -> OvImpact	0.696	0.000	0.633	0.751
Support -> Reflect	0.951	0.000	0.925	0.978
Trust -> Climate	0.584	0.001	0.502	0.640
Trust -> Collab	0.744	-0.001	0.670	0.795
Trust -> Feedback	0.834	0.000	0.765	0.882
Trust -> OverImpact	0.647	0.002	0.564	0.705
Trust -> Reflect	0.808	0.000	0.742	0.863
Trust -> Support	0.858	0.001	0.778	0.903

Based on the result of HTMT inference as shown in Table 4.71, all the values for construct Climate, Collaboration, Feedback, Overall Impact, Reflect, Support and Trust do not contain the value of 1, therefore, discriminant validity is established.

4.6 Structural Model.

The next step is to evaluate the structural model of the study. The assessment of structural models should be evaluated simultaneously with the hypothesis testing of the study. The structural model (Figure 4.1) consists of a directed point which gives a sense of the relationship between one construct with another construct (hypothesized relationship) with a Beta (β) value for hypothesis testing and R^2 (R square) value.

The value of the relationship strength between the constructs is represented

by the Beta (β) value while the value of the contributions of all the variables is seen through R square (R^2) values. Beta (β) value explaining path coefficients values (in between +1 to -1) are used for analysing of the strength of the hypothesized relationships. The path coefficients values close to +1 represent strong positive relationship whereas any value near 0 represents weak relationship. The strength of a relationship between variables is represented by the t-value greater than 1.96 and the level of significance.

4.6.1 Coefficient of Determination (R^2)

For the purpose of hypothesis testing, the value of R^2 is also being assessed. The value of the relationship strength between the constructs is represented by the Beta (β) value while the value of the contributions of all the variables is seen through R square (R^2) values. The R^2 value gives us the combined effects of independent variables on the dependent variable i.e. it represents the amount of variance in the endogenous constructs explained by all of the exogenous constructs linked to it (Hair et al., 2014).

The R^2 value ranges from 0 to 1 with value near to 1 indicates high predictive accuracy. According to Chin (1998), the value of $R^2 = 0.67$ is strong, 0.33 is moderate, 0.19 is weak as shown in Table 4.72

Table 4.72
R² Predictive Power (Chin, 1988)

R2 value	Interpretation
> 0.67	Substantial
> 0.33	Moderate
> 0.19	Weak

4.6.2 Assessment of Predictive Relevance (Q^2)

In addition to R^2 values, the developed reactive Reuse technique (Stone, 1974; Geisser, 1975) can be used to assess the accuracy of the predictive relevance (Q^2).

Through PLS 3.0 software, researchers use blindfolding method to get the value of accuracy forecasting. The Q^2 value larger than 0 indicates that exogenous or independent constructs have predictive relevance for endogenous construct.

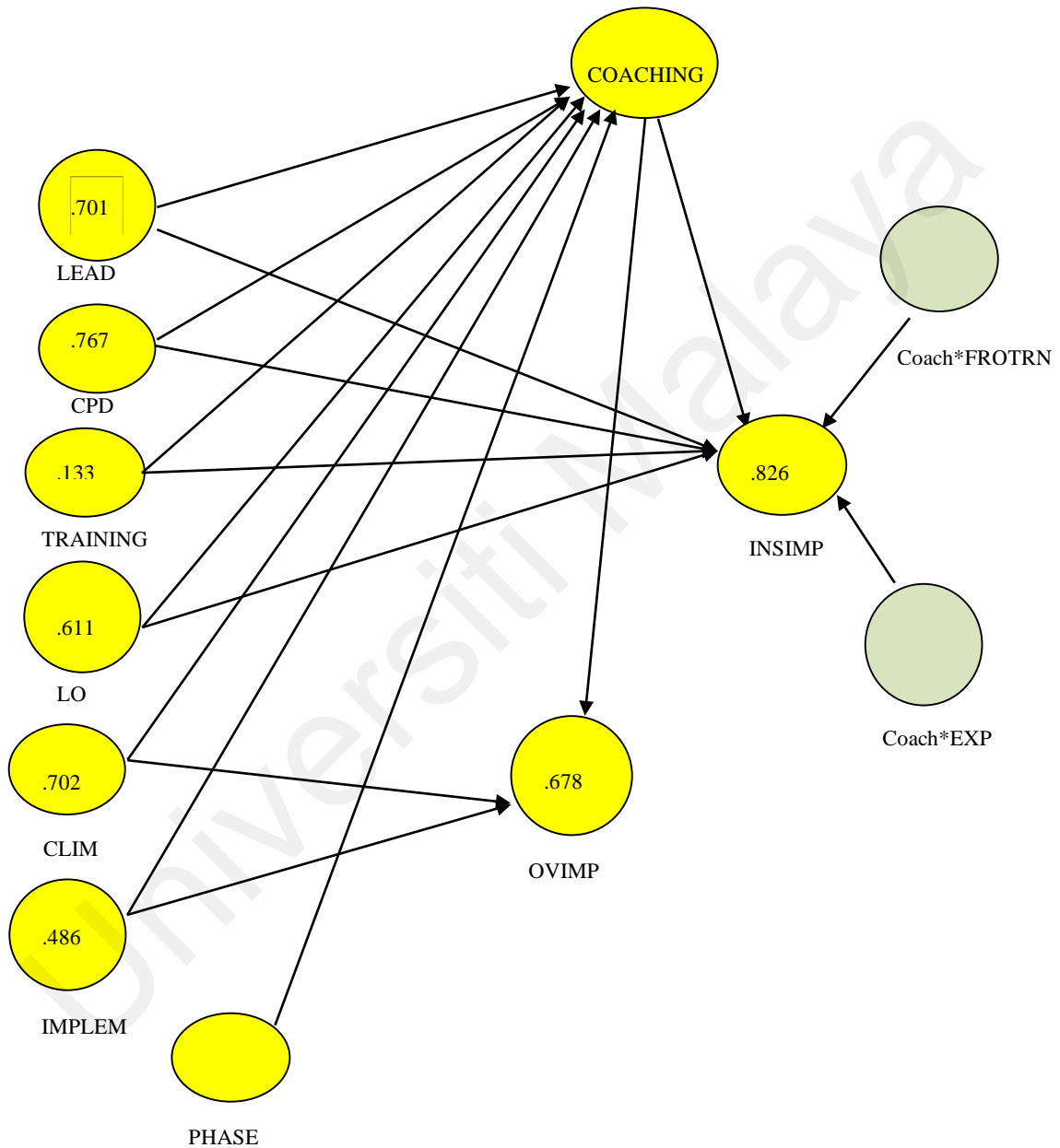


Figure 4.1 Structural Model

4.6.3 Assessment of Effect Size Level (Effect Size f^2).

The p-value informs the reader if an effect exists, but does not reveal the size of the effect. Thus, another aspect to look at is size effects (f^2). The impact of variables on other variables can be seen with effect size (effect size f^2). The effect of size can be measured based on 3 values i.e. 0.02=small effect, 0.15= medium effect and 0.35= large effect (Chin, 1998; Cohen, 1988).

4.6.4 Factors Related to Coaching

Data analysis in this section attempts to answer research objective 4 by answering the following research question:

RQ 4: What are the significant factors related to coaching?

Therefore, in order to explore the significant factors related to coaching, data analysis presented in Table 4.73a and Figure 4. 1 provides the answer to the following hypothesis:

H4.1: Climate is a significant factor related to coaching

H4.2: Continuous Professional Development is a significant factor related to coaching

H4.3: Implementation is a significant factor related to coaching

H4.4: Instructional improvement is a significant factor related to coaching

H4.5: Leadership is a significant factor related to coaching

H4.6: Learning Outcome is a significant factor related to coaching

H4.7: Overall improvement is a significant factor related to coaching.

Based on result of the analysis in Table 4.73a, it can be observed that Coaching has a large effect in producing the R^2 for all coaching sub-constructs. The R^2 value for Support =0.776 with effect size $f^2 =3.456$ followed by Feedback

$R^2=0.839$, $f^2=5.205$; Reflect $R^2= 0.833$, $f^2= 5.000$; Collaboration $R^2= 0.795$, $f^2= 3.875$ and Trust $R^2= 0.776$, $f^2=3.456$.

Table 4.73a

Regression between All Variables Related to Coaching

Relationship	Beta	SD	T Statistics	P Values	R2	f2	Q2
CLIMT -> INSIMP	-0.031	0.038	0.800	0.212		0.002	
CLIMT -> LO	0.292	0.059	4.982	0.000		0.066	
CLIMT -> OVIMP	0.265	0.062	4.289	0.000		0.061	
COACHING -> CLIMT	0.140	0.053	2.637	0.004	0.702	0.017	0.390
COACHING -> COLL	0.892	0.012	74.538	0.000	0.795	3.875	0.565
COACHING -> CPD	0.311	0.044	7.090	0.000	0.767	0.124	0.492
COACHING -> FEDB	0.916	0.008	108.005	0.000	0.839	5.205	0.635
COACHING -> IMPLEM	0.112	0.063	1.769	0.039	0.486	0.007	0.274
COACHING -> INSIMP	0.340	0.046	7.329	0.000	0.826	0.170	0.492
COACHING -> LEAD	0.837	0.018	45.928	0.000	0.701	2.344	0.398
COACHING -> LO	0.580	0.038	15.116	0.000	0.611	0.492	0.473
COACHING -> OVIMP	0.110	0.061	1.781	0.038	0.678	0.01	0.440
COACHING -> REF	0.913	0.010	95.698	0.000	0.833	5.000	0.600
COACHING -> SUPP	0.927	0.008	110.672	0.000	0.860	6.118	0.549
COACHING -> TRU	0.881	0.019	45.170	0.000	0.776	3.456	0.535
CPD -> CLIMT	0.068	0.059	1.156	0.124		0.004	
CPD -> IMPLEM	0.181	0.073	2.474	0.007		0.015	
CPD -> INSIMP	0.112	0.052	2.168	0.015		0.014	
CPD -> OVIMP	0.197	0.064	3.095	0.001		0.024	
CPD -> TRFREQ	0.365	0.036	10.007	0.000	0.133	0.154	0.082
CPD -> TRTYPE	0.390	0.056	6.964	0.000	0.152	0.179	0.096
IMPLEM -> CLIMT	0.690	0.036	19.085	0.000		0.819	
IMPLEM -> INSIMP	0.015	0.039	0.396	0.346		0.000	
IMPLEM -> LO	-0.020	0.056	0.364	0.358		0.000	
IMPLEM -> OVIMP	0.166	0.055	2.989	0.001		0.024	
LEAD -> CLIMT	0.004	0.060	0.069	0.473		0.000	
LEAD -> CPD	0.598	0.044	13.748	0.000		0.460	
LEAD -> IMPLEM	0.436	0.072	6.034	0.000		0.076	
LEAD -> INSIMP	0.367	0.051	7.207	0.000		0.143	
LEAD -> OVIMP	-0.051	0.066	0.768	0.221		0.001	
LO -> INSIMP	0.168	0.045	3.723	0.000		0.047	
LO -> OVIMP	0.258	0.073	3.542	0.000		0.061	

*Significant at $p<.05$; **Significant at $p<.01$; ***Significant at $p<.001$

Note: CPD= Continuous Professional Development, Coll= Collaboration, Fbck= Feedback, Insimp=Instructional Improvement, Lead=Leadership, LO= Learning Outcome, Ref= Reflect, Supp= Support, Tru= Trust, CLIM= climate, OVIM= overall improvement, TRTYPE= Training type, TRFREQ= Training frequency

The result also indicates that for construct OVIMP, the R2 value is equivalent to 0.650 which is moderate. The effect size that Climate, Coaching, IMPLEM and CPD have over OVIMP are 0.092, 0.025, 0.006 and 0.088 which are all weak effects. The R2 value for INSIMP is 0.828 with the effect size $f^2 = 0.185$ (medium effect) CPD $f^2 = 0.014$ (small effect) LEAD $f^2 = 0.13$ (small) and LO $f^2 = 0.049$ (small).

For LEAD the R2=0.722 with the effect size $f^2 = 2.591$ (substantial). For CPD the R2 =0.659 with the effect size $f^2 = 1.93$ (substantial). For LO R2=0.566 with the effect size that coaching has on LO is substantial ($f^2 = 1.305$). For Climate, the R2= 0.394 (moderate) with substantial effect size ($f^2 = 0.651$). For IMPLEM the R2 value is moderate (0.381) with the effect size $f^2 = 0.617$ (substantial). However, there is a weak R2 value for TRTYPE =0.151 with medium effect of CPD $f^2 = 0.178$. Similarly, there is weak R2 value for TRFREQ (0.136) with medium effect of CPD ($f^2 = 0.157$).

Next, relationship between the variables will be discussed based on the result of path analysis represented by beta values. For construct CPD, the most significant relationship is with TRFREQ ($\beta = 0.365$, $t = 10.007$, $p = 0.000$). followed by TRTYPE with ($\beta = 0.390$, $t = 6.964$, $p = 0.000$). Both constructs are significant with t-value greater than 1.96. However, the relationship for construct CPD with OVIMP ($\beta = 0.197$, $t = 3.095$, $p = 0.001$), IMPLEM ($\beta = 0.181$, $t = 2.474$, $p = 0.007$) and INSIMP ($\beta = 0.112$, $t = 2.168$, $p = 0.015$) are modestly significant with t-value greater than 1.96. On the other hand, the relationship between CPD and Climate ($\beta = 0.068$, $t = 1.156$, $p = 0.124$) is weak and not significant with t-value less than 1.96.

It can be interpreted that the practice of teacher professional learning (CPD) determines the frequency of training as well the type of training given to teachers. However, the findings suggest that the practice of CPD in school has modest impact

on overall school improvement, the implementation of coaching in school as well as instructional improvement. On the other hand, the impact of CPD on school climate is not significant.

For construct Leadership, the most significant and strong relationship is with CPD ($\beta=0.598$, $t= 13.748$, $p= 0.000$) There is a significant and moderate relationship between construct leadership and by IMPEM with ($\beta=0.436$, $t= 6.034$, $p= 0.000$). and INSIMP ($\beta=0.367$, $t= 7.207$, $p= 0.000$). However, the relationship between leadership and Overall school improvement is not significant with t-value less than 1.96 ($\beta=-0.051$, $t= 0.768$, $p= 0.000$).

Based on the findings, it can be interpreted that the role of leadership shown by the coach creates a strong impact on teacher professional learning and a moderate impact on the level of coaching implementation in school as well as instructional improvement. However, the findings also suggest that the role of leadership shown by the coach has lower impact on instructional improvement. However, there is no significant relationship between leadership and overall school improvement.

Construct Climate has significantly modest relationship with LO ($\beta=0.292$, $t= 4.982$, $p= 0.000$). followed by OVIMP with ($\beta=0.265$, $t= 4.289$, $p= 0.000$). However, the relationship between climate and instructional improvement is not significant ($\beta=-0.031$, $t= 0.800$, $p= 0.212$). It can be interpreted that the practice of school climate has a modest impact on learning outcome as well as overall improvement of the school. However, it does not have a significant impact on improvement of classroom practices.

For construct Implementation level, a significantly strong relationship is with CLIM ($\beta=0.690$, $t= 19.085$, $p= 0.000$). In addition, a significantly modest relationship for construct IMLEM is with OVIMP ($\beta=0.166$, $t= 2.989$, $p= 0.001$). However, the relationship between implementation and construct and INSIMP ($\beta=0.015$, $t= 0.396$, $p= 0.346$). and LO ($\beta=-0.020$, $t= 0.364$, $p= 0.358$) are not significant.

It can be interpreted that coaching implementation level in school have a strong impact on the working climate among teachers. The findings also suggest that the level of implementation of coaching also have a modest impact on the overall school improvement although the impact is slightly lower. However, it does not have any significant impact on instructional practices and learning outcome.

Table 4.73b
Regression Between Variables Related to Coaching

	Regression	Beta Value	SD	T Statistics	P Values	R2	f2	Q2
H4.1	COACHING -> CLIMT	0.140	0.053	2.637	0.004	0.702	0.017	0.390
H4.2	COACHING -> CPD	0.311	0.044	7.090	0.000	0.767	0.124	0.492
H4.3	COACHING -> IMLEM	0.112	0.063	1.769	0.039	0.486	0.007	0.274
H4.4	COACHING -> INSIMP	0.340	0.046	7.329	0.000	0.826	0.170	0.492
H4.5	COACHING -> LEAD	0.837	0.018	45.928	0.000	0.701	2.344	0.398
H4.6	COACHING -> LO	0.580	0.038	15.116	0.000	0.611	0.492	0.473
H4.7	COACHING -> OVIMP	0.110	0.061	1.781	0.038	0.678	0.01	0.440

*Significant at $p<.05$; **Significant at $p<.01$; ***Significant at $p<.001$

Note: CPD= Continuous Professional Development, , INSIMP= Instructional Improvement, LEAD- Leadership, LO= Learning Outcome, CLIM= climate, OVIM= overall improvement,

Next, Table 4.73b summarises the significant variables related to coaching thus proving the hypotheses developed for research question 4. The result in Table 4.73b suggests that the most significant relationship is COACHING -> LEAD with

strong Beta value greater than .50 ($\beta=0.837$, $t= 45.928$, $p= 0.000$). Coaching construct also shows a strong significant relationship with construct learning outcome with Beta value greater than .50 ($\beta=0.580$, $t= 15.116$, $p= 0.000$).

The relationship between CPD ($\beta=0.311$, $t= 7.090$, $p= 0.000$) and INSIMP ($\beta=0.340$, $t= 7.329$, $p= 0.000$). are moderate with beta value greater than .30. Modest significant relationship for construct Coaching is with constructs Climate ($\beta=0.140$, $t= 2.637$, $p= 0.004$), IMPLEM ($\beta=0.112$, $t= 1.769$, $p= 0.039$) and OVIMP ($\beta=0.110$, $t= 1.781$, $p= 0.038$). It can be interpreted that coaching is strongly related to the role of leadership played by coaches. Apart from that, coaching is also highly related to students' learning outcome. Additionally, the practice of coaching has moderate impact on teacher professional learning and instructional improvement. On the other hand, coaching has modest impact on school climate, coaching implementation as well as overall school improvement. Based on the t-value greater than 1.96, all the hypotheses are significant and accepted except for H4.3 and H4.7 with t-value lesser than 1.96. Therefore, H4.3 and H4.7 were not significant and therefore not accepted.

4.6.5 Relationship between Elements of Coaching and Factors Related to

Coaching

Data analysis in this section attempts to provide the answer for research objective 5 by answering the following research question:

RQ5: Is there a significant relationship between coaching sub-constructs such as trust, collaboration, support, and reflection with a) instructional improvement; b) role of leadership c) professional development; and d) learning outcomes e) training, f) climate, g) implementation and h) overall improvement

a) Relationship between elements of coaching and instructional improvement

To explore the relationship between coaching constructs and instructional improvement, data analysis presented in Table 4.74 and Figure 4. 2 provides the answer to the following hypothesis:

H5.1a: there is a significant relationship between sub-construct collaboration and Instructional Improvement.

H5.1b: there is a significant relationship between sub-construct feedback and Instructional Improvement

H5.1c: there is a significant relationship between sub-construct reflect and Instructional Improvement

H5.1d: there is a significant relationship between sub-construct support and Instructional Improvement

H5.1e: there is a significant relationship between sub-construct trust and Instructional Improvement

Based on Table 4.74, the R² value for coaching constructs towards instructional improvement is 0.747. It can be interpreted that coaching elements contributed 74.7 percent towards instructional improvement. It can be seen that most significant relationship with coaching construct and instructional improvement construct is sub construct support with ($\beta=0.306$, $t= 5.285$, $p= 0.000$). followed by collaboration ($\beta=0.261$, $t= 4.837$, $p= 0.000$), trust ($\beta=0.182$, $t= 3.894$, $p= 0.000$), feedback ($\beta=0.153$, $t= 2.771$, $p= 0.006$) and reflect ($\beta=0.048$, $t= 0.901$, $p= 0.368$).

Based on the findings, it can be interpreted that support is an important element in the implementation of improvement of instructional practices. Nevertheless, it will not be made possible without the existence of collaboration

among teachers and coaches. The support provided by the coach help to improve learning outcome allows teachers to collaborate with the coach to improve their practices.

Table 4.74
Relationship between Coaching Sub-Constructs and Instructional Improvement

	Relationship	Beta Value	SD	T Value	P Value	R2	Result
H5.1a	Collab -> INSIMP	0.261	0.054	4.837	0.000	0.747	Supported
H5.1b	Fback -> INSIMP	0.153	0.055	2.771	0.006		Supported
H5.1c	Reflect -> INSIMP	0.048	0.053	0.901	0.368		Not Supported
H5.1d	Support -> INSIMP	0.306	0.058	5.285	0.000		Supported
H5.1e	Trust -> INSIMP	0.182	0.047	3.894	0.000		Supported

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

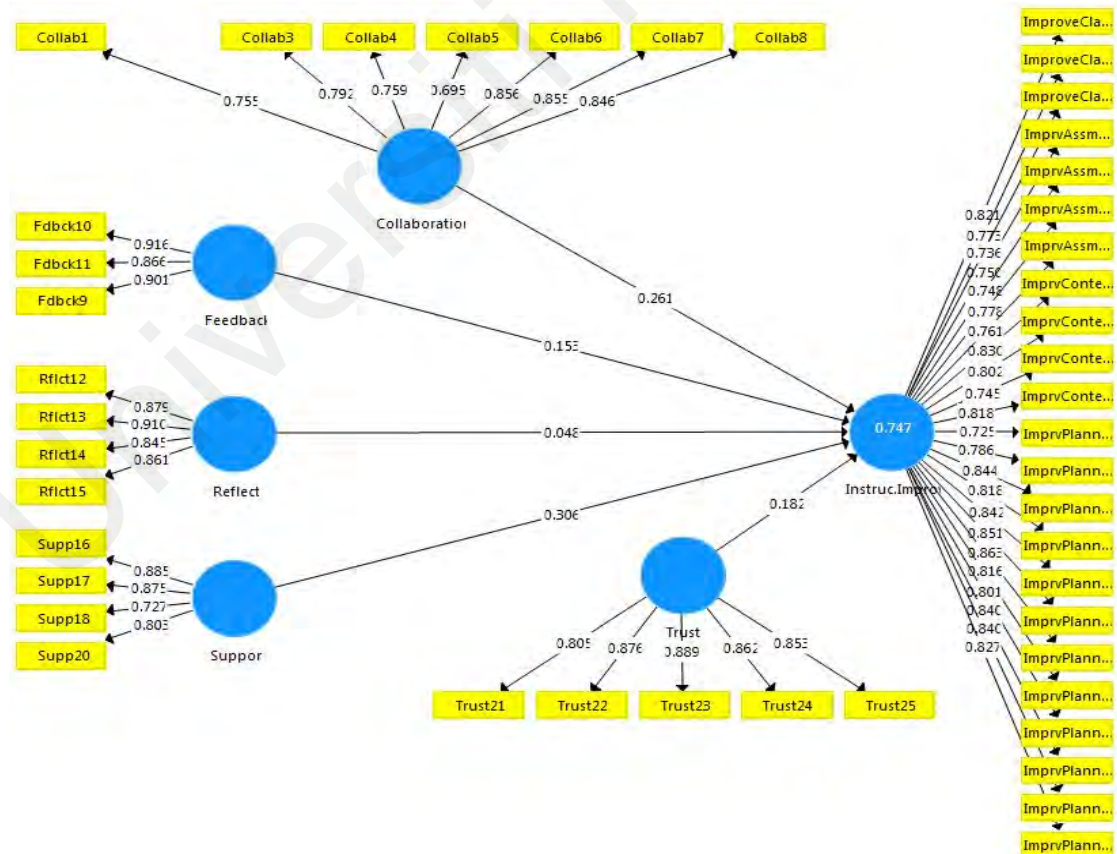


Figure 4.2 Relationship between Coaching Constructs and Instructional Improvement

Support and collaboration allows teachers to establish trust towards the coach. This is because to be able to have positive and effective collaboration, trust is a must. Teachers need to trust the coach as someone who they can share their problems related to classroom practices. The feedback given by the coach is more than valuable to help teachers improve their practices. The feedback they received from the coach will enable them to reflect on their own practices thus allowing them to make necessary changes for the benefit of the students. The p-value affirms that there is a significant relationship between coaching construct and instructional improvement.

b) Relationship between Elements of Coaching and Role of Leadership

To explore the relationship between coaching constructs and role of leadership, data analysis presented in Table 4.75 and Figure 4. 3 provides the answer to the following hypothesis:

H5.2a: there is a significant relationship between sub construct collaboration and role of leadership.

H5.2b: there is a significant relationship between sub construct feedback and role of leadership

H5.2c: there is a significant relationship between sub construct reflect and role of leadership

H5.2d: there is a significant relationship between sub construct support and role of leadership

H5.2e: there is a significant relationship between sub construct trust and role of leadership

Table 4.75

T-statistics, standardized regression weight, (β) and R² of path coefficients of coaching constructs towards Leadership.

	Relationship	Beta Value	SD	T Value	P Value	R2	
H5.2a	Collab -> Lead	0.347	0.050	6.977	0.000	0.728	Supported
H5.2b	Fback -> Lead	0.081	0.057	1.419	0.156		Not Supported
H5.2c	Reflect -> Lead	0.086	0.054	1.592	0.112		Not Supported
H5.2d	Supp -> Lead	0.257	0.061	4.249	0.000		Supported
H5.2e	Trust -> Lead	0.168	0.049	3.421	0.001		Supported

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

Based on Table 4.75, the R² value for coaching constructs towards leadership was 0.728. It can be interpreted that coaching elements contributed 72.8 percent towards coach leadership. It can be seen that most significant relationship with coaching construct and leadership construct was collaboration with ($\beta=0.347$, $t=6.977$, $p=0.00$). followed by support ($\beta=0.257$, $t=4.249$, $p=0.00$), trust 0.168, $t=3.421$, $p=0.001$., reflect ($\beta=0.086$, $t=1.592$, $p=0.112$). and feedback ($\beta=0.081$, $t=1.419$, $p=0.156$).

This shows that the collaboration between the coach and teachers is vital in providing the support needed by teachers to help improve learning outcome. As leaders, coaches need to provide instructional support to teachers. In terms of support, teacher values constructive feedback provided by the coach as it would help teachers to reflect freely on their own practices. After getting all the support and constructive feedback towards their practices, trust towards the coach will eventually develop trust towards the coach needs to be established before teachers could reflect on their own practices and values the feedback received from the coaches. On the other hand, although coaching is about reflecting on practices and feedback, the

findings shows that the effect of both reflect and feedback on coaching is low suggesting that both aspects of coaching practice needs more focus and improvement.

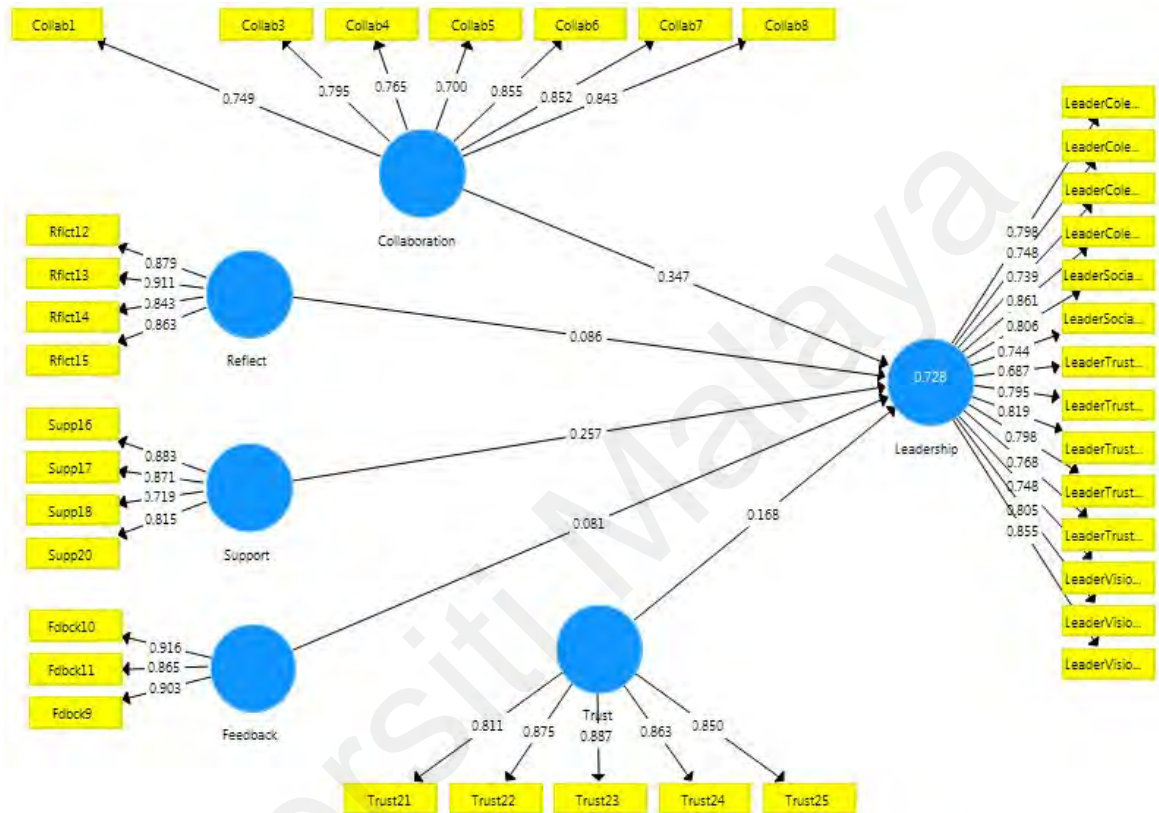


Figure 4.3 Relationship between coaching sub constructs and Leadership

c) Relationship between Elements of Coaching and Role of CPD

To explore the relationship between coaching constructs and continuous professional development (CPD), data analysis presented in Table 4.76 and Figure 4. 4 provides the answer to the following hypothesis:

H5.3a: there is a significant relationship between sub construct collaboration and CPD

H5.3b: there is a significant relationship between sub construct feedback and CPD

H5.3c: there is a significant relationship between sub construct reflect and CPD

H5.3d: there is a significant relationship between sub construct support and CPD

H5.3e: there is a significant relationship between sub construct trust and CPD

Table 4.76

T-statistics, standardized regression weight, (β) and R² of path coefficients of coaching constructs towards CPD.

	Relationship	Beta Value	SD	T Value	P Values	R2	Result
H5.3a	Collab -> CPD	0.212	0.048	4.411	0.000	0.665	Supported
H5.3b	Fback -> CPD	0.124	0.060	2.057	0.040		Supported
H5.3c	Reflect -> CPD	0.075	0.064	1.173	0.241		Not Supported
H5.3d	Supp -> CPD	0.256	0.064	3.967	0.000		Supported
H5.3e	Trust -> CPD	0.237	0.056	4.241	0.000		Supported

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

Based on the findings in Table 4.76, the R² value for coaching constructs towards CPD was 0.665. It can be interpreted that coaching elements contributed 66.5 percent towards CPD. It can be seen that most significant relationship with coaching construct and CPD would be support with ($\beta=0.256$, $t= 3.967$, $p= 0.000$) followed by trust ($\beta=0.237$, $t= 4.241$, $p= 0.000$), collaboration ($\beta=0.212$, $t= 4.411$, $p= 0.000$), feedback ($\beta=0.124$, $t= 2.057$, $p= 0.040$). and reflect ($\beta=0.075$, $t= 1.173$, $p= 0.241$).

Based on the findings, it can be interpreted that Continuous professional development function as a support in providing the knowledge and skills based on the needs of the teachers. The support provided by the coach help to improve learning outcome alongside the feedback given which encourages teacher professional learning. In CPD teachers and coaches work as partners and therefore support each other.

Nevertheless, collaboration, reflect and trust also contribute to CPD. Trust is established to allow collaboration among them. The feedback given allow them to

reflect on their own practices. The p value affirms that there is a significant relationship between coaching construct and learning outcomes.

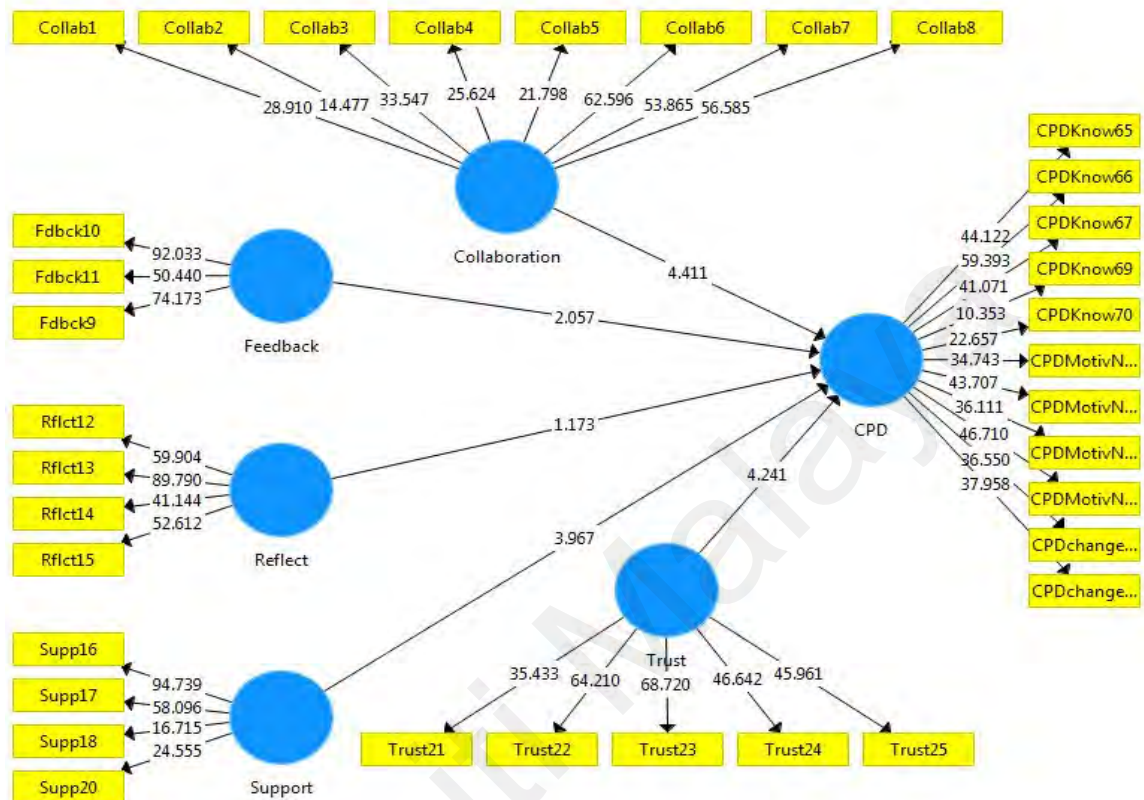


Figure 4.4 Relationship between coaching construct with professional development

d) Relationship between Elements of Coaching and Learning Outcome

To explore the relationship between coaching constructs and learning outcome, data analysis presented in Table 4.77 and Figure 4. 5 provides the answer to the following hypothesis:

H5.4a: there is a significant relationship between sub construct collaboration and learning outcome

H5.4b: there is a significant relationship between sub construct feedback and learning outcome

H5.4c: there is a significant relationship between sub construct reflect and learning outcome

H5.4d: there is a significant relationship between sub construct support and learning outcome

H5.4e: there is a significant relationship between sub construct trust and learning outcome.

Table 4.77 shows the t-statistics, standardized regression weight, (β) and R² of path coefficients of coaching constructs towards Learning Outcome.

Table 4.77

T-statistics, standardized regression weight, (β) and R² of path coefficients of coaching constructs towards Learning Outcome

	Relationshi p	Beta Value	SD	T Value	P Values	R2	Result
H5.4a	Collab -> LO	0.162	0.057	2.870	0.004	0.574	Supported
H5.4b	Fdbck -> LO	0.205	0.069	2.959	0.003		Supported
H5.4c	Reflect -> LO	0.052	0.071	0.730	0.466		Not Supported
H5.4d	Supp -> LO	0.253	0.067	3.772	0.000		Supported
H5.4e	Trust -> LO	0.162	0.058	2.787	0.006		Supported

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

The analysis in Table 4.77 shows that the R² value for coaching constructs towards LO was 0.574. It can be interpreted that coaching elements contributed 57.4 percent towards learning outcome. Construct support had the highest total effect with ($\beta=0.253$, $t= 3.772$, $p= 0.000$). followed by feedback ($\beta=0.205$, $t= 2.959$, $p= 0.003$), trust ($\beta=0.162$, $t= 2.787$, $p= 0.006$). collaboration ($\beta=0.162$, $t= 2.870$, $p= 0.004$). and reflect ($\beta=0.052$, $t= 0.730$, $p= 0.466$).

Based on the findings, it can be interpreted that support is essential to allow teachers creating changes towards learning outcome. This is done through the feedback given by coaches on their classroom practices This shows that the support provided by the coach help to improve learning outcome with the help of feedback given which help to improve classroom practices.

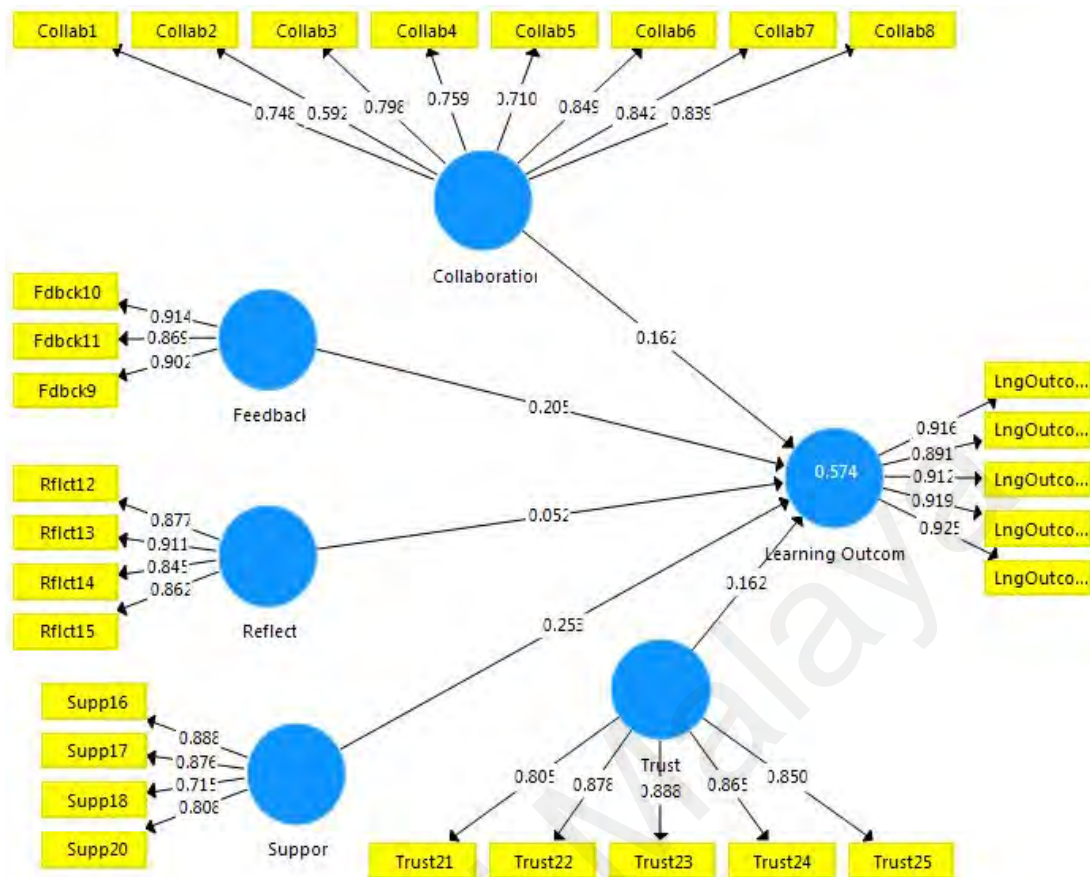


Figure 4.5 Relationship between Coaching Constructs and Learning Outcome

Nevertheless, collaboration, trust and reflect also contribute to the improvement of learning outcome. When trust towards the coach has been established, it opens up an opportunity for teachers to collaborate with the coach in helping them to reflect on their instructional practices which is the key to improving learning outcome. The p value affirms that there is a significant relationship between coaching construct and learning outcomes.

Reflect construct has the lowest total effect for all the 4 variables, this reflect the practice of coaching itself where reflective skills were not highly practiced in coaching although it is one of the most important skills to be mastered by both teacher and coach to ensure effective coaching. The p value ($p= 0.446$) also suggested that the relationship between reflect and learning outcome were not significant.

e) Relationship between Elements of Coaching and Training

To explore the relationship between coaching constructs and training, data analysis presented in Table 4.78 and Figure 4. 6 provides the answer to the following hypothesis:

H5.5a: there is a significant relationship between sub construct feedback and training frequency

H5.5b: there is a significant relationship between sub construct reflect and training frequency

H5.5c: there is a significant relationship between sub construct support and training frequency

H5.5d: there is a significant relationship between sub construct trust and training frequency

H5.5e: there is a significant relationship between sub construct collaboration and training frequency

H5.6a: there is a significant relationship between sub construct feedback and training type

H5.6b: there is a significant relationship between sub construct reflect and training type

H5.6c: there is a significant relationship between sub construct support and training type

H5.6d: there is a significant relationship between sub construct trust and training frequency

H5.6e: there is a significant relationship between sub construct collaboration and training type.

Table 4.78

T-statistics and standardized regression weight (β) of coaching constructs towards FreqTraining and TypeTraining

Relationship	Beta Value	SD	T Value	P Value	R2	Result
H5.5a Fdbck -> FrqTrg	0.180	0.092	1.970	0.049*	0.114	Supported
H5.5b Reflect -> FreqTrg	-0.164	0.081	2.032	0.043*		Supported
H5.5c Supp -> FrqTrg	0.083	0.100	0.829	0.408		Not Supported
H5.5d Trust -> FreqTrg	0.094	0.073	1.297	0.195		Not Supported
H5.5e Collab -> FrqTrg	0.160	0.082	1.941	0.053		Supported
H5.6a Fdbck -> TypTrg	0.150	0.096	1.558	0.120	0.148	Not Supported
H5.6b Reflect -> TypTrg	-0.107	0.087	1.226	0.221		Not Supported
H5.6c Supp -> TypTrg	0.291	0.089	3.273	0.001***		Supported
H5.6d Trust -> TypTrg	0.078	0.080	0.966	0.335		Not Supported
H5.6e Collab-> TypTrg	-0.016	0.079	0.198	0.843		Not Supported

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

The result in Table 4.78 shows that the R2 values for coaching constructs towards FreqTraining and TypeTraining were 0.114 and 0.148 respectively. It can be interpreted that coaching elements had small effect on frequency (11.4%) and type of training (14.8%). This indicates that the current practice of coaching in Malaysian school and its relationship with the training received by teachers and coaches. For construct FreqTraining feedback had the highest total effect with ($\beta=0.180$, $t= 1.970$, $p= 0.049$) followed by reflect ($\beta=-0.164$, $t= 2.032$, $p= 0.043$), collaboration ($\beta=0.160$, $t= 1.941$, $p= 0.053$), trust ($\beta=0.094$, $t= 1.297$, $p= 0.000$) and support ($\beta=0.083$, $t= 0.829$, $p= 0.408$).

Based on the findings in Table 4.78, it can be interpreted that feedback is essential to the frequency of training given to teachers. The trainings received help teachers to reflect on the own practices. Moreover, frequent training provides more

opportunities for teachers to collaborate. Additionally, it allows teachers to develop trust toward the coach and also their colleagues, subsequently teachers are more receptive to the kind of support given related to their practice.

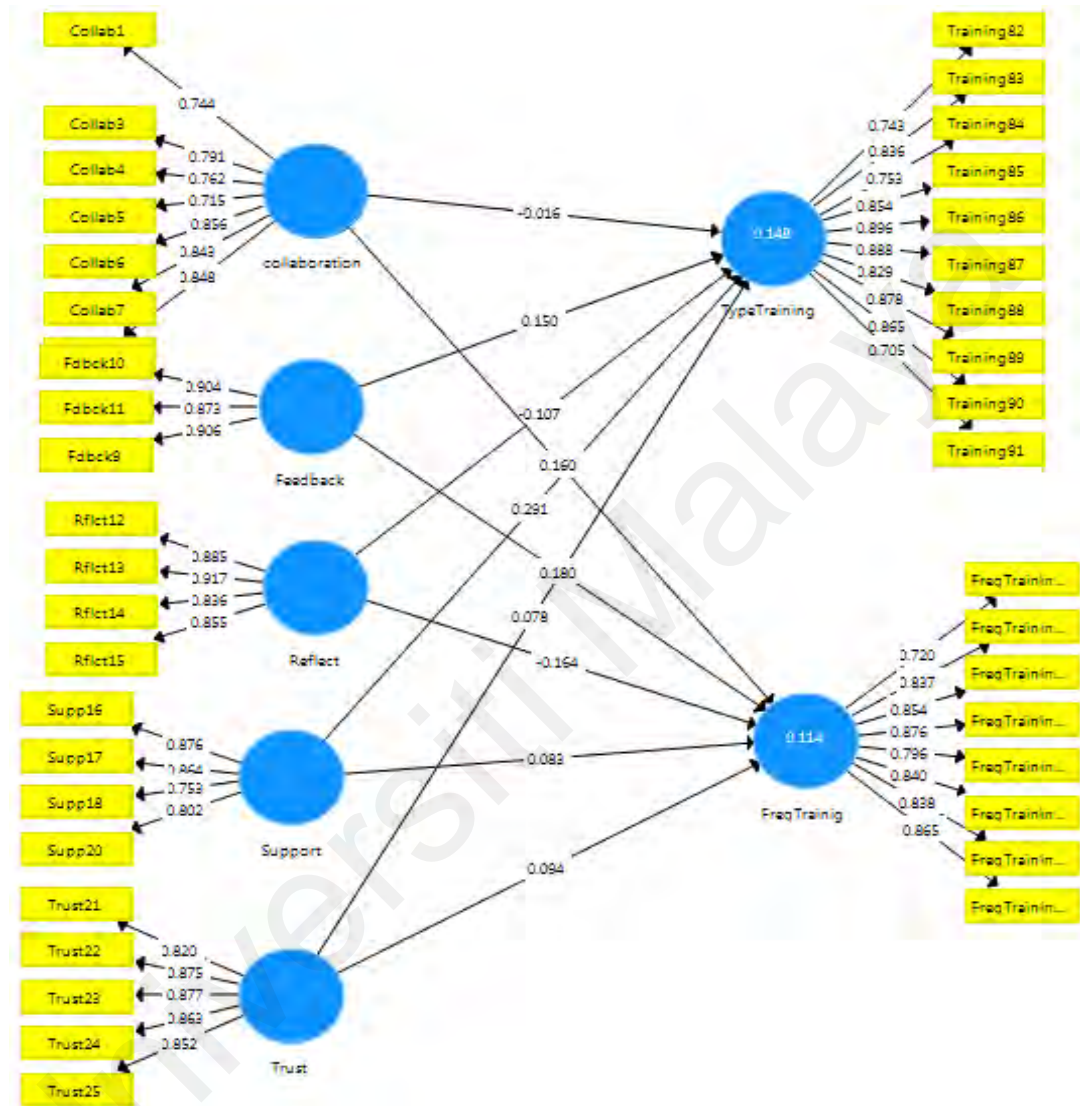


Figure 4.6 Relationship between Coaching Constructs and Training

For TypeTraining, support had the highest total effect with ($\beta=0.291$, $t=3.272$, $p=0.001$) followed by feedback ($\beta=0.150$, $t=1.558$, $p=0.120$) reflect ($\beta=-0.107$, $t=1.226$, $p=0.221$) trust ($\beta=0.078$, $t=0.966$, $p=0.335$) and collaboration ($\beta=-0.016$, $t=0.198$, $p=0.843$). Based on the findings, it can be interpreted that support is essential in the implementation on the different types of training. This is done

through the feedback given by coaches on their classroom practices This shows that the support provided by the coach help to improve learning outcome with the help of feedback given which help to improve classroom practices.

**f) Relationship between Elements of Coaching and Climate,
Implementation Level and Overall Improvement**

To explore the relationship between coaching constructs towards collaboration and climate, implementation and overall improvement, data analysis presented in Table 4.79 and Figure 4. 7 provides the answer to the following hypothesis:

H5.7a: there is a significant relationship between sub construct collaboration towards climate

H5.7b: there is a significant relationship between sub construct feedback towards climate

H5.7c: there is a significant relationship between sub construct trust towards climate

H5.7d: there is a significant relationship between sub construct support towards climate

H5.7e: there is a significant relationship between sub construct reflect towards climate

H5.8a: there is a significant relationship between sub construct collaboration towards implementation

H5.8b: there is a significant relationship between sub construct feedback towards implementation

H5.8c: there is a significant relationship between sub construct trust towards implementation

H5.8d: there is a significant relationship between sub construct support towards implementation

H5.8e: there is a significant relationship between sub construct reflect towards implementation

H5.9a: there is a significant relationship between sub construct collaboration towards overall improvement

H5.9b: there is a significant relationship between sub construct feedback towards overall improvement

H5.9c: there is a significant relationship between sub construct trust towards overall improvement

H5.9d: there is a significant relationship between sub construct support towards overall improvement

H5.9e: there is a significant relationship between sub construct reflect towards overall improvement

Data analysis of the findings based on T-statistics, standardized regression weight, (β) and R² of path coefficients of coaching constructs towards Climate, Implementation Level and Overall Improvement are shown in Table 4.79 and Figure 4.7

For construct Climate, the R² value for coaching constructs towards climate was 0.401. It can be interpreted that coaching elements contributed 40.1 percent of school climate. The element of Collaboration had the highest total effect with ($\beta=0.235$, $t= 3.718$, $p= 0.000$) followed by trust ($\beta=-0.143$, $t= 2.114$, $p= 0.017$), reflect ($\beta=0.123$, $t= 1.454$, $p= 0.073$), support ($\beta=0.104$, $t= 1.207$, $p= 0.114$) and feedback ($\beta=0.097$, $t= 1.268$, $p= 0.103$).

Based on the findings, it can be interpreted that collaboration between teachers and coaches is essential in creating the right working climate. Trust is also essential as it enables teachers to work together with coaches. Being reflective

towards practices also creates a good working climate. Moreover, coaches could show their support towards teachers by providing appropriate feedback for the purpose of improving classroom practices.

Table 4.79

T-statistics, standardized regression weight, (β) and R² of path coefficients of coaching constructs towards Climate, Implementation Level and Overall Improvement

		(β) Value	SD	T Statistic	P Values	R ²	Result
H5.7a	COLL -> CLIMT	0.235	0.063	3.718	0.000***	0.401	Supported
H5.7b	FEDB -> CLIMT	0.097	0.077	1.268	0.103		Not Supported
H5.7c	REF -> CLIMT	0.123	0.085	1.454	0.073		Not Supported
H5.7d	SUPP -> CLIMT	0.104	0.086	1.207	0.114		Not Supported
H5.7e	TRU -> CLIMT	0.143	0.067	2.114	0.017*		Supported
H5.8a	COLL -> IMPLEM	0.361	0.069	5.240	0.000***	0.413	Supported
H5.8b	FEDB -> IMPLEM	-0.11	0.081	1.364	0.087		Not Supported
H5.8c	REF -> IMPLEM	0.181	0.08	2.271	0.012**		Supported
H5.8d	SUPP -> IMPLEM	0.096	0.089	1.077	0.141		Not Supported
H5.8e	TRU -> IMPLEM	0.17	0.067	2.526	0.006**		Supported
H5.9a	COLL -> OVIMP	0.041	0.057	0.723	0.235	0.628	Not Supported
H5.9b	FEDB -> OVIMP	0.075	0.057	1.313	0.095		Not Supported
H5.9c	REF -> OVIMP	0.06	0.065	0.922	0.179		Not Supported
H5.9d	SUPP -> OVIMP	0.103	0.066	1.555	0.06		Not Supported
H5.9e	TRU -> OVIMP	0.111	0.055	2.031	0.021*		Supported

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

For construct Implementation, the R² value for coaching constructs towards implementation was 0.413. It can be interpreted that coaching elements contributed 41.3 towards coaching implementation. The element of collaboration had the highest

total effect with ($\beta=0.361$, $t= 5.240$, $p= 0.000$) followed by reflect ($\beta=-0.181$, $t= 2.271$, $p= 0.012$), trust ($\beta=0.170$, $t= 2.526$, $p= 0.006$), feedback ($\beta=0.110$, $t= 1.364$, $p= 0.087$) and support ($\beta=0.096$, $t= 1.077$, $p= 0.141$).

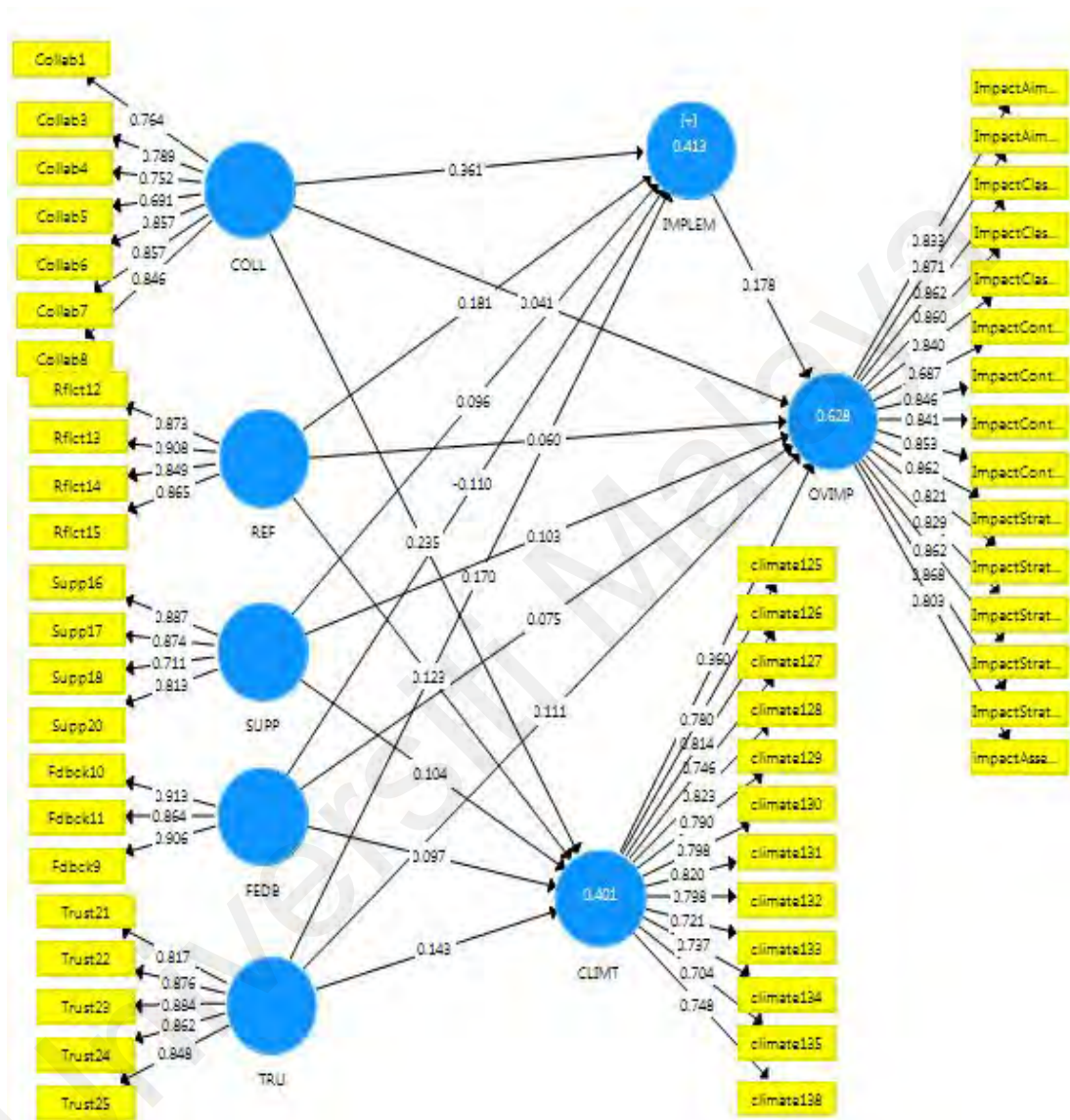


Figure 4.7 Relationship between Coaching Construct towards Climate, OVIMP and IMPLEM

Based on the findings, it can be interpreted that collaboration among teachers and coaches is essential determining the implementation level of coaching. Being reflective is also important as coaching is about improving teachers' practices. Nevertheless, teachers need to trust their coaches to ensure coaching could be

implemented successfully. On the other hand, feedback and support provided by coaches to teachers also determines the level of coaching implementation in school.

For construct Overall Improvement, the R² value for coaching constructs towards overall improvement was 0.628. It can be interpreted that coaching elements contributed 62.8 percent towards overall improvement. The element of trust had the highest total effect with ($\beta=0.111$, $t= 2.031$, $p= 0.021$) followed by support ($\beta=-0.103$, $t= 1.555$, $p= 0.06$), feedback ($\beta=0.075$, $t= 1.313$, $p= 0.095$), reflect ($\beta=0.06$, $t= 0.922$, $p= 0.179$) and collaboration ($\beta=0.041$, $t= 0.723$, $p= 0.235$). Based on the finding, the only significant relationship was Trust-OVIMP.

Based on the findings, it can be interpreted that to create overall improvement, trust is essential. Teachers need to trust coaches. On the other hand, coaches need to provide the right amount of support needed by teachers. Feedback is also important as it help teachers to reflect better and make necessary changes for improving their practices. Nevertheless, in creating overall improvement collaboration among teachers and coaches is still lacking. The significant relationship between Trust-> OVIMP shows that coaches succeeded in developing trust towards coaches among teachers.

Table 4.80 illustrates the summary of most significant and least significant constructs based on relationship between coaching sub-constructs and independent variables based on the findings in Table 4.74, Table 4.75, Table 4.76, Table 4.77, Table 4.78 and Table 4.79.

Based on the summary of findings in Table 4.80, sub construct support is the most significant for constructs INSIMP, CPD, and LO and the least significant for all the three constructs is sub construct reflect. It can be interpreted that providing support is highly practiced during coaching and it yield significant impact on

instructional improvement, professional learning as well as learning outcome. However, the practice of reflective element is comparatively low thus creating a low impact in instructional improvement, professional learning and learning outcome.

Table 4.80

Summary of most significant and least significant relationship between independent variables and coaching sub-constructs

Relationship	Most significant	Least significant
a) coaching sub-constructs and INSIMP	Support	Reflect
b) coaching sub-constructs and CPD	Support	Reflect
c) coaching sub-constructs and LEAD	Collaboration	Feedback
d) coaching sub-constructs and LO	Support	Reflect
e) coaching sub-constructs and CLIM	Collaboration	Feedback
f) coaching sub-constructs and IMPEM	Collaboration	Support
g) coaching sub-constructs and OVIMP	Trust	Collaboration

On the other hand, sub construct collaboration is the most significant for constructs LEAD, CLIM and IMPEM and the least significant for LEAD and CLIM constructs is sub construct feedback whereas the least significant for construct IMPEM is sub construct support. It can be interpreted that collaboration is highly practiced during coaching and it yield significant impact on leadership, school climate as well as level of implementation. However, the practice of feedback comparatively showed low relationship with leadership and school climate indicating that coaches did not provide the right amount of feedback needed and the school climate have low element of feedback practiced. For construct Implementation, in can be interpreted while collaboration between coaches and teachers are high, the amount of support given is fairly low.

For construct Overall Improvement, the most significant sub-construct is trust while the least significant sub-construct is collaboration. This can be interpreted that trust highly existed between coaches and teachers that it contributed towards overall school improvement. However, the element of collaboration between teachers and coaches is comparatively low.

4.6.6 Mediating Effect of Coaching

Data analysis in this section will provide the answer for research objective 6 by answering the following research question:

RQ6: Is there any mediating effect of coaching on

- a) role of leadership, professional development (CPD), learning outcomes and instructional improvement;
- b) school climate, coaching implementation and overall improvement

Accordingly, data analysis in this section will prove the following hypotheses:

H6.1: There is a significant mediating effect of coaching between role of leadership and instructional improvement

H6.2: There is a significant mediating effect of coaching between learning outcome and instructional improvement

H6.3: There is a significant mediating effect of coaching between CPD and instructional improvement

H6.4: There is a significant mediating effect of coaching between climate and overall improvement

H6.5: There is a significant mediating effect of coaching between implementation and overall improvement

The research question is intended to address the mediating effect of coaching in the relationship between other variables related to the implementation of coaching

and instructional improvement. Thus, Structural Equation Modelling (SEM) was used to evaluate the various effects of coaching construct.

PLS SEM was used in performing the mediation analysis of the study. Based on the bootstrapping result, the total effect was first obtained to see if there is a significant total effect of coaching construct and instructional improvement. The total effect is measured by looking at t-statistics which is used to evaluate the significant relationship between independent and dependent variables. If the total effect is not established between the variables, therefore, mediating effect will not be present (Wong, 2016).

If the total effect is established, the mediator will be present in the model. The significance of direct effect and mediating effect are then checked through path coefficients. The strength of the mediating effect could be examined based on the total effect using the following formulae:

$$\text{Total effect} = \text{Direct effect} + \text{mediating effect}$$

The following section will discuss on the various effects of coaching construct and other dependent and independent variables involved with coaching. The effects of coaching construct on CPD, Leadership and learning outcome with instructional improvement are discussed in the next section based on the findings of structural model as presented in Figure 4.1 and Table 4.73. Details of findings of the various effects of coaching are discussed in the following section.

4.6.6.1 Effects of coaching on role of leadership, professional development (CPD), learning outcomes and instructional improvement

This section will discuss on the effects of coaching on instructional improvement based on the findings of structural and mediation model of coaching.

a) **Total Effect**

The strength of a relationship between variables is represented by the t-value and the level of significance. The result of the structural model assessment in Table 4.73 shows that, the strength of relationship between coaching on instructional improvement (INSIMP) is significant with t-statistics greater than 1.96 ($\beta=0.360$, $t=7.579$ $p= 0.00$). The result of R2 for the effect of coaching towards instructional improvement equals to 0.828. This can be interpreted as 82.8 percent of instructional improvements is due to coaching.

Table 4.81

Total effects of constructs coaching, CPD, LO and Leadership with INSIMP

	Beta Value	SD	T value	P Values	R2
CPD -> Coaching	0.264	0.052	5.101	0.000***	0.751
CPD -> INSIMP	0.226	0.045	5.081	0.000***	
Coaching -> INSIMP	0.858	0.017	51.492	0.000***	0.735
LO -> Coaching	0.150	0.051	2.945	0.003**	
LO -> INSIMP	0.129	0.044	2.935	0.003**	
LSHIP -> Coaching	0.500	0.052	9.545	0.000***	
LSHIP -> INSIMP	0.429	0.046	9.232	0.000***	

*Significant at $p<.05$, **Significant at $p<.01$; ***Significant at $p<.001$

Whereas the findings based on mediation model presented in Table 4.81 and Figure 4.8 indicated that coaching has a significant total effect on instructional improvement with t-statistics greater than 1.96 ($\beta=0.858$, $t= 51.492$, $p= 0.00$). The result of R2 for the effect of coaching towards instructional improvement equals to 0.735. This can be interpreted as 73.5 percent of instructional improvements is due to coaching. It can be concluded that the findings in both structural and mediation model shows that coaching has a strong effect on instructional improvement.

b) **Direct and Mediating Effect of Coaching**

The strength of the mediator can be examined through the use of total effect by using the formulae total effect equal to direct effect plus mediating effect through

standardized regression weight (β) values (Wong, 2016). The mediating effect is the product of a and b based on the mediation model of Baron & Kenny (1986). Table 4.82 shows the interpretation of the effect size based on Muijs's (2011) table of beta value and strength of effect size. The mediating variable of this study is Coaching as illustrated in Figure 4.8. The independent variables are CPD, LO and Leadership while the dependent variable is instructional improvement (INSIMP).

Table 4.82
The Muijs's Beta Value and Strength of Effect Size

Beta (β)	Strength of Effect Size
> .50	Strong Effect
>.30 to .50	Moderate Effect
>.10 to .30	Modest Effect
0 to .10	Weak Effect

(Muijs, 2011)

Based on the findings in Table 4.83, the direct effect between CPD-Coaching is significant ($\beta=0.264$, $t= 5.101$, $p= 0.00$). The direct effect between CPD- INSIMP is also significant ($\beta=0.226$, $t= 5.081$, $p= 0.00$). The direct effect between LO-Coaching is similarly significant ($\beta=0.150$, $t= 2.94$, $p= 0.03$). However, the value of the relationship is low. Similarly, the direct effect between LO-INSIMP is also significant but with low value ($\beta=0.129$, $t= 2.935$, $p= 0.03$). The direct effect between LSHIP-Coaching is significant ($\beta=0.500$, $t= 9.545$, $p= 0.00$) whereas the direct effect between LSHIP-INSIMP is also significant ($\beta=0.429$, $t= 9.232$, $p= 0.00$). All the relationship results are greater than 1.96 and therefore are all significant.

Based on the mediation model (Figure 4.2), LO, CPD and LSHIP contributed to the value of R2 of Coaching (0.751) with LSHIP having the highest effect on the

R2 value, followed by CPD and LO. This can be interpreted as 75.1 percent of the practice of coaching is due to Leadership, CPD and learning outcomes.

By referring to Table 4.81, it shows that there is a significant mediating effect of coaching on the relationship between CPD and instructional improvement. Both relationships CPD-Coaching ($\beta=0.264$, $t= 5.101$, $p= 0.00$) and Coaching-INSIMP ($\beta=0.360$, $t= 7.579$, $p= 0.00$) are statistically significant. In addition, there is also significant direct effect of the relationship between CPD and instructional improvement ($\beta=0.226$, $t= 5.081$, $p= 0.00$). When there is a direct effect between the causal variable and the outcome variable, it indicated that partial mediating effect occurs (Baron & Kenny, 1986). Hence, results showed that there is partial mediating effect of coaching on the relationship between CPD and instructional improvement.

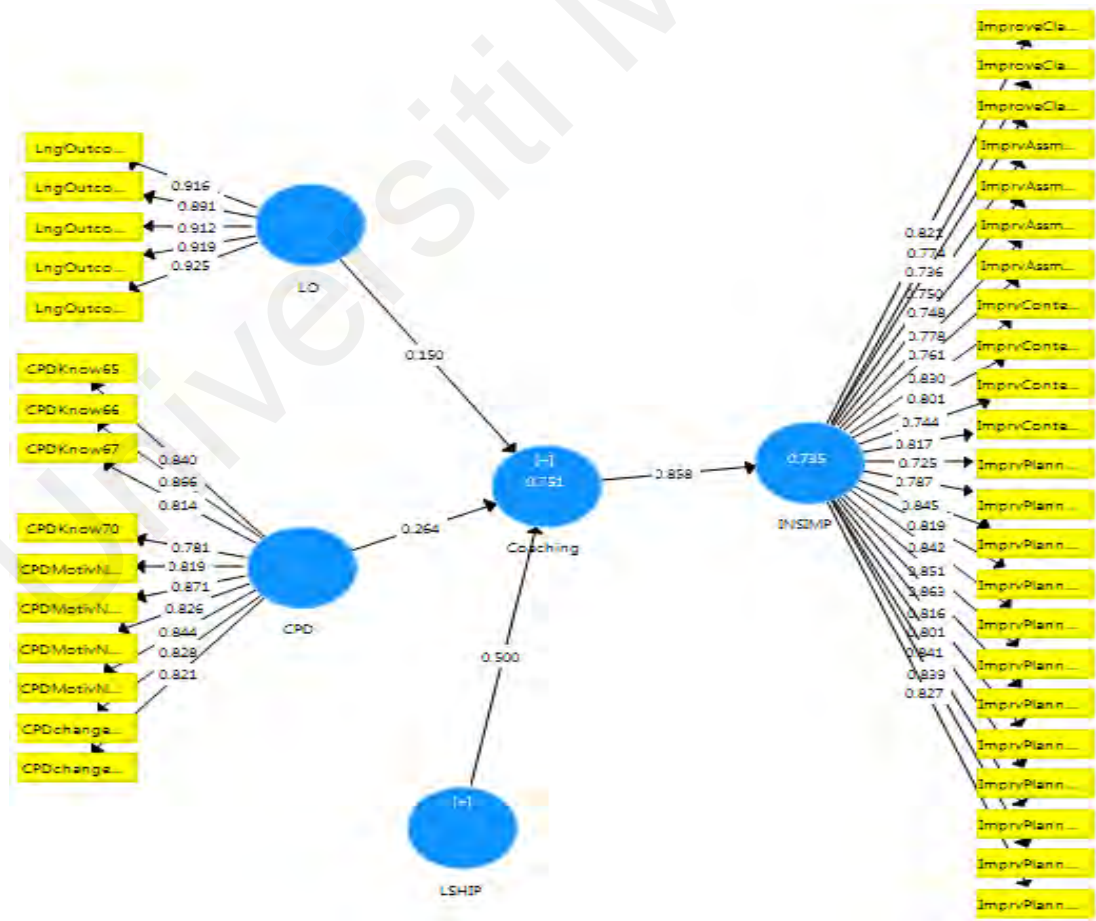


Figure 4.8 Mediation Model for Coaching on the Relationship between Learning outcome, CPD and Leadership and Instructional Improvement

Also, by referring to Table 4.81, it shows that there is a significant mediating effect of coaching on the relationship between LO and instructional improvement. Both relationships LO-Coaching ($\beta=0.150$, $t= 2.94$, $p= 0.03$) and Coaching-INSIMP ($\beta=0.360$, $t= 7.579$ $p= 0.00$) are statistically significant. In addition, there is also significant direct effect of the relationship between LO and instructional improvement ($\beta=0.129$, $t= 2.935$, $p= 0.03$). When there is a direct effect between the causal variable and the outcome variable, it indicated that partial mediating effect occurs (Baron & Kenny, 1986). Hence, results showed that there is partial mediating effect of coaching on the relationship between LO and instructional improvement.

Similarly, by referring to Table 4.81, it shows that there is a significant mediating effect of coaching on the relationship between Leadership and instructional improvement. Both relationships Leadership-Coaching ($\beta=0.500$, $t= 9.545$, $p= 0.00$) and Coaching-INSIMP ($\beta=0.360$, $t= 7.579$ $p= 0.00$) are statistically significant. In addition, there is also significant direct effect of the relationship between Leadership and instructional improvement ($\beta=0.429$, $t= 9.232$, $p= 0.00$). When there is a direct effect between the causal variable and the outcome variable, it indicated that partial mediating effect occurs (Baron & Kenny, 1986). Hence, results showed that there is partial mediating effect of coaching on the relationship between Leadership and instructional improvement.

Based on the result, it can be concluded that all the three mediations are significant at t -value >1.96 and p -value <0.005 . As a whole, coaching mediation between Leadership and INSIMP is the most significant followed by coaching mediation between CPD and INSIMP. Coaching mediation between LO and INSIMP is the least significant between the three mediations. Based on the findings, it can be interpreted that Leadership is an important element in instructional improvement.

This is followed by continuous professional development where teachers gain new knowledge and skills. However, the mediation of coaching between learning outcome and instructional improvement is, thus far not highly practiced in Malaysian schools.

Table 4.83

Coaching Mediation Effect between construct CPD, LO and Leadership with INSIMP

	Hypotheses	Std. Beta	t-value	P Value	Confidence Interval		Decision
					LL	UL	
H6.1	CPD -> Coaching -> INSIMP	0.226	5.081	0.000***	0.148	0.319	Supported
H6.2	LO-> Coaching -> INSIMP	0.129	2.935	0.003**	0.148	0.319	Supported
H6.3	LSHIP -> Coaching -> INSIMP	0.429	9.232	0.000***	0.336	0.518	Supported

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

In addition, based on the findings in Table 4.83, the bootstrapping analysis has shown that all three indirect effects, $\beta=0.226$, 0.129 and 0.429 are significant with t-values of 5.081 , 2.935 and 9.232 . The indirect effects 95% Boot CI Bias Corrected: [LL= 0.148 , UL= 0.319], [LL= 0.148 , UL= 0.319] and [LL= 0.336 , UL= 0.518], do not straddle a 0 in between indicating there is mediation (Preacher and Hayes, 2004, 2008). Thus, we can conclude that the mediation effects are statistically significant and H6.1, H6.2 and H6.3 are supported.

4.6.6.2 Effects of coaching on the relationship between school climate, coaching implementation and overall improvement.

This section will discuss on the effects of coaching on overall school improvement based on the findings of structural and mediation model of coaching.

a) Total Effect

The strength of a relationship between variables is represented by the t-value and the level of significance. The result of the structural model assessment in Table 4.73 shows that, the strength of relationship between coaching on overall improvement (OVIMP) is significant with t-statistics greater than 1.96 ($\beta=0.166$, $t= 2.904$, $p= 0.001$). The result of R2 for the effect of coaching towards instructional improvement equals to 0.65 (moderate). This can be interpreted as 65 percent of overall school improvements is due to coaching.

Whereas the findings based on mediation model presented in Table 4.84 and Figure 4.9 indicated that coaching have a significant total effect on overall school improvement with t-statistics greater than 1.96 ($\beta=0.696$, $t= 22.679$, $p= 0.000$). Whereas, the result of R2 for the effect of coaching towards instructional improvement equals to 0.484. This can be interpreted as 48.4 percent of overall school improvements is due to coaching. It can be concluded that the findings in both structural and mediation model shows that coaching has a medium effect on overall school improvement.

Table 4.84

Total effects between constructs Coaching, CLIM, IMPLEM and OVIMP

	Beta Value	Std. Dev	T value	P Values	R2
CLIM -> COACHING	0.380	0.062	6.080	0.000***	0.452
CLIM -> OVIMP	0.264	0.048	5.535	0.000***	
COACHING -> OVIMP	0.696	0.031	22.679	0.000***	0.484
IMPLEM -> COACHING	0.327	0.063	5.225	0.000***	
IMPLEM -> OVIMP	0.227	0.045	5.048	0.000***	

*Significant at $p<.05$; **Significant at $p<.01$; ***Significant at $p<.001$

b) Direct and Mediating effect of Coaching

The mediating variable of this study is Coaching as illustrated in Figure 4.9 The independent variables are CLIM and IMPEM while the dependent variable is overall improvement (OVIMP).

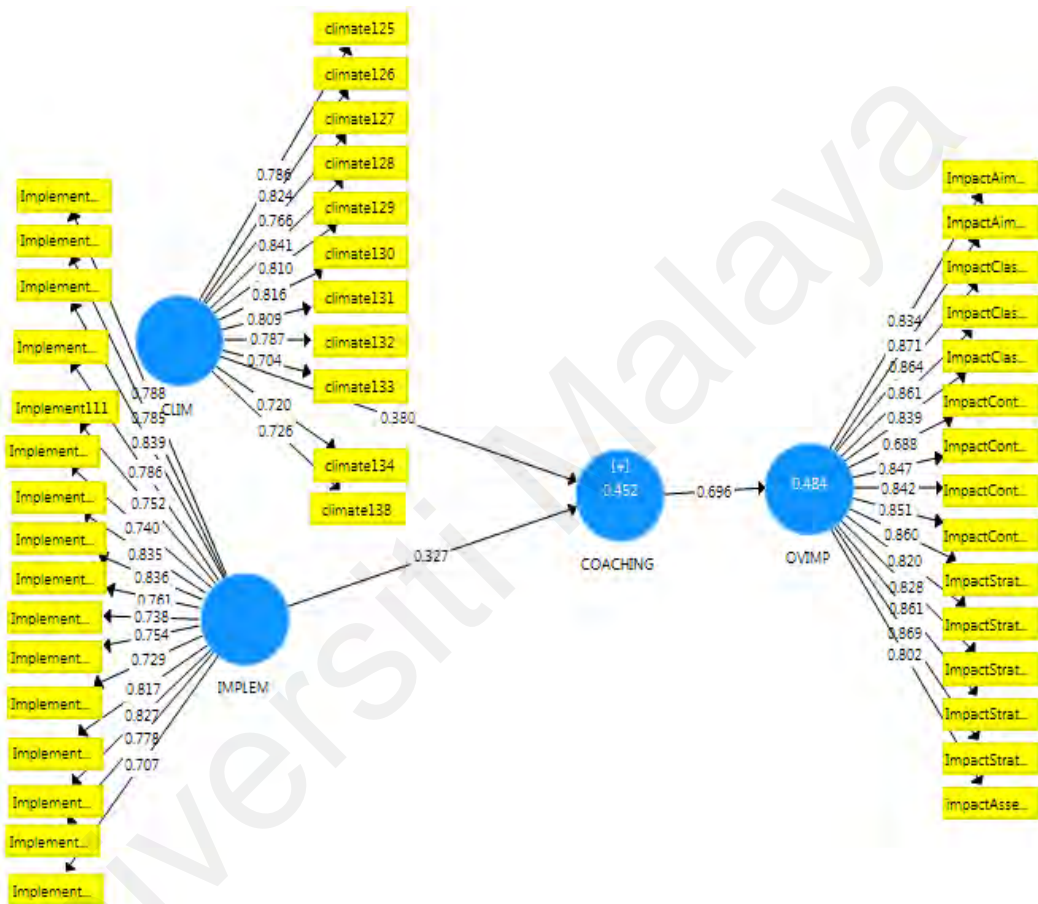


Figure 4.9 Mediation Model for Coaching on the Relationship between Climate, Implementation and Overall Improvement

Based on the findings in Table 4.84, the direct effect between CLIM-Coaching is significant ($\beta=0.380$, $t= 6.080$, $p= 0.00$). The direct effect between CLIM- OVIMP is also significant ($\beta=0.264$, $t= 5.535$, $p= 0.00$). The direct effect between Coaching- OVIMP is similarly significant ($\beta=0.696$, $t= 22.679$, $p= 0.000$). Similarly, the direct effect between IMPEM-Coaching is also significant with

($\beta=0.327$, $t= 5.225$, $p= 0.000$). The direct effect between IMPLEM-OVIMP is significant with ($\beta=0.227$, $t= 5.048$, $p= 0.00$). All the relationship results are greater than 1.96 and therefore are all significant.

Based on the mediation model in Figure 4.9, CLIM and IMPLEM contributed to the value of R² of Coaching (0.452) with CLIM having the highest effect on the R² value (0.380), followed by IMPLEM (0.327). This can be interpreted as 45.2 percent of the practice of coaching is due to school climate and coaching implementation. The R² value for OVIMP on the other hand is 0.484. This can be interpreted as 48.4 percent of the overall school improvement is due to coaching.

By referring to Table 4.84, it shows that there is a significant mediating effect of coaching on the relationship between CLIM and overall improvement (OVIMP). Both relationships CLIM-Coaching ($\beta=0.380$, $t= 6.080$, $p= 0.00$) and Coaching-OVIMP ($\beta=0.696$, $t= 22.679$, $p= 0.00$) are statistically significant. In addition, there is also significant direct effect of the relationship between CLIM and Overall improvement(OVIMP) ($\beta=0.264$, $t= 5.535$, $p= 0.00$). When there is a direct effect between the causal variable and the outcome variable, it indicated that partial mediating effect occurs (Baron & Kenny, 1986). Hence, results showed that there is partial mediating effect of coaching on the relationship between Climate and overall improvement.

On the other hand, by referring to Table 4.84, it shows that there is a significant mediating effect of coaching on the relationship between implementation (IMPLEM) and instructional improvement (OVIMP). Both relationships IMPLEM-Coaching ($\beta=0.327$, $t= 5.225$, $p= 0.000$) and Coaching-OVIMP ($\beta=0.696$, $t= 22.679$, $p= 0.00$) are statistically significant. In addition, there is also significant direct effect of the relationship between IMPLEM and OVIMP ($\beta=0.227$, $t= 5.048$, $p= 0.000$).

When there is a direct effect between the causal variable and the outcome variable, it indicated that partial mediating effect occurs (Baron & Kenny, 1986). Hence, results showed that there is partial mediating effect of coaching on the relationship between implementation and overall improvement.

Based on the result, it can be concluded that both mediations are significant at t-value >1.96 and p-value <0.005. As a whole, coaching mediation between CLIM and OVIMP is more significant than coaching mediation between IMPLEM and OVIMP although the difference in value is minimal. Based on the R2 value, both mediations are of moderate effects. Based on the findings, it can be interpreted that both school climate and level of implementation of coaching are important elements in overall school improvement.

In addition, based on the findings in Table 4.85, the bootstrapping analysis has shown that both indirect effects, $\beta=0.264$, and 0.227 are significant with t-values of 5.535 and 5.048. The indirect effects 95% Boot CI Bias Corrected: [LL= 0.178, UL=0.362] and [LL= 0.150, UL=0.324], do not straddle a 0 in between indicating there is mediation (Preacher and Hayes, 2004, 2008). Thus, we can conclude that the mediation effects are statistically significant and H6.4 and H6.5 are supported

Table 4.85
Hypothesis Testing on Coaching Mediation Effect between construct CLIM and IMPLEM with OVIMP

Hypothesis	Std Beta	T values	P Values	LL	UL	Decision
H6.4 CLIM -> COACHING -> OVIMP	0.264	5.535	0.000	0.178	0.362	Supported
H6.5 IMPLEM-> COACHING -> OVIMP	0.227	5.048	0.000	0.150	0.324	Supported

*Significant at p<.05; **Significant at p<.01; ***Significant at p<.001

4.6.7 Moderating Effect of Working Experience and Training

Data analysis in this section attempts to provide the answer for research objective 7 by answering the following question

Research Question 7:

Is there any moderating effect of working experience and training on instructional improvement?

This research question intended to address the effect of teaching experience as well as coaching competency based on the training received as moderating variable in the relationship between coaching and instructional improvement. Moderating variable affects the direction or the strength of the relation between independent and dependent variable (Baron & Kenny, 1986). For the purpose of testing the moderating effect involved, PLS SEM was undertaken for the analysis by testing the direct and moderating relationship between coaching (independent variable), instructional improvement (dependent variable) as well as the moderating variables namely teaching experience, type of training and frequency of training.

The significance values of the direct and moderating effects are evaluated using bootstrapping result based on t-statistics which are significant at $> \pm 1.96$ at 5% of the probability level ($p < .05$) (Chua & Chua, 2017). The moderating effect is measured through t-statistics of the interaction effect of the moderating variable between independent variables and dependent variables. If the interaction effect is significant, it signifies that the moderating variable demonstrated different effect on the tested causal path. It is thus could be concluded that the moderating effect exists and the tested moderating variable could be confirmed as a moderator.

4.6.7.1 Moderating Effect of Teaching Experience

For the analysis of moderating effect of teaching experience on the relationship between coaching and instructional improvement, a bootstrapping procedure was undertaken. The effect of the relationship between the variables is represented by Beta value and the significance of the relationship is measured based on t-statistics. Data analysis seek to prove the following hypotheses:

H7.1: There is a significant moderating effect of working experience between coaching and instructional improvement

Table 4.86 shows Beta Value and T-statistics value for moderating effect of teaching experience on the relationship between Coaching and Instructional Improvement

Table 4.86

Beta Value and T-statistics value for Moderating Effect of Teaching Experience on the Relationship between Coaching and Instructional Improvement

	Beta Value	Standard Deviation	T Statistics
H7.1 COACH*EXP -> INSIMP	-0.008	0.038	0.215
COACHING -> INSIMP	0.863	0.016	52.673
EXP -> INSIMP	-0.008	0.023	0.368

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

Based on Table 4.86, it shows that the direct effect of coaching to teacher instructional improvement are significant ($t=52.673$) at the .05 level ($p > .05$). In addition, the interaction between coaching and teaching experience were not significant as well ($t=0.215$, $p > .05$). This indicated that there were no statistically significant differences of teaching experience on the relationship between coaching practices and instructional improvement. Hence, teaching experience is not a significant moderator of the relationship between coaching practices and teacher instructional improvement. It means is no significant difference in years of teaching

experience with the relationship between coaching and teacher instructional improvement.

4.6.7.2 Moderating Effect of Frequency of Training

For the analysis of the moderating effect of frequency of training on the relationship between coaching and instructional improvement, a bootstrapping procedure was undertaken. The effect of the relationship between the variables is represented by Beta value and the significance of the relationship is measured based on t-statistics. Data analysis seek to prove the following hypotheses:

H7.2: There is a significant moderating effect of Training Frequency between coaching and instructional improvement

Table 4.87 shows Beta value and T-statistics value for Moderating Effect of Training Frequency on the relationship between Coaching and Instructional Improvement

Table 4.87
Beta Value and T-statistics value for Moderating Effect of Training Frequency on the Relationship between Coaching and Instructional Improvement

	Beta Value	Standard Deviation	T Statistics
COACHING -> INSIMP	0.830	0.021	39.764
H7.2 Coach*TrainFreq -> INSIMP	-0.020	0.031	0.636
TrainfreQ -> INSIMP	0.080	0.025	3.144

*Significant at $p < .05$; **Significant at $p < .01$; ***Significant at $p < .001$

Based on Table 4.87, it shows that the direct effect of coaching to teacher instructional improvement are significant ($t=39.764$) at the .05 level ($p > .05$). In addition, the interaction between coaching and frequency of training were not significant as well ($t=0.636$, $p > .05$). This indicated that there were no statistically significant differences of frequency of training on the relationship between coaching

practices and instructional improvement. Hence, frequency of training is not a significant moderator of the relationship between coaching practices and teacher instructional improvement. It means there is no significant difference in frequency of training with the relationship between coaching and teacher instructional improvement.

In conclusion, there is no significant difference in years of teaching experience with the relationship between coaching and teacher instructional improvement. Similarly, there is no significant difference in frequency of training with the relationship between coaching and teacher instructional improvement.

4.7 Summary of Findings

Based on the above discussion, the following are the summary of findings of the study based on respective research questions as listed in Chapter 1 page 34. The main findings are as follows:

Findings 1:

All the elements of coaching (collaboration, trust, support, feedback and reflect) were highly practiced in schools in Selangor and Sabah. However, there are several items which show that it is either low or moderately practiced. The level of coaching impact on instructional improvement is high. However, the level of coaching impact on leadership is moderate to high. In addition, the level of coaching impact on CPD, training, learning outcome and overall improvement is also high.

Findings 2:

The level of coaching skills and knowledge practiced by the coach is moderate. This is also reflected in the respondents' views that they highly agree that coaches should attend all the trainings listed except for adult learning which they moderately agree.

Findings 3:

The implementation of coaching in school is still at the implementation stage and has yet to become a culture practiced within the schools. It is also reflected in the moderate level of coaching activities practiced and moderate school climate (except for several instances where the level is high).

Findings 4:

There are several significant factors which are closely related to the implementation of coaching namely, leadership, CPD, instructional improvement, learning outcomes and school climate. Nevertheless, some factors were not significant i.e. overall improvement and implementation.

Findings 5:

There are significant relationships between coaching elements (collaboration, trust, support feedback and reflect) and other variables such as instructional improvement, leadership, CPD and learning outcome. However, the most significant and the least significant coaching element vary according to the relationship of coaching with each different variable. Nevertheless, construct reflect was found as not significant for all the variables followed by feedback where it is only significant in the relationship with instructional improvement, CPD and learning outcome.

Findings 6:

There is a partial mediating effect of coaching in the relationship between leadership, CPD and learning outcome towards instructional improvement. Similarly, there is a partial mediating effect of coaching in the relationship between school climate and coaching implementation towards overall improvement.

Findings 7:

Analysis of moderation effect reveals that there is no significant difference in years of teaching experience and frequency of training with the relationship between coaching and teacher instructional improvement.

4.8 Conclusion

This chapter presents the findings of the data collected from 470 teachers and coaches who are involved in coaching program in primary and secondary schools in Selangor and Sabah. Descriptive and inferential statistics were used to analyse the collected data in the attempt to answer all the proposed research questions.

In conclusion, there is a uniformity of the practice of coaching in both states regardless of the geographical factor. The difference in practice, if any, were relatively low. However, analysis of data based on roles provided a different angle of how teachers and coaches views at the different aspects related to coaching. This will be discussed further in the next chapter. Analysis using PLS SEM were able to provide explanation of the relationship between the various variables related to coaching. Based on the analysis, significant factors related to coaching were analysed. Additionally, the most significant as well as least significant constructs and variables related to coaching were also identified. At the same time, analysis of the role of coaching as a mediator was also analysed followed by analysis of moderator which affected instructional improvement. Discussion on the findings of the study are discussed in the next chapter.

CHAPTER 5

DISCUSSION

5.1 Introduction

This chapter begins with a summary of the study followed by a discussion on the findings of the study. Supports from relevant literature will also be presented based on the interpretation of data analysis as presented in chapter four. The discussions presented in this chapter are based on individual objectives of the study as outlined in chapter one. Theoretical and practical implications of the study will also be discussed followed by recommendations for future research.

5.2 Summary of the Study

The study looks at the implementation of coaching as a form of support provided to teachers in the attempt to help them improve classroom practices and increase learning outcome. The study looks at the relationship between various elements related to coaching namely elements of coaching (collaboration, trust, support, feedback and reflect), leadership, instructional improvement, students' learning outcomes and CPD. Additionally, the study also looks at the impact of coaching in terms of school climate, types and frequency of training, the implementation of coaching in schools as well as overall improvement.

For the purpose of data analysis, descriptive statistics based on mean values and standard deviation were undertaken to answer research questions 1, 2 and 3. Research question 1 looked at the level of coaching elements, leadership, instructional improvement, students' learning outcomes, CPD, school climate, training, coaching implementation as well as overall improvement. Research

question 2 looked at the level of coaching skills and knowledge as well as the type of training that should be taken by coaches. Research questions 3 looked at coaching implementation phase and how it is reflected in the level of coaching activities implemented as well as school climate. On the other hand, inferential analysis based on PLS SEM were undertaken to answer RQ 4, 5, 6 and 7. Research question 4 looked the various variables associated with coaching. Research question 5 looked at how the five elements of coaching influence the variables identified in research question 4. Research question 6 looked at the mediation effect of coaching while research question 7 looked the moderating effect of experience and frequency of training on the relationship between coaching and instructional improvement.

Data analysis were carried out based on the perception of 237 respondents from Selangor (teachers and coaches) and 233 respondents from Sabah teachers (total 470 respondents) of which 77 of them were coaches while 393 of the respondents were teachers from secondary and primary schools. The main findings of the study are as listed in Chapter 4 page 292. Further discussion on the findings of the study are presented in the next section.

5.3 Discussion of Findings

The study aims to investigate the implementation of coaching as a form of support provided to teachers in the attempt to help them improve classroom practices and increase learning outcome. Data analysis of the study reported in chapter four were presented based on individual research questions proposed in Chapter 1. Similarly, discussion of the findings in this chapter is based on individual proposed research questions supported by relevant literature review.

5.3.1 The Practice of the Elements of Coaching

There are several characteristics of effective coaching described by Shanklin (2006) namely collaborative teacher dialogues of various levels and knowledge, facilitation of the development of school vision related to literacy and district goals, data oriented (of teacher and student learning), continuous job-embedded professional learning and it is also a non-evaluative and supportive practice. In this study, several elements of coaching were looked at namely collaboration, feedback, reflective, support and trust.

5.3.1.1 Collaboration

The study found that most items for construct collaboration were given high value, although means for coaches in general were slightly higher than those for teachers. The exceptions were “The coach and teacher plan and present a shared lesson” given a moderate by coaches, but was rated high by teachers. “The coach helps teacher to administer assessment was rated as moderate by both groups and “The coach and teacher provide tutoring to individual students’ was rated low by coaches, but moderate by teachers.

Based on the findings of the study, the practice for majority of the item were high except for few items which were moderate. The findings also reveal that there is a big difference in the mean value of the items related to coaching. Coaches have a higher perception on the element of collaboration which existed in coaching especially when the coach observes and identifies areas of strength and needs as it relates to teaching. Teachers agree on similar things but with slightly lower views. Perhaps coaches’ observation towards collaboration meets their expectation, thus the reason why they have higher views on the practice, Nevertheless, both coaches and teachers disagree on their collaborative role in providing tutoring to individual

students as the focus is more on developing teachers' practices. It also suggests that there is a lack of understanding on how coaching should be practices since implementation of any school reform takes time (Fullan, 2007)

Overall, the result of data analysis shows the importance of collaboration in coaching. This is in line with a study by Parman (2015) who found that collaboration allows teachers to share strategies pertaining to decision making related to classroom practices. Prior to the study, the decision making was carried out by individual teachers in isolation which has led to large inconsistencies. However, collaboration which is carried out through coaching has overcome the problem which stresses the importance of collaboration in coaching.

5.3.1.2 Feedback and Reflect

For construct feedback and reflect, the study also found that the practice of providing feedback and being reflective were high. This is similar to the findings of Collet (2012) where teachers improved their practices through reflections which is led by coaches. Lucas (2011) also supported the idea by suggesting that coach can affect the knowledge and practices of teachers by constantly engaging them in reflective conversation. Meanwhile, meaningful constructive feedback given by coaches is very important as it allows teachers to improve practices by reflecting in their own practices (Knight, 2011). This is in line with Cox (2013) which stresses that coaching is a facilitated, dialogic reflective learning process and its popularity has risen due to needs of individual nature to be overcome by complex societal situations.

The reflective element allows transformative learning to take place as suggested by Cox (2006), and it is also in line with the work of Mezirow (2006) that describe the process as necessary in adult learning (teachers) in order to transform knowledge for the purpose of improving their practices.

5.3.1.3 Support and Trust

For construct support and trust, the analysis of data shows that the practice of trust and support in coaching were also high. This is in line with what is suggested by Callahan (2014) that support received by teachers through coaching enables teachers to fine tune their skills and strategies in the classroom. Through the support received, teachers are able to analyse their practice and make necessary changes related to certain skills and practices (Callahan, 2014).

In providing support and creating trust among teachers, it is vital for coach to clearly define their roles and responsibilities. This is in line with the findings of the study conducted by Eismin (2015) which explicitly explain that teachers enjoy getting support from the coach as they considered coaches as part of the team. Ideas from the coach were welcomed and appreciated. There were instances when teachers and coaches work together to brainstorm for solutions related to individual's classroom practices.

Similarly, trust is an important element in coaching although building trust is not easy. Trust refers to mutual confidence that supports teachers' willingness to be open, honest and vulnerable which in turn provides the mutual security needed to manage expectations, establish boundaries and develop an open and honest dialogue (Boyce et al., 2010). Previous research indicated that teachers are more likely to share sensitive information if trust is present (Gyllensten & Palmer, 2007) and violations of trust are associated with resistance to change and lower satisfaction (Ford et al., 2008). This is evident in a study by Ertmer et al., (2005) when teachers took several months to develop trust towards the coach. However, findings of Geok and Chin (2015) showed that trust does not significantly associated with coaching effectiveness.

This is also in line with a study done by Reed (2015) which suggested that the trust level that teacher had is greater on the receptivity towards coaching than on content area or years of experience. Findings from the study also suggested that a more experienced teacher would be less receptive towards coaching as compared teachers with lesser years of teaching experience. However, the qualitative findings of the study reveal that experienced teachers only developed their trust once they saw positive impact or changes took place.

Parman, (2015) in her study found that the element of trust within teacher-coach relationship had the largest impact on instruction as well as student achievement. The result of a study conducted by Eismín (2010) suggested that the element of trust was repeatedly mentioned throughout the study suggested that trust is a critical component which contributes towards the success of effective coaching.

5.3.2 The impact of coaching on instructional improvement

The study found that teachers and coaches perceived the impact of coaching on instructional improvement as high except for a instances which are rated as moderate. Instructional improvement construct was analysed at various aspects such as classroom management, teaching strategies and technique, assessment and several other aspects. All the items were highly practiced except for discussing content beyond the grade level taught (item 39), improved grades (41) and improved standardized test scores (item 42). The main focus of the implementation of coaching in Malaysia is to improve teacher practices and thus indirectly focusing on increasing students' grades or test scores. However, the mean values for assessment are lower compared to mean values of other aspects related to instructional improvement. This is suggesting that more effort should be carried out to improve the situation.

The study proves that teachers received support through coaching which allows them to reflect on classroom practices and changes are made based on the knowledge and skills received from professional learning or CPD. Feedback provided by coach towards teacher practices will help teachers to reflect on their practices (Ericsson, 2006; Knight, 2011). The findings are also in line with a study carried out by Anderson et al (2014) which proved a strong correlation between coaching and improvement in classroom practices.

5.3.3 The impact of coaching on teacher professional development

The findings of the study suggest that teachers and coaches perceived the impact of coaching on continuous professional development as high. This is in line with a study carried out by Nurahimah and Rafisah (2010) which suggest a high correlation between teacher efficacy and instructional improvement as a result of the support and coaching received. The ultimate goal of teacher professional development program is broadly defined as to support student learning and development but often operationalized narrowly as performance on standardized achievement tests (Devine et al., 2013; Desimone, 2009; Kennedy, 2016 & Kraft, Blazar Hogan, 2018). Empirical evidence suggest that coaching is a means to achieve key principals of professional learning (Lofthouse & Towler, 2010). However, a study by Poglinco et al (2003) suggested that the unclear definition of the coach role had caused confusion among teachers which has created a barrier in the implementation of coaching for effective professional development. Meanwhile, in a study conducted by Eismin (2010), the findings reveal the importance of teachers and coaches having the same views regarding the role of a coach in order to ensure the success of coaching and its impact on professional development. Therefore, it is important to have a clear

definition on the roles of a coach which would increase the impact of coaching implementation in schools.

Continuous professional development is a medium where teachers received their knowledge and skills related to teaching and learning or also known as teacher capacity. As such, teacher capacity has been empirically proven to influence effective teaching (Woolfolk & Hoy, 2013) to increase learning outcome (Henson, 2002). However, in recent years, teacher professional development has been underrated. Many have noted the mismatch between the huge sums of money spent on such programs and the limited evidence of effectiveness of these investments (TNTP, 2012; Yoon et al., 2007; Balan, Manko & Phillips, 2011). Nevertheless, although broad-based professional development efforts may be ineffective, recent research paints a more optimistic picture of targeted efforts to provide on-the-job training.

Several studies have shown that interventions that involve individualized coaching and that offer context-specific, narrowly tailored professional development improve teacher effectiveness (Allen et al., 2011; Blazar & Kraft, 2015; Papay et al., 2018; Powell et al., 2010). Coaching programs differ substantially in their design and focus, but those programs with demonstrated evidence of success often share these elements: they are individualized; intensive, involving frequent coaching sessions; sustained over a full year or more; tailored to classroom contexts; and focused on a manageable set of specific skills (Papay & Kraft 2018).

5.3.4 The Impact of Coaching on Training

The study also found that teachers were given a moderate amount of training. In fact, training related to “Adult Learning Theory” were rated as low. Coaching is in fact a form of professional development. Based on the many years of research and

experimentation, Joyce and Showers (2003) reviewed that past studies have shown how coaching have facilitated the transfer of training and the development of organizational norms. The findings of the studies supported the idea that coaching contributed to the transfer of trainings by allowing teachers to practice new strategies more often, adapt the strategies more appropriately based on goals and context, retained and increased skills overtime, more likely to explain new models of teaching to the students and demonstrate clear understanding of the purpose and use of new strategies.

In relation to that, Joyce and Showers (2003) suggest a number of practical implications for school leaders in dealing with professional development of teachers. The design of the training should be closely related to its intended outcomes based on the context of their own goals, problems and priorities. Other aspects which should also be considered includes different components to match the complexity or 'newness' of the desired outcome. Other than that, it should also include the participation and commitment of everyone.

5.3.5 The impact of coaching on learning outcomes

Based on data analysis, teachers and coaches perceived the impact of coaching on learning outcomes as high. This is in line with what is suggested by Cornet and Knight (2009) that coaching not only focus on the development of teacher practices but also on students' learning outcome. A study by Yoon et al, (2007) suggested that coaching helps teachers to boost 20 percent of students' learning.

Studies by Bolam et al, 2005 and Goddard et al., (2007) suggest that there is a positive relationship between teacher collaboration and the increase in students' achievement. Kezar (2006) supported the idea by suggesting that the level of teacher collaboration could lead to the increase in the quality of instruction which resulted in

increased students' achievement. The finding of the study is also in line with empirical evidence in a five-year study by Anderson, et al (2014) which proved a strong correlation between coaching and improvement in classroom practices and learning outcomes. The findings also supported an earlier work by L'Allier et al. (2010) which stresses the relationship between the practices of coaching and learning outcomes.

Another study by Bean et al, (2008) looked at the literacy coaching in schools which involves 20 literacy coaches who were divided into two groups. It was found that there were significant differences in the students' achievement between the two groups of schools. Schools in which coaches spent more time working directly with teachers had a greater percentage of students who scored proficient level in first and second grade. The results of these studies indicate that students benefit when coach spent more time working directly with teachers to help them improve their practice.

Additionally, a study by Rennick (2002) which examined literacy achievements of kindergarten students, found a significant increase in students' academic achievement. However, based on his study Slinger (2004) concluded that the practice of coaching did not result in any statistically significant difference based on students' data. Nevertheless, the analysis of qualitative data showed a significant outcome of coaching specifically the change in focus, from procedural to instructional.

5.3.6 The impact of coaching on role of leadership

Based on data analysis, teachers and coaches perceived the impact of coaching on coach leadership as moderate to high. Half of the practices were rated at moderate level whereas another half of the practices were rated as high. Aspects of leadership

being looked at in the study includes collaboration, creating change, support, and responsibilities.

The findings of the study are in line with a study done by Poerkert, (2012) which suggests that leaders are agent of change which could improve teaching and learning. A study by Heck and Hallinger (2009) proves that there is a reciprocal relationship between collaborative leadership with learning outcome which is in line with the findings of the study. Poskitt (2014) stresses that such collaborative approach among leaders (coaches) and teachers is important in helping teachers to integrate theory into practice apart from analysing the impact on teaching and learning. Additionally, Teemant (2014) confirmed that leadership shown during coaching cycles positively impacted teachers' adoption of a new instructional model in an urban elementary school. In conclusion, there are numerous findings which support leadership in coaching

Various literature on coaching also discuss how coaching develops teachers' understanding of differing aspects of teaching (Coburn & Woulfin, 2012; Huguet, Marsh, & Farrell, 2014; Kersten & Pardo, 2007; Taylor, 2008). Scholars have revealed that coaches practice good leadership by helping teachers to develop understanding of instruction by co-designing units and lessons (Atteberry & Bryk, 2011; Coburn & Woulfin, 2012; Kersten & Pardo, 2007).

The findings of this study are also in line with various other studies which shows evidence on how coaching supports leadership among coaches such as in translating policy (Coburn & Woulfin, 2012; Kutash & Nico, 2010; Woulfin, 2018), catalyze implementation of coaching by prioritizing elements of a reform and promote instructional practices in helping teachers improve classroom practice (Coburn & Woulfin, 2012; Huguet et al., 2014; Teemant, 2014).

In fact, leadership among teachers and coaches could be cultivated through modelling, sharing power, providing resources, overcoming barriers and by listening to views and opinions of others (Katzenmeyer & Moller, 2009; Killion et al., 2016). Among other practices which supports leadership in coaching are collegiality, open communication, having positive environment, recognition, autonomy as well as developmental focus as suggested by Katzenmeyer and Moller (2009).

5.3.7 The level of knowledge, technical and interpersonal skills applied by coaches

Data analysis of the study reveal that implementation of coaching skills and knowledge in Malaysian schools were moderate. The findings suggest that “providing useful feedback to teachers” and “understanding and respecting teachers’ decision” (item 119 and 120) scored the highest mean followed by “reflective dialogue” (item 111). This finding reflects that interpersonal skills such as respecting teachers’ decision is vital.

This is in line with what is suggested by Bailey (2006) that coaching as a form of instructional support which could improve teacher performance (Bailey, 2006). Therefore, one must have the right skills and the appropriate qualifications in order to provide effective coaching (Antonioni, 2000). With the right coaching skills and qualification, a coach can help teachers to improve their practices, for the purpose of achieving the improvements that the organization hoped for. Therefore, coaching skills and competency is an important factor which contributes to the effectiveness of coaching.

Competency refers to efficiency level which consists of various components such as knowledge, skills, values as well as attitude (Frank Jr. et al., 2010). These

knowledge and skills could be gained through professional learning and should be adaptable to change of time (Snell, 2010).

In Malaysia, the instructional support provided to teachers comes either from supervision (from the administrator) or coaching sessions (from peers or pedagogy expert). Either way, the knowledge and skills related to providing instructional support (either from a supervision or from a coach) are similar. The finding of the study therefore is also in line with a study conducted on 390 teachers in Selangor reveals that there is a high correlation between supervisory skills (similar to coaches) in helping teachers to improve their practices (Makin, Abdullah & Shafee, 2018).

Since coaching is new to a school culture, some teachers are resistant towards the implementation, thinking that the coach might be there to supervise and evaluate them instead of helping them (Toll, 2009). Therefore, having the right interpersonal skills would help coaches to build relationship with teachers which eventually ease the process of improving instructional practices (Knight, 2007, 2009, 2011). This is because, with the right interpersonal skills, coaches would create an environment where teachers can be open and feel comfortable to share and discuss their problems with the coach. In fact, “people skills” is unanimously considered as important element that a coach should have in various research (Knight, 2004, 2007; Ertmer, et al, 2005).

Knight (2004) found that teachers are more encouraged and inspired to improve their practices when the coach was able to establish strong relationship and trust with teachers. Ertmer et al (2005) in their study identified interpersonal skills as the most important element as compared to knowledge, skills and personal characteristics of a coach. Having good interpersonal skills is important in order to establish trust and good relationship with teachers. This is mostly helpful for the

coaches as it enables them to use their expertise to facilitate changes in teachers' instructional practices (Ertmer et al., 2005).

However, analysis of data of the study suggests that co-teaching and attending collaboration meetings scored the lowest mean. This is probably due the allocation of time spent for each individual teacher during coaching session where each teacher was only allocated about 2 hours of coaching session per week. Therefore, teachers and coaches may not have enough time to co-teach or attend collaboration meeting with the teachers.

This is also probably due to the lack of understanding of what co-teaching is. This also reflects the type of training that teachers and coaches should attend which are related to coaching and improving practices. This finding also suggests that teachers need to be given trainings on co-teaching as part of their continuous professional development.

As suggested by Saphier and West (2010), coaches could help improve individual teacher capacity which could impact learning outcome by tapping into their passion, expertise, needs as well as frustration. To be able to do that, coaches and teachers must reach out to each other and regard each individual as resources.

5.3.8 Coaching Implementation Phase

The finding of the study reveals that the practice of coaching in Malaysian schools is still at the implementation stage which means that coaching has not yet become part of the school culture. This is in line with what is suggested by Fullan, (2007) that implementing educational changes is process that takes a lot of time depending on the complexity of change. i.e. moderately complex changes take from 3 to 5 years whereas more complex changes take 5 to 10 years. The implementation of coaching in Malaysia started at a large scale under the District Transformation Programme

(DTP) in 2013 and after 5 years of the implementation, the analysis of data reveals that the it is at the implementation stage.

The analysis of data also shows that shared and supportive leadership scored the lowest mean followed by shared personal practice. This is probably because the implementation of coaching in Malaysia is still new and due to the limited time spent in coaching session, the shared and supportive leadership is not too prevalent among teachers and coaches. Similarly sharing of personal practice could not be carried out as a culture as a culture practice among teachers and coaches or among colleague due to the limited time. Studies have proven that one of the problem of instructional coaching is inadequate amount of time coach spent working directly with teachers in the classroom (McCombs & Marsh, 2009; Bean & Swan Dagen, 2012). Nevertheless, many scholars agreed that if coaching is implemented correctly, it would improve teacher practice that would lead to learning outcomes (Joyce & Showers, 2003, Knight, 2011, McCombs & Marsh, 2009; Bright, 2011).

On the other hand, shared values and vision scored the highest mean followed by collective learning and application and supportive condition. This implies that teachers realize their responsibility in achieving school goals and vision. They are also able to accept the support provided by the coach in relation to improving classroom practices. Nevertheless, all the three practices are still at the implementation stage. The finding of coaching practices and the school climate were of moderate level. This indicates that more effort should be placed in order to develop the practices as school culture as suggested by Fullan (2007) who suggested that school culture is a guiding beliefs and values evident in the way a school operates. It is used to encompass attitudes, behaviours and values which could affect how the school operates.

5.3.9 Implementation of Coaching Practices

Data analysis show that the implementation level of coaching in school have a strong impact on the working climate among teachers. The implementation of coaching could change the working culture of teachers. This is because the role of coach is to create changes not only within the classroom but also in terms of school culture and climate (Davis, 2016; Matsumura et al, 2010; Porche & Snow, 2012). As suggested by Toll (2009), for effective implementation of coaching to take place, coaches need help and support not only from teachers but also from the administrator.

The findings also suggest that the level of implementation of coaching also have a modest impact on the overall school improvement although the impact is slightly lower. This could also be due to other factors such as inadequate resource (Toll, 2009; Hipp & Huffman, 2003) or not getting enough support by the principal (Toll, 2009). Another possible reason could also be due to the fact that it may take some time for teachers to be able to work comfortably with the coach. However, with consistent effort put forward by both teachers and coaches, gradual improvement which benefits the school will eventually take place (Toll, 2009; Hipp & Huffman, 2003).

However, implementation of coaching does not have any significant impact on instructional practices and learning outcome. Many scholars agreed that proper implementation of coaching would lead to improvement to teaching practices and learning outcome (Knight, 2007; McCombs & Marsh, 2009; Bright, 2011). A study by Neufeld and Roper (2003) provides evidence where teachers were likely to try new ideas to improve their practices when they receive support from the coach. The findings of this study however, reflects that the implementation of coaching in Malaysian schools especially in Selangor and Sabah has not been properly

implemented. It could also be due to other factors that affects which could affect implementation of coaching such as cooperation and support from teachers and coaches or inadequate time or resources (Toll, 2009; Knight, 2011).

5.3.10 Factors Related to Coaching

Data analysis of the study reveal that coaching is strongly related to the role of leadership played by coaches. Coaching is about providing support to teachers. Therefore, as leaders, coaches need to play the right leadership roles in order to provide the help and assistance to teachers. This is in line with what is suggested by Poerkert (2012) that leaders can become agent of change in the organization by improving teaching and learning. A study by Heck and Hallinger (2009) also shows a significant impact of leadership on the improvements in teaching and learning. As leaders, teachers and coaches were committed to change by collaboratively deconstructing and reconstructing their pedagogical practices through reflective yet supportive environment (Poskitt, 2014). However, Phelps (2008) suggested there are teachers who refused to become leaders as they are comfortable with their position, therefore were unwilling to change. This could contribute to the ineffectiveness of role of leadership in coaching.

Apart from that, the study suggests that coaching is highly related to students' learning outcome. This is because, the main objective of coaching is about providing help and guidance to teachers in improving their practices and improve learning outcome. This is in line with the idea that coaching as strategy for developing teacher practices (Joyce & Showers, 2003) which is aimed at bringing about changes and school improvement (Cornett & Knight, 2009, Joyce and Showers, 2003)

In addition, the practice of coaching has moderate impact on teacher professional learning and instructional improvement. This is because coaching is a strong contributing factor to the success of teacher professional learning and instructional improvement. Various empirical evidence show that coaching contributes towards the success of professional development. Joyce and Showers (2003) proved that teachers who were coached immediately after training were able to transfer the knowledge into classroom practice effectively. The findings are also supported by a study by Cornet and Knight (2009) which also supports the role of coaching in the transfer of knowledge gained from professional development into classroom practice. Marsh et al., (2009) stress that coaching has been used by schools and district education department to provide effective professional development which is geared towards improving classroom practices and learning outcomes.

Coaching is a form of instructional support apart from supervision, which are given to teachers in order to improve classroom practices and learning outcome. Various empirical evidence suggests that instructional support influences teacher classroom practices. A study by Veloo and Komuji (2013) suggests that there is a significant effect of instructional support on the improvement of teacher practices. This finding also supports earlier studies done by other scholars which stress that instructional support received by teachers improved classroom practices (Holland & Adam, 2002; Thomas, 2008; Glickmann et al., 1995; Mohd Zawawi, 2002). The result of data analysis of this study is not in line with the findings made by Haliza (2005) which suggests that instructional support is not effective in helping teachers to improve their practices. The result of data analysis is also in contrast with the

findings made by Baharom (2002) which stresses the failure of carrying the post-conference stages has led to the ineffectiveness of the support given to teachers.

On the other hand, coaching has a modest impact on school climate, coaching implementation as well as overall school improvement. The t-value of implementation and overall improvement shows that the relationship with coaching is not significant with t value less than 1.96. This shows that coaching is not a significant factor which determines the success or effectiveness of coaching implementation as well as school improvement although it may be a less significant factor in the success of school climate. In fact, there are other factors which also influence the success of the three variables. For example, Knight (2011) and Toll (2009) suggested that the role of administrator is vital in the success of a certain school improvement. On the other hand, Hipp and Huffman (2003) suggested that adequate resource is also important in the success of the implementation of a school reform. Other than that, time is also suggested as an equally important factor (Atterbery & Bryk, 2011; Bean & Swan Dagen, 2012)

Data analysis also shows that the practice of teacher professional learning (CPD) determines the frequency of training as well the type of training given to teachers. Empirical evidence shows that districts and schools are likely to improve student achievement when they focus on promoting teacher-centred collaborative and research-based learning activities. through professional learning activities. (Akiba & Liang, 2016). Therefore, providing the right types of training or professional learning to teachers is important and should be well plan and thought.

However, the findings suggest that the practice of CPD in school has modest impact on overall school improvement, the implementation of coaching in school as well as instructional improvement. This is suggesting that more initiatives are

needed with regards to providing the appropriate professional learning to teachers to accelerate school improvement. Empirical evidence suggests that effective transfer of knowledge into practice takes place if teachers were coaches immediately after training (Cornett & Knight, 2009; Joyce & Showers, 2003)

Data analysis also shows that the role of leadership shown by coach creates a strong impact on teacher professional learning. The support provided by the coach allows extensive focus to be placed on the process of coaching which allow teachers to have meaningful learning by reflecting on their practices (Mercer, 2006; Cox, 2015). Additionally, the discussion and conversation that teachers had with the coach help them to generate change and growth as they feel safe and are focus on developing individual needs.

Data analysis also show that leadership has a moderate impact on the level of coaching implementation in school. This is probably due to the lack of support received by the teachers as well as the administrator. The lack of support from teachers is probably due to the lack of trust towards the coach. This is highlighted by Knight (2011) and Toll (2009) that some teachers might be reluctant to cooperate with the coach as building trust is not easy and may take time. On the other hand, the principal could show his support by playing an active role in informing teachers that the coach's presence is not to evaluate them but instead to support them in improving their practices (Toll, 2009).

However, the findings also suggest that the role of leadership shown by the coach has lower impact on instructional improvement. A study carried out by Poerkert (2012) reveals that leaders are agent of change in an organization which impacted teaching and learning. Nevertheless, Phelps (2008) argues that there are some teachers who are too comfortable with their position and will not show

willingness to change or choose to have minimal engagement in their professional learning.

The findings also show that there is no significant relationship between leadership and overall school improvement. This implies that the leadership practiced by the coaches in implementing coaching in Malaysian schools were not strong enough to support overall school improvement although it might be supportive towards teachers improving classroom practices. Fullan (2006) stresses that teachers and coaches are agent of change. With regards to school improvement, it requires effort from various parties.

5.3.11 The Relationship between Elements of Coaching and Other variables

Data analysis suggest that the elements of coaching are significantly related to other factors which contribute to effective coaching. The next section will discuss on the elements of coaching and how it is related to other variables.

a) Elements of Coaching and Instructional Improvement

Data analysis reveal that sub-construct support is the most significant construct for instructional improvement while the least significant is sub-construct reflect. This indicates that the element of providing support for the purpose of instructional improvement is highly practiced in coaching. This is line with what is suggested by Lofthouse and Towler (2010) that coaching is about providing support to teacher to improve their practices for the purpose of improving learning outcome. This is also supported by Creasy & Paterson (2005) that the support provided by coaches will allow teachers to be more persistent and confident in discussing their practices and more open to receive ideas and criticism and ideas from others Cordingley (2008).

However, sub-construct reflect is least significant in the practice of coaching which is aimed at instructional improvement indicates teachers needs more practice

to reflect on their own practice in order to improve classroom practices as well as learning outcome. This also indicates that teachers and coaches need more practice on the skills of being reflective. As suggested by Prince, Snowden & Matthews (2010), the support received through coaching should allow teachers to be more reflective towards their own teaching. In fact, coaching is based on analysing teaching and learning as suggested by Nidus and Sadler (2011).

b) The Relationship between Elements of Coaching and CPD

The findings reveal that sub-construct support is the most significant construct for instructional improvement while the least significant is sub-construct reflect. This also indicates that the element of providing support in the teacher professional learning is highly practiced during coaching. This is in line with what is suggested by Lofthouse and Towler (2010) that coaching is about providing support to teacher professional learning. This is also supported by Knight (2011) that coaching provides support to teachers by transforming new knowledge gained from their professional learning into new practices which benefits the students.

However, the sub-construct reflect is least significant in the practice of professional learning indicates teachers needs more practice to reflect on their own practice in order to improve learning outcome. This also indicates that teacher need more practice on the skills of being reflective. This is because teacher professional learning is a form of adult learning which requires them to fine tune the knowledge given based on their needs and understanding, therefore without proper guidance, they failed to reflect and applied the knowledge accordingly (Hargreaves, 2003; Stein & Coburn, 2005). On the other hand, empirical evidences show when teachers are able to reflect on their practices and applied new knowledge to improve practices, it contributes to the success of professional development (Marsh, et al., 2009).

c) Elements of Coaching and Leadership

Data analysis reveal that sub-construct collaboration is the most significant construct for leadership while the least significant is sub-construct feedback. This indicates that collaboration highly existed between coach and teachers. This type of collaboration would influence the level and rate of instructional improvement made by teachers as suggested by Anderson (2014). Empirical evidence also indicates that collaboration between teachers and coach in turn would lead to positive students' achievement (Bolam et al., 2005; Goddard et al., 2007) as well as school improvement as a whole (Harris & Muijs, 2005; Knight, 2011).

The findings also indicate that although collaboration between teacher and the coach is high yet the element of feedback practiced by the coach as a leader is still lacking. Therefore, the elements of feedback in coach leadership needs to be highlighted and improved. This is because coaching should provide support to teachers in the form of real-time feedback (Sturtevant, 2003; Knight, 2011). The feedback given should enable teachers to refine their practices and deliver new approaches in the classroom (Jones et al., 2013).

However, the sub-construct feedback is least significant in the practice of coaching leadership indicates coaches needs more practice to provide feedback to teachers on their instructional practice in order to improve learning outcome and vice versa. This also indicates the need to have more practice on the skills of providing feedback by the coaches. This is in line with what is suggested by Callahan (2014) that the feedback received by teachers enables them to fine tune their skills and strategies in the classroom by reflecting on their classroom practices. On the other hand, if poor feedback were given to them, teachers will not able to reflect well on their practices.

d) Elements of Coaching and Learning Outcome

Data analysis reveal that sub-construct support is the most significant construct for learning outcome while the least significant is sub-construct reflect. This also indicates that the element of providing support to teachers in increasing learning outcome is highly practiced during coaching. This is in line with what is suggested by Lofthouse and Towler (2010) that coaching is about providing support to teacher to improve their practices for the purpose of improving learning outcome. This is because the support provided to teachers through coaching is an important element in ensuring teacher effectiveness. The support provided should allow teachers to analyse their own teaching and learning (Nidus & Sadder, 2011). The interaction between coach and teachers would allow teachers to unfold the problems faced in the classroom and therefore improve learning outcomes (Downey, 2004).

However, the sub-construct reflect is least significant in the practice of professional learning indicates teachers needs more practice to reflect on their own practice in order to improve learning outcome. This is in line the suggestion made by Pitler & Goodwin (2008) that the classroom strategies chosen by teachers would affect the learning outcome and therefore teachers should be able to justify the decision made with regards to teaching strategies. The coach on the other hand should allow teachers to make decision by reflecting on their own practices (Tschannen-Moran & Tschannen–Moran, 2011)

The findings provide an insight to stakeholders such as the administrator and the District Education Department in the type of training that they should provide to teachers in order to help them reflect on their practices and later increase learning outcomes and school improvements.

e) Elements of Coaching and Climate

Data analysis reveal that sub-construct collaboration is the most significant construct for climate while the least significant is sub-construct feedback. This indicates that the element of collaboration among teachers and coaches in creating a positive school climate which is geared towards increasing learning outcome is highly practiced during coaching. This is in line with what is suggested by Lofthouse and Towler (2010) that coaching is about collaboration between teachers and coaches to teacher to improve their practices for the purpose of improving learning outcome. The collaboration between teachers and coaches has created a positive school climate.

However, the sub-construct reflect is least significant in creating the school climate which is positive enough to create school improvement. This indicates that teachers need more practice to reflect on their own practice in order to improve learning outcome. This also indicates that teacher need more practice on the skills of being reflective so that it becomes a culture where teachers constantly reflect on their practices to improve learning outcome and school improvements. This is in line with the idea that the role of coach is not only in creating changes within the classroom but also changes in the school climate (Davis, 2016; Matsumura et al.; Porche et al, 2012) It is also in line with the findings of Steckel (2009) which reports that coaching yields observable changes in the overall school culture or working climate. In his study, it was also found that teachers were able to collaborate and reflect openly on their practices. Thus, also indicates the need for Malaysia teachers to improve their reflective skills and practices during coaching.

The findings provide and insight to stakeholders such as the administrator and the District Education Department in the type of training that they should provide to

teachers in order to help them reflect on their practices and later increase learning outcomes and school improvements.

f) Elements of Coaching and Implementation

Data analysis reveal that sub-construct collaboration is the most significant construct for instructional improvement while the least significant is sub-construct support. This also indicates that the element of collaboration between teachers and coaches in increasing learning outcome is highly practiced during coaching. This is in line with what is suggested by Lofthouse and Towler (2010) that coaching is collaboration between teacher and coaches which is aimed at improving instructional practices for the purpose of improving learning outcome.

However, the sub-construct support is least significant in the practice of professional learning which indicates that more support is needed in the implementation of coaching in schools. This is because professional learning is an on-going process, and the knowledge gained from their professional learning is embedded in their practices as they indulge themselves constructive and reflective discussion with the coach (Russo, 2004; Knight, 2011). Thus, cooperation from teachers as well as the principal is much needed for effective coaching implementation

The finding provides and insight to stakeholders such as the administrator and the District Education Department in the type of support they should provide to in implementing coaching in school for the purpose of providing support to teachers to improve their practices, improve learning outcomes as well as school improvement. As suggested by Toll (2009) and Knight (2011), that coaches need help and support not only from teachers but also from the administrator. The administrator should be able to remind the teachers on the role of coaches which is not to evaluate them but

instead to provide support and guidance in helping teachers to improve their practices (Toll, 2009).

g) Elements of Coaching and Overall Improvement

Data analysis reveal that sub-construct trust is the most significant. This also indicates that the element of trust is essential in providing support to teachers in increasing learning outcome and it is highly practiced during coaching. This is in line with what is suggested by Lofthouse and Towler (2010) that it is essential for coach to create trust among teachers in helping them improve their practices as well as learning outcome. Shaw (2009) even suggested that building trust should be the first step that a coach should do by establishing one-to-one communication with teachers. Trust can also be established by clarifying the roles and responsibilities of coach during initial meeting (Bean & Swan Dagen, 2012).

However, the sub-construct collaboration is least significant in the practice of professional learning indicates teachers and coaches need to improve their collaboration during coaching. This seems to contradict with the idea that coaching is about partnership (Knight, 2009) which involves collaboration between teachers and coaches (Galluci, DeVoogt, Yoon & Boatright, 2010). The findings implied that more focus should be given with regards to improving collaboration among teachers and coaches for the purpose of school improvement. The findings also provide and insight to stakeholders such as the administrator and the District Education Department in the elements of collaboration among teachers and coaches. They should also consider on the coaching practices that could foster more collaboration between teachers and coaches. Which eventually leads to increase learning outcomes and school improvements.

5.3.12 Mediation Effect of Coaching

The study looked at the mediation effects of coaching on the following aspects:

a) Mediation Effect of Coaching on CPD and Instructional Improvement

As described in the previous section of this chapter, there was a statistically significant relationship between continuous professional development, coaching and instructional improvement. The findings suggest that CPD can impact teacher instructional practices (Poskitt, 2013; Darling-Hammond & Richardson, 2009). The impact of CPD is direct, and theories by Guskey (2000), Malm (2009) and Poskitt (2014) provide evidence of the direct impact CPD can have on teachers' instructional improvement. For instance, Poskitt (2014) indicates organizational support emphasizes the relationship between the professional learning and the transfer of knowledge into practices. However, based on Guskey's (2002) model for professional development, holistic evaluation of professional learning is vital which includes the impact on knowledge gain, teachers' practices, school system as well as student learning.

However, based on data collected from 470 teachers and coaches from Selangor and Sabah, the results also indicated that there is a significant and positive partial mediating effect of coaching on the relationship between continuous professional development and instructional improvement. The findings suggest that continuous professional development may directly influence instructional improvement. However, it may also take place indirectly through coaching.

By considering coaching as a mediator of the study, it provides a thorough understanding on how instructional support could help teachers in transforming skills and knowledge received from CPD to improve their practices and learning outcome. This assumption is further supported by Marsh et al. (2009), who suggest that

coaching as a means in improving instructional practices. Therefore, there is a need to further investigate the relationships between coaching and improvements in instructional practices and learning outcome to better understand the dynamics at play.

Numerous literature reviews (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009; Ippolito, 2010) link strong, positive, effect of coaching on instructional improvement. Research studies have confirmed that there are positive impacts of coaching on instructional improvement (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009; Fullan & Knight, 2011).

The findings of this study add to the body of research, affirming that coaching could influence CPD in improving teacher instructional practices as coaching is linked to increase teacher practices (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009). In conclusion, this study revealed that there is a significant and positive partial mediating effect of coaching on the relationship between continuous professional development and instructional improvement in schools in Selangor and Sabah.

b) Mediation effect of coaching on learning outcome and instructional improvement

Data analysis in Chapter 4 shows that there was a statistically significant relationship between learning outcome, coaching and instructional improvement. This is suggesting that students learning outcome is a driven force which can impact teacher instructional practices (Poskitt, 2013; Darling-Hammond & Richardson, 2009). The idea is also supported by Cai, Hohensee and Hwang (2018) which suggested that

teachers use different forms of learning outcome (data) as the driving force in making decision pertaining to changes or improvement in their practices.

Based on the data collected from 470 teachers and coaches from Selangor and Sabah, results indicated that there is a significant and positive partial mediating effect of coaching on the relationship between learning outcome and instructional improvement. The findings suggested that that learning outcome may directly influence instructional improvement. However, it may also influence instructional improvement indirectly through coaching.

By considering coaching as a mediator of the study provide a thorough understanding on how instructional support were provided to teachers in transforming skills and knowledge received from CPD to improve their practices and learning outcome. This assumption is further supported by Marsh et al. (2009), who suggest that coaching as a means in improving instructional practices. Therefore, there is a need to further investigate the relationships between coaching and improvements in instructional practices and learning outcome to better understand the dynamics at play.

Numerous literature reviews (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009; Ippolito, 2010) link strong, positive, effect of coaching on instructional improvement. Research studies have confirmed that there is a positive impact of coaching on instructional improvement (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009; Fullan & Knight, 2011). The findings of this study add to the body of research, affirming that coaching does influence improvements of teacher instructional practices based on learning outcomes as suggested by various scholar (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009). The

impact of learning outcome is direct. Studies provide evidence of the direct impact of learning outcomes on teachers' instructional improvement (Poskitt, 2014; Cai, Hohensee & Hwang, 2018). For instance, Poskitt (2014) indicates teacher uses data of students' performance to motivate them to improve their practices. However, through coaching, the coach provides assistance and guidance to teachers in making use of students' learning outcome for the purpose of improving their practices.

In conclusion, this study revealed that there is a significant and positive partial mediating effect of coaching on the relationship between learning outcome and instructional improvement in schools in Selangor and Sabah.

c) Mediation effect of coaching on leadership and instructional improvement

Data analysis in Chapter 4 suggested that there was a statistically significant relationship between leadership, coaching and instructional improvement. This revealed that leadership may directly influence instructional improvement. Leadership can impact teacher instructional practices (Bush, 2011, Leithwood & Louis, 2012; Marzano, 2003; Marzano et al., 2005;). The impact of leadership is direct, and theories by Leithwood and Louis (2012), Marzano et al., (2005) and Stronge, et al., (2008) provide evidence of the direct impact Leadership can have on teachers' instructional improvement and learning outcome. For instance, Bush (2011) suggested that organizational support emphasizes the relationship between the professional learning and the transfer of knowledge into practices.

By considering coaching as a mediator of the study, it provides a thorough understanding on how instructional support were provided to teachers could enhance leadership skills of coaches in helping teachers to improve their practices and learning outcome. This assumption is further supported by Heck and Hallinger

(2009), who suggest that reciprocal relationship between coaching and leadership as a means in improving instructional practices. Therefore, there is a need to further investigate the relationships between coaching and leadership in improving in instructional practices to better understand the dynamics at play.

The finding of the study also suggested that coaching could also indirectly influence instructional improvement. Based on the data collected from 470 teachers and coaches from Selangor and Sabah, results indicated that there is a significant and positive partial mediating effect of coaching on the relationship between Leadership and instructional improvement. Numerous literature reviews (Harris & Muijs, 2002; Bush, 2011, Cooper, 2012 and Ippolito, 2010) link strong, positive, effect of coaching on instructional improvement. Research studies have confirmed that there are positive impacts of coaching on instructional improvement (Harris & Muijs, 2002; Bush, 2011, Cooper, 2012 and Ippolito, 2010; Katzenmeyer& Moller, 2009; Killion et al., 2016)). The findings of this study add to the body of research, affirming that coaching does influence leadership in improving teacher instructional practices. Coaching is linked to increase teacher practices (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009).

In conclusion, this study revealed that there is a significant and positive partial mediating effect of coaching on the relationship between Leadership and instructional improvement in schools in Selangor and Sabah. The role of leadership plays a vital role in ensuring effective implementation of coaching. Due to that, teachers and coaches should be committed enough to continuously switch between the different leadership roles in the process of instructional improvement.

d) Mediation Effect Coaching on Climate and Overall School

Improvement

As described in the previous section of this chapter, there was a statistically significant relationship between Climate, coaching and overall school improvement. These revealed that Climate may directly influence overall school improvement or indirectly through coaching

By considering coaching as a mediator of the study provide a thorough understanding on how instructional support were provided to teachers in creating the school climate which could improve instructional practices and learning outcome. This assumption is further supported by Hughes and Pickeral (2013), who suggest that positive school climate improve instructional practices and learning outcome. Therefore, there is a need to further investigate the relationships between coaching and improvements in instructional by creating positive school climate.

Based on the data collected from 470 teachers and coaches from Selangor and Sabah, results indicated that there is a significant and positive partial mediating effect of coaching on the relationship between Climate and overall school improvement. Numerous literature reviews (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh, McCombs and Martorell, 2009; Ippolito, 2010) link strong, positive, effect of coaching on instructional improvement. Research studies have confirmed that there is positive impact of coaching on instructional improvement (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh et al., 2009; Fullan & Knight, 2011). The findings of this study add to the body of research, affirming that coaching does influence school climate in improving teacher instructional practices.

School climate can impact teacher instructional practices (Joyce & Showers, 2003; Darling-Hammond & Richardson, 2009). Meanwhile, coaching is linked to

increase teacher practices (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh et al., 2009). The impact of school climate on instructional practices is direct, and theories by Joyce and Showers (2003), Davis (2016) and Hughes and Pickeral (2013) provide evidence of the direct impact of coaching on improvements in school culture and climate. For instance, Hughes and Pickeral (2013) suggest that in order to create high quality school climate to become a norm, the school should encourage support and shared leadership. Shared leadership which is practiced in coaching and the elements of support shown by coaches would create positive school environment. In fact, successful school requires strong engagement of the whole school community and therefore dismisses the idea of teachers and coaches working in isolation (Hughes and Pickeral, 2013).

In conclusion, this study revealed that there is a significant and positive partial mediating effect of coaching on the relationship between climate and overall school improvement in schools in Selangor and Sabah.

e) Mediation effect coaching on level of implementation (of coaching) and overall school improvement.

As described in the previous section of this chapter, there was a statistically significant relationship between implementation, coaching and overall school improvement. These revealed that implementation may directly influence overall school improvement or indirectly through coaching. By considering coaching as a mediator of the study provide a thorough understanding on how instructional support help with the implementation of school reform for school improvement. This assumption is further supported by Marsh et al. (2009), who suggest that coaching as a means in improving instructional practices. Therefore, there is a need to further

investigate the relationships between coaching and the implementation of school reforms to achieve school improvement to better understand the dynamics at play.

Based on the data collected from 470 teachers and coaches from Selangor and Sabah, results indicated that there is a significant and positive partial mediating effect of coaching on the relationship between implementation and overall school improvement. Numerous literature reviews (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh et al., 2009; Ippolito, 2010) link strong, positive, effect of coaching on instructional improvement. Research have confirmed that there is positive impact of coaching on instructional improvement (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh et al., 2009; Fullan & Knight, 2011). The findings of this study add to the body of research, affirming that coaching does influence implementation and overall school improvement. Implementation of a certain school reform can impact the school improvement (Hargreaves 2013; Fullan, 2007). Meanwhile, coaching is linked to increase school improvement (Cornett & Knight, 2009; Joyce & Showers, 1981, Marsh et al., 2009). The impact of coaching implementation is direct, and theories by Knight (20011), Fullan (2007) and Pickeral et al (2009) provide evidence of the direct impact coaching implementation can have on school improvement. For instances, Mangin and Hall (2015) indicates that organizational support emphasizes the relationship between the implementation of reform and the impact on school improvement.

In conclusion, this study revealed that there is a significant and positive partial mediating effect of coaching on the relationship between coaching implementation and overall school improvement in schools in Selangor and Sabah.

5.3.13 Moderating Variables

There has been a debate on the qualification or coaching credentials which would impact the implementation of coaching. In Malaysia coaches received on-going training as part of the on the job professional learning to equip them with the right amount of coaching knowledge and skills. Therefore, there is a need to look at the moderating effect of coach the frequency of training received and working experience based on the implementation of coaching in Malaysian context.

The findings of the moderation analysis show that there is no significant difference in years of teaching experience and frequency of training with the relationship between coaching and teacher instructional improvement. The findings reflect that teaching experience does not influence the relationship between coaching and instructional improvement. This contradicts the findings by Reed (2015) who found that teaching experience affected their receptivity towards coaching. Most of teachers were resistant towards the process of coaching when it was first introduced and therefore, took a long time to establish trust towards the coach. The findings also reflect that frequency of training does not influence the relationship between coaching and instructional improvement. This is in line with the findings of Linton (2014) which suggest that frequency of training was not a significant factor which influence teaching practices and student learning.

5.4 Implications of Findings

The main significance of the current study is that rather than looking at coaching generically, it has looked at specific elements of coaching, such as collaboration, feedback, reflect, trust and support, in ways that has not been done previously. In addition, it has considered and tested mediating and moderating variables, such as

professional development, leadership and training, that also provide significant data related to the understanding of what might support coaching. It supports other research that suggests that coaching impacts positively on what happens in classroom and on how student learn. Implications for the theory and implication for the practice will be discussed and presented in the following section, particularly on the relationship between the coaching and the dependent and independent variables mentioned in the study. Overall, the study has provided new understandings of the connections between coaching, instructional improvement and student learning in Malaysia.

5.4.1 Theoretical Implication

The study specifies the discussion on the effect of coaching on instructional improvement, learning outcome as well as school improvement. Various literature reviews discuss the role of coaching as a form support to improve teacher instructional practices. It also discusses on the relationship between coaching and other variables such as CPD, leadership, school climate and implementation of school reform (coaching).

Coaching allows individuals teacher to reflect and create links between individual specific learning even to their professional or even personal life (Ciporen, 2015). With every coaching engagement, teachers would be able to reflect, and become more intentional of their own behaviour (Ciporen, 2015; Elsenberg, 2016). The analysis of data also reveals that coaching could support teacher learning by transforming the knowledge and skills gained through professional development and transform it into classroom practices.

Instructional coaching has been used as a form of professional development strategy for teachers to increase teacher competence and most of the research done

on instructional coaching has mostly been exploratory (Thomas et al., 2015; Elsenberg, 2016). Data analysis proves that coaching has been able to increase the implementation or skill transfer as suggested by Cornett & Knight (2009) which is also closely related to increasing teacher professional growth as suggested by Elsenberg (2016). It also proves that coaching enabled the teachers to increase students' achievement by learning and implementing new ideas and practices in the classroom as suggested by Cornett & Knight (2009).

In addition, data analysis also proved that coaching is a conduit that will allow changes in the classroom to take place as suggested by Fullan & Knight (2011). It is also in line with the theory that coaches are given a powerful position as agent of change (Duessen et al., 2007; Fullan & Knight, 2011; Killion, 2009; L'Allier et al., 2010) by carrying out various responsibilities by making sure that teachers implement new initiatives in their classroom (Fullan & Knight, 2011).

Moreover, the finding in line with the ideas that the changes that happen within the classroom will eventually influence the transformation of the school (Fullan, 2011; Bush 2011, 2013). It also supports the ideas that teacher collegiality and collaboration generates positive change in schools (Rosenholtz, 1989; Vangrieken et al., 2017; Jones et al., 2013). Apart from that, the findings also agreed to the idea that coaching allows teachers to become leaders at various time apart from having a stronger drive for improvement (Harris & Muijs, 2002, Bush, 2011)). These drives will empower teachers to create changes within their classroom within their own chosen time.

The overall findings verify the theoretical framework which was established for the purpose of the study as the findings were relatively consistent with existing theories and models. These theories provide evidence on the indirect impact that

coaching has on improving instructional practices and school improvement as a whole. In fact, the findings of the study offer new insights in the field of instructional coaching. The study specifically looks at how each element of coaching (collaboration, feedback, reflect, trust and support) affects other factors which are related to coaching. Various other studies have looked at how coaching impacted instructional improvements and various other variables but none have looked at coaching based on how each elements of coaching plays an important part to ensure coaching effectiveness. Therefore, the findings of the study contributed to the body of literature related to the field of coaching. Moreover, it also looked at how these elements of coaching influence other factors which are related to coaching and how it helps to improve teacher practices and school improvements.

Data analysis on the mediating effects of coaching also offers new insights in the field of coaching. The findings suggest that there are various other factors which are equally important in helping teachers to improve their practices. However, coaching acts a conduit that brings the various factors together which finally resulted in improved practices and learning outcomes. The analysis of the moderating effects on the other hand, also adds up to the body of literature which suggest that working experience and type of training does not influence the relationship between coaching and instructional improvements.

5.4.2 Practical Implications

The findings of the study also would affect various stake holders such as the Ministry of Education (MOE), District Education Officers including coaches (SISC+), school principals as well as teachers.

The study provides an insight on future planning for professional learning of teachers and coaches in order to develop their competency. A large amount of money

was spent for the purpose of professional learning as well providing training for coaches which is aimed at improving teaching profession. The findings of the study indicated that the implementation of coaching in school is high. Nevertheless, it is still at the implementation stage although it has been implemented for 5 years. This indicates that coaching has not yet become a school culture but the high level of implementation shows that teachers and coaches are putting the effort to improve teaching and learning. The findings of the study provide an insight which could be used for future planning related to teacher professional learning and the type of training for coaches to enhance their coaching competencies.

Secondly, the model presented in this study also provides an insight to stakeholders in terms of appropriate strategies and policies to maintain and increase the attitudes of teachers towards coaching. Findings related to the relationship between CPD, leadership, climate and implementation of coaching in schools with instructional improvement, learning outcome and overall school improvement provide an insight on the significant element which are directly related to coaching. Based on the findings, the stakeholders will be able to improve the implementation of coaching and establish a better focus on the most significant element to the least significant ones. Apart from that, leaders which include teachers, coaches, principals and district education officers will be able to play a better role in the attempt to support teaching in improving their practices and increase learning outcomes

The findings of the study also reveal that coaching is only a partial mediator in instructional improvement, learning outcomes and school improvement. Therefore, other independent variables are equally responsible in the effort to increase teacher practices and school performance. Elements such as leadership,

professional learning, school climate as well the effort put in the implementation of coaching should also be improved.

The principal should improve his leadership role by putting more effort in getting full cooperation from teachers by creating more awareness of the importance of coaching and explaining the roles and responsibilities of a coaching in providing the support to help teachers improve and not to evaluate them. Since coaching has a partial mediation effect in various variables, coaches should be able to focus on which area that they are lacking so that they could make improvement on the areas that are lacking. For example, the findings indicated that although the element of trust highly existed within school climate yet collaboration between coaches and teachers is low. Therefore, teachers should focus on improving the level of collaboration between coaches and teachers. Teachers on the other hand, should play teacher leadership role by being more motivated and committed towards their own professional learning and improvement for the benefit of the students and the school as a whole.

5.5 Contribution

The current study has numerous contributions to the body of knowledge in the field of coaching. The findings provide an insight on the implementation of coaching in both primary and secondary schools in Malaysia since it was first introduced in 2013. The study has shed some light on how the different elements of coaching play an important role in creating effective coaching which could lead to improvements in classroom practices. It has filled in a gap in the literature, namely, developing a better understanding of the nature, influences and impact of coaching in Malaysian schools. Additionally, the findings of the study also

serve as a guideline for policy makers to consider the significant factors related to the success of the implementation of coaching as a form of school reform which could affect school improvements.

Furthermore, the partial mediating effect of coaching presented in this study suggested that factors such as leadership, CPD, school climate as well as implementation effort by the school community also play an important role in improving teachers practices and students' learning outcomes. On other hand, it also provided some insights on the preparation of becoming a coach to maximize the impact of coaching towards instructional improvements.

These findings contributed to the body of knowledge in the field of coaching while at the same time serve as a reference for future studies. Additionally, the study adds to the existing literature on coaching to some extent in the field of educational management and instructional support by combining the various theories of coaching, CPD, leadership, instructional improvement and school improvement. The findings of the study illustrated how the theory of coaching sparked the mediation model established in the study.

Finally, a new measurement model or instrument related to instructional coaching was also established which incorporates the elements of coaching, leadership, CPD, instructional improvement, learning outcomes, reform implementation phase, school climate as well as school improvement. The developed instrument was analysed and tested based on Structural equation modelling and has achieved a good degree of reliability and validity. Hence, the instrument is an added value to the research in the field of coaching especially in the local context which is deemed useful for future researchers. Since coaching is a recently explored field in the local educational context, there is a paucity not only in the literature but also in

measurement method. Thus, instrument established for this study is an added innovation to the field of the study.

5.6 Recommendation and Future Studies

Based on the findings and discussion presented in the previous sections as well the limitations of this study, there are several recommendations which are proposed for future consideration for the purpose of improving the quality of future research in similar field. This study only looked at Selangor and Sabah, thus, it is recommended that similar research to be conducted to other states in Malaysia to verify the findings of this study as well as providing different insights from different angles of similar study related to the implementation of coaching in Malaysian schools.

Firstly, the questionnaire used for the study is the sole instrument used for the researcher to comprehensively review data related to the study. The feedback received from the respondents of the study is dependent on the sincerity of the respondents in answering the questionnaires, which might affect the research findings. Moreover, the instrument was adapted from several instruments used by previous non-local researchers. The previous instruments were used in non-local context and therefore differs from the local context. The findings of this study therefore yield different result. Therefore, instrumentation bias could be one of the limitation of the study. Therefore, it is recommended for future research to be carried out using a different research design and method which includes different technique of data collection such as interviews and observation for the purpose of gaining depth of findings and cross validation purpose.

Additionally, the focus of this study also differs since the study seek to look at the mediation effect of coaching and attempts were also made to look at the moderating variables which affect coaching. For future research, the time spent to coach individual teacher in a year could be considered as moderating variable to see if it affects the implementation of coaching on instructional improvement. The findings of the study also provide an insight to coaches as well as District Education Department in the planning of the implementation of coaching in the future.

In addition, the findings of the study showed that leadership construct is a significant element associated with coaching and instructional improvement. It is suggested that in the future, Leadership for Learning is explored by looking at the five principles to see how it supports learning both for students and teachers. It could also be done using different research design such as mixed method by gathering both quantitative as well as qualitative data to gain more depth of findings.

On the other hand, since reflect and feedback are found to be insignificant elements, thus, in the future, an in-depth study could be carried out by focusing on exploring these two elements with interviews with coaches, teachers to identify ways in which the two elements could be improved further.

5.7 Conclusion

The implementation of coaching in Malaysian schools has yet to become a culture practiced by school community. Coaching is part of school reform which aims at achieving school improvement. However, the implementation of any form of school reform takes time. Not only that, it requires involvement of various elements to sure the success of the implementation.

In Chapter 1, the background of the study was established in the light of the implementation of coaching as a form of instructional support which is aimed at improving teacher professional practices. The problem statement clarifies the need of the study to be conducted in the attempt to improve instructional practices and students' learning outcome. Theories related to coaching, instructional improvement, leadership professional learning with several other theories were discussed and conceptual framework were established based on the theories.

Chapter 2 discusses on the various studies related to coaching such as the attributes and types of coaching. Factors related to effective coaching were also discussed in the light of plethora of studies related to the various highlighted factors namely teachers professional learning, leadership, instructional improvement, learning outcomes, school climate, school reform implementation as well as school improvement. The implementation of coaching in Malaysian school were also discussed and the role of the coach (SISC+) were also clarified.

Chapter 3 discusses the quantitative method used for the study. The instruments used for the purpose of collecting data were adapted from 5 different instruments used in previous studies. Data collection procedure and data analysis were also explained. Findings of the study were analysed based on descriptive analysis using SPSS version 23 and Structural Equation Modelling PLS. Data analysis were carried out to provide answers for seven research objectives and research questions which were outlined in Chapter 1.

Chapter 4 reveals the findings of the study. The descriptive analysis indicated that teachers in Malaysian schools perceived that the elements of coaching are highly practiced in school. At the same time coaching has high impact on instructional improvement, leadership, professional development as well as learning outcome.

However, the level of knowledge and skills practiced by coaches is moderately high. Meanwhile, the implementation of coaching in Malaysia schools is at the implementation stage. Based on inferential data analysis using PLS Structural Equation Modelling, the significant factors which are related to coaching were analysed namely leadership, professional learning, instructional improvement, learning outcomes, school climate, implementation and school improvement based on the significant and positive correlation between the variables. The mediation analysis confirmed that there is a significant partial mediation effect of coaching on the relationship between CPD, leadership, climate and implementation with instructional improvement and school improvement. Finally, the results also indicated that training as well as working experience are not the moderators which influence the effects of coaching on instructional improvement.

Chapter 5 discusses on the antecedents of the impact of the implementation of coaching in Malaysian schools. Leadership, CPD, school climate and implementation effort are significant factors in the implementation of coaching. Additionally, the amounts of coaching elements injected in the coaching process such as collaboration, feedback, reflect, support and trust also plays a vital role to ensure its success. The findings of the study also offer numerous implications and contributions to the body of knowledge of the implementation of coaching as a school reform for the purpose of improving teacher practices and the school as a whole. The mediation and moderation model established in the study could be further tested and verified through longitudinal research within clearly defined contexts of any education institution.

Overall, the findings of the study reflect that the practice of coaching in general involves a collaboration of various elements such as leadership, professional learning, learning outcome, school climate etc. These elements could work

individually to increase learning outcome and school performance in general, however, with the existence of coaching, it would help to boost the result as coaching is a form of catalyst in creating instructional improvement. Thus, teachers and school leaders should give more support in the implementation of coaching in school as it is proven to support other elements associated with instructional improvement.

The findings of the study also reflect the practice of coaching Malaysian school which are lacking in the element of reflect and feedback. It is ironic since coaching is about providing support to teachers in helping them to reflect on the on practices. Therefore, attention should be given to these insignificant elements so that the implementation of coaching could be improved to increase instructional improvement as well as school performance. The findings also reflect that not only the school community should support the implementation of coaching but to increase the effort so that it finally become a school culture. Having said that, there should be a change in the school climate and the coaching practices shown by the school community.

School principals should provide more support towards the implementation of coaching by creating awareness among teachers on the importance of coaching for teacher professional development and that coaches are individuals who are assigned to provide the needed support in helping them to improve their practices and learning outcome. Coaches on the other hand should be well equipped with the appropriate knowledge and skills for coaching. This is especially important in order to gain teacher trust towards them. As such, coaches should be given appropriate training before they embark on their journey as a qualified coach. In fact, the stake holder should set up a more stringent criteria or requirement at the initial stage of choosing

the coaches and not merely based on their eagerness or willingness to become a coach.

On the other hand, the number of coaches assigned to the school could be revised in order to provide more opportunities for teachers to be involved in coaching. It could be based on the enrolment of students or the number of teachers so that more teachers will have a fair chance to receive instructional support to improve their classroom practices for the benefit of their students. Otherwise, coaches could be stationed at the school instead of district education department. This would allow more time for coaching sessions and that teachers would have more opportunities to seek help and guidance from the coach. All in all, the findings of the study strongly support the idea that coaching is a form of catalyst for instructional improvement.

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