

EFFECTS OF TEACHER TRAINING PROGRAMME ON TEACHERS' AWARENESS AND  
READINESS IN SECONDARY INCLUSIVE CLASSROOMS IN PENANG

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**EFFECTS OF TEACHER TRAINING PROGRAMME ON TEACHERS'  
AWARENESS AND READINESS IN SECONDARY INCLUSIVE  
CLASSROOMS IN PENANG**

**ABSTRACT**

In the current inclusive practices of most secondary schools in Malaysia, the regular teachers have not been equipped with the necessary information about the characteristics and learning abilities of the students with disabilities who are included into the regular classrooms. Consequently the researcher of this study, proposed a Teacher Training Programme for general educators who teach students with special needs included in their classrooms. The proposed programme comprised five modules that covered significant aspects of inclusive education and disabilities. The programme was evaluated by three experts in the field of special education from the Faculty of Education, University of Malaya and changes suggested by an external expert from the University of The quasi experimental design was chosen as the study utilised intact groups in two chosen secondary schools, with thirty three general educators who teach in the inclusive setting for the experimental and the control groups respectively. The instrument was in the form of a questionnaire consisted of seventy-two items which tested on the domains of *awareness* that comprised factors of *knowledge* and *values*; and domains of *readiness* that comprised factors of *skills* and *emotions*. The Cronbach's Alpha indicated an internal consistency of 0.917. Both the tests of Kolmogorov-Smirnov<sup>a</sup> and Shapiro-Wilk indicate normality in the distribution as the significant level was greater than 0.05. The findings show that there was significant difference in terms of *knowledge* before and after the intervention for the Experimental Group, with  $t(58)=3.41$ ,  $p<.05$ . However, there was no significant difference in the factor of *values*, with  $t(58)=-.67$ ,  $p>.05$ . This indicates that teachers' *awareness* in

terms of *knowledge* has increased significantly after the intervention for the Experimental Group. The findings further show that there were significant increases in the factor of *skills*, with  $t(58)=-2.59$ ,  $p<.05$  and in the factor of *emotions*, with  $t(58)=-2.75$ ,  $p<.05$ . These indicate that teachers' *readiness* in terms of *skills* and *emotions* have been enhanced significantly after the intervention. However, when comparing teacher *awareness* between the Experimental and the Control groups after the intervention, there was no significant difference for the factor of *knowledge*, with  $t(57)= -1.63$ ,  $p>.05$ , as well as for the factor of *values*, with  $t(58)= -1.89$ ,  $p>.05$ . The finding, though not significant, does indicate that the Experimental Group had experienced certain level of changes in *awareness*. As for the comparison of teacher *readiness* between the Experimental and the Control groups, there was no significant difference for the factor of *skills*, with  $t(57)= -1.63$ ,  $p>.05$ , as well as for the factor of *emotions*, with  $t(58)= -1.89$ ,  $p>.05$ . Although the result was not significant, it was in favour of the Experimental Group. The observation of a teacher and the evaluation of the presentation by the Experimental Group were reassuring. It can be concluded that the Teacher Training Programme (TTP) has provided benefits to teachers who have students included in their classrooms.

# KESAN PROGRAM LATIHAN KEGURUAN TERHADAP KESEDARAN DAN KESEDIAAN GURU DALAM KELAS INKLUSIF SEKOLAH MENENGAH PULAU PINANG

## ABSTRAK

Dalam konteks amalan pendidikan inklusif di kebanyakan sekolah menengah di Malaysia, para guru didapati tidak dilengkapi dengan pengetahuan tentang ciri-ciri dan keupayaan murid berkeperluan khas yang dimasukkan ke dalam kelas arus perdana. Oleh itu, pengkaji kajian ini mencadangkan Program Latihan Keguruan bagi para guru yang mengajar murid berkeperluan khas di dalam kelas inklusif. Program yang dicadangkan terdiri daripada lima modul yang meliputi aspek-aspek signifikan tentang pendidikan inklusif dan berkeperluan khas. Program ini telah dinilai oleh tiga orang pakar dalam bidang pendidikan khas dari Fakulti Pendidikan, Universiti Malaya. Reka bentuk kajian eksperimen kuasi telah dipilih dengan menggunakan dua kumpulan intak dari dua buah sekolah menengah berserta dengan 33 orang guru yang mengajar kelas inklusif untuk kumpulan eksperimen dan kumpulan kawalan. Intrumen kajian menggunakan soal selidik sebanyak tujuh puluh dua item yang telah diuji ke atas domain *kesedaran* yang terdiri daripada faktor *pengetahuan* dan *nilai*; serta domain *kesediaan* yang terdiri daripada faktor *kemahiran* dan *emosi*. Nilai Cronbach Alpha menunjukkan ketekalan dalaman sebanyak 0.917. Kedua-dua ujian Kolmogorov-Smirnova dan Shapiro-Wilk menunjukkan taburan normal dengan nilai signifikan lebih daripada 0.05. Dapatan kajian menunjukkan terdapat perbezaan yang signifikan dari segi *pengetahuan* sebelum dan selepas intervensi untuk Kumpulan Eksperimen dengan nilai  $t(58)=-3.41$ ,  $p<.05$ , manakala, tidak terdapat perbezaan yang signifikan untuk faktor *nilai* dengan nilai  $t(58)=-.67$ ,  $p>.05$ . Ini menunjukkan *kesedaran* guru dari segi *pengetahuan* untuk Kumpulan Ekperimen telah meningkat secara signifikan selepas intervensi. Dapatan yang lain juga menunjukkan terdapat peningkatan yang

signifikan dalam faktor *kemahiran* dengan nilai  $t(58)=-2.59$ ,  $p<.05$  dan faktor *emosi* dengan nilai  $t(58)=-2.75$ ,  $p<.05$ . Ini menunjukkan *kesediaan* guru telah meningkat secara signifikan selepas intervensi. Walaubagaimanapun dalam melihat perbezaan *kesediaan* guru antara Kumpulan Eksperimen dengan Kumpulan Kawalan selepas intervensi, tidak terdapat perbezaan yang signifikan untuk faktor *pengetahuan* dengan nilai  $t(57)= -1.63$ ,  $p>.05$ , serta untuk faktor *nilai* dengan nilai  $t(58)= -1.89$ ,  $p>.05$ . Walaupun dapatan tersebut tidak menunjukkan nilai yang signifikan, namun kumpulan eksperimen mendapat pengalaman serta perubahan dalam *kesedaran*. Seterusnya, perbandingan *kesediaan* guru antara Kumpulan Ekperimen dan Kumpulan Kawalan menunjukkan tidak terdapat perbezaan yang signifikan untuk faktor *kemahiran* dengan nilai  $t(57)= -1.63$ ,  $p>.05$ , dan juga untuk faktor *emosi* dengan nilai  $t(58)= -1.89$ ,  $p>.05$ . Walaupun dapatan tidak menunjukkan peningkatan yang signifikan, perubahan yang positif wujud dalam Kumpulan Ekperimen. Pemerhatian guru dan penilaian pembentangan oleh Kumpulan Eksperimen adalah menyakinkan. Oleh itu, dapat dirumuskan bahawa Program Latihan Keguruan membawa maafaat kepada para guru dalam menghadapi murid berkeperluan khas di dalam kelas inklusif.

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# **CHAPTER 1**

## **INTRODUCTION**

### **Background of the Study**

The education of students with disabilities began with 'special education.' Though intentions were positive, this special school learning was taking place outside the mainstream and therefore there was discrimination. According to UNESCO 1990, learning in these special schools resulted in 'exclusion' because it was "leaving children with various needs outside the mainstream of school life and later, as adults, outside community, social and cultural life in general". Inclusive education involves changes to make education more flexible to all learners. Therefore it has "implications for teacher training as it aims to enable both teachers and learners to feel comfortable with diversity" (UNESCO, 1990).

Most participants who presented research papers at special and inclusive educational conferences stressed on teacher training courses; both pre and in - service for general educators to develop essential skills to manage and teach students with special needs in inclusive classrooms especially in secondary schools. Professional training for general educators would in future bring about success in inclusive education. "The ultimate vision for inclusive education systems is to ensure that all learners of any age are provided with meaningful high quality educational opportunities in their local communities alongside their friends and peers" said the European Agency, (2015). The Malaysian Education Blue Print phase one, (2013-2015) has stated that there was an increase in the enrolment of Special Needs Students for Inclusive Education programme, from 18.4% to 23.2 %. There was also an increase of the level of parental involvement too, from 57% in 2013 to 74.6 % in 2015. These



figures show that educational targets had been met during the years mentioned. It is stated in the Blue Print phase two 2015-2025 that the aim of the education system was to develop values- driven students and give learners shared values and experiences by embracing diversity. Other implementations would be new interventions to appreciate diverse views. In order to support Malaysia's global brand of education, reviews and enhancements have been taking place to match international practices and face challenges.

Every student with disabilities or adults with disabilities in our society, needs to be treated with human dignity. Society consists of the abled and the disabled. It was society that segregated those who were disabled from those who were not disabled. A child born normal brought joy to the whole family but if the infant was born with a disability it brought sorrow to all. Disability was and is seen as abnormal and therefore the individual needed to lead a separate life. "The segregation started within the family and relations who were not able to accept a child with an impairment."Puri and George (2004, p.23) also insist that "inclusion needs to begin right from birth". The person with disabilities had been forced to believe that he/ she is of no use to society. The individual with disabilities was shunned by the family, schools, society and the world at large. The idea of being "useless" had seeped into schools and most teachers had the belief that a students with disabilities could not study and therefore teaching students with special needs was impossible. "Teachers needed to be challenged in their thinking that they are *not* capable of teaching all children" (Florin & Rouse, 2009).

Society needed a paradigm shift in its education system to bring about a change in its thinking and to create a future inclusive world where disability would be seen as normal and not abnormal. "Throughout history people with disabilities had been treated harshly".(Deborah, 2004). If we glimpsed at history pertaining to students and

learners with disabilities, they were mainly institutionalized, later when non-governmental organisations were started they were enrolled in centres and after that had been integrated into 'special schools' when the special education system, emerged through vigorous lobbying by parents of children with disabilities. Special education in fact started way back in 1801, in Paris, when the feral boy, Victor was given some education by Jean Marc Itard (an otologist) who was considered to be the first special educator (Ashman & Elkins, 2002, p. 55). In Australia special schools were started in 1880. (Ashman, & Elkins, 2002, p. 54, 56). Therefore the idea of special education is not new. At present special education in special schools in a number of countries especially in the West is being discontinued in stages, as the tendency is to make available opportunities and chances for all students to learn in regular or mainstream schools. This is known as 'Inclusive Education.' In Malaysia, research, seminars and workshops were conducted to implement inclusive education. "The outcome from these seminars and workshops ..... made way for the change of emphasis from integration to inclusion." (Manisah et al., 2006). This change indicated the first step towards an inclusive Malaysian society. The Ministry of Education in Malaysia has introduced inclusive education in a number of schools throughout Malaysia. Special educational needs students have been mainstreamed in general classrooms and they follow the general curriculum which the students without disabilities follow. "The belief that the kind of society we create emerges from the kind of education we provide has a long history" (Puri & George, 2004, p. 41). It is through education that social transformation has been happening universally. Those involved in bringing about educational transformation are the educators at all levels. Therefore the transformation expected to take place in society linked to the acceptance

of people with disabilities, would definitely happen through the efforts of educators with proper and adequate training to be successful in inclusive education.

### **Rationale of the Study**

This study is in line with the Blue Print of the Malaysian Ministry of Education, (2013) that highlighted the importance of inclusive education. This is the recent phenomena in the country's education system. The Education Ministry is doing its level best to make inclusive education successful. Therefore it is logically acceptable to support a study on teacher training for general educators in inclusive secondary schools in Malaysia as proposed in this study. In Malaysia, Act 685 (2008) refers to persons with disabilities and their education to enable them to be integrated into society. Furthermore Chris Watkins (2000) in his competency model suggested that high level training was needed for general educators.

In the Incheon Declaration, the World Education Forum declared a new insight for education for all. "This commits to quality education and improving learning outcomes and states the agreement to: ensure that teachers and educators are empowered, adequately recruited, well trained, professionally qualified, motivated and supported within well resourced, efficient and effectively governed systems" (2015, p. 2). In Malaysia, the absence of effectively governed systems may cause problems as inclusive education is still in its early stages and awareness programmes are being carried out.

The present study was done with an aim of extending a new dimension to the knowledge that is existing presently in teacher education. It is expected that, inclusive educators take on the responsibility of educating students with disabilities to enable them to maximize their academic and social skills and to play an active part in society.

The proposed teacher training programme has incorporated the two factors of inclusive education awareness and disability awareness which would have the potential to increase teacher competence and teacher readiness to deal with diversity. The teacher training programme has been designed to provide teachers with a quality training that will enhance their present and future teaching and learning experience in the inclusive classroom.

In the Malaysian context inclusion refers to integration of students with specific learning disabilities (SLD) and learning difficulties into regular classes. Those with hearing and visual impairments are mostly in schools which are specially equipped to cater for such students. Therefore in this study the focus was to develop a programme for general educators in secondary schools that enrolled students with learning disabilities such as:

1. Autism Spectrum Disorder (ASD)
2. Cerebral Palsy
3. Attention Deficit Hyperactivity Disorder (ADHD)
4. Down Syndrome
5. The category of Slow Learners.

The above learning disabilities are prevalent in Malaysian schools which have implemented inclusive education for students with learning disabilities. The Diagnostic and Statistical Manual of Mental Disorders (5<sup>th</sup> edition) provides assessments for research and validation of clinical results. The information contained in the manual is valuable for psychologists and social workers too. It also contains the diagnostic criteria for the disabilities.

The special educational needs students, have been taught by general educators who are subject specialists especially in the secondary schools. The teachers handling

students with diverse abilities have had no proper and adequate training in special education. Most of these teachers had commented that they lacked information on special and inclusive education, when the researcher met them during her first visit to school 1. Therefore this study was proposed to investigate a teacher training programme that included 'special education' and 'inclusive education'. The modules used in the training covered disability studies and inclusive educational components.

Furthermore there is a plethora of research findings that stated that "research is needed in teacher preparation....to date little information is available on effective teacher education models for inclusive classroom" as stated in an educational journal. The proposal to introduce a comprehensive programme for the benefit of regular teachers in this study is in line with what the literature review recommended.

The specific consideration that was given to Inclusive Education in this study refers to inclusion of students with learning disabilities and learning difficulties in mainstream inclusive Malaysian Secondary School classrooms. Research showed that there was a gap in this area of teacher effectiveness. The EFA global monitoring report (2008) stated, "It is surprising how few studies there are on teacher effects.....teacher effect is much higher than other factors." An educational research journal pointed out that more research is needed in teacher preparation as to date little information is available on effective teacher education models for inclusive classroom .

Another consideration to be given to Inclusive Education was to scrutinise the vital dimension of professional competency such as awareness which included factors such as knowledge and values; and readiness which involved skills and emotions in teaching and supporting special educational needs students in their learning. Teacher competency has been seen to be an emerging and critical issue in the implementation of Inclusive Education in Malaysia, "because teaching children of varying abilities is

complex ....to be effective it requires....high levels of skill among class teachers.” (OECD, proceedings,1998,p.18).

Several studies done on inclusive education in Malaysia confirmed the fact that “the inclusive education programme, could be successfully implemented if the level of the general educators’ proficiency in handling diverse students was raised through in service training (Manisah et al., 2006). Haniz (1998) in his study stated his dissatisfaction on training sessions for regular teachers organized by the Department of Special Education “for these sessions are usually one-shot workshops and offer disconnected training”. Findings in empirical studies on inclusion showed that “over half of the respondents stated that the mainstream classroom teachers lack the exposure and the skills to deal with students with special needs.” (Manisah et al., 2006, p. 4). The essential component needed to ensure ‘quality inclusive education’ are teachers, especially general educators. Therefore, this study proposed a teacher training model that incorporated educational and neurological aspects to enhance teacher proficiency and teacher effectiveness. To change inclusive education into a successful practice, teachers need the proposed training module which would provide an in-service training, so that teachers could be well equipped and prepared to bring about successful inclusive education.

Initiating inclusive education was not sufficient, for the challenge was to organise and manage effectively this reform of ‘inclusion’, to achieve positive results. The success of inclusion depended significantly on the professional competency of regular and special educators in inclusive schools. They needed a “sound understanding of the learning styles, preferences and approaches, human beings adopt so that the curriculums and lessons they design and deliver would meet the needs of their class” (Sarah, 2008, p.73). As stated above, research suggested that regular

teachers needed high levels of skills to manage diversity. They needed to understand diversity in its various forms and one form was the disability or the disorder itself causing diverse behaviours.

The study by Bouck (2006), said that inclusive education needed to be examined continuously. Overall the study revealed that “inclusive education must continue to be examined and understood at the secondary level.” “Behaviours associated with seizures/epilepsy” ... that cause learning difficulties “may be frightening to the teacher and the students in the class but knowing what to expect and what to do in the event of a seizure reduces stress and danger to the individual student.” (Diane et al.,2008). Most studies recommended that teachers need to cultivate positive attitudes towards students with special needs.

The researcher of the present study contends that having a positive attitude alone would not solve the problem. As Westwood, (2002 p. 16-17) stated: “Students with general learning difficulties and those with specific learning difficulties need to be taught more effective ways of managing themselves and regulating their own learning”.

‘Professional competency’ embraced the main domains of knowledge, values, skills and emotions of regular teachers. It is vital for general education teachers and school professionals concerned with inclusive education to be familiar with the concept of

‘Inclusive Education’ and its philosophy. “Therefore, a student’s success in learning depends to a great extent on the teacher’s ability to match specific instructional strategies with the content and the purpose or goal of learning that content.” (Victor & Margaret, 2005, p. 23). As stated by Mike et al. (2000) “schools cannot deny places to pupils with special needs simply because established practices, structures and

procedures were designed to meet the needs of only a certain proportion of potential pupils” which referred to the normal students. Furthermore, regular teachers in Malaysian inclusive schools need to develop certain qualities to be ready for teaching special educational needs students. These qualities as Powell (1996, p.68) emphasised, are, “alternative flexible teaching, open mindedness, whole-heartedness, responsibility, patience and perseverance”.

Regular teachers need to acquire teacher competency and readiness to make the necessary adjustments and adaptations to relate teaching to the needs of the special educational needs students and their styles of learning. “Inclusion demands imaginative approaches to the curriculum” (Mike et al., 2000). These adaptations would modify the curriculum as well as the teaching process in favour of diversity. Once the proficiency and teacher readiness in inclusive education were imbibed and established the majority of the regular classes would comprise regular and special educational needs students from special and integrated programs and inclusive education would progress automatically without impediments. General educators who were responsible for inclusive practices need to be experts at differentiating the disabilities prevalent in Malaysia and additionally comprehend what inclusive education is. These two categories of disabilities and inclusion had been elucidated in the earlier part of this study. General educators are expected to understand the differences between “learning styles and learning approaches”. Comprehending this is not an easy task but if provided effective in- service courses as was proposed in this study the general educators would be assisted and encouraged to manage diversity.

Currently, professional incompetence appears to be the main barrier to inclusion. Research shows that teacher training is considered as a high priority for successful inclusion. “There is recognition that teacher training is a highly interactive,



continuous and supportive process of enhancing the competence of the teacher to respond to a greater diversity of children's learning styles and needs" (Puri & George, 2004).

In an article on working practices in mainstream schools it was stated that, most mainstream school staff members have little training or experience in working with these children, while increasingly being placed in a position where they have to do so. This research also indicated the views of the mainstream staff that particularly those in mainstream schools indicated the value of outside professional advice and all the teachers questioned were concerned for the need for professional training and development .

Within the Malaysian context, studies to investigate and to scrutinise the competency of regular teachers for effective teaching techniques for all students in the actual inclusive classrooms in secondary schools, were minimal because full concentration in most schools was placed on special education while inclusive education was not prioritised. This could be perceived in the negligible number of special educational needs students enrolled in inclusive classes in most Malaysian secondary schools where inclusion had been initiated.

It needs to be emphasised here that the in - service courses for professional development provided by officials from the local education department of the various states **accentuate** special education and not inclusive education. Manisah et al. (2006) refer to "integration practices in inclusive schools in Malaysia". Most schools in Malaysia where inclusion has been implemented continue with integration practices which in fact cause segregation and exclusion not inclusion. In Malaysia, the programme that is being followed is: Program Pendidikan Khas Integrasi (The Integrated Special Education Programme). This programme does not carry the word

‘inclusion’ though implementation of integration into inclusive classrooms is currently happening in the Malaysian schools. The Malaysian education policy is more in favour of integration into special schools, on a large scale, though it is aware of and supports inclusive education in mainstream secondary schools in the country.

For the philosophy of Inclusion to be fully comprehended, all students have the right to be included in regular classes. Regular teachers need to recognize and understand the students’ diversity. For inclusion to be successful, teacher education has to take the initiative to build the competency and proficiency in student teachers to impact on and influence inclusive education. “It has been said that the goal of inclusion is not to erase differences but to enable all students to belong within an educational community that validates and values their individuality.” (Westwood, 2002, p. 2). Teachers in inclusive classes need to take into account the student’s strengths and help him/her to realize their potential. Marks scored in exams are not needed to become a useful citizen. The students with disabilities’ transition into the world means inclusion into society and this inclusion begins in the student’s ‘school world.’ It is in the classroom that the student genuinely learns to socialize with his/her normal peers. This paves the way for him/her to comprehend the world and its global community. This study has taken into consideration by Watkins (2000), interpretation on teacher competency in his model of teacher competencies.

### **Statement of Problem**

The dynamic reform movement of Inclusive Education has been implemented in a number of secondary schools in Malaysia as has been the trend globally. The Ministry of Education (MOE) which is referred to as Kementrian Pendidikan Malaysia (KPM) is involvement with International Organisations such as: United Nations Educational,

Scientific and Cultural Organisation, (UNESCO) and United Nations International Children's Emergency Fund, (UNICEF). The state education department also known as Jabatan Pendidikan Negeri (JPN) is involved in identifying those schools where special Education and Inclusive Education have been implemented. The JPN under the Special Education Unit (Unit Pendidikan Khas) is responsible for the admission of special educational needs students in special education classes. Parents are consulted for mainstreaming students with special needs into regular classes by the special education teachers.

In Malaysia, Act 685 (2008) refers to persons with disabilities and their education. These inclusive schools have to provide education for an increasingly diverse group of students. It was stated in his speech by Mr. Youssoouf Oomar (2008, p. 4) the Malaysian representative at UNICEF that, "Inclusive Education is a challenge due to ... shortage of properly trained teachers and curriculums that are not adapted to the needs of children with disabilities". McMahon, Forde, & Dickson, (2015) consider, reshaping teacher education through the professional continuum as stated in the Educational Review, 67(2) 158.-178.) In the Malaysian context a study done in 2015 concludes that further professional development is required to address these shortcomings, and that, given the lack of sufficient teacher educators in this area, it seems likely that the government's aim of implementing inclusive education remains a distant goal .Another Malaysian study by Sailajah et al. (2014) referred to competency, guidance information, workload and students' disabilities .They also say that " more guidelines and support are required for successful inclusion in Malaysian integrated preschools."

Furthermore the disorder of learning disabilities is on the increase. In a paper presented at the second Malaysian Conference on Rehabilitation, See et al. (2009)

claim that in 2004 the number of children with learning difficulties was 57,483 and in 2009 it increased to 100,180. As such, more students with learning disabilities will be included in regular classes in future. At this juncture, two pertinent questions need to be asked: (1) Have regular teachers been trained and prepared to educate the large number of students with learning disabilities? The answer would be in the negative as most studies on inclusive education refer to the lack of teacher competence in teaching students with disabilities. (2) Are the in-service courses being conducted at present for professional development, sufficient for regular teachers in mainstream schools, as the focus of these courses is not entirely on inclusive education but more on special education? Again the answer would be in the negative as those conducting these courses have been equipped with knowledge about special education and not about inclusion or learning disabilities.

A survey of two inclusive schools by the researcher, showed that the number of special educational needs students in inclusive classrooms was minimal. Most regular teachers, though seeming to have a positive attitude towards inclusion, did not readily and confidently accept the responsibility of teaching special educational needs students as they should have by differentiating the methods and lesson plans. They avoided intimate contact with the special educational needs student, when teaching. Not being able to either understand the disorder or know how to teach the students with disabilities, the regular teachers employed empathy and sympathy for such students and their attitude was to be kind and protective of the disabled student. This was conveyed to the researcher of this study during her visit to two inclusive schools in Selangor and Pulau Pinang. Such an attitude gave moral support but did not help in cognitive aspects. In the Malaysian context, students with severe diagnosis are not allowed inclusive education as they are considered to be disruptive. Furthermore they

needed extra personal attention such as providing medication and feeding. Such students could be taught in the special education wing.

Administrators and teachers in Malaysian inclusive schools critically need to possess a clear understanding of the disabilities which cause learning disorders and what inclusive education is all about including its significance within the education system. Regular teachers tend to view problems of learning as within the students with disabilities, and not in the methods teachers employed in teaching students with diverse needs. The general educator's concentration has been more to cater for the needs of the students' disabilities and not to their ability.

Competency in regular teachers' methods of structured teaching and management of the various learning styles of special educational needs students in inclusive classes was significantly lacking. Regular teachers needed competency in acquiring, understanding and using knowledge regarding the various disorders limiting special educational needs students. They needed proficiency in assessing the special educational needs students' capability and understand his/her learning styles.

Adaptations in the curriculum for special educational needs students are not being done presently. "In some cases a change in the curriculum emphasizing more life skills may be required". (Diane, 2008, p. 204). Research by various investigators showed that teacher ability and the modified curriculum are needed for smooth inclusive practices. In any education system, the curriculum is one of the major obstacles or tools to facilitate the development of a more inclusive system. The school curriculum on inclusive practices was often unable to meet the needs of a wide range of different learners. In many contexts, the regular teacher's instructional content was acquired from the existing curriculum which had been primarily designed for normal students and was rigid, leaving little flexibility for adaptations or for regular teachers

to experiment and try out new approaches. The content of the curriculum might not be practical to the environment in which the special needs student lived and therefore his/her learning became redundant and not motivating. The regular class teacher had to be sensitive especially to the needs of the students included, their technique of learning and also understand the differences in the content of the curriculums for the regular and special education. "Differentiated instruction is instruction that is responsive to the diverse needs of all students with a focus on the curriculum" (Diane, 2008, p. 203).

The special education teacher used a different curriculum which was adapted to special students but in inclusion the regular teacher had to take the initiative to adapt the general curriculum and the lessons to provide what the learner needed. Presently what is happening in inclusive education in the Malaysian context is 'otherwise.' The regular teacher follows the normal curriculum intended for the normal students and hopes that the students with disabilities included will catch up with whatever has been taught, since he is sitting with normal peers. Interestingly, the normal peers frequently help him out and therefore the teachers' burden is made lighter. Schools fail to understand that in inclusion the special educational needs student is not made to sit next to normal peers for them to act as his tutors but more for the purpose of social interaction.

Most students included in schools where inclusive education has been implemented in Malaysia had gained in expertise in their learning through help from their normal friends who take an interest in their disabled friend's understanding of the lesson. It was noticeable that the normal peers took great pride in contributing to the special educational needs student's learning. This is appreciated where sound interaction is promoted but not where 'sound tutoring' is. In instances where the

normal peers were going out of the way to help the student, credit went to the normal students and not to the regular teacher. The school principal needed to place caution on such practices as these procedures would deprive the normal student of his/her own study and independent time.

The principal had to bear in mind that when students with special needs were placed in regular classes without adequate preparation and support, problems would emerge. Normal students might not accept students with disabilities readily and disabled students might not imitate social models automatically (Westwood, 2002).

Regular teachers' lack of abilities to teach students with disabilities and negative attitudes towards their performance can be major limitations for successful inclusive education. The training of staff at all levels of the education system is often not adequate for inclusive practices. The teacher education institutes need to upgrade their capacity in developing a modified curriculum towards a more inclusive future for student teachers and to replace the existing curriculum which places its emphasis on a general teaching technique for all. There is no understanding of the causes and the management techniques of the disruptive behaviours exhibited by the majority of the disabled students. Collaboration and co-teaching between the regular teacher and the special educator does not exist in the present inclusive classes in all inclusive schools.

Currently in inclusive practices in a majority of Secondary Schools in Malaysia, the regular teacher has not been equipped with the necessary information about the characteristics and learning abilities of the students with disabilities integrated into the regular classroom. The teacher knows the label the student carries but apart from that, the regular teacher has not been provided with information regarding the disorder with which the special needs student is diagnosed and

specialized teaching techniques needed to teach such a student. In most schools in Malaysia, the regular teacher's estimated skills to handle students with disabilities, as well as teaching them are at a very low level. Under such circumstances the regular teacher places more emphasis on the academic performance of the normal students and tended to 'push' the students with special needs with low ability to perform beyond his/her capability. Educators have to realize that a disabled individual learns best in a non- threatening environment.

When the researcher of this study visited a school to observe how general educators taught students with special needs, a regular teacher was perceived walking around the inclusive classroom with a long ruler in her hand as she had not been provided with the necessary techniques for educating problem students. Instead these students with behaviour problems are termed, as 'disruptive students' and as a result the regular teacher resorted to a stricter mode of corrective measures. In the teacher training programme proposed in this study, this factor was taken into consideration by the researcher when preparing module five which was about managing a class of diverse students.

Investigation by the researcher of this study, concerning school professional development activities showed that when there was a course for teacher training it often tended to be a general overview of inclusion and more emphasis was placed on special education rather than on inclusive education. Thus this type of a professional training was uncoordinated and inadequate to be of great help to upgrade the regular teacher's practice in the inclusive classroom. It was a common practice in the Malaysian education system to have professionals from the local education department of the state to address teachers on professional development to prioritise special education to inclusive education. The reason was that there were only a few,



merely one or two students included in the regular classes and therefore the professionals assume that in schools where inclusive education had been implemented the regular teacher would be able to cope with those few special needs students. This proved that the concept of inclusion was not supported. Those professionals conducting those courses were also trained in special education only. In future this situation could be overcome.

The Malaysian education system prefers to favour special education in segregated provisions. Is this attitude prevailing because the professional competency of regular teachers is deficient? If this attitude continues then the capable students with disabilities will lose their opportunities to learn in regular classes. Inclusive education is a challenge to those education systems which consider changes in pedagogy and curriculum as a threat. The second criteria already referred to earlier, in the Malaysian National Report imposed on the selection of students to learn in regular classes, and stated as: "Do not have behavioural conditions that could cause disruption to mainstream learning" emphasised the idea that special educational needs students included in regular classes were viewed in terms of their disorders, disabilities and deficits, not in terms of their capabilities. If professionals fear inclusion as a result of professional incompetence and prefer segregation and exclusion, they are forming barriers to inclusive education. School professionals' and regular teachers' proficiency was instantaneously required to be re-orientated towards the positive and beneficial elements in inclusive education. Acquiring adequate knowledge about the various disorders that limit the progress of special educational needs students, attending in-service courses on inclusion and changing negative attitudes will contribute towards the success of inclusion. Taking into consideration circumstances in this country, Malaysia, it must be stated that the implementation of the inclusive

program can be effective only with a proper teacher training programme which embraces the philosophy of inclusion and an understanding of biological factors affecting cognitive development in special educational needs students.

This must be made the priority of the National Teacher Education System in Malaysia.

### **Objectives of the Study**

The study aimed to achieve the following objectives:

1. To assess the level of teacher awareness in inclusive secondary school classrooms;
2. To assess the level of teacher readiness in inclusive secondary school classrooms;
3. To investigate the significant level of teacher awareness in secondary school inclusive classrooms through the Teacher Training Programme;
4. To investigate the significant level of teacher readiness in secondary school inclusive classrooms through the Teacher Training Programme;
5. To identify if there are any significant differences in teacher awareness between the experimental and the control groups; and
6. To identify if there are any significant differences in teacher readiness between the experimental and the control group.

Based on the above research objectives the following research questions have been formulated.

### **Research Questions**

1. What is the level of teacher awareness to teach diverse students in inclusive secondary school classrooms?
2. What is the level of teacher readiness to teach diverse students in inclusive secondary school classrooms?
3. Are there any significant changes in teacher awareness before and after introducing the Teacher Training Programme?
4. Are there any significant changes in teacher readiness before and after introducing the Teacher Training Programme?
5. Are there any significant differences in teacher awareness between the experimental group and the control group?
6. Are there any significant differences in teacher readiness between the experimental and the control group?

### **Hypotheses of the Study**

Following are the interpretations for the four hypotheses of the study:

H<sub>a1</sub>: There are significant changes in teacher awareness before and after introducing the teacher training programme

H<sub>a2</sub>: There are significant changes in teacher readiness before and after introducing the teacher training programme

H<sub>a3</sub>: There are significant differences in teacher awareness between the experimental group and the control group

H<sub>a4</sub>: There are significant differences in teacher readiness between the experimental and the control group

### **Significance of the Study**

Inclusive education has its benefits for students as well as parents. Through inclusion, students with disabilities can lead lives like their normal peers. They can learn how to interact and learn social skills with their normal peers in the classroom. This will bring happiness to their parents who hope their children with disabilities will behave and lead lives which are regular. Inclusive education in schools will not only influence parents and students but will also influence the hierarchical administration of the District, the State and the Ministry of Education of Malaysia to bring about social transformation in the country. Therefore, general educators play a great role in bringing about this change.

This study would benefit all regular teachers and educators in Secondary Schools, as they will be re-trained in coping with diversity and the process of managing and educating special educational needs students together with their normal peers. The study would also benefit school administrators and officials in the education department to make adaptations to the school curriculum. It would also eliminate segregation and would hopefully bridge the gap that had existed between the regular and special educators, who are either in the special education or mainstream section. Through collaborative consultation in all of the secondary schools where inclusive education had been introduced, effective lesson planning and effective instructional methods would ultimately result in inclusive practices. The collaborative consultation could happen between schools and Non-Governmental Organisations (NGOs) too.

This study will benefit the teacher education agencies under the Ministry of Education besides also benefitting all State Education Department officials who need

to give in-service training on inclusive education and Non - Governmental Organisations that need training programmes for their teachers as well.

This study would bring about a change in the curriculum for teacher training as it needs to be redesigned and restructured to meet the demands of all teachers who are in future going to be involved in inclusive teaching. It is hoped that suggestions and findings from this study could assist the teacher education department of the Ministry of Education for special education to come up with future plans in designing high quality and successful methods to train all pre-service teachers to cope with inclusive education. The significant aim would be to make teacher education responsive to the critical demands of inclusive education.

The study will most significantly benefit all special educational needs students as they would be educated in real inclusive environments with adaptations to the curriculum and new methods of teaching and learning employed in differentiated teaching by regular teachers who are competent and know the art of collaborating with the special educator. Teaching and learning would be enhanced as present and future teachers undergoing the teacher training programme would comprehend the purpose of inclusion as well as the biological factors that cause disorders in the learning process of their students with disabilities.

### **Limitations of the Study**

The study was conducted in a secondary school in the state of Penang. This school had been chosen because inclusive education had been introduced and inclusion was taking place in classes from forms one till five. The school conducted full inclusion and there was no “pull out “scheme as the students follow the general curriculum and had to take the public exams. The students mainstreamed in school

had been diagnosed with mild Autism Spectrum Disorder (ASD), Dyslexia, Down Syndrome, and there are Slow Learners too.

Although the school chosen for the experiment was intensely involved in 'special education' it was at the same time incorporating inclusive education for 'learners with learning disabilities and difficulties' in the mainstream. Furthermore the principal in a discussion with the researcher had shown that he was keen on professional development through an in-service training programme for teachers in inclusive settings. He had since been transferred to another school.

The principals and staff in most secondary schools were only aware of special education and were fervently supporting special education in the various secondary schools. Therefore the number of students included in mainstream classes was extremely minimal. Moreover, many of the principals had the fear that the inclusion of disabled students in mainstream classes might affect the overall results in the public exams for the particular school.

In most secondary schools there was a certain level of acceptance of inclusive education but as Haq (2000) had raised the point that in Malaysia, "integration of children with and without disabilities is desired but there is no intention that every child with a disability be placed in a general education class". It was also mentioned in her study that, "there is a reluctance to abandon special education classes completely but at the same time there is a need to increase the involvement of children with mild disabilities in the regular classes."

In the Malaysian context, access into the inclusive classroom depended on the choice by the special educator who managed special educational needs students in collaboration with the parents. Consideration was also given to marks scored in tests. The severity of the disorder is also taken into account. There had been a case where a

female student with Cerebral Palsy, from the Spastic Centre, was integrated in the general education class in the State of Penang. She attended a Secondary School, Penang from where she entered the local university in that state, and graduated in the field of Anthropology. It is beyond the scope of this study to investigate on issues such as teacher training aspects for inclusive education by the Education Ministry of Malaysia, the school and parents' support for inclusive practices, resources and assistive technological help provided.

### **Operational Definitions of Terms**

In this section, the key variables, concepts and terms with special meaning for this study have been defined clearly.

#### **Teacher Training Programme.**

There are two components infused into the teacher training programme for general educators. Inclusive educational factors and biological and neurologic factors in disabilities, essential segments to intensify teachers' awareness and readiness to teach in inclusive settings.

This study aims to establish the effectiveness of the teacher training programme to strengthen teacher awareness and increase teacher readiness to cope with and also to teach and manage diverse students. The dimensions of biological factors and inclusive educational factors involve essential elements of disability awareness and inclusive educational awareness which will impact and implicate the training programme.

The impact of this training programme will be upon the general educators' awareness in the two segments of knowledge and values and in the domain of readiness the areas are skills and emotions. The input of knowledge disseminated during the training programme will equip the general educators with an understanding of the biological factors that give rise to neurological disorders which, the disabled students are grappling with, such as specific learning and intellectual disabilities.

The inclusive educational factors, will promote awareness in the teachers in inclusive settings, regarding the philosophy of inclusive education. Teachers need to comprehend that inclusion is about diversity and change in attitudes and instructional methods of teaching. Inclusion is a process that involves a change in the thinking patterns of educators, majority of whom are influenced by the "medical model" which seeks to highlight the deficits of the disabled individual. Rayner (2007) describes this medical model "as a 'deficit model' and presumes that pathology or disorder is the basis for defining disability or learning difficulty". As such, special educational needs students were segregated and taught in special schools. They were excluded from the regular classes and seen only as people who were different and needed help. This training programme will erase the negative thinking pattern of the teachers and will enhance only their awareness about disabilities with the purpose of increasing knowledge and understanding behaviours.

When inclusive education began, the regular teachers were at a loss as they had, had no training in special education and did not comprehend the philosophy of inclusion. The researcher in her exploration of inclusive educational practices came to realize that the general educators, had not been prepared adequately for inclusion in all schools General educators are experiencing this dilemma which this training



programme hopes to clear and will make the application of inclusion more comprehensible.

### **Teacher Awareness**

Teacher awareness refers to the ability and skills to do what is needed in a job. In this study teacher awareness refers to teacher proficiency in the following two domains which are knowledge and values in inclusive classroom teaching.

**Knowledge.** Knowledge refers to the acquisition of facts concerning inclusive education and disabilities.. Disability awareness and inclusive educational awareness are essential elements in the proposed training programme. Within the dimension of ‘disability awareness’, neurological disorders such as ASD – autism spectrum disorder, Cerebral Palsy, Epilepsy, Down Syndrome, ADHD- attention deficit hyperactive and SLD or specific Learning disabilities , and Intellectual Disabilities are discussed with reference to characteristics, behaviours and styles of learning.

General educators need to be equipped with knowledge about the various strategies that could help them in the teaching and learning process. Educators have to realize that an individual with disabilities learns best in a nonthreatening environment. In most cases students with disabilities who have behaviour problems are termed as ‘disruptive’ and as a result the general educator resorts to a stricter mode of corrective measures. Therefore general educators who are responsible for inclusive practices need to be experts at differentiating the various disabilities and the learning styles and approaches of diverse students.

**Values.** Values are most often considered as a platform for professionalism. Rayner (2007, p. 102) describes “professionalism” thus: “Professionalism- reflects a set of beliefs, attitudes and values about learning, teaching, pedagogy and the

curriculum". In this study values incorporate changes in attitudes of teachers, from negative ideas about learning styles of disabled students to positive ones. Inclusive education demands more positive beliefs and greater commitment from the professionals. Teachers who value and respect their students, understand that students with disabilities if supported and given the opportunities, can achieve more than what is expected of them. Terese and Victoria (2008, p. 316) reiterate that, "their ability to overcome the challenges they face is unique", with reference to disabled individuals. Tolerance and flexibility are guiding principles for the teacher instructing special educational needs students. A high quality teacher development needs to infuse the Emotions such as stress when dealing with unacceptable behaviours exhibited by students with special needs have been observed among teachers recognition of student ability and strengths and positive beliefs and values need to be imbibed in general educators for them to manage diversity.

### **Teacher Readiness**

Teacher readiness refers to the ability and skills to do what is needed in a job. In this study teacher readiness, refers to teacher proficiency in the following two domains which are skills and emotions in inclusive classroom teaching.

According to Bandura (1997), a person's attitudes, abilities, and cognitive skills comprise "what is known as the self-system." This system plays a vital role in how we perceive situations and how we behave in response to different situations. Self-efficacy plays an essential part within the self-system. In this study 'teacher readiness' refers to teacher preparedness to enter a class of diverse students and conduct lessons both for the person with a disabled as well as those without disabilities. The way teachers are prepared influences their self-efficacy and the way

they teach their students. Teacher preparedness involves the educator's willingness to accept all students – special educational needs students as well as normal students, and give service without discrimination. This shows the teachers' readiness to welcome diversity. The teachers' readiness to serve and to eliminate disparities promotes human rights. When there is acceptance then there is commitment to preparing appropriate lessons for every student in the inclusive class thus maximizing the potential of each student. Every student is accepted, supported and valued regardless of differences.'

Readiness also involves the educator's tolerance and flexibility elements in his/her approaches. 'Tolerant' here means giving respect to individual freedom and not being prejudiced. The teacher needs to internalize coping strategies to manage students with disabilities especially those with disruptive behaviours. The training programme proposed in the study provides the teachers with the necessary coping strategies to be utilized when the need arises.

The educators' professional development through the teacher training programme equips them with strategies to plan and prepare lessons and materials to be used in the inclusive classroom. An understanding of the diverse needs of all the students allows for, the teachers' confidence level to be elevated. Therefore the teacher– student relationship is closer, creating an optimum learning environment.

**Skills.** Skills refer to the application of what knowledge had been gained concerning biological and neurological factors and inclusive educational components appropriately, in practice. The educator is required to be prepared to teach a diverse student population. Practice encompasses differentiated teaching methods to cater for diversity. It includes the use of new ideas and ways of dealing with differences. The educator needs to adapt the general curriculum to invoke interest and understanding

in students in the inclusive classroom. This demands appropriate materials and teaching plans which call for a collaborative effort on the part of the general educators.

**Emotions.** An understanding of the diverse needs of all the students allows for the teachers' confidence level to be elevated. Therefore the teacher - student relationship is closer, creating an optimum learning environment.

Teacher readiness involves the educator's willingness to accept all students – special educational needs students as well as normal students, and to give service without discrimination. This shows the teachers' readiness to welcome diversity. The teachers' readiness to serve and to eliminate disparities promotes human rights. Every student is accepted, supported and valued regardless of differences.' A caring attitude and a positive nature brings about good rapport between the educator and the student with a disability. Emotions such as stress when dealing with unacceptable behaviours exhibited by students with special needs have been observed among teachers. Additionally this study postulated that lack of knowledge and skills could explain the presence of stress in the general educators in inclusive practices.

### **Secondary School**

In this study the teacher training programme will be conducted in a secondary school where full inclusion has started. In this Secondary School students are included, from forms one till form five. In this school the special education needs students, diagnosed with learning disabilities of various kinds, follow the general curriculum and learn together with their normal peers. Research by Forlin (1996) shows that teachers teaching in such diverse classes are stressed by lack of knowledge about the various disorders and also the purpose and methods of inclusive practices as their pre-service training did not include such aspects. Ainscow (1994) mentions that inclusion

had the potential to unsettle educators and Forlin (1996) referred to ‘the high stress levels of regular class teachers’.

The school has at the same time a special education unit which caters for students with disabilities. These students are taught by special educators. The integration of special educational needs students are carried out by the special education teachers in the school. The selection is done based on the special educational needs students’ results in exams in collaboration with parents of the selected students. Majority of the regular teachers in this school have had pre-service training to teach normal students only and are not trained in special education. They are mainly subject specialists and have been teaching normal students all the years. The officers from the local education department are doing their very best to conduct professional development sessions but the main input is about special education and not inclusion. A casual discussion with the teachers concerned revealed this information. Therefore the training programme proposed in this study, will provide the essentially needed expertise to enhance their awareness and readiness to teach in inclusive settings.

### **Inclusive Classroom**

The regular teacher who has had professional development through “the teacher training programme” confidently engages the students in appropriate learning situations. Instruction is differentiated and the whole class enjoys the learning process through challenging activities. Through the teachers’ efforts there is a change in the learning environment of the inclusive classroom. All students are made to feel the warmth of caring companionship and therefore their self- esteem and self- concept are strengthened thus escalating their cognitive levels while there is respect in the learning environment of the inclusive classroom.

Presently, as teachers are not aware of neither factors about neurological disorders nor the philosophy of inclusion they are not serving as they should. Their pre-service training did not cover the art of inclusive educational practices. In this study inclusive classroom cites the classroom where the special educational needs students and the normal peers learn together and access the general curriculum. The students in the inclusive classroom in this study are taught by general educators, without proper training to handle diversity. The class environment should be one that is welcoming for the disabled students. The general educator needs to comprehend that most of the special needs students are on medication. Therefore the students seem to have a lethargic demeanour. The general educator in an inclusive class should most of the time look for the strengths and not the weaknesses of the special needs students who cannot be compared with the normal peers.

The training programme was initiated by the researcher of this study in view of this existing gap in teacher effectiveness and which was being extensively highlighted at international conferences on inclusive education and by writers such as Forlin et al.

(2009).

### **Summary**

This chapter had examined the implementation of the educational reform of inclusive education in Malaysia. This reform was stated in the Malaysian Education Act of 1996 and the Education Blue Print of 2013. The reform was introduced because Malaysia supported the universal stand on inclusive education. The Declaration of Human rights and the Act of Education for All had unanimously supported this movement and have requested all nations to sustain it. Furthermore UNESCO's Salamanca Statement (1994), and The Convention against Discrimination in

Education prohibits discrimination, exclusion or segregation in education. The UN Convention on the Rights of the Child (1989) sets out children's rights in respect of freedom from discrimination and in respect of the representation of their wishes and views. The purpose of these requirements is to carry out the intent of the IDEA, The Individuals with Disabilities Education Act (IDEA 2004) requests to educate as many students with disabilities as possible in the regular education classroom, while still meeting their unique, individual needs. However, IDEA recognises that it is not appropriate to place all children in the regular education classroom.

The chapter had also discussed the philosophy of inclusion and had provided definitions for major terms used in inclusive settings such as 'integration' and 'inclusion'. Particular attention had been given to competencies such as awareness and readiness of regular teachers' actual classroom teaching and management of regular and special educational needs students. A proposal to train teachers involved in inclusive classrooms, using "The Teacher Training Programme" had been introduced.

The two essential elements of inclusive education and disabilities prevalent in Malaysia caused by neurological factors were infused into the training programme. The inclusive educational factors supported the teachers with the knowledge of what inclusive education is and the biological factors that allow the teachers to understand clearly the reasons for the occurrence of disorders and disabilities in learning faced by students with special needs. Such an understanding is crucial as it enhances the process of teaching and learning in the inclusive setting.

The significance of collaborative consultation, of regular teachers with special educators in the teaching process in the future scenario had been conveyed. This concept was included in module three in the teacher training programme. The critical issue of adaptations, included in module four as 'differentiated instruction' in teacher

training pre-service curriculum has been emphasized and suggestions provided. An overview of issues faced by present regular teachers, and their lack of a clear idea of inclusive education, their inadequate and inappropriate in- service courses have been explored and highlighted.

Furthermore, module five in the teacher training programme, on ways of managing a diverse class would clear the confusion existing in the minds of regular teachers handling students with special needs. Regular teachers need to estimate the special needs students' strengths and weaknesses and plan lessons according to their ability instead of placing high expectations on them.

The unacceptable behaviours exhibited by those with special need to be assessed and proper initiatives to be employed to contain those behaviours. Parents need to be consulted in this matter for the initiative taken to be continued at home too. Some behaviours such as sleeping could be attributed to the medication prescribed for the disability. Therefore teachers need to be in close contact with the parents to obtain such information. The class teacher needs to collaborate with other subject teachers entering the class and notify them of the improper behaviour and the reasons for it to happen. General educators should keep in mind the fact that special needs students are able to learn like other normal peers and give the motivation and encouragement to do so.

This chapter had elucidated the fact that 'teacher preparation' is the essence in the success of inclusive education. The literature review, previous and recent, are indicators of the fact that teachers are the significant elements in promoting inclusion.



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **Introduction**

This chapter reviewed the definition of inclusive education for the teacher training programme, explained the philosophy of inclusive education, and teacher training in inclusive practices. The context of related theories and models linked to the aim of social development in inclusive education was explored. The theoretical and conceptual framework of this study, the proposed teacher training programme and a summary of this chapter have been included. The areas infused into the training programme such as the various disabilities have been explained in detail supported by the literature review of the areas and dimensions concerned.

#### **Related Theories**

As disability is a social problem and inclusive education involves the preparation of students to become members of society, this study has used concepts from theories concerning society and education and aspects of ecology. Teachers of students with special needs crucially need to understand the influences of society and ecology on an individual. Another theory is that of “interruptions to thinking” which means “changes in thinking patterns”.

The introduction of inclusive education brings with it a shift in the paradigm of thinking within the education system and the social world. “Inclusion is about the establishment and maintenance of a social world in which all people experience the realities of inclusive values and relationships.”(Barton 2003).Inclusion is about enhancing social values and practices that influence the ecological aspects of human beings to support recognition of human rights. The social model of disability

highlights the struggle of individuals with disabilities to attain human rights. Inclusive education supports the social model and is meant to promote inclusiveness in all aspects of human life. Sachs (2003) contended that inclusive education brought about new ways of thinking and therefore teacher training and in service professional development need to acquire a fully inclusive approach.

### **Social Developmental Theory**

The Russian psychologist Lev Vygotsky introduced the theory of 'Social Development'. He viewed disabilities as 'a biological and social abnormality' (Gindis, 1995, p. 2). He maintained that differences in an individual's biological make-up only become 'abnormal' when brought into the social context. He clarified that the concept of a 'disability' did not project itself "until the student is unable to behave and perform like the typical peer in the social context of the school environment." Two concepts from

Vygotsky's theory are:

- (i) The Social Developmental Theory
- (ii) MKO or the more knowledgeable other (which refers to then teacher)

For Vygotsky (1978), social interactions happen in the school. He wrote, "Schools are incorporated into the larger society, some of their activity settings are determined by this larger contextuality". Vygotsky further stated that: "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level (Vygotsky, 1978). In Vygotsky's view, special education programs should have the 'same social/cultural goals as general education

programs'. "Instructions in special education should follow the same principle as general education". From his proposals, we can conclude that Vygotsky was apparently referring to 'inclusive education' a term that was not in use at his time. Therefore teachers in inclusive settings presently need a special training that will support Vygotsky's idea of the 'same goals' for the special educational needs students and the normal peers. This view is not readily accepted by the researcher because the researcher maintains that there are constraints and limitations in achieving the 'same goals' for special educational needs students and those without disabilities because the normal peers are not disadvantaged. This gives them a better chance to cope with the demands of learning and preparing for exams.

Inclusive education has been introduced in all countries and one of its main aims is to prepare special educational needs students to be included into society. For Vygotsky, "the classroom is also a social organisation that is representative of the larger social community, it is the social organisation.....that is the agent for change in the individual." All teachers and educators in inclusive settings should make an effort, to try to encourage social interactions within the classroom selecting those activities that are conducive to learning among their diverse students.

Vygotsky's theory of MKO (more knowledgeable other) referred to the teacher who needs to be the expert. An expert in an inclusive classroom not only needs to know the subject matter being taught but needs to know all about the students in the class especially the special educational students. This knowledge about students, involves not only their needs but their strengths, learning styles and behavioural characteristics too. The teacher in the inclusive classroom needs a paradigm shift in his or her thinking. Teachers need to be knowledgeable about the various disabilities as well as the concept and meaning of the philosophy of

‘inclusion’ to be successful in the inclusive classroom. In 1983 Vygotsky’s work collection was represented in various volumes.

### **Social Learning Theory**

Albert Bandura (1977) introduced his theory of ‘Social Learning’. Bandura’s concept is used as a support for this study. Bandura’s theory of Social Learning (Bandura, 1994) emphasises social experience, in the development of ‘self-efficacy’ and attributes of teacher awareness and readiness - the dependent variables which are investigated in this study. According to Bandura, “a person’s attitudes, abilities, and cognitive skills comprise what is known as the self-system. This system plays a major role in how we perceive situations and how we behave in response to different situations.” Therefore, his concept of this system can be considered as an important element of teacher personality in inclusive settings.

Teachers’ ‘self- efficacy’ needs to be improved during professional development and can be greatly enhanced by the proposed model for teacher training, Bandura and other researchers had demonstrated that ‘self-efficacy’ can have an impact on everything from psychological states to behaviour and motivation. The researcher contends that in the present day situations, the self- efficacy of teachers can get hampered by work pressure, parental attitudes and the outcomes of the results of public exams which can be considered as limitations to what is suggested in the study.

## Ecology Theory of Human Development

Bronfenbrenner's theory (1979) is about human development that shapes the individual to become part of society. The author sees socialisation as the result of this particular development. The crucial component in his theory is the fact that society influenced the development of individuals throughout their lives. His theory is also known as "The Theory of Socialisation". Therefore it is a developmental psychology theory (Saarinen et al., 1994). Figure 2.1 shows the Bronfenbrenner's Theory.

In Bronfenbrenner's opinion, the understanding of the system's nature leads to a better understanding of the phenomenon of education. With the help of Bronfenbrenner's theory the process of education, as well as the processes of care and teaching, can fit into the said development formula, as the factors influencing the result of development. (Härkönen, 2007). The five systems mentioned by Bronfenbrenner in his theory of human development are:

The **microsystem** made up by the developing person's closest surroundings like home, the day-care group, the kids in the courtyard, class-mates at school, hobby club members or close relatives (Saarinen et al., 1994, p. 88, 89). Other examples may include the neighbourhood or the religious setting (Penn 2005, p. 45). The teacher in the inclusive classroom needs to consider this factor and understand the differences in the behaviour, and other characteristics of the students and how the closest surroundings have influenced the individual. For example, a child is ready to learn to read when their auditory system is developmentally ready to distinguish one sound from another. But if reading instruction is not provided, or if the child's parents do not enrich the environment by reading to him or her, learning to read will be delayed.

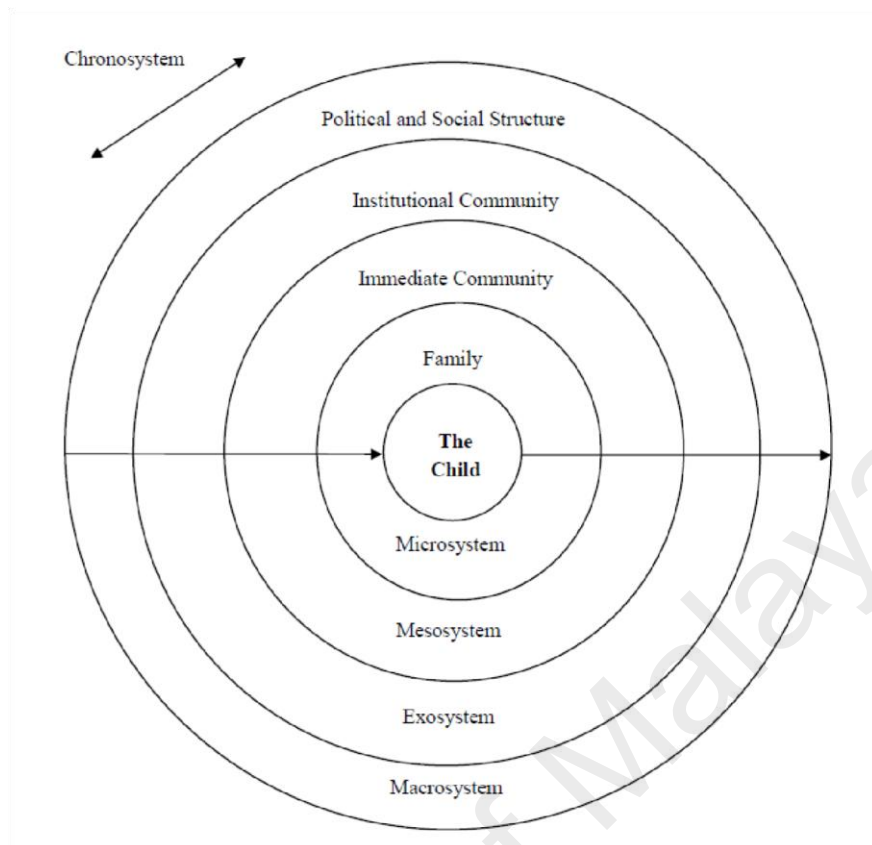
The **mesosystem** is a system of microsystems. Paquette and Ryan (2001) define the mesosystem by saying that this layer produces the connections between the child's microsystems, i.e. connections between the child's teacher and the parents or the child's religion and the neighbourhood. Again the inclusive education teacher must understand that the connections between the child, parents, teachers and the community also play its part in the development of the individual. In the Malaysian context, the inclusive educator may face the restraint of dealing with the three different languages of the communities and cultural beliefs within the community and the home environment.

The **exosystem** encompasses the linkage and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person, but in which events occur that influence processes within the immediate settings that does contain the person (e.g. for a child, relation between the home and the parent's work place; for a parent, the relations between the school and the neighbourhood group) (Bronfenbrenner 1989, p. 227). The exo-system represents the relationship between other environments such as the place where parents are employed and the child. If the child's parents are doctors, the child will depict the actions of patient treatment during playtime. The educator has to realise that the child observes and acquires ideas of what is happening in various situations.

The **macrosystem** is the outmost layer for the child. It has no distinct framework but it holds inside it the cultural values, traditions and laws. The macrosystem influences and penetrates through all other layers. (Berk,2000). The macrosystem influences the child's beliefs, customs and practices which in turn will affect the student's conduct and habits.

The **chronosystem** is a “description of the evolution, development or stream of development of the external systems in time. The chronosystem models can cover either a short or long period of time” (Bronfenbrenner, 1989, p. 201-202). **This system** involves the sequence of natural events and transformations that take place during the whole life of the individual. The effects critically impact a child’s development. For example, a divorce that happens in a family can have a negative effect on a child. This theory, according to (Härkönen, 2007) is not aimed at the phenomenon of education itself, which is studied by the education science and pedagogies. Bronfenbrenner’s theory is suited for the description of human socialisation. Saarinen, Ruoppila and Korkiakangas (1994, p. 88) remind us that Bronfenbrenner adapted the ideas, contained in the definition of ecology, while studying socialisation, The researcher has chosen Bronfenbrenner’s

“Theory of human development” as a basis for her study because, an understanding of the five systems that influence human development will support the teaching and learning process in inclusive education. Furthermore the theory dwells on human socialisation towards which inclusive education aims at for disabled students whose future is in the education provided in inclusive settings. Therefore the teachers providing this education need a training to improve their level of proficiency to cater to diversity and improve socialisation student with for special educational needs.



*Figure 2.1* Bronfenbrenner's Theory

### **Related Models**

Models on inclusive education and teacher training were reviewed and selected. The selected models deal with: professional learning, levers for change, interconnected environments and the model of teacher competence. The elements discussed in these models are related to aspects in the dual teacher training model, being researched in this study.

### **Professional Learning Model**

The Professional Learning Model is a training model on inclusion for teachers in Iraq (Ainscow et al., 2011). The authors of this model believe that “professional learning for teachers and the quality of teaching” are vital elements for students’ success in learning. Their conviction is that, inclusive education will help to implement



a balanced **society**. In their professional model, the authors refer to two broad responsibilities which are: developing new meanings about diversity and promoting inclusive practices within schools. The two responsibilities mentioned concerning, diversity and inclusive practices are infused into the proposed Teacher Training Programme in the present study.

As shown in Figure 2.2, the professional training model suggested by Ainscow et al. (2011) consists of four overlapping themes of concepts, policy, practice, structures and systems. The theme of inclusive education is centrally placed as it involves all the other concepts. The theme of concept refers to the philosophy of inclusion, the policy refers to the various laws and declaration of inclusion, practice means the performance of teaching and learning and systems mean the school and the overall education system. The overall learning objectives stated in Ainscow's model, support the present study. They are: (i) Raise teachers' awareness of disability issues and familiarise them with the social model of disability; (ii) Introduce teachers to international developments in theories declarations.

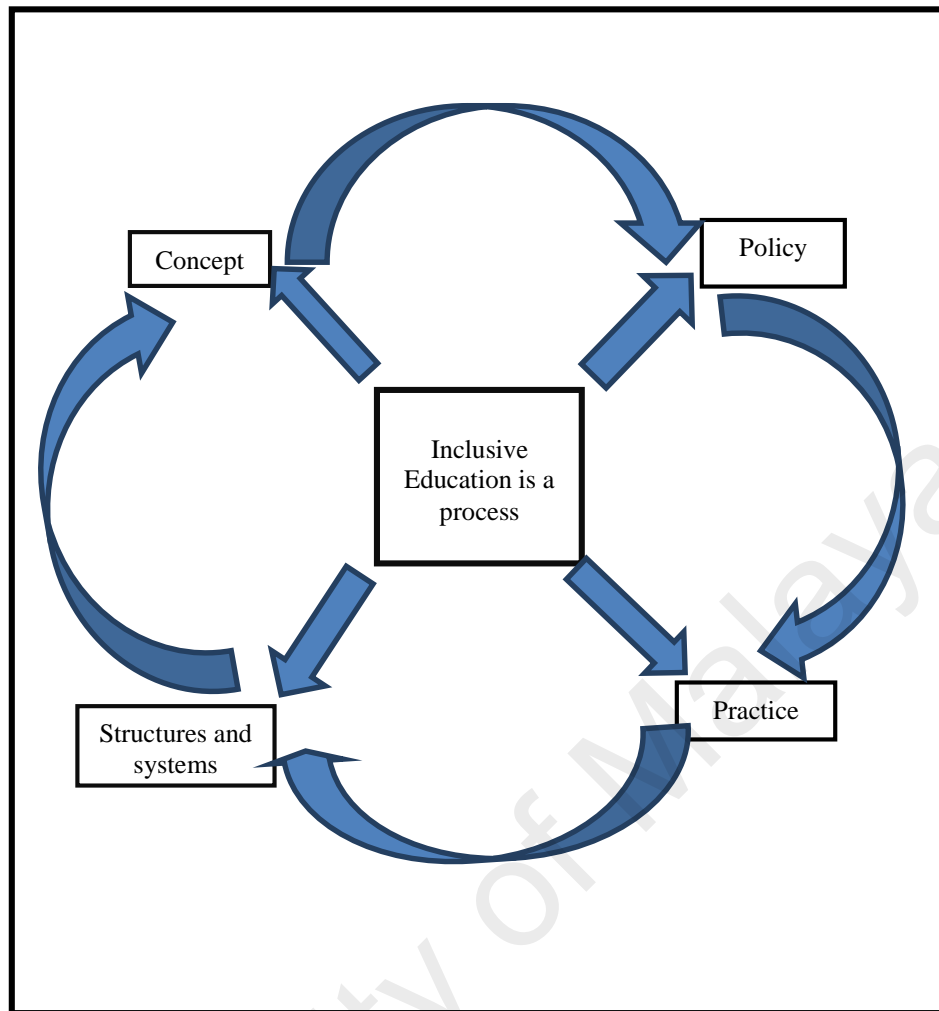


Figure 2.2 Adapted from: *A Professional Learning Model* (Ainscow et al., 2011)

The concept of a ‘community of practices’ is centrally placed. The author refers to a social group engaged in sharing interests. Ainscow (2004) explains that “practices are ways of negotiating meaning through social action and he focuses on ‘levers for change’ He stated that practices were about “learning how to live with differences, and learning how to learn from difference.” He explained that ‘differences’ come to be seen more positively for developing learning, amongst all. He informed us that the development of inclusive policies and practices rapidly changing education systems, was a “complex business.” Ainscow (2004) stated that, his paper was an attempt to make a contribution to a better understanding of these complex issues in the field. He

hoped that the ideas discussed here would stimulate thinking and would enable further progress to be made.

Consequently, strategies for developing inclusive practices have to involve “interruptions to thinking,” in order to explore overlooked possibilities for developing success in practices (Ainscow, 2004).

The idea of “interruptions to thinking” has influenced the researcher to introduce the element of disability awareness in her study. Biological and neurological factors have always been termed “medical” factors and are not considered to be included in “educational themes”. As Ainscow (2004) refers to changes in thinking, the researcher of this present study has attempted to infuse certain “medical” aspects to her research model for teacher training. The researcher’s contention is that, as educators we are trying to bring progress to educational thinking, which involves the ‘brain’ that is part of the anatomy of the human body, the knowledge about which is strictly ‘medical’. We need to ‘interrupt our thinking’ as Ainscow (2004) advises, and allow it to become more inclusive of new ideas and methods of teaching and learning.

### **Model of Teacher Competences**

Watkins (2000) through his model explains to show that competences are important for high level teaching and learning, which helps the learner stimulate upward movement through the levels. Teachers need ‘learning competences and performance competences.’ The researcher argues that ‘performances competences’ may not be achieved without an adequate training for the special educator in inclusive settings, because the educator has to understand the students’ needs and his/her way of comprehending concepts.

As can be noted in Figure 2.3, learning competences embrace effectiveness in handling ambiguity, solving complex problems and being flexible as well as self-reflective. Teachers should also be able to use multiple perspectives for evaluation including self-evaluation. In performance competences, the teacher needs to plan instruction, and monitor students' learning as well as present information. The competence model by Chris Watkins, reflects what is proposed in the teaching training programme in this study. In the programme, the competences required are in knowledge, values, skills and emotions.. The implication of the programme is to raise the level of regular teachers' awareness and readiness through the training. The training hopes to support teacher awareness and readiness in handling disabled students. The general educators need to be committed to helping the students with special educational need.

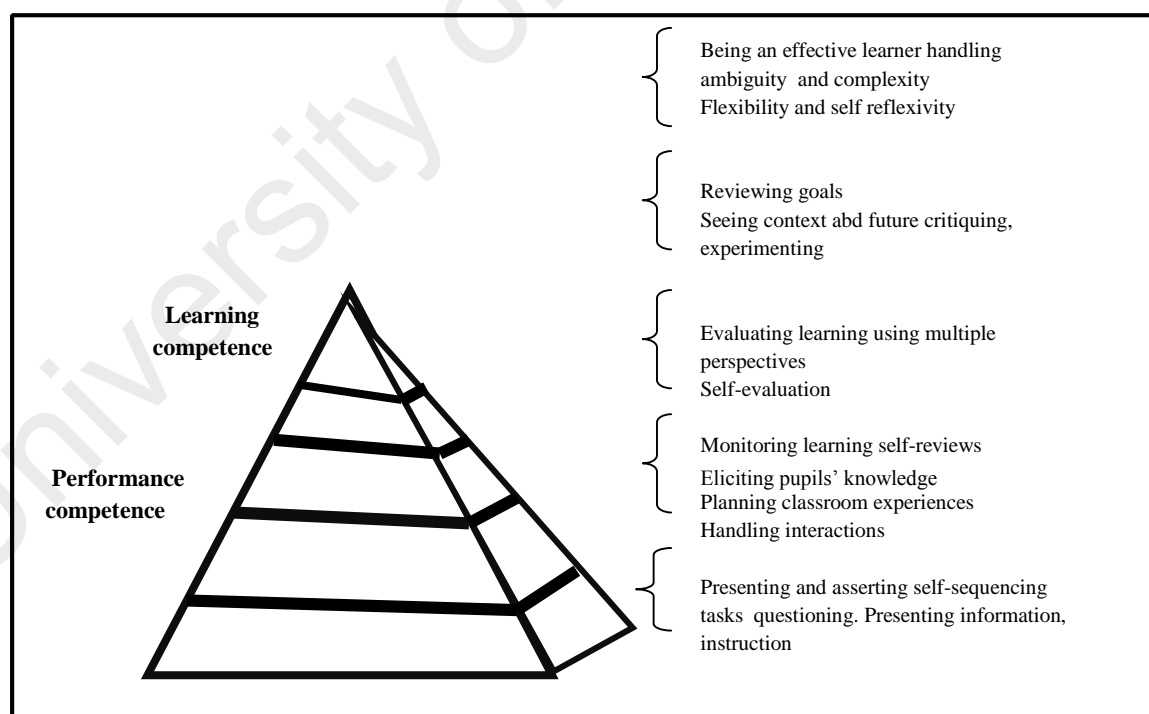


Figure 2.3 Model of teacher competences (Watkins, 2000)

This figure is linked to the Teacher Training Programme as it refers to levels of teacher proficiency.

### **Significant Concepts Consolidated from the Literature Review**

The researcher had captured salient views from the theories concerning Human development and aspects of ecology as those stated by Bronfenbrenner (1979) and Vygotsky (1978) and Ainscow (2011) changes in thinking by Ainscow (2004) and teacher competence Watkins (2000). These concepts were formulated into a framework.

### **The Four Concepts**

The four concepts of human development, social development and social learning, transformation in thinking and teacher proficiency, underpin the researcher's investigation on the critical function of the general educators' capability to handle diverse classes in inclusive settings. The four concepts could be considered as the cornerstones for building professional developmental training courses for general educators to upgrade their proficiency.

Figure 2.4 illustrates the concepts that emerged from the theories and models. The framework supports inclusive education and general educators' professionalism which are centrally placed in the framework. This is because if inclusive education is to be successful the general educators' professionalism and proficiency need to be developed.

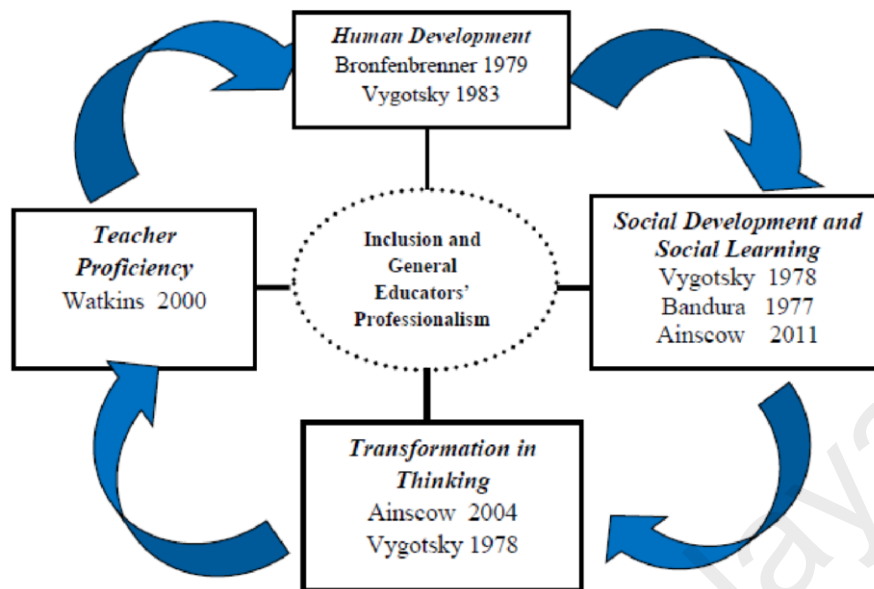


Figure 2.4 The four concepts

**Concept 1: human development.** The primary aim of introducing ‘inclusion’ is for disabled students to develop meaningful relationships with normal peers during the process of learning together. This allows them to practice for the future real world where they are expected to become functional citizens. Bronfenbrenner’s theory (1979) is about human development that shapes the individual to become part of society. In Bronfenbrenner’s opinion, the understanding of the system’s nature leads to a better understanding of the phenomenon of education. The concept of human development in education, involves the teacher and the students he/she teaches. The teacher has to upgrade his/her expertise to become proficient to handle disabled students, manage a class of diverse students and use different strategies in teaching, to be successful with the students in inclusive settings. The professional development can be achieved through attending in-service courses conducted at the school level. These courses should aim at giving adequate knowledge and practice to help the general educator to become a successful teacher within a mixed class of disabled and

non-disabled students. Presently, the general educator who has been trained to teach normal students for specific subject areas has to teach the same subject to a class of diverse students. This is a dilemma for one who has not undergone disability studies to comprehend how learning is hampered in the disabled. Diversity in an inclusive setting deals more with comprehending the various impairments causing learning disabilities, and general educators require a lucid understanding of the reasons for the occurrence of learning incapacities in the disabled students. Vygotsky was convinced that only a truly differentiated learning environment can fully develop a 'handicapped' child's higher psychological functions and overall personality. Vygotsky (1983) believed in deep links between "normal" and "abnormal" behaviour and he wrote that both were parts of human development following certain patterns of formation. In this respect, his general developmental theory is relevant to the study of disabled children as well. Vygotsky wrote; "Any physical handicap - be it blindness or deafness - not only alters the child's relationship with the world, but above all affects his interaction with people." He wrote this in his paradigm for special education. The relationship with the world which Vygotsky (1983) is referring to, starts with their relationship with the peers and teachers in school and this is part of human development that is offered and practiced in the educational world. As the concept of human development involves "inclusion", it is necessary for general educators to have a coherent understanding of "inclusion" and the reasons for its implementation.

**Concept 2: social development and social learning.** Albert Bandura (1977) introduced his theory of 'Social Learning'. Bandura's concept is used as a support for this study. Bandura's (1994) theory of Social Learning emphasises social experience, in the development of 'self- efficacy' an attribute of teacher competence and readiness. According to Bandura, "a person's attitudes, abilities, and cognitive

skills comprise what is known as the self-system. This system plays a major role in how an individual perceives situations and how he/she behaves in response to different situations.” Therefore, his concept on this system can be considered as an important element of teacher personality in inclusive settings. Teachers’ self-efficacy could be improved through professional development aimed at enriching the attitude, ability and cognitive finesse of the general educators. As stated earlier, it can be perceived from Vygotsky’s proposals that he was apparently referring to ‘inclusive education’ a term that was not in use during his time. Therefore teachers in inclusive settings presently need a special training to carry out and support Vygotsky’s idea of the ‘same goals’ for students with special needs and their normal peers.

Ainscow et al. (2011) believe that “professional learning for teachers and the quality of teaching” are vital elements for students’ success in learning. Their conviction is that, inclusive education will help to implement a balanced society. In their professional model, the authors refer to two broad responsibilities which are: “developing new meanings about diversity and promoting inclusive practices within schools.” So the conclusion to be drawn from their remarks is for school authorities to take on the responsibilities mentioned by the authors.

**Concept 3: transformation in thinking.** General educators have to alter their opinion towards believing that they are able to teach all students in a class of diverse students and it is their accountability to cater for diversity in inclusive education.

Adaptations, are crucial for successful learning in a diverse class of students. Ainscow’s model supports inclusive educational practices. In this model the main idea developed in inclusive practices is by changing the usual ways of thinking. Ainscow (2004) refers to the idea that current ways of thinking actually cause barriers to learning. Through his model, Ainscow intends to help educational professionals, focus



on factors that sustain inclusive development within an educational system. It focuses our attention as Ainscow expresses “on possible levers that can help to develop the system.” Ainscow (2004) explains that “practices are ways of negotiating meaning through social action and he focuses on ‘levers for change’. He states that practices are about “learning how to live with differences, and learning how to learn from difference.” He explains that ‘differences’ come to be seen more positively for developing learning, amongst all. He informs us that the development of inclusive policies and practices are rapidly changing education systems, and that it is a ‘complex business’. Ainscow (2004) also states that, his paper “is an attempt to make a contribution to a better understanding of these complex issues in the field of education”. He hopes that the ideas in his model, will stimulate thinking and will enable further progress to be made. Consequently, strategies for developing inclusive practices have to involve “interruptions to thinking,” in order to explore overlooked possibilities for developing success in practices (Ainscow, 2004). The idea of “interruptions to thinking” has influenced the researcher of this study, to emphasise on changing the usual procedures of teacher developmental courses, to be infused with new ideas for professional training courses. It is necessary to ‘interrupt present thinking’ as Ainscow (2004) advises, and allow it to become more inclusive with fresh ideas and methods of teaching and learning.

It can be concluded that what Ainscow (2004) means by ‘levers’ is ‘influence’. He goes on to argue that those who wish to encourage change must be “smart in determining where the high leverage lies.” So the teachers in inclusive classrooms need to change their thinking patterns about students with special needs and apply positive ideas that students with disabilities are capable of learning as their normal peers, when the teaching is differentiated. Ainscow’s framework places schools at the

centre of the analysis. This emphasizes the point that any move towards inclusion should focus on increasing the capacity of local mainstream schools to support the learning of an increasingly diverse range of learners. The author (Ainscow, 2004), considers the paradigm shift implied in the Salamanca Statement which argues that changes towards inclusion are about the development of schools, and not that it simply involve attempts to integrate students with special needs into regular classes. The author through his model shows that it is essential for those within schools to develop practices that can ‘reach out to all learners’.

**Concept 4: teacher proficiency.** Watkins (2000) through his model on “Teacher competences” explains to show that competences are important for high level teaching and learning which help the learner to stimulate upward movement through the levels.

Watkins describes in his model, that teachers need “learning competences and performance competences” to be proficient in inclusive settings. In his model, Watkins refers to five levels of competences and they are:

1. The first level is about presenting and asserting self -sequencing tasks, questioning, presenting information and instructing.
2. The second level is: Monitoring learning, self- reviews, eliciting pupils’ knowledge. planning classroom experiences and handling interaction.
3. The third level is: Evaluating learning using multiple perspectives and self- evaluation.
4. The fourth level is: Reviewing goals, Seeing context and future critiquing models, experimenting.
5. The fifth level is: Being an effective learner, handling ambiguity and complexity, flexibility, and self- reflexivity.

From Watkin's model, it can be surmised that general educators need to reach the fifth level where he/she is able to be an effective learner, knows how to handle ambiguity and complexity, be flexible and self-reflective. Watkins also advises educators to be able to use multiple perspectives for evaluation, including self-evaluation. In performance competences, he states that the teacher needs to plan instruction, and monitor students' learning as well as present information. The competence model by Chris Watkins, reflects what is proposed in this paper which is, that general educators need in-service trainings through which they can be equipped with, knowledge, practice, skills and values to handle diversity. Teaching and learning in the inclusive classroom can only be achieved if general educators will concepts that will enhance the motivation of student learning.

MacKichan and Harkins (2013) in their investigation note that 'educators and parents of children with special need to promote positive and productive Individual Program Planning meetings.' Timor & Burton (2007) in their research commented that 'further research is required to assess the impact of professional development'. This view supports the present study and the study by Ford (2013) views that general educators need to get 'resources available in their school, in addition to the skill level of the students they work with'.

### **Theoretical Framework of the Study**

Inclusion of students with disabilities in general education, started with the movement to include individuals with disabilities in the mainstream of society. This movement was started in Scandinavia and then in The United States in the early 1970's. The aim was to make life for those with disabilities as normal as possible (Jimenez & Graf, 2008, p. 71). Therefore this study has selected theories such as social

development, social learning, ecology of human development and models on teacher training and levers for change to enhance teachers' professional development to teach students with special needs. It is stated in UNESCO's guidelines (2009) that: "the final goal of inclusive education involves the individual's social participation and of attaining his/her future capacity for development". In many countries such as the United States, Canada, Britain, Australia, New Zealand and much of Europe, inclusion is now the accepted placement model for students with special needs (Westwood, 2002, p. 2). Schools where inclusion has been introduced need teachers trained in catering for students with diverse needs.

There is a plethora of research which shows that, teachers in inclusive settings need new methods of training. Professor L. Barton (2003) from the University of London, in his professorial lecture mentions that "disability is a social construction....and teachers in the modern world will need to respond to and manage change in a creative and responsible way.... The position of teacher training in relation to its contribution to the development of inclusive thinking and practice on the part of student teachers is of fundamental importance.

In a presentation delivered to the Scottish Teacher Education Committee Conference, Florian and Rouse (2009) raised the point that international research suggests that teachers are not sufficiently well prepared to deal with issues of diversity." They also argue that new approaches be introduced in pre-service training of teachers so that all teachers have a greater awareness and understanding of the educational and social problems and issues that can affect children's learning.

Therefore, the Teacher Training Programme , proposed in the study, can be a new approach to be introduced in the pre-service training for teachers in the future. In Malaysia. The pre-service training for teachers in inclusive settings needs to absorb

ideas from related theories such as social development, social learning and ecology of human development. Such ideas will enhance an understanding of the purpose of inclusion. Studies on changes in thinking patterns and interrelated environments need to be considered for perfecting teaching and learning for a diverse population of students. Teachers of special educational needs students in the present and future, need to have attained a high level of proficiency in understanding neurological and biological factors causing disabilities and the learning dimensions involved. Present and future teachers cannot remain within a paradigm of thinking in which “one size fits all”. They may have used one particular curriculum and few methods in teaching normal students but the implementation of “Inclusive education” expects broad changes in every aspect. Teachers critically need to be enhanced in domains such as knowledge, values, skills and emotions to realise the philosophy of inclusion for educating all children. The proposed Teacher Training Programme will support and change ways of thinking patterns in teachers involved in inclusive education.

Special educational needs students’ learning styles are different. Their characteristics and behaviours are the manifestations of the disabilities they are coping with. To educate them is not an easy task. It needs commitment and an understanding of the responsibilities involved to cater to a diverse population of students comprising students with special educational needs and their normal students. Instead, the teacher's role should be that of a facilitator and a guide (Dewey1897). Basing on Dewey’s philosophy, it can be concluded that the education of students depends profoundly on the teachers’ competence, readiness and skill to handle a class of active diverse students.

Reflecting on Dewey’s notions concerning the proficiency of educators, the researcher of this study conceptualized a frame work that depicts the flow of the two

essential ideas of inclusive educational awareness and disability awareness which are infused into the teacher training programme. The teacher training programme hopes to improve teacher competency which in turn will enhance teacher readiness, to handle students with special needs confidently. Presently the majority of the secondary school teachers in inclusive educational settings, lack appropriate information concerning disabilities and inclusive education. Figure 2.5 depicts the theoretical framework of the study:

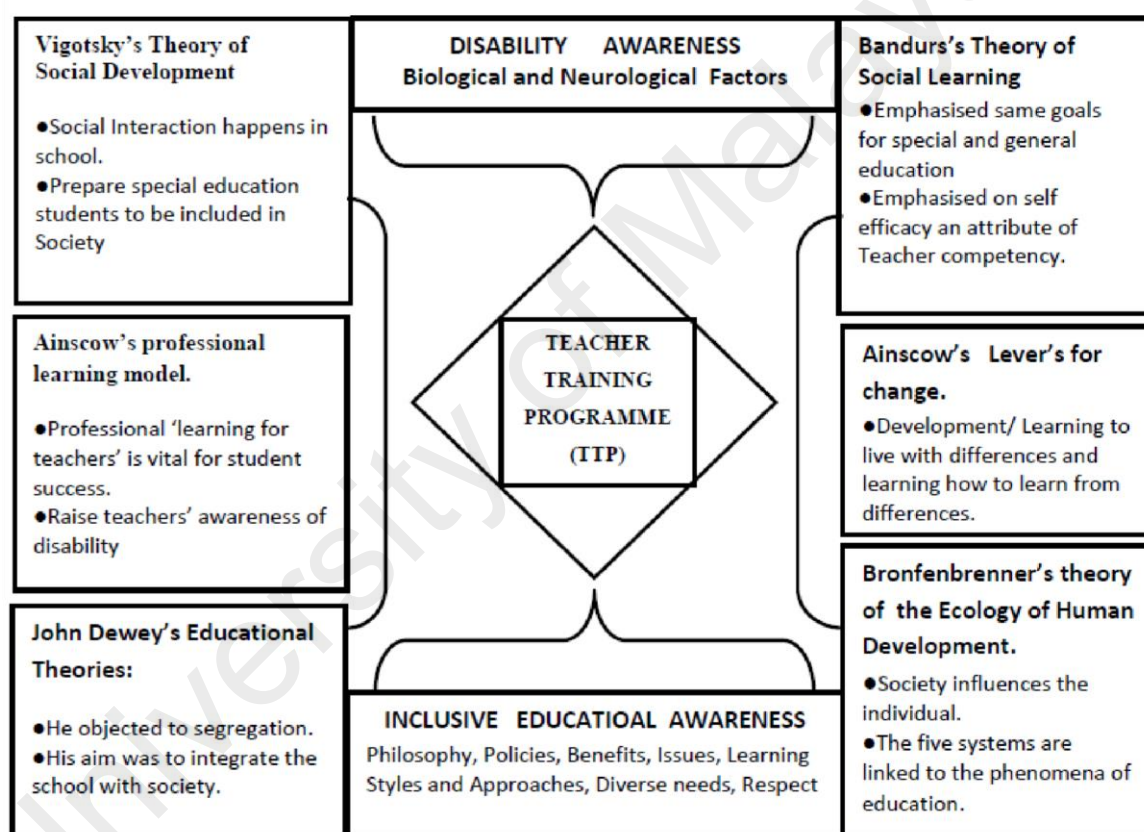


Figure 2.5 Theoretical framework of the study

The theoretical framework is linked to the 'Teacher Training Programme' as the four concepts in Figure 2.4 were drawn from it as support for the training programme.

## **Teacher Training Programme**

Global articles view education as: “all about making students aware of the infinite potential within and bringing it up so that the result is transformation of personalities.” In this 21st century, where students are flooded with information from all sides, the role of a teacher has become all the more vital.” “Teachers have to be by the side of the students, help them distinguish between right and wrong, motivate them to find their potential, find themselves as they grapple with challenges and connect them.” (Ghodawat, 2016).

The Teacher Training Programme proposed in this study, was developed to support educators in inclusive settings to be more proficient in their field and to develop a pre - service training course to support general educators. The training programme involved the infusion of the two significant elements of ‘inclusive education awareness’ and ‘disability awareness’. All educators need to have a thorough understanding of what “inclusive education” is all about. Presently teachers in inclusive settings have not been trained to identify or know more about the different neurological impairments which limit the special needs students’ learning. These two dimensions of inclusive education awareness and neurological disorder awareness, are the key dimensions in the training programme for underpinning teaching and learning in the inclusive classroom.

The training programme was carried out in a Secondary school for about four months. The sample was the regular teachers who were involved in inclusive education, from Forms (Secondary) One till Five, where full inclusion is being practiced. ‘Full inclusion’ here means, the special educational needs students attend classes for all subjects with their normal peers, following the general curriculum. As

general educators are in urgent need of exclusive information which could substantiate their perception of inclusive learning and teaching process.

### **Inclusive Education**

Inclusive education is interpreted as education for students with disabilities who have been mainstreamed. There are many definitions for inclusion but all focus on the rights of students with disabilities to be educated in regular schools (Staub & Peck, 1995) have defined inclusion as ‘the full time placement of children with mild, moderate and severe disabilities in regular classrooms’ (Peter, 2002 p.189). Inclusive education is not just placement of special educational needs students in regular classes but it is also about maximising their full participation in learning. “It is the philosophy of supporting all children in their learning. The philosophy embraces a fundamental belief that all children can learn and achieve.” (Douglas et al., 1999). Inclusion means full inclusion of children with diverse abilities in all aspects of schooling that other children are able to access and enjoy. It involves regular schools and classrooms genuinely adapting and changing to meet the needs of all children.

In connection with discrimination’ a review of the new United Nations Report (2016) revealed that “important new findings about persisting inequalities in education and economic opportunity and, challenges” have been detected and that “the international community needs to work harder to break down barriers to participation.” The report further stated that “While there has been unprecedented global social progress, it has not been evenly experienced. Some 40 per cent of the world’s population does not have access to education”. The report also contended that “It is not enough for countries to remove discriminatory policies; subtler forms of discrimination, through attitudes and entrenched practices, must be confronted and



rooted out”. From the report we can deduce that inclusion practices need further refinement.

It was further mentioned in the report that, “The Sustainable Development Goals recognize that development will only be sustainable if it is inclusive,” said Wu Hongbo, the UN Under-Secretary-General for Economic and Social Development, adding: “Pursuing development grounded in social justice will be fundamental to achieving a socially, economically and environmentally sustainable future for everyone.”

Many studies have been conducted on inclusive education, universally. One study looked at ‘instructional practices’. These strategies include assessing the whole child, performance-based assessments, and use of visuals, specifically graphic organizers, and collaboration.” (Barnes, 2009).

The global trends of inclusive education are expressed in the quotations from speeches by the Ministers of education from three countries about inclusive education (UNESCO- International Bureau of Education). The minister of education from Australia: “promoting inclusive education means to respect the principles of equity, diversity, non-segregating access to education and securing quality of education”

The education minister from China said: “Inclusive education – ‘The way of the future’, highlights the education equality and serves as a solid foundation for the realisation of Education for All.” The education minister of Azerbaijan said “The main measures taken for the development of inclusive education are the development of up-to-date inclusive education curriculum for pre-service and in-service teacher training institutions.” In Asia Inclusive education has been started in India- Bangalur, Nepal and also in Bangladesh. In Indonesia the government ratified the United Nations Convention on the Rights of Persons with Disabilities-UNCRPD in 2016. This

shows that all countries are moving towards a world where inclusive education will support people with disabilities to voice out their opinions in the creation of a new education system.

Inclusive education has replaced integration and is a different concept. In inclusive education special educational needs students are included into the mainstream classes where they follow the general curriculum, and are taught by general educators. In inclusion the school is expected to adapt itself to the students in order to meet their needs and learning styles. Inclusion is about the child's rights to participate and learn in regular schools and the school's duty to accept the child. Inclusive education is referred to as a sustainable scheme. "The Sustainable Development Goals (2016) recognise that development will only be sustainable if it is inclusive," said Wu Hongbo, the UN Under-Secretary-General for Economic and Social Development. He added that any development should be "grounded in social justice", in order to achieve "a socially, economically and environmentally sustainable future for everyone."

**Goals of inclusive education.** The overall goal of inclusive education, is the realization of a school or any organized educational provision where all learners are participating and treated equally, and which also proactively seeks and reaches out to any learner who is left behind. Inclusive education examines how the educational services can be modified or changed to make sure that the education is relevant to the local context, that it includes and treats all pupils with respect and that it is flexible so that all can participate. Inclusive education is an approach that looks into how to transform education systems in order to remove the barriers that prevent pupils from participating fully in education. These barriers may be linked to ethnicity, gender, social status, poverty, or disability.

In inclusion the school is expected to adapt itself to the students in order to meet their needs and learning styles. Inclusive education is defined as a philosophy. It is “the philosophy of supporting all children in the learning. The philosophy embraces a fundamental belief that all children can learn and achieve.” (Douglas et al., 1999).

There are many definitions for inclusion but all focus on the rights of students with disabilities to be educated in regular schools. Staub and Peck (1995) have defined inclusion as ‘the full time placement of children with mild, moderate and severe disabilities in regular classrooms’ (Peter, 2002, p. 189). Another definition reiterates: “Inclusion means full inclusion of children with diverse abilities in all aspects of schooling that other children are able to access and enjoy. It involves regular schools and classrooms genuinely adapting and changing to meet the needs of all children.”(Tim, 2006, pg. 2) “There is sufficient research evidence to suggest that inclusion of children even with the most severe disabilities can work if schools have a set of shared values and are generally committed to improving their practices” (Tim et al., 2006, p. 3).

In inclusive education, the students with disabilities learn social skills from the students without disabilities by learning together. The students without disabilities learn to live with differences and they learn to appreciate diversity. The students with disabilities learn to accept their conditions and learn to merge with society. All this happens in an inclusive classroom.

**History of inclusive education.** ‘Inclusion’ is by no means new. Its roots have been sown by a succession of educationalists and philosophers throughout the twentieth century.....demand to individual rights as a central component in policy making to place inclusion firmly on the agenda of social changes.’(David,2005, p. 39). Inclusive education was adopted at the Salamanca World Conference on Special

Needs Education (1994) and restated in the Dakar Framework of Action (paragraph 4).

The concept of 'Inclusive Education' began in 1973 on the theory that disabled students should not be segregated and should have access to friendship and interactive relationship. School administrators, policy makers and researchers in the United States, started to recognise that special education was becoming a dumping ground for disabled students (Ashman & Elkins, 2002). "Integration is the placement of students in regular classrooms without the content or delivery of that programme being changed in any significant way" (Peter, 2002). "I use integration to mean the education of students with disabilities in regular schools without significant change in the nature of the host school" (Adrian & John, 2002, p. 77).

Terms such as 'integration' and 'mainstreaming' were originally used for the placement of special educational needs students in regular classes and now it is referred to as 'inclusion'. Students with learning disorders, learning difficulties, physical and sensory disabilities and those with emotional and behavioural problems are placed in regular classes. These students previously had to attend special schools (Westwood, 2002). "Inclusive education is a process of addressing and responding to the diverse needs of all learners by reducing barriers to, and within, the learning environment" (UNESCO, 1999).

Research shows that parents of students with disabilities globally played a significant role in promoting inclusive education. They became involved in decision making procedures. The goal towards which they were struggling was 'full inclusion'. They were in other words requesting for their children to be placed in the same schools as their brothers and sisters (Adrian & John, 2002, p. 23).

The whole of this study evolves around the term ‘inclusion’ and its practice by regular teachers, in inclusive schools. The term refers to the placement of students with disabilities into regular classes. This study investigates whether the special educational needs students are taught by regular teachers who have the professional competency to provide them the opportunity to participate fully in class activities and are also assisted to access the general curriculum. A review of literature on inclusive education, mainly points to the issue in inclusive educational studies as being focused on ‘teacher education for inclusion’ by local and international researchers as well as scholarly writers and authors on special and inclusive education which are published in journals. Majority of the writers recommend training courses for general educators in inclusive contexts and argue for urgency in considering such procedures.

In the Malaysian context, in the school where the study took place, special educational needs students were fully included in inclusive classrooms from, form one till form five. They were included for all subjects which is total inclusion. They sit with their normal peers and are taught by general educators. They sit for the same tests as their normal peers. The special educational needs students are given extra time of half an hour for their PMR and SPM exams. This is done to give them an opportunity to complete the exam paper as disabled students compared to normal students are usually slower. The special educational needs students take part in field activities if they want to and have been given permission by their parents. “There is sufficient research evidence to suggest that inclusion of children even with the most severe disabilities can work if schools have a set of shared values and are generally committed to improving their practices” (Tim et al., 2006, p. 3).

**Laws and policies for inclusive education.** Inclusive education is an international movement and many countries have implemented it. Education policies

and reforms such as “The Universal Declaration of Human Rights (1948)”, “Education for All (2008)” and “The Incheon Strategy” (2012), aim to meet the needs of all children, youths, adults and stress that education is a fundamental human right. The person with a disability on the other hand needs training to merge himself/herself into society. This culture should take place in the school. Inclusive education requires well equipped knowledgeable and competent teachers who are able to foster the needed values, confidence and support for students with special educational needs to become part of society. It is crucial that society views persons with disabilities as ‘normal’ and not ‘abnormal’.

Inclusive education is a philosophy and encompasses very wide areas such as the special educational needs students, teacher proficiency for inclusive education, mainstreaming, curriculum development and parent involvement. Inclusive education is not without its issues but these are not enormous. Some special needs students are not able to interact with their normal peers as they are pressured by inferiority complex. Other students have behaviour and learning problems. Some special needs students are easily distracted and others exhibit aggressive behaviours when they are upset. Teachers have complained that the special needs students have poor language abilities while others have poor memory (Bos & Vaughn, 2002). In schools where inclusive education is practised, it plays a vital role in full - filling the nation’s requirements and this can only be achieved if regular teachers get quality training. As referred to earlier in this study within the Malaysian context, this study investigated and scrutinised the proficiency of awareness and readiness of general educators for effective teaching techniques for all students. In the actual inclusive classrooms in secondary schools, effective techniques have been minimal because full concentration in most of them was placed on special education while inclusive education was not

prioritized. This was because no pre-service and in-service teacher training sessions were taking place according to what was stated in the plethora of literature on inclusive education and teacher preparation for inclusion.

Even in the recent research done by the “European Agency 2014” emphasis was on teacher education for inclusive practices.

In a case study entitled, “Empowering teachers to promote Inclusive Education” (2015) approaches for training and support for inclusive teacher practices have been mentioned. The European Agency for Special Needs and Inclusive Education quotes UNESCO 2014, thus: “Inclusive education is a human right” and the case study “contributes towards addressing the ‘knowledge gap’ (identified by the UNESCO-IBE expert meeting in 2014) on empowering inclusive teachers to address the diversity of learners by defining inclusive practices and inclusive teaching approaches and empowering teachers through training and support. It discusses policies in initial teacher education (ITE) continuing professional development (CPD) and ongoing support for teachers.”

It must be borne in mind that “each government will interpret such international guidance in the light of its own history, traditions, values and structures, to the point where the original policy may become unrecognizable” (David, 2005, p. 33). Many studies have been conducted on inclusive education, universally. One study looked at ‘instructional practices’. These strategies include assessing the whole child, performance based assessments, and use of visuals, specifically graphic organizers, and collaboration.” (Barnes, 2009).

In Malaysia, inclusive education was implemented in 1996 with the commencement of the 1996 Education Act. From then on, special needs students have been mainstreamed and they have followed the general education curriculum as for

their normal peers. Numerous schools primary as well as secondary schools had started inclusive education though special education is co-occurring in those inclusive schools. Special needs students from the special education section are selected and included in inclusive classroom. The selection is done by the special education teacher.

Under the laws of Malaysia, Act 685 is an Act for persons with disabilities and this Act was enacted by the Parliament of Malaysia, in 2008. The Act refers to the importance of accessibility to education, in enabling persons with disabilities to effectively and wholeheartedly participate in society as valuable citizens. It is further stated in the Act that “The Government and private educational providers shall take appropriate steps and measures to enable persons to learn life and social development skills in order to facilitate their full and equal participation in education.”

Adopted at the Salamanca World Conference on Special Needs Education (1994) and restated in the Dakar Framework of Action (paragraph 4), inclusive education is a process of addressing and responding to the diverse needs of all learners by reducing barriers to, and within, the learning environment. The overall goal of inclusive education, is thus the realisation of a school where all learners are participating and treated equally, and which also proactively seeks and reaches out to any learner who is left behind.

The Handicapped Children’s Act (1973) now known as ‘Individuals with Disability Education Act’ (IDEA 1991-1997) and Individuals with Disability Education Improvement Act 2004, requires placement be found for special educational needs students and states that “the law requires to the maximum, children with disabilities are educated with children who are not disabled and that special classes, separate schooling or other removal of children with disabilities from the us objections were



raised on the segregation of students with special needs into special schools and classes as professionals and parents were concerned with the long term effects of segregating students with disabilities from their regular classroom peers. Immense support was given to the reintegration of students with special needs into regular classes through which students with special needs could benefit by interacting with the normal students (Ashman & Elkins, 2002, p. 58, 60, & 70).

In 1978, the Warnock Report (DES 1978) was published in Great Britain. Several recommendations were made. The report gave substantial attention to the critical issue of teacher preparation and all training courses so that teachers were well equipped to deal with diversity. It also stated that every child should be trained to “enter the world as an active participant in society and to contribute to it.” The Warnock Report coined the words ‘integration’ and ‘special education’. The Warnock report introduced the idea that special educational needs was about the child’s education as opposed to his/her handicap. The report emphasised education in the mainstream wherever possible. (Margaret et al., 2000, p. 17) The Warnock Report helped to change the emphasis from ‘defects’ and ‘deficits’ to an identification of the unique needs of individuals regardless of labels. The Warnock committee recommended that a special education element should be included in all courses of initial teacher training. “Those responsible for validating teacher training courses should make inclusion of a special needs element, a condition for their approval of training courses” (DES, 1978, para: 12.7, 12.11). It is further mentioned in the Warnock report that “newly qualified teachers need to have a basic understanding of inclusive teaching and inclusive schools.” (Peter, 2001).

The Education for All is a global movement led by UNESCO, aiming to meet the needs of all children, youths and adults. At the World Conference on education for

all (Jomtien, 1990), the World Declaration on education for all was adopted, which stressed that education is a fundamental human right. At the world education forum in Dakar, Senegal—the Dakar Framework for Action reaffirmed their commitment to achieving education for all by the year 2015. There should be no barriers to inclusive education in any educational setting be it academic, sports or social. The modification in the present education policy in all countries, towards inclusion, took its root when, ‘The League of Nations’ adopted the universal Declaration of Human Rights in 1945. Article 26 of the Declaration, proclaims the right of every citizen to an appropriate education. The 1990 World Declaration states, “Basic education should be provided to all children” (UNESCO, 1998, Article 3.1) states “Consistent measures must be taken to reduce disparities”.

The Dakar Framework for Action adopted the idea of Education for All which means no disabled child should be left without a basic education. EFA clearly supports ‘Inclusion’ as “one of the key strategies to address issues of marginalisation and exclusion and the notion of education being the fundamental right”. The fundamental principle of EFA is for all children to learn together. The World Declaration on Education for All, calls for “child-centered learning and flexible approaches to cater to a diverse group of students all of which are compatible with recognized inclusive educational best practices.” Malaysia being a multicultural country where different languages are spoken, teachers handling students with diverse abilities would find it rigorous to deal with students who are severely disabled.

In June 1994, representatives of ninety-two governments and twenty-five, international organisations formed ‘Education for All,’ which refers to an education, “that is geared to tapping each individual’s talent and potential and developing learners’ personalities so that they can improve their lives and transform their

societies” People have come to get the idea that, “special education is separate education” and therefore special needs students should be segregated from the mainstream. It is imperative for schools to accommodate all children. Education for All is a global movement led by UNESCO, aiming to meet the needs of all children, youths and adults. At the World Conference on education for all (Jomtien 1990), the World Declaration on education for all was adopted, which stressed that education is a fundamental human right. The conference adopted a framework for Action and the statement begins with a commitment to ‘Education for All’. Education for All (EFA), is an international initiative, launched in Jomtien, Thailand in 1990. Its aim is to bring every citizen the benefits of education. This is to be done through Inclusive Education, which involves the merging of SEN (Special Educational Needs) students with normal students. The concept of ‘inclusion is by no means new. Its roots have been sown by a succession of educationalists and philosophers throughout the twentieth century.....demand to individual rights as a central component in policy making to place inclusion firmly on the agenda of social changes.’(David, 2005, p. 39). For social changes to happen, teachers need to be equipped with good practices of teaching and learning which is the focus of the present study.

The aims are to benefit from an education that will meet the basic learning needs and an education that includes learning to know, to do and to live together and to be. EFA goals, targets and pledge include: to enhance the status morale and professionalism of teachers, and periodic assessments. The Dakar Framework for Action (2000), in September of the same year (2000), the international community under UNICEF, adopted the Millennium Developmental Goals which were: “Establishing an inclusive policy framework, shifting from disability policy to inclusive policy which is a critical step in realizing the human rights of people who

have a disability” (UNICEF, Millennium Goals, p. 13). The EFA (2000) Assessment highlights that the challenges of education for all is greatest in and refers to a lack of attention to the quality of learning. Information is sparse on the nature and quality of teaching and learning, educational outcomes, and effectiveness of teachers and other educators. It is further stated that “quality must not suffer and all children must have the opportunity to fulfil their rights to a quality education schools.” The law encourages ‘social development skills’ and this unquestionably starts in school in the inclusive classroom. A study on inclusive education says that providing education for the inclusive setting is very challenging. “To be ready for that future we must prepare teachers who can teach in settings that are inclusive, meeting the needs of all students. This will require a different model of teacher education.” (Whitworth, 1999).

**Positive effects of inclusive education.** The positive effects of inclusive education are:

- (i) It enhances positive attitudes in teachers and students;
- (ii) Research shows that special educational needs students in inclusive programmes progress while those segregated, regress; and
- (iii) One study shows that special educational needs students made academic and affective gains and showed improvement in self- esteem and motivation.

We could presume that to prepare students with disabilities to live in inclusive communities as adults they should grow up in an inclusive environment in which they interact with their peers without disabilities. The relationship developed in schools with peers without disabilities could provide and create the necessary support needed to acquire and develop the skills required to make successful transitions to adulthood.

Inclusive education is different from integration which is the placement of students in regular classrooms without the content or delivery of that programme being changed in any significant way (Peter, 2002). “I use integration to mean the education of students with disabilities in regular schools without significant change in the nature of the host school” (Adrian & John, 2002, p. 77)

**Issues in inclusive education.** The practical problem in most countries in inclusion is the placement of special educational needs students with severe and multiple disabilities. These students need special care and management apart from their educational needs (Westwood, 2002). Higher educational authorities question principals of schools on the decline in exam results without realizing that not all special educational needs students in inclusive classes can achieve excellent results. David (2005) reports appropriately “policies and practices that create segregation and division within and between schools .....these involve a preoccupation with the raising of standards as reflected in the publication of tests and examination results.” Rayner (2007, p.45) stresses that inclusion is restrained by the emphasis upon “academic results, league tables and intense competition”. The active involvement and support of the schools’ administrators in the implementation of Inclusive Education is critical (Jantan, 2007).

Many students with special needs in the Malaysian context are educated largely in isolation from their peers and effectively form part of the population of minispecial schools attached to the mainstream. This is in contradiction to what is mentioned by David (2005, p. 64). “Regular schools with an inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcome communities, and building an inclusive society”. Chris et al. (2000, p. 53) reported that “segregation, identification and labelling are discriminatory.”

In the Malaysian context in special education, students with special needs are integrated and educated in a different part of the school by special education teachers. The special educational needs students are expected to adapt to the school and the special education curriculum. The building or the classrooms are segregated from the mainstream. The Malaysian education system must bear in mind that presently, special education is being faced away as preference is for inclusion and mainstreaming.

The general educator needs to comprehend that most of the special needs students are on medication. Therefore the students seem to have a lethargic demeanour. The general educator in an inclusive class should most of the time look for the strengths and not the weaknesses of the special needs students who cannot be compared with the normal peers. Mthembu(2009) advocates that “successful implementation of inclusive education requires educators to have the necessary knowledge, skills, and competencies to accommodate a wide range of diversity among learners in an inclusive classroom.” **Inclusive education in Malaysia.** In Malaysia “no proper consideration had been given to obstacles which would need to be overcome before starting on the ‘inclusive programme’. The implementation of inclusive education should have been treated with caution as there are several convincing reasons especially with the complexity and diversity of the country. Funding is the main issue. ‘Inclusive Education is expensive and high costing – improving infrastructure, room modification, purchase of teacher resources, and raw materials for teaching and learning.’ (Sufean et al., 1997).

Children with learning and behaviour problems are not sick and their treatment should not be guided just by the medical model. Too much emphasis should not be placed on the label. What should be prioritised is the student’s ability to learn. Existing obstacles should be overcome. Example: Regular teachers should learn how to cope

with disruptive behaviours of students with disabilities placed in their classes. There are no library facilities for students with disabilities in most of the schools where inclusion has been implemented. Teachers of students with disabilities say that the time allocation for subjects in a classroom with special needs students is not sufficient. Presently they finish at 12.30pm. Segregation still exists in schools where inclusion has been started in the form of mini-special schools, within the mainstream school, where students with special needs are educated. Such students end up getting assistance, but learn nothing in connection with academics.

Exclusion is inhuman and denies students with special needs the opportunity to learn under the same roof as their peers, is discriminatory. Inclusive education presents challenges to regular class teachers who must develop competence in dealing with the personal, social and educational needs of students with special needs. They feel incompetent when faced with disabled students. Teacher curriculum developers in Malaysia, need to consider whether the present system of training teachers is adequate to provide for diverse abilities of students with special needs.

The curriculum in all schools should cater for a wide range of student ability for teachers to become more versatile and adaptable in their approach to all students. Attention should be given to ways in which the regular curriculum can be adapted to enable students with special needs to experience some means of success. The process of monitoring the implementation of inclusive practices needs to be upgraded for inclusion to be successful.

The whole of this study evolves around the term 'inclusion' and its practice by regular teachers, in inclusive schools. The term refers to the placement of students with disabilities into regular classes. This study investigates whether the students with special needs are taught by regular teachers who have the professional competency to

provide them the opportunity to participate fully in class activities and are also assisted to access the general curriculum.

In the Malaysian context, in the school where the study will take place, students with disabilities are fully included in inclusive classrooms from, forms one till form five. They were included for all subjects which is total inclusion. They sit with their normal peers and are taught by general educators. They sit for the same tests as their normal peers. The students with special needs students are given extra time of half an hour for their PMR and SPM exams. This is one to give them an opportunity to complete the exam paper as disabled students compared to normal students are usually slower. The students with disabilities take part in field activities if they want to and have been given permission by their parents. "There is sufficient research evidence to suggest that inclusion of children even with the most severe disabilities can work if schools have a set of shared values and are generally committed to improving their practices" (Tim et al., 2006, p. 3).

In Malaysia, students with special needs are integrated and educated in a different part of the school by special education teachers. The students with disabilities are expected to adapt to the school and the special education curriculum. The building or the classrooms are segregated from the mainstream. Presently special education is being faced away as preference is for inclusion and mainstreaming.

**Studies on teachers in inclusive schools.** A large number of the studies on teachers in inclusive settings refer to two important aspects which are attitude and professional development. Attitude may be generally defined as "a tendency to react positively or negatively towards a certain object, be it a person, idea or situation." It is closely linked to opinion. According to Foulger (2010) the construct of an attitude is formed from the experience or information the teachers have about "the idea" which



in this case is inclusive education and the causes of learning disabilities by neurological disorder “Attitudes towards inclusive practices can also have an impact on the quality of educational services and the climate a teacher establishes in the classroom” (Flavey, 1995, p. 85). It is crucial that relevant knowledge and information be provided to teachers in inclusive settings so that they can develop a positive attitude to inclusive education.

Majority of the studies refer to ‘teacher proficiency’ as a significant variable for successful implementation of inclusive education. Strain and Kerr (1981, p. 45) declare that regular teachers be given information regarding inclusion. Researchers and paper presenters at conferences on inclusion, are simultaneously advocating for enhancement of teacher training in inclusive practices and to build up their professional capability to support students with special needs.

The on -going process of educating teachers is mentioned in the ‘The Malaysian Teacher Education Philosophy.’ Jamil et al. (2010, p. 91) in their study quote the education philosophy thus: “Schools are encouraged to conduct in-house training programmes to develop and enhance teachers’ practices and knowledge that covers a wide range of areas”. Therefore the training programme proposed in this study is essential and will benefit schools as well as teachers in this respect.

In the present education system, teachers will need to be creative and responsible to cope with change. If they are to be effective in this changing context teacher educators will need to re-conceptualise their task and restructure how they undertake their work including the establishment of vibrant relationships (Barton, 2003).

The study by Jantan (2007) was undertaken in response to a directive received from the Ministry of Education with the aim of providing the Ministry with relevant

information on the attitudes of Primary school teachers on inclusive education. It is mentioned in this study that implementing this innovative project can bring about barriers such as, “establishing forms of teacher training and established teacher attitudes”. It is further mentioned in the study that Malaysia is “unprepared, both in terms of emotional acceptance and technical skills.”

Inclusive practice is not simply a soft option which allows students with disabilities and learning difficulties to fade into the background without being unduly challenge and without really making progress through the curriculum. To be effective inclusion should result in much more than simply minor gains in social development.” Westwood (2002). Rarely have studies been carried out on ‘teacher proficiency such as competency and readiness, in handling special educational needs students in inclusive secondary school classrooms’ in Malaysia.

**Human rights in inclusion.** Human rights are those that all people have irrespective of their condition, behavior or status in life. In the field of ‘Education for All’, a disabled student cannot be denied admission into a regular school. These rights are mentioned in the United Nation Universal Declaration of Human Rights (1948). In the education law of Malaysia, it is stated that “No person shall be denied the right to education” (Tie, 2011, p. 117). In September 2000, world leaders endorsed the Millennium Declaration, a commitment to work together to build a safer, more prosperous and equitable world. The Declaration was translated into a roadmap setting out eight time-bound and measurable goals to be reached by 2015, known as the Millennium Development Goals (MDGs)..

According to ‘Corporal Punishment in Malaysia’, Tie (2011, p. 122) states that, school principals and teachers who abuse their authority and use excessive force leading to hurt or grievously hurt to maintain order could be charged for committing

a criminal offence'. The Malaysian National Report (2000) on Inclusive Education states that, "Children who are perceived able to access mainstream learning are included either fully or for certain subjects. Thus inclusion of these students is strongly encouraged but not mandatory." The Malaysian National report for the International Conference on Education in Geneva (2008) states that "eligibility for placement in special education is through certification by a medical officer and parents and guardians are responsible for transportation of their children to the respective schools". Several major studies in the 1980s, showed that it is difficult to classify children accurately and that the classification system for placing students in special programmes are seriously flawed."

The Malaysian Education Act of 1996 explains that the national context towards special education is based on the principle, to integrate, and to make inclusive special education possible to students who have the right to do so (Akta Pendidikan, 1996).

These are the students who have been identified as suffering from physical and sensory deficiencies, hearing impairments and learning difficulties. The Malaysian Ministry of Education provides special education programmes for three types of disabilities namely, hearing, visual and learning disabilities (Zalizan, 2000).

**The least restrictive environment.** One of the legislated requirements is that students with disabilities be educated in the least restrictive environment (LRE).

Regulations state that 'children with disabilities be educated with their non – disabled peers to the maximum extent possible.' General education is presumed to be the least restrictive environment. 'A statement of the LRE for the child is a mandatory component in the individualised education programme' (Willis, 2000, p. 16).

## **Disability Awareness**

According to World Health Organisation, a disability refers to “a restriction of functional ability and activity caused by an impairment” (Koppelman, 2008, pg. 292). Teachers in inclusive educational practices needed to understand the difficulties faced by students with impairments. There were several obstacles and deficits they had to cope with. The home environment and society had influenced them in shaping their lives. Most often, negative attitudes and segregation had excluded them from leading lives similar to their normal peers. Society had organised and catered for the normal without due consideration for those with disabilities. It is fundamental for present and future teachers to implement education for all. Teacher also needs to be introduced to the Diagnostic and Statistical Manual of Mental Disorders from which the criteria for diagnosis may be obtained.

### **Models of disability: the medical model and the social model.**

There are two approaches to disability, the medical and the social model. The medical model understands a disability as a physical or mental impairment of the individual and its personal and social consequences. It regards the limitations faced by people with disabilities as resulting solely, from their impairments. The social model has been developed with the aim of removing barriers so that disabled people have the same opportunity as everyone else to determine their own life styles. The social model understands disability as a relation between an individual and his/ her social environment: the exclusion of people with certain physical and mental characteristics from major domains of social life. Their exclusion is manifested not only in deliberate segregation, but in a built environment and organized social activities that precluded or restricted the participation. “The importance of the social

model in the struggle for equity and a non-oppressive, non-discriminatory world, is that this goes beyond the issue of disablement and is about the establishment and maintenance of a social world in which all people experience the realities of inclusive values and relationships” (Barton, 2003).

**Biological and neurological factors.** As the brain is the seat of all learning, if any part of the brain is damaged it causes an impairment, and also give rise to a learning disability. The brain consists of the four lobes which are: Frontal, Parietal, Occipital and the Temporal Lobes; the Cerebellum, the Limbic Cortex and the Hippocampus.

In most right-handed people, the left frontal lobe behind the forehead controls speech while the left temporal lobe above the ear controls understanding of spoken and written language. The occipital lobes, at the back of the head, control vision. Neuronal discharge in the occipital lobes could make objects appear larger or smaller than they are, or produce distorted visual images.

The left and right parietal lobes each control muscles of the leg, hip, trunk, arm, hand, face, tongue and vocal chords on the opposite right and left sides of the body. A seizure that affects this part of the brain might produce just the twitch of a hand or facial muscles, or might progress to involve the whole of one side of the body. The left temporal lobe incorporates hearing, language, and verbal memory. The right temporal lobe also includes hearing, plus musical appreciation. The limbic cortex incorporating deep, central portions of the frontal and temporal lobes controls emotions and memory. This area is frequently the site where partial seizures begin. The hippocampus, an area of the brain just below the temporal lobes, plays a key role in memory, especially recent memory.

**Brain functioning/neurotransmitter.** It is believed that the brain contains several hundreds of different types of chemical messengers 'neurotransmitters' that act as communication agents between different brain cells. These chemical messengers are molecular substances that can affect mood, appetite, anxiety, sleep, heart rate, temperature, aggression, fear and many other psychological and physical occurrences. A neuron is a nerve cell. Neurotoxins greatly affect brain development of nerve cells. Malnutrition has been found to decrease nerve and brain cells thus lowering I.Q scores. Students' achievement are also lowered. Most scientists have concluded that learning disabilities have a neurological basis.

**Autism spectrum disorder.** Autism Spectrum Disorder (ASD), is a pervasive developmental disorder, which was first discovered by child psychiatrist, Leo Kanner in 1943. One of the deficits is in the social communication area. A learning disorder may occur within this spectrum. Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder with typical symptoms that include difficulty communicating with others, the inability to form social relationships, and repetitive movements such as rocking and twirling, or even self-abusive behavior such as biting or head-banging, according to the U.S. National Institute of Neurological Disorders and Stroke. Under the new definition of autism, Asperger Syndrome, which generally describes a higher functioning individual, would be eliminated, as would Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). In 1944, a German doctor described characteristics which were similar. This syndrome was named after doctor Asperger. This syndrome came under the continuum of autism but given another title. He described the similarities of both the disorders but also the differences in personality, structure and cognitive skills. Those diagnosed under this label were found to be high functioning.

Causes of autism by findings. Frith (2003) reported that at one time clinicians held the view that autism was a disorder of the mind and not the brain. The increasingly sophisticated neuroimaging techniques nowadays can produce high quality photographs of the brain that show what is happening in the brain while the person is engaged in thinking, looking, listening feeling and remembering. Abnormalities in the brain are said to be one of the causes of autism (Frith, 2003). Schopler et al. (2001) states that clinical genetic studies show strong evidence in favour of a genetic etiology.

Communication interventions for students with autism. Enabling people with autism to communicate spontaneously in everyday situations has been identified as a critical goal (Potter & Whittaker, 2001). Potter and Whittaker (2001) stress that:

1. Spontaneous communication is vital in enabling children to exert control over their environment and to develop self-determination;
2. It is necessary to explore the nature of the students' communication;
3. Environments as well as their abilities to understand their true communication capabilities; and
4. Environments provided by the school can be disabling for these students. Adequate professional training that examines attitudes and skills will be needed to alter this situation.

***Attention deficit hyperactivity disorder.*** The DSM-IV (Diagnostic and Statistical Manual of Mental Disorders) produced by the American Psychiatric Association, characterizes Disorders such as ADHD and epilepsy as developmental disorders and developmental disabilities. Special educational needs students integrated into inclusive classes, in Malaysia, are those diagnosed with learning

disabilities and learning disorders. Learning disabilities are the result of biological and neurological factors.

According to the Oxford Medical Dictionary (2002), Attention Deficit Hyperactivity Disorder/ADHD is a mental disorder marked by a gross level of excessive activity and an impairment of the ability to attend. Learning is impaired as a result and behavior is disruptive.

**Cerebral palsy.** This is an impairment of movement. It is a static condition as it does not worsen as the child grows (Barratt, 2008, p. 30). Learning disabilities and learning difficulties do co-occur within this impairment. There are three main types of Cerebral Palsy. They are:

Spastic cerebral palsy. This is the most common type of Cerebral Palsy and falls into three main categories which are:

1. Spastic Diplegia: indicating both lower limbs are involved
2. Spastic Hemiplegia: indicating that the whole of one side of the body is affected
3. Spastic Quadriplegia: indicating that all four limbs are affected

Athetoid cerebral palsy. Individuals with this condition present involuntary movements. The individuals become fatigued by these constant writhing movements. Conversation is difficult as they are not able to coordinate and control their breathing and vocal chords. Feeding and swallowing are also problems and hearing difficulties are also evident.

Ataxic cerebral palsy. Individuals with such a condition, have difficulties in maintaining their balance. Therefore when they walk they stagger, have tremors in their upper limbs and their speech is not smooth. Promoting good posture, thus



normalizing muscle tone will improve development and enhance self -confidence and self – esteem (Barratt, 2008).

**Genetic, Chromosomal and Acquired Disorders.** Scientists analysing new images of the brain had discovered that structures associated with language were heavily influenced by genetics. The findings began to explain why learning disorders in dyslexia and autism could run in families. A genetic disorder is a disease that is caused by an abnormality in an individual's Deoxyribonucleic Acid (DNA). A defect in the gene or chromosome can cause a disability.

What is a gene? A gene is the basic physical and functional unit of heredity. Genes are packaged in bundles called chromosomes. Humans have about 20,000 to 25,000 genes that determine traits like eye and hair color; genes also direct the growth and development of every part of the body. In humans, genes vary in size from a few hundred DNA bases to more than 2 million bases. Genes, which are made up of DNA, act as instructions to make molecules called proteins. Genes are code instructions for making everything the body needs, especially proteins. Therefore we can realize that genes play a vital part in the formation of healthy bodies. General educators handling special needs students need to thoroughly understand how and why disabilities occur in various ways.

Huntington's disease is caused by a defect in a single gene. Huntington's Disease (HD) is a brain disorder that affects a person's ability to think, talk, and move. The disease destroys cells in the basal ganglia, the part of the brain that controls movement, emotion, and cognitive ability. HD is caused by a mutation in a gene on chromosome 4. Huntington's disease is inherited in an autosomal dominant pattern. This means that everyone who inherits the faulty gene will eventually get the disease. A parent with a mutation in the HD gene has a 50 percent chance of passing on the

disease to their children .This information was taken from the ‘Human Genome Object Information’.

***What are chromosomes?*** Genes are packaged in bundles called chromosomes. Chromosomes are tiny, string like structures in cells of the body that contain the genes. Humans have 23 pairs of chromosomes for a total of 46. Of those, one pair is the sex chromosomes determines whether you are male or female, plus some other body characteristics. We inherit one chromosome per pair from our mother and one from our father. The other two chromosomes, X and Y, are the sex chromosomes, that determines whether you are a male or female, plus some other body characteristics and the other 22 pairs autosomal chromosomes determine the rest of the body’s makeup. An incomplete or missing chromosome can cause syndromes such as Turner’s syndrome; Abnormalities can range from a small mutation in a single gene to the addition or subtraction of an entire chromosome or set of chromosomes.

***Down syndrome.*** Down Syndrome occurs because of a chromosomal disorder. There is an extra 21<sup>st</sup> chromosome. The medical name is ‘Trisomy 21’. The characteristics of people with this disorder is the typical flat face and slanting eyes which gave it its former name of “mongolism”. This is one of the most common chromosomal abnormalities, affecting about one in 800 babies. Individuals with Down Syndrome have varying degrees of intellectual disability, characteristic facial features and, often, heart defects and other problems. The outlook for children with Down Syndrome is far brighter than it once was. Most have intellectual disabilities in the mild to moderate range. With early intervention and special education, many learn to read and write and participate in diverse childhood activities. Development delay is a characteristic in individuals with Down Syndrome. Some of the students may have average intelligence and are likely to have difficulties in learning to read and write.

*Epilepsy* is a disorder of the brain function characterized by recurring seizures, which may be sudden. As the stream of thought is interrupted those with frequent seizures may have learning difficulties. This is a health problem.

***Fragile X syndrome.*** Fragile X syndrome is a genetic condition that causes a range of developmental problems including learning disabilities and cognitive impairment. Fragile X syndrome is the most common form of inherited mental retardation in males and is also a significant cause of mental retardation in females. It affects about 1 in 4,000 males and 1 in 8,000 females and occurs in all racial and ethnic groups. Nearly all cases of fragile X syndrome are caused by an alteration (mutation) in the FMR1 gene where a DNA segment, known as the CGG triplet repeat, is expanded. Normally, this DNA segment is repeated from 5 to about 40 times. In people with fragile X syndrome, however, the CGG segment is repeated more than 200 times. The abnormally expanded CGG segment inactivates (silences) the FMR1 gene, which prevents the gene from producing a protein called fragile X, mental retardation protein. Loss of this protein leads to the signs and symptoms of fragile X syndrome. Both boys and girls can be affected, but boys may have behavioural problems such as hyperactivity, hand flapping, hand biting, temper tantrums and autism. Other behaviors in boys after they have reached puberty include poor eye contact, perseverative speech problems in impulse control and distractibility. Physical problems that have been seen include eye, orthopaedic, heart and skin problems. Males and females who have a fragile X pre-mutation have normal intellect and appearance. A few individuals with a pre-mutation have subtle intellectual or behavioural problems. As boys have only one X chromosome, a single fragile X is likely to affect them more symptoms, such as learning difficulties or social anxiety.

Other behaviours in boys after they have reached puberty include poor eye contact perseverative speech, problems in impulse control and distractibility. Affected individuals usually have delayed development of speech and language by age two. Most males with fragile X syndrome have mild to moderate intellectual disability, while about one-third of affected females are intellectually disabled. Children with fragile X syndrome may also have anxiety and hyperactive behaviours such as fidgeting or impulsive actions. They may have attention deficit disorder (ADD), which includes an impaired ability to maintain attention and difficulty focusing on specific tasks. About one-third of individuals with fragile X syndrome have features of autism spectrum disorders that affect communication and social interaction. Seizures may occur as stated in the 'Genetics Home Reference'.

***Traumatic brain injury.*** Traumatic brain injury (TBI) is a form of acquired brain injury. It occurs when a sudden trauma causes damage to the brain. TBI can result when the head suddenly and violently hits an object, or when an object pierces the skull and enters the brain tissue. Symptoms of a TBI can be mild, moderate, or severe, depending on the extent of the damage to the brain. A person with a mild TBI may remain conscious or may experience a loss of consciousness for a few seconds or minutes. Other symptoms of mild TBI include headache, confusion, light-headedness, dizziness, blurred vision or tired eyes, ringing in the ears, bad taste in the mouth, fatigue or lethargy, a change in sleep patterns, behavioural or mood changes, and trouble with memory, concentration, attention, or thinking. A person with a moderate or severe TBI may show these same symptoms, but may also have a headache that gets worse or does not go away, repeated vomiting or nausea, convulsions or seizures, an inability to awaken from sleep, dilation of one or both pupils of the eyes, slurred

speech, weakness or numbness in the extremities, loss of coordination, and increased confusion, restlessness, or agitation .

Injury causes learning and psychological problems such as:

- (i) Problem in remembering
- (ii) Problem learning new information.
- (iii) Difficulties in sequencing or processing information
- (iv) Failure to understand humour or social situations
- (v) Unreasonable fear and anxiety, aggression, depression and irritability
- (vi) Sudden swing of moods

**Learning disabilities.** The term ‘learning disabilities’ was first used by Sam Kirk in 1963, at a meeting in Chicago. In 1975, the term ‘special learning disability’ was included in the federal Education for All Handicapped Children’s Act. In general, ‘learning disabilities’ refers to a neurological disorder related to differences in how an individual’s brain works. It is a general term which specifies different types of learning problems. Learning disabilities vary from person to person. The general belief among researchers is that learning disabilities exist because of some types of dysfunction in the brain, not because of external factors such as limited experience or poor teaching. It was once thought that all learning disabilities were caused by a single neurological problem. Now research shows that the causes are diverse and complex. Present research shows that learning disabilities stem from difficulties in bringing together information from different areas of the brain region (Pierangelo & Giuliani, 2007, p. 3).

The DSM-IV, produced by the American Psychiatric Association, characterizes Disorders such as ADHD and epilepsy as developmental disorders and

developmental disabilities. Special needs educational students integrated into inclusive classes, in Malaysia, are those diagnosed with learning disabilities and learning disorders. Learning disabilities are the result of biological and neurological factors. A specific learning disability results from problems in one or more of the central nervous system processes involved in perceiving, understanding and/or using concepts through verbal (spoken or written) language or nonverbal means . The Malaysian Ministry of Education had defined learning disabilities into six categories, which are caused by the following impairments, the main impairments focused in this study. The six categories were selected as they are the ones defined by the Malaysia Ministry of Education. The DSM-V was issued in 2013 and carries changes to some of the disorders. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, is the most comprehensive, current, and critical resource for clinical practice available to today's mental health clinicians and researchers of all orientations.

The different categories include:

- (i) Children with Autism Spectrum Disorder and Asperger Syndrome
- (ii) Children with Cerebral Palsy
- (iii) Children with Down Syndrome
- (iv) Children with Cognitive disabilities
- (v) Children with Behavioural and Emotional difficulties
- (vi) Children with health problems. (Asthma )
- (vii) Children with speech and language difficulties (Haq, 2000).

Learning disabilities are further defined by the Malaysian Ministry of Education and the two criteria stated by the Ministry of Education in the national report, for integration of students with learning disabilities are:

- (i) Able to manage themselves without help
- (ii) Do not have behavioural conditions that could cause disruption to mainstream learning (National Report, 2000).

Learning Disabilities are linked to impairments such as Specific Learning Disabilities (SLD), Autism Spectrum Disorder (ASD), Cerebral Palsy and Down Syndrome.

***Specific learning disabilities.*** The term ‘Specific Learning Disabilities’ (SLD) means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written” (Pierangelo & Giuliani, 2007). Learning disabilities are believed to be caused by neurological differences in the way the brain processes information. People with learning disabilities learn differently and may need a variety of instructional practices to learn effectively. This may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.” SLD is also defined in (IDEA 2004) as follows:

- 1. Dyslexia : not being able to read
- 2. Dysgraphia: not being able to write
- 3. Dyscalculia: not being able to calculate

Students diagnosed with dyslexia will have problems in dyscalculia and dysgraphia as the root is the problem of language acquisition. To acquire knowledge one needs to be proficient in reading. A specific learning disability results from

problems in one or more of the central nervous system processes involved in perceiving, understanding and/or using concepts through verbal (spoken or written) language or nonverbal means. 'Coordination' and language disorders can be generally classified under the umbrella of SLD. Co-ordination is called 'dyspraxia'. As outlined in the Diagnostic and Statistical Manual (DSM IV-TR, 2000), the diagnostic criteria for dyspraxia includes: performance in daily living activities that require motor coordination is substantially below that expected, such as: dropping things, clumsiness, poor performance in sports, poor hand-writing.

Developmental dyspraxia is a neurologically based disorder. The Dyspraxia Foundation defines it as an 'impairment in the organisation of the movements which leads to associated problems with language, perception and thought'. There are significant disruptions to what a person is trying to do. Individuals with dyspraxia will find it difficult to understand messages, learn or remember. They can easily become victims of bullying. Dyspraxia can impact an individual's communication, social and emotional development (Brookes, 2007).

**Intellectual disability.** There are three major criteria for intellectual disability:

significant limitations in intellectual functioning, significant limitations in adaptive behaviour, and onset before the age of 18.

**Slow learners.** A "slow learner" is not a diagnostic category, it is a term people use to describe a student who has the ability to learn necessary academic skills, but at rate and depth below average same age peers.

As a conclusion for the above mentioned categories of special needs, here is a summary table as in Table 2.1 that shows the type of disability rates, overall rate, rate of disability 10-16% of all children (Amar, 2008).



Table 2.1

*Type of Disability Rates, Overall Rate, Rate of Disability 10-16% of All Children (Amar, 2008)*

Diagnosis	Degree of Disability	Birth Rate
Intellectual Learning	Mild, Moderate, Severe, Profound	10 – 30 per 1,000
ADHD estimates	School going children	50 – 100 per 1,000 UK
Pervasive Developmental Disorders Autism, ASD, Asperger	Mild, Moderate, Severe	20 – 50 per 1,000 UK
Learning Disabilities Autism, ASD, Asperger	Mild, Moderate, Severe	50 – 100 per 1,000
Physical Disabilities Cerebral Palsy	Mild, Moderate, Severe	3 – 4 per 1,000

### **Collaborative Consultation**

Collaboration is a significant dimension in the schooling process. It is the link to promote trust and support within the classroom, within the school and within the education system. “Collaboration is the key to communication”. The concept of collaboration is based on, “equal relationship, joint approach and a shared responsibility.” (Ashman & Elkins, 2002).

The proposed teacher training programme will emphasise on collaborative efforts by teachers and special educators for planning and adapting lesson plans for the students with special needs for the successful implementation of inclusive education.

**Individualised education plan.** IEP stands for ‘Individualised Education Plan or Program’ (Ashman & Elkins, 2002, p. 2). The IEP is drawn up through a process of collaboration involving the special educator, class teachers, parents, principals and input from specialists such as the psychologists, speech pathologists or physiotherapists. Long term goals and short term objectives are prepared. Timelines are also prepared for achievement of goals.

The IEP is a mandatory legal requirement in the United States. Teachers in inclusive classes, need to realize that the IEP fits into the process of education. Their focus should be on how to plan and carry it out effectively. A large number of teachers focus on how to complete the forms and some copy the IEP written for one student and apply it to others without changes (Ashman & Elkins, 2002).

### **Differentiated Instruction**

Differentiated instruction is ‘adapting content, process and product in a way that responds to students’ needs, readiness levels, interests and learning profile’ (Therese, & Graf, 2008, p. 213). According to Quicke (1995) the purpose of differentiation in teaching practices and in curriculum design is to ensure that all children maximize their potential experience and success. The term ‘differentiation’ is used in Britain and in North America to describe the types of strategies used by regular teachers to motivate students with special needs to take part in the learning activities provided. In Australia it is referred to as ‘adaptive education’.

Collaboration is a significant dimension in the schooling process. It is the link to promote trust and support within the classroom, within the school and within the education system. “Collaboration is the key to communication”. The concept of collaboration is based on, “equal relationship, joint approach and a shared

responsibility.” (Ashman & Elkins, 2002). The proposed teacher training programme will emphasise on collaborative efforts by teachers and special educators for planning and adapting lesson plans for the students with special needs for the successful implementation of inclusive education.

**Diverse needs.** The inclusive classroom represents a population of diverse students. The *diversity* mentioned here does not only refer to students with special needs but includes the normal peers who have their own learning styles as well. The teacher in this class needs to adapt her / his curriculum and teaching plans to support all of these students.

**Flexibility.** The teacher in an inclusive classroom should be flexible in many ways. The attitude and pre-conceived ideas about disabled persons should change. The teacher needs to realize that all students are educable but that they learn in different ways. The educator must understand the needs of special educational needs students and plan, teach and assess according to their needs. The curriculum has to be adapted so that it is easily accessible by diverse students. Flexibility should also be perceived in the choice of class activities for the learning process. Each student has to progress at his /her rate of learning.

Where time is concerned, the teacher should be adaptable and be considerate towards the slow disabled student. During a comprehension lesson, the special education needs student needs to be given more time to answer or reply to questions either during the written or oral activity. The concept of Individualised Education Plan (IEP) can be successful only with “flexibility in its curriculum content and in the pedagogical processes necessary to achieve the programme goals” (Ashman & Elkins, 2002, p. 3).

**Respect.** Besides academic excellence, the teacher has to promote and interrelate ‘respect’ for the special educational needs students who are not only coping with barriers to their learning, resulting from their impairments but also being sensitive about their difference. Normal peers need to look at the difference as a natural phenomenon and teachers have to help students to inculcate an ‘inclusive culture.’ The teacher’s duty is to facilitate the smooth transition from school to the real world of work and adult life in a diverse society.

**Students’ learning styles.** A learning style is the way an individual prefers to processes information, or his/her typical mode of thinking, problem solving or remembering a given skill (Sarah, 2008). Learning style relates to the ‘learning environment’ and how a person is connected to it. It also refers to how a person concentrates on knowledge he receives, practices it, till it becomes part of him (Dunn & Giggs, 2000). Most learners respond according to their preferences. A mismatch between a student’s style and an instructor’s style will affect learning (Felder, 1996). Wooldridge (1995) says that learning styles are based on sensory preferences. They are:

- Auditory preferences which means learners learn by listening such as a lecture
- Visual preferences: learners remember what they see or observe
- Tactile preferences: They take down notes and learning occurs when they are writing
- Kinesthetic preferences: They learn well when they are involved in the activity

Educators need to make a paradigm shift in their ways of thinking. They have to understand the various difficulties the students with special needs included in the classroom are coping with. General educators and all those involved in inclusive

education need to be committed in helping students with special needs to progress within their capacity, without blaming the disability and the negative idea that students with disabilities are not capable of learning. Teachers have to weigh the strengths of the student and not look at their weaknesses.

Future educators need to make provisions to remove barriers such as prejudices and eliminate the idea of discrimination based on the disability. Munford and Peter (1986) identified four different learning styles. They named them as the activist, the theorist, the pragmatist and the reflector. The regular teacher needs to identify the range of learning styles and approaches adopted by students. This knowledge is then applied when planning and designing lessons to suit the students.

### **Managing Diverse Students**

The approach to learning of the four different types of learners is discussed below. (i)

#### **The Activist**

It is stated that the activist learns well in an environment where they are given opportunities. They make themselves the centre of attention. They need a variety in lessons and activities.

#### **(ii) The Theorist**

They prefer to learn material that is presented in a logical and a sequential way. They use an analytical approach. They like opportunities to practice the skills they have learnt. They like a practical approach rather than a theoretical approach

#### **(iii) The Pragmatist**

They have a practical bias in the way they approach learning material. They respond to role models they trust and use techniques that have been proven to work.

(iv) The Reflector

These learners reflect on things before acting on them. They usually take a back seat in class observing and listening. They enjoy working on projects. They do not have difficulty repeating their work (Sarah, 2008).

**Social and communication skills.** Achievement in communication skills is an asset for developing social skills. Difficulty in communication starts with difficulty in reading. Difficulty in reading is the result of “difficulty in phonological processing.” (Ashman & Elkins, 2002). Communication involves a number of developmental stages. Children with impairments have problems, reaching these developmental stages. Such children also experience speech and language problems. Intervention for these children will involve the use of appropriate communication strategies. Effective communication may be introduced through activities and games. Students with disabilities need to be encouraged to initiate and maintain social interactions with their peers (Ashman & Elkins, 2002, p. 125).

Those experiencing specific learning difficulties in social and communication, may have deficits in social skill such as trouble within the domain of social communication and language which is prevalent in persons with autism. Students with Down Syndrome have “difficulty with speaking and reading as 60% of them will have secondary hearing loss” (Sarah, 2008, p. 33). Those with Cerebral Palsy will have learning and communication difficulties as they are unable to understand spoken words.

They may have attention deficits in addition to recurrent sleeping and toileting problems. Educators need to assist such students in learning effective social skills. Short stories describing social situations may be used as a support to learn new social skills.

### **Implication of the Teacher Training Programme**

The Teacher Training Programme has been designed to support the general educator in every aspect. The training encompasses in-depth aspects of disability awareness and inclusive education, which will positively promote knowledge of the two significant dimensions. The domains of knowledge, values skills, emotions will be strengthened automatically with the fundamental understanding of the special educational needs students, the impairments they are coping with, their behaviours and learning styles, what inclusive education is and the role of the regular teacher in the inclusive classroom. Therefore the teachers' competency is elevated.

Improved competency builds and reinforces the teachers' confidence which is the foundation for the readiness and acceptance to teach a class of diverse students. Being equipped with the knowledge of why and how learning disabilities occur, the teacher is well prepared to plan and make adaptations to the lessons as well as bring about changes to the general curriculum that will cater for all students.

The modules prepared for the training are appropriately linked to enhance the teachers' knowledge of the learning styles of the students. The awareness and the readiness of the regular teacher to instruct special educational needs students will improve thus supporting teaching and learning in an inclusive secondary school classroom.

### **Conceptual Framework of the Study**

Concepts from John Dewey's 'Theories of Education' have been selected and used as a foundation for the conceptual framework. The conceptual framework reveals the structure used to impact teaching and learning in inclusive education. The Teacher Training Programme as proposed in the present study, will benefit regular as well as special educators thereby advancing 'educational progress' as one of the excellent ideas mentioned by Dewey in his theory. Dewey's educational philosophy helped forward the "progressive education" movement (Warde, 1960). Dewey not only re-imagined the way learning process should take place, but also the role that the teacher should play within that process. According to Dewey, "the teacher should not be one to stand at the front of the room doling out bits of information to be absorbed by passive students." Instead, the teacher's role should be that of a facilitator and a guide (Dewey 1897). Basing on Dewey's philosophy though classical, it can be concluded that the education of students depends profoundly on the teachers' competence, readiness and skill to handle a class of active diverse students.

Reflecting on Dewey's notions, the researcher of this study has conceptualised a frame work that depicts the flow of the two essential ideas of inclusive educational awareness and disability awareness which are infused into the teacher training programme. The teacher training programme hopes to improve teacher competency which in turn will enhance teacher readiness, to handle students with special needs confidently. Presently the majority of the secondary school teachers in inclusive educational settings, lack appropriate information concerning disabilities and inclusive education.

As most of the general educators are subject specialists they concentrate on achieving results for their special subjects only. Furthermore they are not motivated



by the inclusive culture in the schools by some principals. Therefore they feel that it is a waste of time dealing with students with special needs. More research and more awareness in inclusion could solve the problem. General educators could use collaborative consultation not only within the schools but also with general educators in other inclusive schools.

The last model touches on how to manage a diverse class. This module was integrated to assist the general educator with ideas that could boost their success in inclusive settings. Figure 2.6 depicts the conceptual framework of the study:

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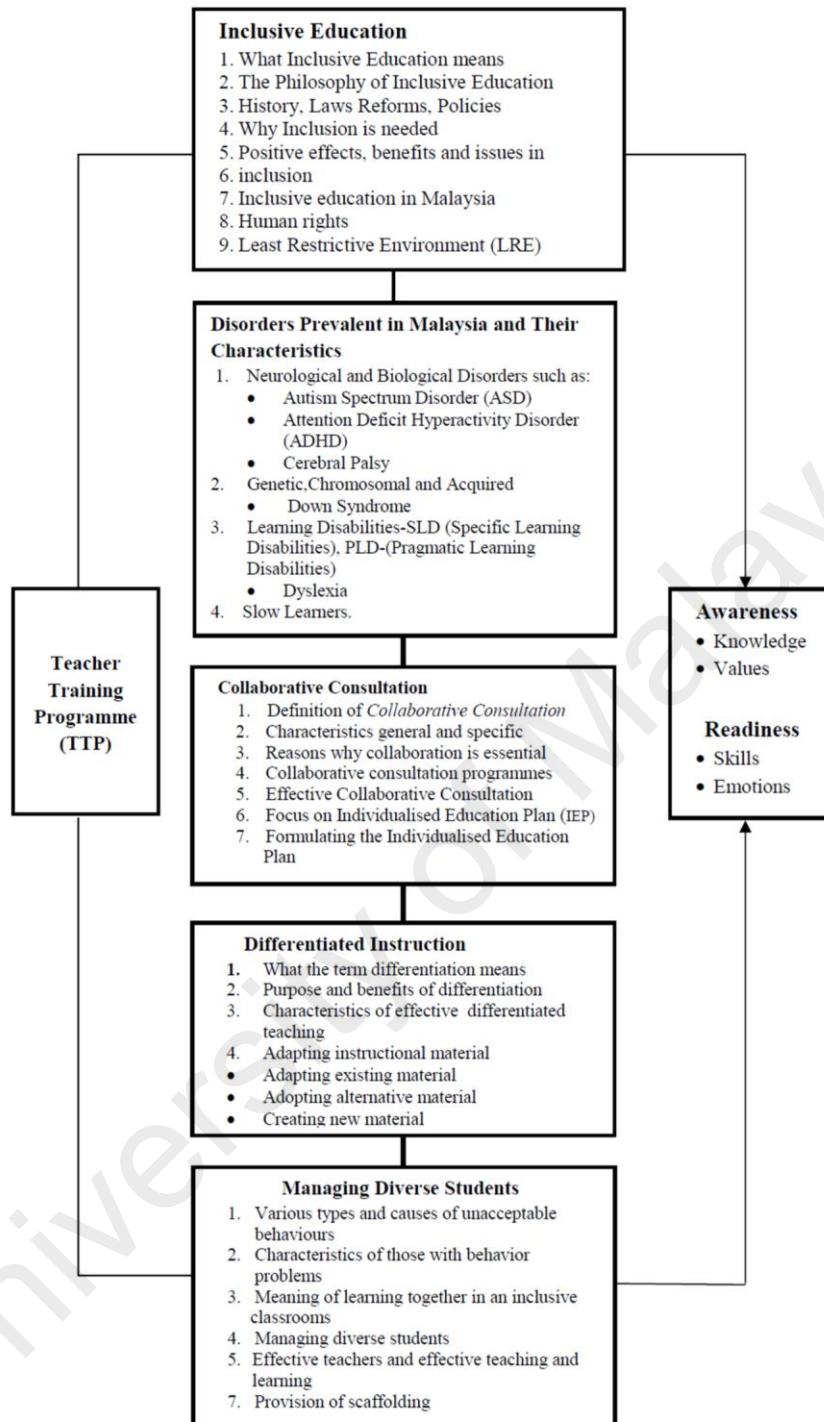


Figure 2.6 Conceptual framework of the study

## Summary

This chapter covered a comprehensive literature review of the topic in the present study. An in-depth study of how it started, the definition of inclusive education, why it is important, the issues and benefits connected with it were explored. Also reviewed extensively were facts about disabilities caused by various conditions such as neurological or biological. A study was also made on the two models: the medical and the social model in connection with disabilities. A review of the various disabilities was conducted and the main source of information was the 'Diagnostic and Statistical Manual of Mental Disorders' – 1V-TR and V which was published in 2013, with several changes.

Learning Disorder has been changed to Specific Learning Disorder and the previous types of Learning Disorder (Dyslexia, Dyscalculia, and Disorder of Written Expression) are no longer being recommended. The type of Learning Disorder will instead be specified as noted in the diagnosis. Source: American Psychiatric Association.

Another vital area of vast review was done on Vygotsky's Social development theory and Albert Bandura's Social learning theories. Vygotsky's theory of "Zone of Proximal Development" also includes 'scaffolding'. These concepts were reviewed, as the main aim of inclusive education is to support the social education of students with special needs. Models of teacher training and inclusive education by Ainscow (2011), Ainscow et al. (2004) and the model based on the social effects of the environment (Bronfenbrenner, 1979), on the individual who needs to fit into the social world, have been reviewed and following elements from the review, that support the present study had been selected.

Ainscow's (2011) model referred to developing new meanings about diversity and promoting inclusive practices within schools. Ainscow (2004) has directed us to focus on factors that sustain inclusive development within an educational system. He referred to levers or influences for changing patterns of thinking which would have positive effects on present teaching and learning. Bronfenbrenner referred to the various layers that exerted influence on the individual. The environments has played a crucial part in shaping the special education needs student's' concept of the world and his role in society. It had been discussed earlier how the disabled individual had been shunned by the family, society and the school. Teachers dealing with special educational needs students need to internalize significant references in the reviewed models to improve their competence in teaching a class of diverse students. Dewey's educational theories, though presently are considered to be ancient, have been deliberately chosen to be reviewed by the researcher because Dewey referred to principles within the present study which were:

1. He objected to segregation
2. His aim was to integrate the school with society

The main objective of inclusive education as stated in the Warnock report of (1978) is for teachers to train students with special needs to become part of society. Not many in-depth teacher training programmes for teachers involved in inclusive education have been carried out till now on the aspect of training students for becoming members of society. Teachers cannot be expected to teach students with disabilities, without understanding the purpose of inclusion and the causes of learning disabilities. The proposed Teacher Training Programme will encompass the dual elements of

inclusive awareness and disability awareness, to bring about change in patterns of thinking and methods of teaching diverse students.

The theoretical and conceptual framework in this chapter focused on inclusive teaching and learning practices in schools where inclusive education has been implemented. The chapter had verified the essential elements of biological and neurological factors affecting students with special needs learning. A detailed investigation of the philosophy of inclusive education, the various laws and reforms, the differences between integration for special education and inclusion, and the status of inclusive education in Malaysia were elucidated. The chapter also reviews the proficiency of regular teachers who are presently teaching in inclusive classrooms. There have been several questions on disabilities and how deal with students exhibiting unacceptable behaviours. A comprehensive literature review of the topic in the present study pointed out that Vygotsky's Social Development Theory, and Albert Bandura's Social learning Theories of inclusive education were aimed to support the social education of students with special educational needs. Models of teacher training and inclusive education by Ainscow (2011) and Ainscow et al. (2004) and the model based on the social effects of the social environment, (Bronfenbrenner, 1979) on the individual who needed to fit into the social world had been studied and elements from the reviews supporting the present study had been selected. The literature review had revealed a number of authentic ideas that sustained this study such as changes in thinking and inclusion of students with special needs.

With reference to the declaration that all children need education, Suleymanov (2015) points out that 'all children have the right to education regardless of their race, gender, nationality, disability. Most research and scholarly articles refer to aspects such as effective strategies for special education (Martel, 2009). The general attitude

of educators in inclusive settings, according to research studies is positive but their acceptance of the students with disabilities in the regular class is not positive because they are influenced by the severity of the disabling condition (Avramidis & Norwich, 2010).

Lastly, the literature review had revealed a number of authentic ideas that sustained this study such as changes in thinking (Ainscow, 2004) and inclusion of students with disabilities into society when they leave school.

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## **CHAPTER 3**

### **METHODOLOGY**

#### **Introduction**

This chapter had defined the methodology used in this quantitative study. This study conducted an experiment for general educators in an inclusive secondary school where students identified with learning impairments in the mild categories of disabilities had been mainstreamed. The teacher training programme was the outcome of this research.

Considering the fact that the study was about investigating the effects of the Teacher Training Programme upon the dependent variables, the researcher proposed to use the quasi experimental design in which a pre-test, a post test and an experimental and control groups were used. A detailed description of the research design had been presented. The reasons for the choice of this design, the procedure and the application of the design had been clarified, and this section included the target population, the accessible population, the sample and the location of the study. Details of the methodology for the experiment and the five modules used had been drafted out. The characteristics of the design, and a few ways used to control for internal validity as well as external validity were elucidated. The instrument for data collection and the type of analysis to make the data more reliable and relevant to the objectives and research questions of the study had also been described.

#### **Research Design**

As the study involved an investigation on the effects of the Teacher Training Programme on the two dependent variables, namely awareness and readiness that

incorporate the four factors of knowledge, values, skills and emotions of general educators in inclusive settings, the researcher of this study used the quasi experimental design as this is one of the most widespread designs in educational research (Campbell & Stanley, 1963).

### **Quasi Experimental Design**

Experimental designs are used when the purpose of the research is to conduct a study on causal relationship between independent and dependent variables (Creswell 2008, p. 299). In this study the relationship between the independent and the dependent variables were investigated. Experimental research directly attempts to influence a particular variable and is proper for testing cause effect relationships (Fraenkel & Wallen, 2007).

The researcher attempted to attribute the change in the dependent variables to the experiment. To do this, Hedges, (2008), said that the researcher must first identify the independent or influencing variable and the dependent or acted upon variable. In the present study the influencing or independent variable was the Teacher Training Programme and the dependent variables were teacher awareness and teacher readiness to handle diverse students. “The researchers manipulate the independent variable and look for the effects these manipulations have on the dependent variables.” (Hedges, 2008). “Because experiments are controlled they are the **best** of the quantitative designs to use to establish probable cause and effect.” (Creswell, 2008, p. 299) but the quasi experimental design needed the researcher’s efforts to control for internal and external validity as randomization is not allowed in this design. The quasi experimental design needed a control group and an experimental group. The participants for both the groups were from two secondary schools where



inclusive education had been implemented for a few years. The intervention for the experimental group was carried out during four months successfully. The experiment was carried out at School 1, in the state of Penang. This is a school where inclusive education had been implemented. The control group was from School 2, in Penang, where inclusive education had also been introduced.

In line with the views of Campbell and Stanley (1963), the researcher was careful about the similarities when selecting the experimental and the control group. The experimental and the control groups for this study were similar in a number of ways. The schools the general educators for the control and experimental groups came from were both secondary schools and both the schools practiced inclusive education. Both the schools were situated on the island of Penang and were in the urban location. The teachers in both the schools were aware of some inclusive practices which they had utilised for a few number of years. Implementation of inclusive education had been followed by both the schools for many years after the Malaysian Education Act of 1996 had been initiated.

As there was no random assignment, the researcher matched the subjects in two schools from where the experimental and the control groups were selected. By matching some control, on subject characteristics, mortality, instrument decay, testing, history, maturation and regression, it helped to overcome the threats to internal validity (Fraenkel & Wallen, 2007, p. 283). Both were secondary schools where inclusion was implemented and both schools were in urban areas. Both the schools had students with learning disabilities and general educators managed both students from the mainstream classes and students with special needs, as shown in Figure 3.1.

Pre-test		Experiment	Post-test
Experimental Group School, (1 Pulau Pinang)	O <sub>1</sub>	x	O <sub>2</sub>
Control Group School (2 Pulau Pinang)	O <sub>1</sub>	-	O <sub>2</sub>

*Figure 3.1* The quasi-experimental design

### **Population of the Study**

The population means a group of individuals who comprise the same characteristics. The target population is the population to which the researcher ideally would like to generalise results. In this study the target population was general educators in all secondary schools in Malaysia which were involved in teaching special educational needs students in inclusive settings and were making use of the general curriculum with or without adaptations. It is the group to which the researcher would like to generalise the results of the study. These schools comprise all the secondary schools in the whole of Malaysia where inclusion has been introduced, and where the general educators had not undergone training in disability studies.

### **Sample of the Study**

The sample of the population is sometimes called 'the sample frame'. It is a group of individuals with some common defining characteristics. It is the group on which information is obtained.

The teachers involved in the experimental group and the control groups totalled 66. There were 33 teachers from School 1, where the experiment was

conducted. It was with a flip of the coin that the choice was made for the school where the experiment was conducted. Another 33 teachers came from School 2, which was the school for the control group.

Teachers involved in the pilot study totalled 33 from school 3 in the state of Penang. The teachers who were respondents in the exploratory factor analysis, totalled three hundred and sixty two. These teachers were from four schools in Penang and two schools in the mainland . The four schools from Penang were: Schools 4-7 and schools 8 and 9, were on the mainland. These schools were chosen from the list of schools on the list given by the Penang Education Department, for Inclusive Education. All the schools mentioned were schools where inclusive education had been implemented and all the schools had registered students with learning disabilities.

### **Location of the Study**

The setting where the researcher observed the phenomenon in question was in secondary school 1, in the state of Penang. This particular school was chosen because this was a school for learning disabilities. In this school inclusion had been implemented in Forms (Secondary) 1 to 5. Most of the general educators in this school were subject specialists trained to teach only mainstream students and the curriculum used was the general curriculum without adaptations.

The general educators from this school were those in the experimental group. The teachers in the control group were from another secondary school where inclusive education had also been implemented. The location of this school is in the urban area, away from the experimental group. The control group could not be

selected from the same school as the experimental group, as the school had limited number of general educators in inclusive classrooms.

### **Instrumentation**

The instrument of seventy two items used in this study was in the form of a questionnaire that used a five point Likert scale of 1-5. The questions covered two dependent variables under investigation, namely awareness that comprises two areas: knowledge and values; as well as readiness that comprises skills and emotions. (Refer : Appendix A).

Domain of **Awareness**: The knowledge item comprised 21 questions and the values item comprised 12 questions Domain of Readiness: The skills item comprised 21 questions and the emotions item comprised 18 questions. Instructions for the questionnaire were both in English and Bahasa Malaysia.

For determining the internal consistency of the instrument, a pilot test was conducted for 30 secondary school general educators in inclusive settings. For validity and reliability of the instrument an exploratory factor analysis (EFA) was conducted using a total of 362 teachers who were given the questionnaires. These general educators were from six secondary schools with inclusive settings in Penang and Seberang Prai, on the mainland. These schools did not include the schools where the pilot testing, the pretests and posttests and the intervention were carried out. The instrument was used for the pilot testing in secondary school 3, in Penang with inclusive settings. This was done to obtain the Cronbach's alpha value. Thirty teachers filled in the questionnaire, and this testing was done before the intervention. The alpha values were more than 0.70 (Refer table 3.5)

### **The Teacher Training Programme**

This study aimed at supporting the inclusive education policy of the Ministry of Education in Malaysia, as enacted in the Malaysian Education Act (1996). The success of inclusive education depends on the general educators teaching in secondary schools which have implemented inclusive education. Teaching students with learning disabilities is a tremendous task. General educators need to be well equipped with the necessary skills including the application of differentiated methods of planning and instruction to cater for diversity. Collaborative consultation is also a major requirement among general educators as students' with disabilities are known to vary their behaviours in class depending on the individual subject and the teacher involved. These students with special needs are happier with teachers who understand their needs. Methods of managing a diverse class are also crucial issues. This study concentrated on 'teacher quality and proficiency' in inclusive settings in secondary schools in Malaysia as teaching students with learning disabilities requires multiple skills.

Therefore the researcher proposed to develop a teacher training programme. This programme was named: 'Teacher Training Programme', because it serves as an in-service training course for general educators in secondary schools who do not have any training in disability studies and do not comprehend the benefits of inclusive education. Consequently the 'Teacher Training Programme' will serve the purpose of such a training for all general educators in inclusive schools, as this programme could be generalised to the whole population of general educators in inclusive secondary schools in Malaysia. Successful inclusive education as mentioned earlier needs general educators who are geared towards managing students with learning

disabilities in inclusive schools in Malaysia as well as being responsible for their academic performance.

The teacher training programme was prepared by the researcher with the main aim of sustaining and elevating the conceptualisation of inclusive education and is based upon the theory of teacher competences described by Watkins (2000) in his model. Watkins (2000) explains that competences are important for high level teaching and learning which help the learner stimulate upward movements through the levels. Teachers need “learning competences and performance competences”.

As can be noted in Figure 2.3 of this study, learning competences embrace effectiveness in handling ambiguity, solving complex problems and being flexible as well as self-reflection. Teachers should also be able to use multiple perspectives for evaluation including self-evaluation. In performance competences, the teacher needs to plan instruction, and monitor students’ learning as well as present information. Performance competences are the general educators’ proficiency in managing a class of diverse students. The competence model by Chris Watkins, reflects what is proposed in the teaching training programme in this study. Other concepts captured from the literature review by the researcher, such as human development, social development and social learning, changes in thinking would be considered as the four cornerstones of the training package.

The teacher training programme used in the intervention, investigated the effects of the experiment upon the two dependent variables of awareness and readiness. The training programme consisted of five modules.

The teacher training programme comprised five different segments which began with the observation of the general educator and this was carried out by the researcher of the study before the experiment was administered. The pretest was given

to the general educators who would be participating in the experiment. The pretest would also be given to those in the control group. The experiment/intervention comprised five training modules will be presented during the intervention, by the researcher of this study. After the training, the post-test was administered to both the experimental and control groups. The observation of the general educator teaching in the same class room was performed again.

### **Objectives of the Teacher Training Programme**

Here are the objectives of the Teacher Training Programme:

1. To improve the level of teacher awareness and readiness of general educators in teaching diverse students in secondary school inclusive classrooms through enhancing the understanding of the purpose and the philosophy of inclusive education including its benefits;
2. To discuss on biological and neurological disorders prevalent in Malaysia and why they occur and how they cause, learning disabilities such as Autism Spectrum Disorder (ASD), Cerebral Palsy Down Syndrome, Attention Deficit Hyperactivity and about Slow Learners;
3. To guide general educators to implement collaborative consultation in schools and to use differentiated instruction in teaching.
4. To strengthen general educators' knowledge of how to manage a class of diverse students.

### **Outcomes of the Teacher Training Programme**

The outcomes of the Teacher Training Programme had been perceived at the end of the training. The general educators had gained knowledge through their

participation in the experiment about inclusive education, neurological disorders, how to collaborate and use differentiated teaching methods.

The general educators would be able to be equipped with knowledge about neurological and biological disorders, why they occur and how they cause learning disorders. The general educators would know how to collaborate when solving problems of students with special needs and make decisions in a shared partnership. The general educators would know how to use differentiation when preparing and conducting lessons. They would also be able to adapt content and delivery to accommodate a wide range of abilities and disabilities.

The general educators would be ready to cope with the negative behaviours exhibited by students with special needs as well as manage a class of diverse needs students. The general educators would have gained knowledge and awareness needed to teach students with special needs in secondary inclusive schools.

### **Reason for Preparing the Modules**

The Teacher Training Programme was primed to be used as an in -service training course for general educators in inclusive practices. As most off the general education teachers were without adequate training to manage a diverse classroom, it was envisaged that they were greatly in need of high quality and structured instruction for their professional development. Modules for the training programme were prepared by the researcher to investigate the effects of the independent variable - the teacher training programme, upon the two dependent variables of awareness and readiness of the general educators to cope with diversity in inclusive classrooms.

The modules covered elements chosen from the theoretical framework and the conceptual framework. From the theoretical framework ideas such as



“neurological factors” and “inclusive educational elements” were selected. From the conceptual framework factors such as various learning disabilities, collaborative consultation, differentiated instruction and managing a class of diverse students were extracted.

In the statement of problem in Chapter One it was stated that “Inclusive Education is a challenge due to ... shortage of properly trained teachers and curriculums that are not adapted to the needs of children with disabilities”. Therefore the researcher ventured to prepare relevant modules for a teacher training programme in the form of five modules, for secondary school teachers in inclusive classrooms.

### **The Modules**

The intervention was conducted through the use of the five modules (Refer Appendix C). Each module was divided into six sections as can be viewed in the example below. For the full module refer (Appendix C). The module for each week focused on aspects such as: Title, Focus area, Objectives, Outcomes, Activities and Materials, as indicated in Table 3.1. Displayed under the column of ‘Materials’, are the notes which provided them with vital information to be referred to whenever the need arose. They valued the notes and the contents in the handouts. The notes comprised significant facts to support and enhance teacher information. Furthermore, the notes elaborated on what the researcher had focused on during, the power point presentations.

Table 3.1

*One Example of Module Division*

Module	Content	Objectives	Outcomes	Activities	Materials
Module 1 Power point presentation	Inclusive Education	To explain the definition and the philosophy of inclusive education	General educators are able to apply Inclusive practices in the diverse classroom to benefit all students	(1 hour) Discussion Question and answer session Listening to views on inclusion by visitor from the Education Department	Power point slides Handouts /notes Exercises for reflective thinking Forms for evaluation of presentation

Activities provided the teachers with an opportunity to interact with each other. During the activities they discovered how to prepare the ‘Individualised Education Plan’ for each special educational needs student. The invited guests such as the speech pathologist and the physiotherapist gave them new and fresh ideas on why such services are essential and how they are beneficial to the students.

The exercises on reflective thinking, were found to be interesting to the teachers. These exercise made them reflect on what they had heard during the presentation. It was an exercise to stimulate their memory. Answers were also provided at the end.

During the activities the general educators were given a chance to evaluate the presentations and these evaluations were later analysed. They provided an in-cite into how the general educators’ viewed the process of the training. Results were positive as depicted by the histogram in Figure 4.1. The five modules used for the Teacher Training Programme were based on the framework as shown in Figure 3.2.

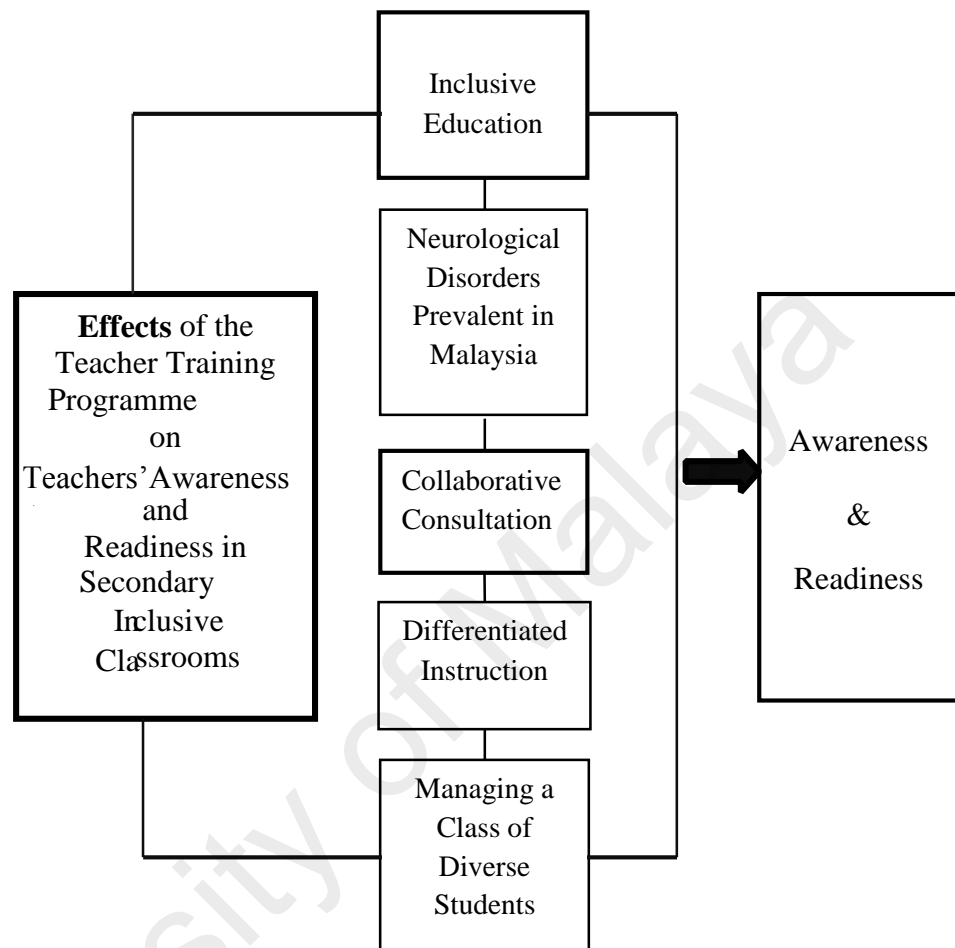


Figure 3.2 Framework for the module

The regular teachers were also given time to answer exercises on reflective thinking to remind them of the content of the module. They liked this exercise and compared what they had written with the answers, when given. It was noticeable that they liked cognitive tasks. The teachers had to remember the facts which were highlighted in the presentation to understand the sentence as well as the appropriate word and its spelling to get at the accurate solution. They agreed it was challenging but better than engaging in physical activities which were tiresome and childish.

Another area was the “Individualised Education Plan”. The general educators were not sure who to include in this set of people. Most of the teachers were satisfied when they were given the clarification during the presentation. Each module was divided into the following sections - an example: (Refer Appendix C for full module).

The five modules were presented to the participants in the experimental group during the intervention. During the session on negative behaviours, it was apparent to the researcher that the teachers experiencing difficulty with student behaviour were more likely to see the behaviour disorder as lying within the students and more likely to ignore the reality that it is the outcome of the interaction between teachers and students and this behaviour could not be dismissed as the responsibility of the students alone. Some teachers deliberately used the same management techniques for students with behaviour problems as they used for the regular students. It was pointed out that as teachers they were expected to examine the approaches to their responses on individual students. It had been discovered in several research studies that once students are engaged in learning, behaviour problems are reduced.

The five modules introduced to the general educators in a secondary school with inclusive settings proved to be successful in raising the awareness and readiness of the general educators in diverse classes. The teachers agreed that the information they received during the training had helped them to apply the knowledge and techniques of managing a class of students with and without disabilities more efficiently. These general educators were the participants in the experimental group. The participants in the control group were from another secondary school with inclusive educational practices. The treatment was not applied to them though they took part in the pre-test and post-test.

The proposed training modules used in the intervention would enhance general educators with awareness and readiness to face and teach a class of diverse students. Good training for inclusive practices would bring success to inclusion. Supporting such a focus the training module for the intervention had been prepared to train general educators in secondary schools inclusive practices in Malaysia to manage diversity in all secondary inclusive schools in Malaysia.

As stated earlier the proposed programme involved the concept of inclusion and prevalent disorders in Malaysia. The disorders focused in this study were mentioned in Chapter 2. The presentation also involved the causes and how the impairment impedes the learning ability of the student. The brain areas involved in these disorders are briefly discussed. The general educator needs to comprehend that most of the special needs students are on medication. Therefore the students seem to have a lethargic demeanour. The general educator in an inclusive class should most of the time look for the strengths and not the weaknesses of the special needs students who cannot be compared with the normal peers.

### **Evaluation of the Modules**

The modules for the Programme, required expert evaluation before it could be considered for use in the experiment. The researcher who prepared the teacher training programme is grateful to three experts in special education from the University of Malaya and the University of Texas at San Antonio, who evaluated it and gave their most valued comments to further refine and enhance this programme (Refer Appendix C). Three other lecturers in the statistics fields, at the University of Malaya and the University Sains Malaysia, had also given their advice in improving the data analysis.

The modules were evaluated on the following components:

Suitability of the objectives - Six objectives were enumerated.

Suitability of the expected outcomes - Five outcomes were stated.

Suitability of the content of the modules. Reference was made to the five modules.

Suitability of the activities during the intervention. All activities carried out during the experiment.

Suitability of the notes as handouts. The notes covered the five modules.

Suitability of the exercises for reflective thinking. There were ten exercises.

Suitability of the slides used for the presentation. There were ten presentations (Refer Appendix D).

It needs to be disclosed here that the esteemed evaluators of the programme had highly commended the programme and had given their full support for it to be utilised as intended. This is obviously perceived in their comments and the grades selected in the evaluation form. More positive support emerged after the data analysis as the analysis indicated statistical significance of the scores. The positive evaluation by the experts gave the necessary inspiration to the researcher to proceed with the experiment.

### **Stages of the Study**

The stages of the experiment are explained below:

1. Pilot testing for Cronbach's alpha in a secondary school.
2. Analysis of Instrument: Exploratory Factor Analysis where five schools were involved
3. Pre-tests for the experimental and control groups where two schools were involved
4. First observation of teacher in Form (Secondary) Four handling a class with typical students and Slow Learners in the school, selected for the intervention
5. Intervention for the experimental group
6. Post-tests for experimental and control groups
7. Second observation of the same teacher in the same mixed class with Slow Learners
8. Data analysis

### Procedure of Data Collection

The data collection was done through a series of steps. The flow chart as in Figure 3.3 shows the four steps.

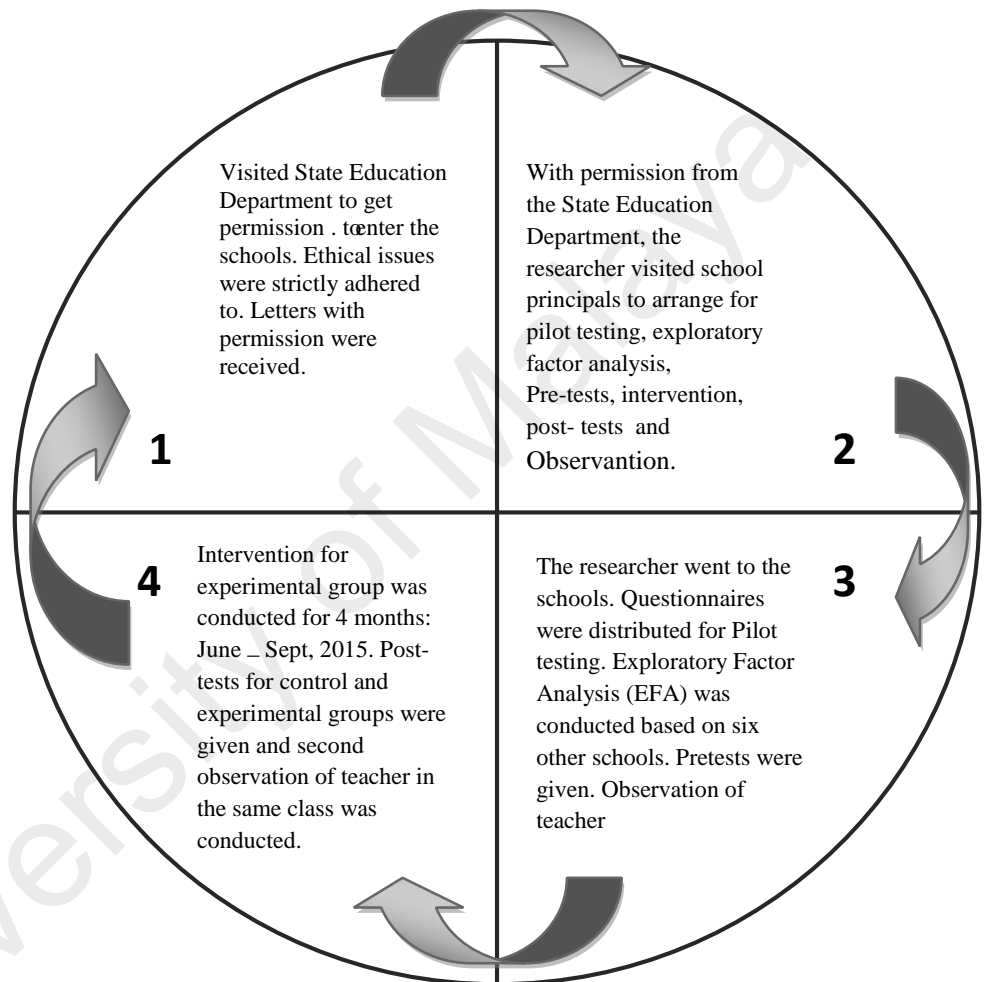


Figure 3.3 Flow chart showing the procedure of the data collection

### The Experiment

The intervention/experiment was crucial as the research proposal involved a Teacher Training Programme for general educators in inclusive secondary schools in Malaysia. The experiment was carried out after the pre-tests of the control and



experimental groups and the first observation of a general educator in a form four inclusive class. This observation was done to compare the teaching done before the experiment and the teaching after the experiment and to make sure the experiment had helped the teacher in conducting his lesson in a mixed class of normal students and students with disabilities.

The experimental presentation of the five modules introduced during the intervention touched on salient factors such as inclusion, neurological disorders, collaborative consultation, differentiated instruction, the drawing up of the Individualised Education Plan (IEP) and the management of a class of diverse students. These factors had helped the general educators to internalise facts related to inclusive education and disabilities prevalent in Malaysia.

The intervention/ experiment consisted of power point presentations to elucidate each module. The researcher of the study presented the power point slides to the general educators who were participating in the experiment. After each module presentation, time was allotted for questioning and valid discussion. Various activities for each presentation were carried out (Refer Appendix D). Printed notes on the particular module introduced were also distributed. The speech pathologist and the physiotherapist from the Spastic

Association in Penang were invited to address and share their views with the teachers. An officer from the State Education Department presented his views on inclusive education on one of the days during the intervention.

### **Procedure of the Experiment**

Prior to the experiment the researcher had requested the principal of the school to allow for an observation of a class of form four students where about five slow

learners were included. This was carried out by the researcher to evaluate the teaching taking place in an inclusive classroom before and after the intervention. Through this procedure the researcher found out whether the intervention caused a difference in the manner the lesson was conducted. An observation protocol form (Refer Appendix E ) was utilised to observe the differences.

The researcher assigned the general educators in one secondary school to the experiment and the general educators in another school to the control group in order to acquire a maximum total of sixty six teachers-thirty three for the experimental group and thirty - three for the control group.

The control group selected for the experiment was from a secondary school in Penang and the school selected for the experiment/ intervention was also in Penang. So this controlled the location bias as both were in the urban area and situated in the same city of Georgetown. The school chosen for the intervention had already implemented inclusive education for students with learning disabilities and learning difficulties. Thirty three general educators participated in the experiment and the intervention was carried out for four months. The participants from the control group also numbered thirty-three and they were only given the pretest and the post test and they did not participate in the experiment comprising the Teacher Training Programme .

The experiment was carried out for four months: from June 2015 till September 2015 on the days selected by the principal of the school. Table 3.2 shows the tasks performed prior to the intervention.

Table 3.2

*Task Performed Prior to the Intervention*

Day	Date	Content	No. of Hours
Wednesday	3/6/15	Handed over letter to Pengarah Jabatan Pendidikan, Pulau Pinang to get permission to conduct the research. Meeting with Mr. Fadyll, officer in- charge of Special Education, Education Department Penang	
Thursday	4/6/15	Visited the headmistress of school 3 to arrange for pilot testing.	
Friday	5/6/15	Visited schools to distribute questionnaires for EFA	
Monday	8/6/15	Meeting with the headmistress of School 1 where the experiment was conducted	
Monday	22/6/15	Pilot testing was done at School 3	
Wednesday	24/6/ 15	Analysis of: (1) pilot testing; (2) Exploratory Factor Analysis	
Friday	26/6/15	Observation protocol at School 1	1 hour
Tuesday	30/6/15	Pretest for general educators, <i>control group</i> at School 2	1 hour
Wednesday	1/7/15	Pretest for general educators, <i>experimental group</i> , at School 1	1 hour

During the intervention sessions, the teachers signed the attendance form at all sessions. Table 3.3 depicts the duration of the intervention.

Table 3.3

*Duration of the Intervention*

Day	Date	Content	Invited Guests	Time	No. of Hours
Wednesday	1/7/15	Pretest Inclusive Education	-	2.00 pm – 5.00 pm	3 hours
Wednesday	29/7/15	Disorders prevalent in Malaysia	Representatives from Handicapped Centre	2.00- 5.0 pm	3 hours
Wednesday	12 /8/15	Collaborative Consultation	-	2.00pm- 4.30pm	3 hours
Wednesday	2 /9/15	Differentiated Instruction	Representative from the Education Department	2.00 pm- 5.00 pm	3 hours
Wednesday	23/9/15	Managing a Class of Diverse Students Post test for Experimental Group Post Test	-	2.00pm – 5.00pm	3hours
Tuesday	29/ 9/15	Post test for Control Group (H School 2	-	10am -11am	1 hour
Wednesday	30/9/15	Observation Protocol (2) at School 1	-	9am – 10 am	1 hour

Here are the tasks performed during the intervention.

1. The researcher used power point presentations to explain each module. This was carried out in the seminar room of the school and each session lasted for about two and a half to three hours. The presentation was followed by questions and discussion or group activities such as drawing up an individualised education plan for a student in their class.
2. Notes were handed out for further reading, followed by teachers attempting reflective thinking questions which they seemed to enjoy. Answers were provided to those questions.
3. On those days when speakers were invited such as the speech pathologist, the physiotherapist and the officer from the education department, they addressed the teachers after the presentation of the module by the researcher.
4. The researcher also gave suggestions and advice to be followed when carrying out lessons. (refer criteria on page 172).
5. Evaluation forms were distributed to the teachers to evaluate the presentation of the module at each session.

### **Control of Extraneous Variables**

To avoid bias, the researcher determined which group was given the treatment and which group was not. The researcher also determined the similarity of the experimental group and the control group. Both the groups were similar in several ways such as: the demographic information of both the schools pointed to similar factors such as qualification of the teachers and experience, both groups were secondary school teachers handling inclusive classes, both the schools practiced

inclusion, both schools had students experiencing learning disabilities and location wise both the schools were situated in urban areas. For the purposes of internal validity this similarity confirmed by the pretest scores where the experimental scores were greater, and the difference between the pretest and post test scores were greater for the experimental group again, (as explained in next chapter on findings) this design could be regarded as controlling the main effects of history, testing, and instrumentation (Campbell & Stanley, 1963).

### **Control of Subject Characteristics**

To minimise threats due to subject characteristics, the researcher gave the treatment to the experimental group which comprised only general educators who were handling students with learning disabilities in inclusive settings so that the outcome of the study will not be affected. In this way the researcher was holding the variable “subjects” constant.

### **Controlled Environment**

Although it is difficult to have a tightly controlled environment, the researcher had to have the control of the experimental group to avoid influences that might affect the outcomes of the experiment such as noise by using the same seminar room throughout the experiment.

### **Control of Maturation Threat**

A careful selection of participants for the control and the experimental groups was done. The participants in both the groups were mature, experienced adults who were teaching in secondary schools with inclusive settings.

### **Control of Regression**

Selection of participants without extreme scores helped to control for this threat for example: Participants were all qualified teachers, none was a temporary teacher without qualification.

### **Control for External Validity**

Threats to external validity refer to whether the treatment programme can be generalized at the population level. External validity has to do with whether the study as a whole can be generalised. If the study can be generalised across the sample population, settings and outcomes, it has a good external validity. The researcher used the same instrument throughout the experiment. This advice was given by Creswell (2008).

### **Pilot Testing**

The pilot testing is to confirm the internal consistency of the instrument. The pilot testing was done at Secondary School 3 in Penang, a secondary school where inclusive education had been introduced for students with learning disabilities. Thirty teachers took part in the pilot testing. The pilot testing was conducted using the questionnaire of 72 items to find the Cronbach's alpha, the reliability coefficient for an instrument. The researcher proposed to use Cronbach's alpha significance level of  $p < .05$ .

Through the pilot testing, the Cronbach's alpha coefficient for each of the four factors was more than 0.70 suggesting that the items had relatively high internal consistency and reliability as shown through the reliability statistics in Table 3.4.

Table 3.4

*Reliability Statistics*

Factors	Cronbach's alpha
Knowledge	.926
Values	.931
Skills	.755
Emotions	.762
Total (72 items)	.917

**Exploratory Factor Analysis**

This study was more exploratory in nature where by the researcher was investigating the effects of the Teacher Training Programme upon the general educators. The study did *not* use a 'model' such as 'the Rasch' model' to develop the instrument as this study appears to be the first and the only one so far to preparing a programme for training for teachers in inclusive settings. Therefore the Exploratory Factor Analysis was the most appropriate to be used for this study. It is envisaged that future researchers could use this study as a model.

The confirmatory factor analysis (CFA) was not used for this study because in this study no psychometric testing was involved. This fact is confirmed by Murphy and Davidshofer (1998) who say that the confirmatory factor analysis is used to confirm an established factor. Diana S. (2006) of University of Northern Colorado ,stated on CFA, that: "The researcher may use the Beck Depression Inventory and the Hamilton Rating Scale for Depression and may impose constraints on the model based on these a priori hypotheses. By imposing these constraints, the researcher is forcing the model to be consistent with his theory." The Exploratory Factor Analysis was used



to find out the reliability of the instrument. It was proposed that the Kaiser - Meyer – Olkin Measure of Sampling Adequacy (KMO) be used with Bartlett’s Test of Sphericity to obtain the statistical significance of the instrument. The Statistical Packages for the Social Sciences (SPSS) for EFA was used for the analysis. For this analysis the researcher had utilised 362 subjects made up of general educators involved in inclusive practices, from six different secondary schools where inclusion had been implemented in all the schools. These participants answered the questions in the instrument which used the Likert scale. In this findings the interpretation of the Kaiser-Mayer–Olkin measure of sampling adequacy (KMO) and Bartlet’s Test of Sphericity, results proved that the instrument was valid and reliable. According to Julie Pallant (2010) factor analysis is appropriate if Kaiser- Meyer- Olkin Measure of Sampling Adequacy (KMO) value is .6 or above. In this study the KMO value was .90 and Bartlet’s test was .000 for the significance value.

Table 3.5 shows the Exploratory Factor Analysis (EFA).

Table 3.5

*KMO and Bartlett’s Test*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.901
Bartlett’s Test of	Approx.Chi Square	12254.701
Sphericity	df	1540
	Sig.	.000

In this study the first four components explain a total of 50.33 per cent of variance. This analysis provided the interpretation that the instrument was valid and reliable. In addition to the above, Table 3.6 shows that in the factor loading that was performed during the Exploratory Factor Analysis (EFA), the total communalities for almost all factors was more than 0.30. Hair et al. (2006) in their table on Loadings for Practical Significance say that the factor loading should be 0.30 for a sample size of

350. The sample size for factor analysis, in this study was 360. Communality is the variance of observed variables accounted for by a common factor. A large communality value indicates a strong influence by an underlying construct. Communality is more relevant to EFA (Hatcher, 1994).

In Table 3.6, the item of Knowledge totalled 21 and the factor loading ranged from 0.848 to 0.599. The item of Values totalled 12 and the factor loading ranged from 0.791 to 0.480. The item of Skills totalled 21 and the factor loading ranged from 0.861 to 0.303.

The item of Emotion totalled 18 and the factor analysis ranged from 0.828 to 0.470. As the factor loading is acceptable with a range of more than 0.30 it can be concluded that the instrument is reliable and valid.

Table 3.6

*Factor Loading Performed during Exploratory Factor Analysis*

	<u>Knowledge</u>	<u>Values</u>	<u>Skills</u>	<u>Emotions</u>	<u>Communalities</u>
K1	0.845		0.337		0.669
K2	0.845		0.337		0.829
K3	0.779				0.406
K4	0.778		0.370		0.655
K5	0.776	0.366			0.743
K6	0.776				0.794
K7	0.773				0.639
K8	0.773				0.626
K9	0.766				0.546
K10	0.766				0.675
K11	0.765		0.355		0.762
K12	0.749				0.669
K13	0.749				0.829
K14	0.736	0.366			0.406
K15	0.736				0.655
K16	0.708				0.743
K17	0.708				0.794
K18	0.689				0.639
K19	0.689		-0.332		0.626
K20	0.599				0.546
K21	0.599				0.675
V1		0.791			0.620
V2		0.782			0.654
V3		0.776	0.316		0.589
V4		0.774			0.659
V5		0.764			0.760
V6		0.735			0.768
V7		0.717			0.813
V8		0.651			0.743
V9		0.575			0.757
V10		0.565			0.706
V11		0.556		0.330	0.723
V12		0.480			0.772
S1			0.861		0.314
S2			0.861		0.312
S3			0.851		0.601
S4			0.851		0.692
S5			0.828	0.327	0.717
S6			0.828	0.327	0.637
S7			0.828		0.601
S8			0.751		0.674

S9	0.751	0.760
S10	0.720	0.703
S11	0.720	0.787
S12	0.711	0.717
S13	0.689	0.828
S14	0.670	0.802
S15	0.591	0.837
S16	0.591	0.787
S17	0.498	0.717
S18	0.436	0.828
S19	0.417	0.802
S20	0.380	0.837
S21	0.303	0.828
E1		0.828
E2		0.828
E3		0.819
E4		0.815
E5		0.762
E6		0.751
E7	0.314	0.741
E8		0.720
E9		0.717
E10		0.696
E11		0.679
E12		0.667
E13		0.631
E14		0.616
E15		0.538
E16	0.493	0.527
E17	0.432	0.484
E18	0.424	0.470

Factor scores or factor loadings are the correlation coefficients between the variables and factors indicate how each hidden factor is associated with the observable variable. Factor loading indicates how each hidden factor is associated with the observable variable.

The squared factor loading is the per-cent of variance in that variable explored by the factor.

Cross loading shows how heavily a factor loads on to the variable. In the above table K5 is loading on the second factor but as the communality is high- more than 0.3, the variable need not be dropped.

Varimax developed by Kaiser (1958) is a popular rotation method. During rotation the axes move to a point that encompasses the actual data points better overall. Rotations that allow for correlations are called oblique rotations. Rotations that assume factors are not correlated are called orthogonal rotations. Rotations make the factors more easily interpretable. If the angle is less than 90 degrees in the rotation it means the factors are not correlated. Therefore more rotations were not needed for this study.

### **Data Analysis**

The data analysis focused on the following categories:

Pilot testing of the instrument / the questionnaire was carried out using 30 teachers secondary school 3 where inclusive education had been implemented. This testing was done for finding the Cronbach's alpha using SPSS, to confirm the internal consistency of the instrument.

The Exploratory Factor Analysis for finding the validity and reliability of the instrument was also carried out.

Analysis of the pre- and post- tests, control and experimental groups was done.

Use of observation protocol of a teacher teaching in a diverse classroom before and after the intervention was conducted.

Evaluation of the presentation of the teacher training modules by the general education teachers participating in the experimental group was performed.

## Summary

This chapter explained the methodology, defined the instrument, which was the questionnaire, described the modules used in the intervention for the experiment as well as explained the procedure of the experiment. The quasi experimental design, its characteristics, ways used to control the threat of internal validity and the instrument applied were described.

The four steps as indicated by the flow-chart (Figure 3.3), were used for the data collection. All the five schools involved in the exploratory factor analysis and one school for the pilot testing were secondary schools where inclusive education had been implemented. A total of 362 subjects from the six schools were involved for the EFA and teachers for the pilot testing. Both the pilot testing and the EFA produced positive results when analysed, thus supporting the instrument's reliability and validity.

The instrument in the form of a questionnaire with seventy two items, was used in the exploratory factor analysis, pilot testing and the pre-test and post-test for the experimental and control groups. The effect of the "independent variable" which was the Teacher Training Programme upon the dependent variables of teacher awareness and readiness to teach diverse students in inclusive settings, was investigated, through the experiment that employed the quasi experimental design.

In the universal domain of education most countries have simultaneously accepted inclusive education as the "education for the future". Within this new era of advancement, the most significant segment is that of teacher training. Initial teacher education programs are undergoing reforms to equip pre-service teachers with inclusive skills, knowledge, attitudes, and values that are critical for successful implementation of inclusive education (Nketsia, 2016).

As mentioned in the literature review, teachers in inclusive settings need levers or changes in their thinking (Ainscow, 2004). This change happened through the intervention as the general educators who participated in the experiment agreed that the intervention improved the teaching and learning process.

The proposed training modules used in the intervention would enhance general educators with awareness and readiness to face and teach a class of diverse students.

Good training for inclusive practices would bring success to inclusion. Supporting such a focus the training module for the intervention had been prepared to train general educators in secondary schools inclusive practices in Malaysia to manage diversity in all secondary inclusive schools in Malaysia.

## **CHAPTER 4**

### **FINDINGS**

#### **Introduction**

This chapter has described the data analysis and the summary of results of each of the six research questions. It also has described briefly, the type of statistics used, the design selected, the sample chosen, the instrument utilised in the study, and the method for data cleansing in order to fix the missing data. The research objectives and the research questions were generated to study whether the teacher training programme (the independent variable proposed in this study had an effect on the awareness and the readiness-(the dependent variables) of general educators in inclusive settings. This chapter also includes a descriptive profile of the participants, an account of the protocol observation of a general educator teaching special needs students before and after the intervention, and the evaluation of the presentation of modules by the participants in the experiment, through detailed discussion and the use of statistical representation.

This quantitative study used inferential statistics and a quasi-experimental design. “Inferential statistics is a statistical procedure that can be employed to arrive at a conclusion.” (Ho, 2014). The study is inferential in nature as in the theory of inferential statistics the prominent features are: hypothesis testing, statistical assumptions and analysis of variance and normality which were conducted in this study. Furthermore the study involved comparisons between the control and the experimental groups before conclusions were drawn up, concerning the effects of the independent variable upon the dependent variable. “Inferential statistics also allows researchers to make inferences about a large group of individuals, based on a research



study in which a smaller number of individuals took part.” (Aron et al., 2011). The small number of individuals refers to the sample.

The quasi experimental design - the pre-post design (Fisher & Stanley, 1963), was chosen as the study involved intact groups such as general educators in secondary schools for both the control and the experimental groups. “Quasi experiments include assignments but not random assignments of groups to groups. Quasi experiments are frequently used in education” (Creswell, 2008). Quasi-experiments aim to demonstrate causality between an intervention and an outcome. In this study the researcher attempted to investigate the effects of the experiment upon the general educators who had participated. The sample for the study was a ‘representative sample’ as the characteristics of the sample were similar to the population where it was going to be generalised. “Representative refers to the selection of individuals from a sample of a population such that the individuals selected are typical of the population” (Creswell, 2008). Characteristics mainly referred to the inclusive settings of secondary schools in Malaysia and the students included were diagnosed with learning disabilities and learning disorders caused by various neurological and biological disabilities.

The instrument utilised for the pilot testing and the exploratory factor analysis was in the form of a questionnaire using a five point Likert scale where: 1=Strongly agree, 2=Agree, 3=Somewhat agree/disagree, 4=Disagree and 5=Strongly Disagree. This instrument was also used for the pre- and post- tests given to the control and the experimental groups before and after the intervention. The results of the findings of the pilot testing were described in chapter three, for the measurement of each construct. The pilot test showed that the Cronbach’s alpha results were positive as they were in the range of more than 0.70 for each of the items. Nunnally (1978) has indicated

0.70 to be an acceptable reliability coefficient. As the four items measured showed coefficients of more than 0.70, it could be concluded that the instrument has a high internal consistency and reliability. It is viewed by most statisticians that it is compulsory for researchers to test the items to add validity and accuracy to the interpretation of their data (Aron et al., 2011). It should be noted that in the Likert scale there is a natural mid- point which has the potential to skew the responses to the middle.

The exploratory factor analysis which used 362 respondents, was done to check on the validity and also the reliability of the instrument. The exploratory factor analysis (EFA) the instrument was done by teachers in six other schools where inclusive education had been carried out. A total of three hundred and sixty two teachers participated and the instrument used was the questionnaire.

The output interpretation revealed the factor analysis was appropriate as the value of the Kaiser- Meyer- Olkin, measure of Sampling Adequacy (KMO) value was 0.90 more than 0.06 (Pallant, 2010). The Bartlett's Test of Sphericity value was 0.00. Therefore this analysis provided the interpretation that the instrument was valid and reliable (Bartlett, 1937). Fortunately most of the respondents had attempted all of the questions in the questionnaire. The SPSS, the statistical package for the Social Sciences, version 21 was used for cleaning the database by substitution of a value for one missing value and also by eliminating the participant with missing scores. This happened in the sample 't' test for the control group for the factor of skills.

As the purpose of the study was to find the effectiveness of the independent variable upon the dependent variables a test such as the paired sample 't' test was inevitable. Other tests included, 'Laverne's test of equality of Variance, Assumption test of Homogeneity of Variance and Assumption test of Normality including the

Kaiser- Meyer- Olkin, measure of Sampling Adequacy (KMO) and the Bartlett's test. The Bartlett's Test of Sphericity value was significant in this study.

The pretest and post test conducted for the control and the experimental groups used the instrument in the form of the questionnaire. The findings of the following six research questions as decided in chapter one, proved distinct results in relation to the effects of the Teacher Training Programme upon the variables of awareness and readiness, among general educators in inclusive secondary schools.

### **Findings**

The findings were analysed based on the following research questions:

1. What is the level of teacher awareness to teach diverse students in inclusive secondary school classrooms?
2. What is the level of teacher readiness to teach diverse students in inclusive secondary school classrooms?
3. Are there any significant changes in teacher awareness before and after introducing the teacher training programme?
4. Are there any significant changes in teacher readiness before and after introducing the teacher training programme?
5. Are there any significant differences in teacher awareness between the experimental group and the control group?
6. Are there any significant differences in teacher readiness between the experimental and the control group?

## **Level of Teacher Awareness to Teach Diverse Students in Inclusive Secondary School Classrooms**

Table 4.1 shows the mean and standard deviation for the factor of knowledge in the pre-test for the Experimental Group was 3.04 and .34 respectively and in the post-test it was 3.34 and .39 respectively. The difference in the means was 0.30 which demonstrated that the level of awareness in the experimental group had increased greatly. This was because the experimental group had experienced the intervention. However for values, the mean and standard deviation for the pre-test was 3.81 and .40 respectively and the mean and standard deviation for the post-test was 3.88 and .43 respectively with a slight increase of 0.07 in the difference.

As for the Control Group, the table shows that the mean and standard deviation in the pre-test for knowledge was 3.11 and .42 respectively, while the mean and standard deviation in the post-test was 3.16 and .45 respectively. The difference was very minimal being 0.05. Therefore it was only a slight difference. This occurred because the Control Group was not exposed to the treatment. For values, the mean and standard deviation was 3.62 and .53 respectively in the pre-test and 3.63 and .61 respectively in the post-test. The difference was only 0.01. Again there was only a very minor increase. This marginal increase was because the control group had not experienced the intervention.

Table 4.1

*Level of Teacher Awareness for the Experimental and the Control Group*

Teacher Awareness	Experimental					Control		
	Pre-te		SD	Post-test		Pre-test		Post-test
				Mean	SD	Mean		Mean
	N	Mean				N	Mean	Mean
							SD	SD
Knowledge	30	3.04	.34	3.34	.39	30	3.11	3.16
							.42	.45
Values	30	3.81	.40	3.88	.43	30	3.62	3.63
							.53	.61

### Level of Teacher Readiness to Teach Diverse Students in Inclusive Secondary School Classrooms

Table 4.2 shows the mean and standard deviation for the factor of skills in the pretest for the Experimental Group was 3.28 and .33 respectively and in the post-test it was 3.52 and .33 respectively. The difference in the means was 0.24 which showed that the level of readiness in the experimental group had increased vastly. This was because the experimental group had experienced the intervention. For emotions, the mean and standard deviation for the pre-test was 3.14 and .37 respectively and the mean and standard deviation for the post-test was 3.45 and .45 respectively showing a difference of 0.30 which was a large increase. This showed that the exposure to the experiment had an effect on the participants.

As for Control Group, the table shows that the mean and standard deviation in the pre-test was 3.36 and .34 respectively for skills, while the mean and standard deviation in the post-test was 3.43 and .44 respectively. The difference was only 0.07 which can be concluded as being deficient. The mean and standard deviation in the

pre-test for emotions, was 3.14 and .30 respectively in the pre-test and 3.33 and .45 respectively in the post-test. The difference was only 0.19. There was an increase in the difference. This increase could be on account of teachers having discussed among themselves or read more about disabilities.

Table 4.2

*Level of Teacher Readiness for the Experimental and the Control Group*

Teacher Readiness			Experimental st			Control			
				Post-test		Pre-test		Post-test	
			SD						
				Mean	SD				
		Pre-te				N	Mean	Mean	
	N	Mean					SD	SD	
Skills	30	3.28	.33	3.52	.33	29	3.36	3.43	.44
							.34		
Emotions	30	3.14	.37	3.45	.45	30	3.14	3.33	.45
							.30		

### **Significant Changes in Teacher Awareness Before and After Introducing the Teacher Training Programme**

Research Question 3 examines if there is any significant changes in teacher awareness before and after introducing the teacher training programme. The research hypothesis ( $H_{a1}$ ) states that: There are significant changes in teacher awareness before and after introducing the teacher training programme.

Before inferential testing was conducted, the researcher had performed the assumption testings. Based on Table 4.3 the significant value is 0.205, as this is greater than 0.05, i.e. the p value set by the researcher, the assumption for homogeneity of variance has not been violated.

Table 4.3

*Assumption Test Results for Test of Homogeneity of Variance*

Levene's Statistics	df 1	df 2	Sig.
1.55	3	121	.205

Based on Table 4.4 the significance value for the tests, Kolmogrov - Smirnov<sup>a</sup> was 0.200 and in Shapiro Wilk it was .314. In both tests the significance level was greater than 0.05 ( $>0.05$ ) indicating normality in the distribution (Kolmogorov, 1933; Smirnov, 1948).

Table 4.4

*Test of Normality for Significant Changes in Teacher Awareness Before and After Intervention*

Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pre-cont.	.102	33	.200*	.959	33	.241
Pre-exp.	.123	33	.200*	.982	33	.831
Post-cont.	.094	29	.200*	.982	29	.875
Post-exp.	.097	30	.200*	.960	30	.314

In Table 4.5 the total mean in the pre-test was 6.85 and the total mean in the posttest was 7.22, an increase of 0.38, with  $t(118)=-4.08$ ,  $p>.05$ . The result further shows that there was significant difference in terms of knowledge before and after the intervention, with  $t(58)=-3.41$ ,  $p<.05$ . however, there was no significant difference in the domain of values, with  $t(58)=-.67$ ,  $p>.05$  This indicates that there were significant

changes in teacher awareness, in terms of knowledge before and after the intervention for the Experimental Group.

Therefore, it can be concluded that the research hypothesis ( $H_{a1}$ ) that states that there are significant changes in teacher awareness before and after introducing the teacher training programme was partially accepted.

Table 4.5

*Paired Sample t-Test for Teacher Awareness Before and After the Intervention Period for the Experimental Group*

Teacher Awareness	N	Mean	<i>t</i>	Sig.
Knowledge				
Pre	30	3.04	-3.41	.01
Post	30	3.34		
Values				
Pre	30	3.81	-.67	.51
Post	30	3.88		
Total				
Pre	60	6.85	-4.08	.52
Post	60	7.22		

In Table 4.6 shows the teacher awareness in the Control Group. The mean for the total of pre-test was 6.73 and the mean for the total of post-test was 6.79. The difference was only 0.06, with  $t(118)=-.47$ ,  $p>.05$ . For the domain of knowledge and the domain of values, they are both not significant, with  $t(58)=-.41$ ,  $p>.05$  and  $t(58)=-.06$ ,  $p>.05$  respectively. The significant values were found to be  $>.05$ . Therefore, it could be concluded that there was no significant change in the Control Group for *awareness*, before and after the intervention.



Table 4.6

*Paired Sample t-Test for Teacher Awareness Before and After the Intervention Period for the Control Group*

Teacher Awareness	N	Mean	<i>T</i>	Sig.
Knowledge				
Pre	30	3.11	-.41	.69
Post	30	3.16		
Values				
Pre	30	3.62	-.06	.96
Post	30	3.63		
Total				
Pre	60	6.73	-.47	1.65
Post	60	6.79		

### **Significant Changes in Teacher Readiness Before and After Introducing the Teacher Training Programme**

Research Question 4 examines if there is any significant change in teacher readiness before and after introducing the teacher training programme. The research hypothesis ( $H_{a2}$ ) states that: There are significant changes in teacher readiness before and after introducing the teacher training programme.

Before inferential testing was conducted, the researcher had performed the assumption testings. Based on Table 4.7 the significant value is .205, as this is greater than .05, i.e. the p value set by the researcher, the assumption for homogeneity of variance has not been violated (Levene, 1960).

Table 4.7

*Levene's Test for Test of Homogeneity of Variance*

Levene's Statistics	df 1	df 2	Sig.
1.552	3	121	.205

Based on Table 4.8 the significance in the tests, Kolmogorov - Sminov<sup>a</sup> was .200 and in Shapiro Wilk it was .314. In both tests the significance level was greater than .05 ( $>0.05$ ) indicating normality in the distribution (Kolmogorov, 1933; Smirnov, 1948).

Table 4.8

*Test of Normality for Significant Changes in Teacher Readiness Before and After Intervention*

Group	Kolmogorov-Smi nova			Shapiro- Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-cont Pre-exp.	.102	33	.200*	.959	33	.241
Post-cont.	.123	33	.200*	.982	33	.831
Post-exp.	.094	29	.200*	.982	29	.875
	.097	30	.200*	.960	30	.314

Table 4.9 shows the findings for the Experimental Group in terms of teacher readiness. For the domain of skills, the mean for the pre-test was 3.28 and the mean for the post-test was 3.52. There was an increase of 0.24, with  $t(58)=-2.59$ ,  $p<.05$ . For the domain of emotions, the pre-test mean was 3.15 and the post-test mean was 3.45. There was an increase of 0.30, with  $t(58)=-2.75$ ,  $p<.05$ . The total mean for the pre-test was 6.42 and the total mean for the post-test was 6.97. The difference was

0.54, with  $t(58)=-5.34$ ,  $p<.05$ , indicating a credible increase which concludes that there was a significant change in teacher readiness after the intervention. This increase occurred because the experimental group had participated in the intervention.

As it is, the research hypothesis ( $H_{a2}$ ) that states that there are significant changes in teacher readiness before and after introducing the teacher training programme has been accepted.

Table 4.9

*Paired Sample t-Test for Teacher Readiness Before and After the Intervention for the Experimental Group*

Teacher Readiness	N	Mean	<i>t</i>	Sig.
Skills				
Pre	30	3.28	-2.59	.02
Post	30	3.52		
Emotions				
Pre	30	3.14	-2.75	.01
Post	30	3.45		
Total				
Pre	60	6.42	-5.34	.03
Post	60	6.97		

The results for the Control Group are shown in Table 4.10. The pre-test mean for the domain of skills was 3.36. The post-test mean was 3.43. There was a slight increase of 0.07, with  $t(56)=-.62$ ,  $p>.05$ . The Control Group had not experienced the intervention.

Therefore the increase was minimal. For the domain of emotions, the pre-test mean was 3.14 for and 3.33 for the post-test. The difference was 0.19, with  $t(58)=-2.75$ ,  $p<.05$ . This increase could have happened by chance as those in the Control Group could have accumulated knowledge by reading or had discussed on disabilities. The total mean for both skills and emotions for the pre-test was 6.50 while the post-

test mean was 6.76. The difference was 0.26, with  $t(116)=3.37$ ,  $p>.05$ , and this was because the Control Group had not gone through the intervention.

Table 4.10

*Paired Sample t-Test for Teacher Readiness Before and After the Intervention for the Control Group*

Teacher Readiness	N	Mean	<i>t</i>	Sig.
Skills				
Pre	29	3.36	-.62	.54
Post	29	3.43		
Emotions				
Pre	30	3.14	-2.75	.01
Post	30	3.33		
Total				
Pre	59	6.50	-3.37	.55
Post	59	6.76		

### **Significant Differences in Teacher Awareness between the Experimental and the Control Groups**

Research Question 5 examines if there is any significant difference in teacher awareness between the Experimental Group and the Control Group. The research hypothesis ( $H_{a3}$ ) states that: There are significant differences in teacher awareness between the Experimental Group and the Control Group.

Based on Table 4.11, the significance value was .205. This was greater than .05 and therefore there was no violation of the Homogeneity of Variance (Levene, 1960).

Table 4.11

*Assumption Test Results for Test of Homogeneity of Variance*

Levene's Statistics	df 1	df 2	Sig
1.552	3	121	.205

Based on Table 4.12 the significance in the tests, Kolmogorov - Smirnov<sup>a</sup> was .200 and in Shapiro Wilk it was .314. In both tests the significance level was greater than .05 ( $>0.05$ ) indicating normality in the distribution (Kolmogorov, 1933; Smirnov, 1948).

Table 4.12

*Test of Normality for Differences in Teacher Awareness between the Experimental and the Control Groups*

Group	Kolmogorov-Smirnov <sup>a</sup>		Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-cont.	.102	33	.200*	.959	33	.241
Pre-exp.	.123	33	.200*	.982	33	.831
Post-cont.	.094	29	.200*	.982	29	.875
Post-exp.	.097	30	.200*	.960	30	.314

Based on Table 4.13, there was no significance difference between the two groups for knowledge [ $t(58) = -1.63$ ,  $p > .05$ ]. There was significance difference between the two groups for values [ $t(58) = -1.86$ ,  $p < .05$ ].

Table 4.13

*Levene's Test for Equality of Variance*

Levene's Test of Equality of Variance	T test for Equality of means				
	F	Sig.	df	<i>t</i>	Sig. (2- tailed)
Total knowledge					
Equal variance assumed	.00	.97	58	-1.63	.05
Equal variance not assumed					
Total values					
Equal variance assumed	6.44	.01	58	-1.86	.03
Equal variance not assumed					

In Table 4.14 the mean for knowledge for the Experimental Group after the intervention was 3.34 while the mean for the Control group was 3.16. The difference in the mean between the Experimental and the Control Groups was 0.18. This indicated that the Experimental Group had experienced changes in awareness more than the Control

Group. The mean for values was 3.88 for the Experimental Group and 3.63 for the Control Group. This difference of 0.25, with  $t(58) = -1.89$ ,  $p > .05$ , though not significant, does indicate that the Experimental Group had experienced certain level of changes in awareness. In conclusion, the hypothesis ( $H_{a3}$ ) that states that there are significant differences in teacher awareness between the Experimental Group and the Control Group has been rejected

Table 4.14

*Differences in Teacher Awareness between the Experimental and the Control Group After the Intervention*

Teacher Awareness	Experimental Group			Control Group			<i>t</i>	Sig.
	N	Mean	SD	N	Mean	SD		
Knowledge	30	3.34	.39	30	3.16	.45	-1.63	.11
Values	30	3.88	.43	30	3.63	.61	-1.89	.07
Total	60	7.22	.82	60	6.79	1.06	-3.52	.18

### **Significant Differences in Teacher Readiness between the Experimental and the Control Groups**

Research Question 6 examines if there is any significant difference in teacher readiness between the Experimental Group and the Control Group. The research Hypothesis ( $H_{a4}$ ) states that: There are significant differences in teacher readiness between the Experimental Group and the Control Group. Based on Table 4.15 the significant value was .205. As this is greater than .05, the assumption for homogeneity of variance has not been violated (Levene, 1960).

Table 4.15

*Assumption Test Results for Test of Homogeneity of Variance*

Levene's Statistics	df 1	df 2	Sig.
1.552	3	121	.205

Based on Table 4.16 the significance in the tests, Kolmogorov - Smirnov<sup>a</sup> was .200 and in Shapiro Wilk it was .314. In both tests the significance level was greater than .05 (>0.05) indicating normality in the distribution (Kolmogorov, 1933; Smirnov, 1948).

Table 4.16

*Test of Normality for Differences in Teacher Readiness between the Experimental and the Control Groups*

Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-cont.	.102	33	.200*	.959	33	.241
Pre-exp.	.123	33	.200*	.982	33	.831
Post-cont.	.094	29	.200*	.982	29	.875
Post-exp.	.097	30	.200*	.960	30	.314

Based on Table 4.17, there was no significant difference between the two groups for skills ( $t(57) = -.89$ ,  $p > .05$ ) and there was no significant difference between the two groups for emotions ( $t(58) = -.99$ ,  $p > .05$ ) (Levene, 1960).

Table 4.17

*Levene's Test for Equality of Variance*

Levene's Test of Equality of Variance	T test for Equality of means				
	F	Sig.	df	<i>t</i>	Sig. (2-tailed)
Total skills					
Equal variance assumed	1.91	.17	57	-.89	.19
Equal variance not assumed					
Total emotions					
Equal variance assumed	.19	.67	58	-.99	.16
Equal variance not assumed					

In Table 4.18 the mean for skills for the Experimental Group was 3.52. For the Control Group it was 3.43, showing a difference of 0.09, with  $t(57) = -1.63$ ,  $p > .05$ . For



emotions the mean was 3.45 for the Experimental Group and 3.33 for the Control Group with a difference of 0.12, and  $t(58) = -1.89$ ,  $p > .05$ . The total mean for skills and emotions were 6.97 for the Experimental Group and 6.76 for the Control Group, with a mean difference of 0.21, with  $t(117) = -3.52$ ,  $p > .05$ . Although the result was not significant, it was in favour of the Experimental Group.

In conclusion, the research hypothesis ( $H_{a4}$ ) that states that there are significant differences in teacher readiness between the Experimental Group and the Control Group was rejected.

Table 4.18

*Differences in Teacher Readiness between the Experimental Group and the Control Group After the Intervention*

Teacher Readiness	Experimental Group			Control Group			<i>t</i>	Sig.
	N	Mean	SD	N	Mean	SD		
Skills	30	3.52	.33	29	3.43	.44	-1.63	.11
Emotions	30	3.45	.45	30	3.33	.45	-1.89	.07
Total	60	6.97	.78	59	6.76	.89	-3.52	.18

For Research Questions 5 and 6 An independent sample *t*-Test was done because the study was for comparing two sets of scores from entirely different groups of people: the Experimental Group and the Control Group. The scores of these two groups are independent of each other and so the test needed is a *t* test for independent means (Aron et al., 2011).

The exploratory factor analysis (EFA) instrument was done by teachers in six other schools where inclusive education had been carried out. A total of three hundred and sixty two teachers participated and the instrument used was the questionnaire.

The findings to the six research questions revealed that teacher training programme was effective and had influenced the two dependent variables of awareness and readiness. The training programme of five modules used in the experiment, are acceptable as they had positive effects upon the general educators who had participated. Furthermore, the observation of the general educator's teaching before and after proved that the intervention had helped to improve the teaching and learning process in an inclusive class.

### **The Demographic Profile of Participants in the Experiment**

The participants in the experimental and control groups were general educators in two secondary schools in the state of Penang, where inclusive education had been implemented.(Refer Appendix G). They had received training to teach various subjects to students who are *not* diagnosed with disabilities. They were subject specialists who did not undergo any form of training for teaching students with disabilities. Some of them had attended briefings by officers from the local education department on 'special education'. Majority of them were not aware of 'inclusive education'. Their educational qualifications consisted of college training and in educational training institutions. Only about five percent had university training. Their age groups ranged from about twenty eight till fifty eight. Most of them were above forty years of age. The control and experimental groups were made up of males and females. The demographic information of the general educators would help to gauge their academic level as they are responsible for the cognitive achievement of their students. The students with special needs attending these schools were in forms one till form five and aged between thirteen till nineteen. These special needs students consisted of those diagnosed with learning disabilities. The diagnostic categories were

those with Autism Spectrum Disorder, Down Syndrome, Attention Deficit Hyperactivity Disorder (ADHD), Dyslexia and Slow Learners. Both the control and the experimental schools were schools where co-education was practised. The demographic information of the students helped in understanding their styles and approaches in learning as well as the reasons for their behaviour problems. Their parents mainly worked as business men, teachers and a few as labourers. Most of them were earning between one thousand and two thousand ringgit. The method of looking after their disabled children was of three types. Some had helpers, others looked after them by themselves while a few got help from their parent and relatives. Most of these parents are very concerned about the future of their children with disabilities. The demographic information of the parents showed their level of involvement in their children's learning.

### **Observation of a General Educator Teaching a Diverse Class**

The researcher had obtained the permission from the principal of the school to observe the general educator teaching a diverse class before and after the intervention. This was to evaluate whether the general educator was applying what was advised during the experiment. The criteria (Appendix B) and protocol observation (Appendix F) were used.

The criteria and the protocol for observation were developed by the researcher as ratings for the observation as other types of rating scales were not suitable for this initial study.

### **The General Educator Teaching the Diverse Class Before the Intervention.**

Prior to the intervention for the experimental group, the researcher observed a class where there were six slow learners in the secondary school where the experiment

was going to take place. The observation protocol results showed that the teacher did not differentiate the lesson plan and during the process of teaching, he was concentrating more on the normal students and gave them all the opportunities to answer while the slow students were passive listeners. Instructions were also not explicit. The teacher did not encourage all students to answer and he did not adapt instruction to cater for diversity. The lesson was planned as if every one of the pupils was normal. The teacher did not concentrate on the slow learners as he did not know whether they understood the lesson or not. The written exercise given was all the same for all the students and it was not graded for the slow learners.

Table 4.19

*Criteria for observation of general educator teaching in an inclusive classroom*

Instructions and suggestions emphasized during the intervention	Followed what was instructed during experiment	Failed to follow instruction
A Visual aids to be varied.		
Simple and easily understood	-	-
More difficult for the normal peers.		
B Teacher needs to concentrate on all students. This is to be done during question time and during participation in activities	-	-
C Teachers needs to note if special educational needs students are following the explanations or not.	-	-
If they are apprehensive then explanations and instructions are to be repeated till they understand clearly.		
D. Encourage special educational needs students to try to answer and commend them if they make an attempt to answer.	-	-

### **The General Educator Teaching a Diverse Class after the Intervention.**

An observation of the same teacher in the same class with the slow learners was carried out subsequent to the intervention and it was perceived that there were improvements in the teaching and learning process. The teacher used visual aids suitable for all students and allowed more time for the slow students during oral answering of questions. The teacher also interacted with the slow learners more often showing greater interest in their written tasks. The teacher also encouraged all students to take part in all activities and he commended when the special needs students attempted to answer. From this observations it could be concluded and generalised that the intervention for the experimental group of general educators had positive effects on them, The general educators had gained from the presentations of the five modules, The second observation demonstrated the positive effects of the teacher training programme on the general educator to conduct and manage a class of diverse students successfully as the teacher had followed suggestions given during the experiment.

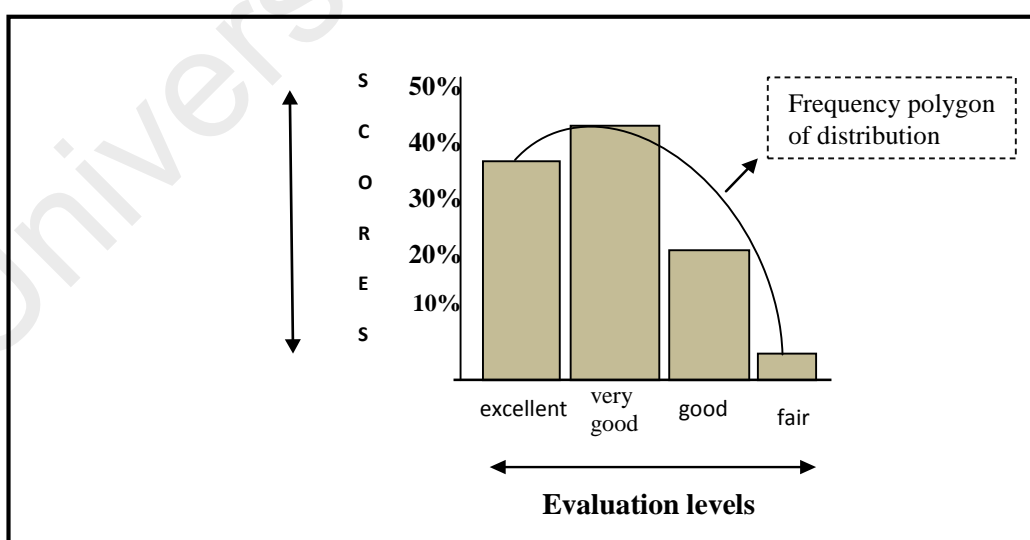
### **Evaluation of the Presentation of the Modules by the Participants**

According to Creswell, 2008, “Whether the analysis consists of descriptive or inferential analysis, or both, the researcher presents results in tables, figure and in a detailed description of the results”. The evaluation of the presentation of the five modules was carried out by the general educators who participated in the experiment during the intervention when the five modules were presented. The general educators who participated in the experiment were handed out forms, after every presentation for evaluation (Refer Appendix D).

**Discussion on the evaluation.** Figure 4.1 shows a Histogram of the evaluation of the presentation. In this figure, the scores are piled to the right and the polygon of distribution is positively skewed to the right. The figure reveals that the evaluation of the modules by the general educators was positive and encouraging as the results supported the experiment.

From Figure 4.1, it can be viewed that the “excellent” level scored was 37.30%, the “very good” level scored 41.27% the “good” level scored 19.64% and the “fair” level scored only 1.79%. The total scored by the three levels, excellent, very good and good was 98.85% while the fair scored only 1.15%. From the ratings of the evaluation, it can be concluded that the general educators who participated in the experiment were supportive and highly favoured the five modules presented during the intervention.

On the final day of the intervention the teachers views of the intervention revealed that the modules for the teacher training programme were considered as being helpful to them in their teaching within inclusive settings and this proved that they had accepted the teacher training programme.



*Figure 4.1* Histogram of the evaluation of the presentation

From the comparison of both these observations it may be concluded that the intervention for the experimental group of general educators had positive effects on

the general educators as they had gained from the presentations of the five modules during the experiment. The second observation demonstrated the positive effects of the Teacher Training Programme on the general educator to conduct and manage a class of diverse students successfully after having participated in the experiment.

**Impact of the presentation.** The questions the general educators asked after each presentation displayed their lack of knowledge of the meaning of inclusive education as well as the various causes of learning disabilities. When discussing the benefits of inclusion the general educators were not aware of any except that it was causing more problems for the normal students because the teachers had to use more time to attend to the special needs students. After the explanation during the presentation the regular teachers saw inclusion from a different angle and they then realized the positive side of inclusive education and the benefits it could bring to society.

Examples of questions asked by general educators during the treatment:

- 1) *How do I differentiate between a student with ADHD (Attention Deficit Hyperactivity Disorder) and a normal active student who is talented and can also be very active?*

The reply given:

*If given a cognitive task to perform, the student diagnosed with ADHD will sit down only for a few minutes and then give up whereas the talented student has the concentration power to continue to complete the task.*

*Why is a student diagnosed with autism not afraid of hurting himself/herself?*

The reply given:

*The student diagnosed with Autism Spectrum Disorder has a deficit in the brain which causes the him/her not to be afraid of doing activities that are harmful, not only hurting himself/herself but also trying to touch fire or crossing the busy road without care.*

The five modules introduced during the intervention impacted the general educators greatly. The first module introduced was on inclusion and why inclusive education is being practiced universally. Teachers learnt about the benefits, issues, of inclusion and its outcomes. The second module which concerned neurological and biological disorders re-enforced their interests in the anatomical part of the causes of the learning disabilities. The interactive slide showing how neurons pass their messages from one to another and the speed the messages were sent intrigued, most of them.

Teachers' knowledge about Cerebral Palsy, Down Syndrome, Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder was enhanced. The third module referred to Collaborative Consultation which defined the necessity to collaborate with other school educators and parents as well, for pupil success. The fourth module referred to differentiated instruction.

The regular teachers considered the practice of differentiating lessons and lesson plans very interesting when examples were illustrated. The researcher explained how differentiated instruction could be achieved and the characteristics of effective differentiated teaching. The example chosen was a comprehension lesson, as explained below:

A cutting from the newspaper was photo-copied and distributed to all the teachers participating in the experiment. The discussion was on a 'comprehension lesson for students in form four'. The passage about the disease 'Mers', spread by



camels, was discussed and the importance of differentiating the passage for students with special needs was highlighted.

The fifth and the final module was on managing a class of diverse students. Numerous questions were raised by the teachers during this presentation. They were mainly on the difficulties they were facing when teaching students with special needs. The differentiated teaching methods would help all students to gain in their learning as lessons are planned to cater to their individual learning styles and approaches. From the practical implication aspect all the modules did impact on the teachers as all were related to special needs and inclusive education.

### **Summary**

The data analysis and the findings proved that in all the categories of analysis, the results favoured the experiment and the instrument used in this study. In the first category of the pilot testing, the cronbach alpha value was more than 0.70, suggesting a high level of internal consistency and reliability of the questionnaire which was the instrument used for all the tests. This was explained in chapter three. As clarified in chapter three, the second category of exploratory factor analysis (EFA), where the KMO measure and Bartlett's test were performed, proved that the instrument was valid and reliable.

The third category of pre-test and post-test comparisons made visible the significant increases in the experimental group's better performance compared to that of the control group, thus proving that the experiment was effective. All the research questions were answered with regards to the study. The expectations of this study materialised positively with the implementation of the treatment which was the Teacher . Training Programme consisting of five modules.

The fourth category of the analysis was considered to be very significant to the researcher as it concerned the evaluation of the general educators on the presentation administered at the experiment which was the Teacher Training Programme consisting of five modules. The general educators had selected the three levels of excellent, very good and good to support the presentation which included various segments. The total of these levels of scores was 98.95% and this greatly underpinned the intervention. The fifth category consisted of the observation of the general educator teaching a class of normal and slow learners in form four, before and after the intervention. The teacher had participated in the intervention conducted by the researcher, and there were improvements in the teaching method as well as the change in the attitude and manner in the way he managed the class. By comparing both these observations it can be concluded that the intervention had delivered the message of the experiment to all general educators who had participated.

Based on Vygotsky's theory of MKO –the more knowledgeable other, as was mentioned in the literature review of this study earlier, that "Teachers need to be knowledgeable about the various disabilities as well as the concept and meaning of the philosophy of 'inclusion' to be successful in the inclusive classroom", the intervention raised the general educators' knowledge on various disabilities and the philosophy of inclusive education. Therefore the results of the data analysis show significant statistical increases in the performance of the general educators who had participated in the intervention. The prediction that the teacher training programme would effect the general educators' awareness and readiness, turned out to be true as the analysis showed that the experiment was successful. There were statistically significant increases in the results in favour of the experiment in all areas of the data analysis.

It may be concluded from the analysis described in this chapter that the experiment was successful and the instrument valid and reliable to be used for future in-service teacher training courses for general educators in secondary school inclusive classrooms in Malaysia. The findings of the study provided knowledge that will allow for the development of professional standards and teacher education programmes for inclusive education teaching and learning process.

The overall findings from the analysis revealed the fact that the application of the treatment effected the awareness and readiness of the general educators in managing diversity. This was shown in the observations of the general educator teaching in the same class before and after the intervention. Improvements in the planning and methodology of the lesson in session were clearly visible. The statistical analysis of the pre and post-tests of the experimental group imparted results that clarified the positive effects of the experiment upon the participants in the treatment. The experiment had impacted extensively on the awareness and the readiness to address diversity in all categories of the analysis.

## **CHAPTER 5**

### **DISCUSSION AND CONCLUSION**

#### **Introduction**

The purpose of this study was to develop a teacher training programme to be used as an in-service training course for general educators in inclusive secondary schools and to investigate the effectiveness of the training programme, using an experiment. The present study appears to be the initial attempt by a researcher to develop a basic training programme for an in - service course for teachers in inclusive secondary schools. This chapter elucidates the summary of findings, succeeded by a discussion on each of the research questions. This is followed by the practical and theoretical implications of the study. Suggestions and recommendations for future studies are elaborated subsequently.

#### **Summary of Findings**

The findings, an integral part of the study are intrinsic to the investigation carried out in this study. As this is a quantitative study the findings are actually the results of the various tests conducted empirically to test the hypothesis that had already been described earlier. This study used six research questions which were determined by the objectives of the study. The six research questions were formulated to support the investigation ventured in the study.

This section carries the summary of findings of the research questions. The summary of the findings starts with research questions one and two as they focus on the two significant variables of awareness and readiness of general education teachers to teach diverse students. The data analysis of the factors embedded in the domains of

awareness and readiness reveal that the mean for the factor of knowledge in the pre-test for the experimental group was 3.04 and in the post test it was 3.34. The difference in the means was 0.30 which demonstrated that the level of awareness had increased greatly. The analysis revealed an increase in the performance of the experimental group that sampled the treatment. The differences in the mean scores of the control group that did not go through the experiment, was minimal. However for the variable, values the mean for the pre- test was 3.81 and the mean for the post test was 3.88 with an increase of 0.07 in the difference.

In the control group, for the variable of knowledge it was 3.11 in the pre-test and 3.16 in the post test; the difference being 0.05 only. For the variable of values, the pre-test was 3.62 and for the post test it was 3.63. This was very minimal compared to the experimental group. We can conclude that the level of teacher proficiency was influenced by the treatment positively through the acquisition of knowledge as shown by the experimental group. For the domain of readiness, the factors of skills and emotions in the experimental group, again demonstrated a higher difference. The values for skills for the pre-test was 3.28 while for the post test it was 3.52, the difference being 0.24 pointing to a positive incline. In the control group, the values for skills was 3.36 for the pre- test and 3.43 for the post test and the difference was 0.07 which could be considered as minimal.

For the factor of emotions the pre- test score was 3.14 and the post test was 3.33 with a difference of 0.19. This was a positive result.

Findings for Research Questions Three and Four showed that there were significant changes in teacher capacity after introducing the teacher training programme. The mean for the experimental group for the factor of knowledge after the intervention was 3.34 for the post test and it was 3.04 for the pre-test, demonstrating

a prominent difference of 0.30, while the mean for the Control group for this factor in the pre- test was 3.11 and in the post test it was 3.16, displaying a difference of 0.05. The mean for the factor of values, in the experimental group was 3.81 and in the control group it was 3.88 revealing an increase as well. For the domain of readiness in the control group, the factor of skills showed the value of 3.36 in the pre-test and 3.43 in the post test, leading to a difference of 0.07. For the factor of emotions, the pre-test showed the value of 3.15, and 3.33 for the post-test with a difference of 0.18.

Other tests were also applied for Research Questions Three and Four. The results of the significance in the tests, of Kolmogorov - Smirnov<sup>a</sup> was 0.200 and in Shapiro Wilk it was 0.314. In both tests the significance level was greater than 0.05 ( $>0.05$ ) indicating normality in the distribution. The results of the paired 't' test indicated that in the control group there were no significant changes but in the experimental group there were prominent changes in teacher proficiency, after the intervention and this showed the positive impact of the experiment.

Research Questions Five and Six led to the investigation of significant differences between the control and the experimental group. In this comparison, the total mean for the experimental group for awareness was 7.22 and in the control group it was 6.79 with a vast difference of 0.43, signifying a prominent difference between the groups. For the domain of readiness the comparison denoted a value of 6.97 for the experimental group and 6.76 for the control group. The difference was 0.21 indicating a positive increase. This investigation required the Levene's assumption test results for the test of Homogeneity of variance which indicated that it was not violated as the value was 0.205 and this was more than 0.05. For the test of normality in Kolmogorov Sminov, the significance value was 0.200 and for Shapiro Wilk the significance value was 0.314. As both values were more than 0.05 it indicated normality in the

distribution. In the Levene's  $t$  test for equality of means, there was no significant difference between the two groups for the factors of knowledge, values, skills and emotions.

The findings of the analysis of data comparing both groups led to the discovery that there were significant statistical differences in teacher proficiency between both the groups. Considering the fact that the instrument had to be tested before use, it was evaluated for normality, validity, reliability and internal consistency. Various tests as mentioned earlier were used in this study. The Levene's test was used to test the homogeneity of variance. Results and interpretation of the homogeneity assumption was completed through the use of the Levene's test of variance, in SPSS version 21, which tested the hypothesis and that the population error variances which were equal. The assumption of homogeneity of variance had not been violated as the significance level was 0.97, which was larger than 0.05 the level set by the researcher.

The Kaiser-Mayer-Olkin measure of sampling adequacy (KMO) and Bartlett's Test of Sphericity were used for factor analysis. In this study as the KMO was 0.90 the factor analysis was appropriate because the value should be 0.06 or more. (Julie, 2010).

The Bartlett's Test of Sphericity value was significant in this study. The significance in the tests, Kolmogorov-Smirnov<sup>a</sup> was 0.200 and in Shapiro-Wilk it was .314. In both tests the significance levels were greater than 0.05 ( $>0.05$ ) indicating normality in the distribution.

The study necessitated the use of the independent ' $t$ ' test to compare the means of factors in two groups. The independent ' $t$ ' test was chosen because the study was comparing two sets of scores from entirely two different groups of people: the experimental group and the control group. The scores of these two groups were

independent of each other and so the test needed was a '*t*' test for independent means (Aron et al., 2011).

Previous research by Ainscow et al. (2011) mention that teachers' quality of teaching affects students' learning. The model on teacher competences by Chris (2000) shows that teachers in inclusive classrooms need competences such as learning and performance competences. Through the various analysis it was discovered that the teacher training programme had been effective for the teaching process in inclusive settings but only future research could release the results of its impact on the learning process of the special needs students.

### **Discussion**

This study aimed at supporting the inclusive education policy of the Ministry of Education in Malaysia, as enacted in the Malaysian Education Act (1996). The success of inclusive education depends on the general educators teaching in secondary schools which have implemented inclusive education. Teaching students with learning disabilities being a tremendous task needs general educators to be well equipped with the necessary skills including the application of differentiated methods of planning and instruction to cater for diversity. Collaborative consultation is also a major requirement among general educators as students' with disabilities are known to vary their behaviours in class depending on the individual subject and the teacher involved. These students with special needs are happier with teachers who understand their needs. This attitude is crucial for them to succeed. Methods of managing a diverse class are also crucial issues.

This study concentrated on 'teachers' quality and proficiency' in inclusive settings in secondary schools in Malaysia as teaching students with learning



disabilities requires multiple skills. As can be noted in Figure 2.3, of this study learning competences embrace effectiveness in handling ambiguity, solving complex problems and being flexible as well as self-reflective. Teachers should also be able to use multiple perspectives for evaluation including self-evaluation. In performance competences, the teacher needs to plan instruction, and monitor students' learning as well as present information. The competence model by Chris Watkins, reflects what is proposed in the teaching training programme in this study.

As stated earlier, this study involved a teacher development programme for inclusive teaching in secondary schools. The intention for developing the programme, was to upgrade teacher performance so that students with special needs benefit. This study will also help to fill the gap referred to in most of the literature on inclusive education teacher training, that students with disabilities need expert teaching.

The study by the Organisation for Economic Cooperation and Development (OECD, 2010), has noted that many teachers are “under” prepared for diversity. The biggest challenge the regular teachers are facing is the lack of exposure to special needs students and methods of teaching them and helping them to solve problems within the challenges that are limiting them in their learning. Therefore the researcher attempted to fill that gap which was crystal clear in all the research articles.

The teacher training programme had impacted the general educators teaching process positively. The researcher's observation of a teacher's performance, subsequent to the intervention in a class that was available, did reveal that the teacher's teaching process had progressed. Improvements in the planning and methodology of the lesson in session were clearly visible. The learning process depends on the educators' ability to use differentiated instructions and this needs to be seen in future

research on the students' progress. The methods of collaborative consultation, differentiated instruction and management of a diverse class where students exhibit behaviours that are unacceptable, have been infused into the training programme. This can be realized in the study by Cassady (2011) who states that the participants who took part in her study preferred to have students with autism rather than students with emotional behaviour disorders. The teachers' responses in her study reveal that they were not trained to manage the behaviours shown by the students with disabilities. There is a lack of understanding of the impact of the disability upon the learning of students with special needs. This gap was in a way filled when the researcher of the present study included the topic of various neurological and biological disorders in the training programme, and explicitly explained how they occur and how they cause learning problems in students with special needs.

From those results which clearly showed the positive outcome of the experiment, we can conclude that the experiment had influenced the dependent variable of 'awareness and readiness' constructively. The study by Haiyan Bai and Suzanna (2015) supports the view of this study for they reiterate that general educators need to acquire "knowledge to make them more successful in serving students with disabilities". Additionally, supporting this view, "To be ready for that future we must prepare teachers who can teach in settings that are inclusive, meeting the needs of all students. This will require a different model of teacher education" Whitworth (1999). Therefore it is hoped that , the present study will successfully raise the performance competences of the general educators to teach diverse students. One of the values that the general educators are expected to possess is a non-discriminative attitude which supports diversity. In the findings it was noticeable that the respondents did not do very well for values. This could be attributed to the belief that the general educators

were not predisposed to principles of ethics, moral standards and human rights for students with special need. In another study supporting this view of the general educators to handle diversity “recommendations are then suggested for educators and parents of children with special needs to promote positive and productive Individual Program Planning meetings.” MacKichan and Harkins (2013). Several strategies are available to support educating students with learning disabilities in inclusive classrooms including: co-teaching, differentiated instruction, and peer-mediated instruction and interventions (Ford, 2013).

Findings of the third and fourth research questions show that there are significant changes in teacher awareness and readiness after introducing the teacher training programme. The training programme had been effective. This view is sustained by Mthembu (2009) who advocates that “successful implementation of inclusive education requires educators too have the knowledge, skills and competences to accommodate a wide range of diversity”. Another study is also of the same opinion. The study conducted by (Booth & Dyson 2008) who state that “values are moral guides” and “in education an understanding of values is essential”. Additionally the report published by the European Agency for Development in Special Needs Education, (2011) states that teachers need a repertoire of skills, expertise, knowledge, pedagogical approaches, adequate teaching methods and materials and time if they are to address diversity effectively within their classrooms”. Another study by Moran (2009) states that “good inclusive teaching goes beyond demonstrating achievement of a given set of competences or standards and requires the values dimension to be made explicit and permeate all aspects of teacher preparation”.

Research questions five and six investigated on whether there were significant differences in teacher awareness and readiness between the control and the

experimental groups. Only the post tests were applied in this analysis. The analysis uncovered results which showed that there were significant differences in teacher competences between the control and the experimental group. These differences occurred because the experimental group had experienced the intervention. The outcome was that the teacher training programme had brought positive results and the same could occur when generalized. This view is also supported in the study by Usher (2002) who believes that teachers need a

“positive view of the self” and Rhodes-Coblentz (2017) who refers to “with the influx of students with autism to the general education classroom, the role of the educator has drastically changed. Limited training and negative perceptions among teachers of students with autism are concerning.” It is further stated by Nketsia (2016) that teachers should be equipped with “skills, knowledge, attitudes and values” for inclusion to be successful. Carpenter (2007) states that to address the quality of teachers who are chosen for inclusive educational practices, the principal of a school needs to address issues such as “the qualifications, the strengths and professional development experiences the teacher possesses to handle diversity”. Lambe (2019) believes that, “While the findings reveal evidence of support for the philosophy of inclusion and for inclusive practices generally, they also show that many young teachers still show a strong attachment to, and belief in, traditional academic selection as a preferred education model.

The Teacher Training Programme was successful as the general educators had been impacted in their knowledge, values, skills and emotions to manage the diversity of students in an inclusive classroom. The overall findings from the analysis revealed the fact that the application of the treatment was effective. This was visible in all categories of the analysis; the pre and post-tests, the evaluation of the presentation and

modules by the general educators, the observation by the researcher, indicated the conclusive effectiveness of the treatment. The objectives of this study were to assess essential teacher proficiencies, improve practices and identify significant changes that transpired as a result of the use of the Teacher Training Programme. Through the findings of this research it was discovered that all the objectives were achieved to a maximum extent. The objective to improve revealed the greatest positive result as the experiment was effective and the teaching process improved vastly. This study could contribute towards enriching the existing knowledge of teacher education for inclusive education in secondary schools.

The experiment in the form of an intervention, proved to be effective as the results of the data analysis in chapter four, showed interpretations of positive results. Furthermore the teachers who underwent the intervention were supportive. They were given the opportunity to evaluate the presentation together with its content of the modules after each session. They provided results with fine scores which were elaborated in chapter four.

Current efforts towards upholding the rights of all children are impeded by a lack of understanding of inclusive education and misappropriation of the term itself. Additional barriers include “negative and discriminatory attitudes and practices, lack of support to facilitate inclusive education, and inadequate education and professional development for teachers and others”. A number of authors had identified the barriers but had not attempted to provide a programme to overcome the barriers highlighted unlike this study which introduces ways to facilitate inclusive education through elevating teacher proficiency that could facilitate the barriers mentioned in that study.

Present and future general educators cannot remain within a paradigm of thinking in which “one size fits all”. They might have used one particular curriculum

and few methods in teaching normal students but the implementation of “Inclusive education” expects broad changes in every aspect. General educators need to realize that in inclusive practices, they are the key players to bring about successful learning in special educational needs students. Success is possible as proven by the Malaysian winners of the gold medals at the Paralympics at Rio, 2016. If special needs students are coached properly and given full motivation they could excel in their studies as well. General educators could be supported to do so through programmes that will enrich them with knowledge about ‘inclusion’ and ‘disorders’ that cause learning disabilities and learning difficulties, such as the programme proposed for the Teacher Training Programme investigated in this study.

In chapter one under the statement of the problem it was mentioned that a survey was done in two secondary schools with inclusive practices. During this survey, a casual meeting with the teachers in the two secondary schools, proved to be very useful. The researcher got an idea of the problems faced by the teachers in inclusive practices. The researcher had requested them to write their problems they faced while teaching in a diverse class. Two teachers wrote about their problems in Bahasa Malaysia. The problems were related to the ‘mood’, ‘difficulty in understanding’ ‘forgetfulness’ of the students with special needs and the ‘teasing’ by normal students. Following excerpt, by a general educator, is in the Malay language version:

*Mereka mempunyai mood tersendiri/guru biasa kurang faham pelajar khas /pelajar mudah lupa pelajaran yang sudah diajar/guru mengalami masalah untuk memupuk keyakinan diri, kerana kebanyakan rakan seringkali mengejek pelajar khas yang berani menjawab soalan.*

Teachers were not able to understand the students with special needs; which arises from not having a proper knowledge about disabilities and not knowing what action to take when the normal students are not respecting those with disabilities. In

short it is about 'class management'. The problems faced by the teachers could be eliminated through the Teacher Training Programme which includes five modules to enhance teacher awareness and teacher readiness.

As mentioned in the literature review, teachers in inclusive settings need levers or changes in their thinking (Ainscow, 2004). The intervention, conducted in this study on the other hand, brought changes to the general thinking patterns of those who had participated in the experiment. The participants did remark that what was introduced at the treatment benefited them in managing and teaching a class of normal as well as students with special needs. According to Watkin's (2000) views, embracing effectiveness in handling ambiguity, solving complex problems and being flexible as well as self-reflective improved the teaching and learning process. Teachers should also be able to use multiple perspectives for evaluation including self-evaluation. In performance competences, the teacher needs to plan instruction, and monitor students' learning as well as present information. The competence model by Chris Watkins, reflects what is proposed in the Teaching Training Programme in this study. In the Teacher Training Programme the competences required are: Awareness involving knowledge, and values, and Readiness involving skills and emotions which form the four main factors upon which the questionnaire used in this study was based.

This study associated with the teacher training programme, will not only support general educators but will enhance students with special needs to progress efficiently. The five modules which were built around the concepts in the conceptual framework.

### **Implications of the Study**

The findings from the study have enabled the researcher to draw significant implications. The process of teaching and learning of students with learning disabilities originates with the educator having a clear knowledge of why and how learning disabilities occur, how they cause learning disorders and learning difficulties, the approaches and learning styles of such students and teacher behaviour in a diverse classroom. The regular teacher who is equipped and well informed would be able to conduct successful lessons. Lessons would be well planned and differentiated to cater for diversity. The regular teacher would be motivating, encouraging and would know how to deal with all students in a pleasant way. Learning would take place in a non-threatening environment. Equipped with strategies to face students with unacceptable and aggressive behaviour the regular teacher would cope with the issues that would arise in a diverse classroom.

### **Practical Implications**

Several practical implications for inclusive education may be drawn from the findings of this study. The findings imply that if general educators undergo a teacher training programme such as the one proposed in this study for inclusive settings their level of proficiency in the area of knowledge, values skills and emotions will be increased. This will happen because the teachers would have grasped a clear idea of what inclusive education is and how learning disabilities cause learning disorders.

Findings concerning changes in general educators reveal that after the intervention with more guidance and input from the training sessions such as in-service courses, equivalent to the one used in this study, teaching and learning in the diverse classroom is enhanced. This is because, inclusive education is basically dependent on



the teaching and learning process in the diverse classroom and the teachers' capability in managing diversity.

The findings in this study also show that when general educators received relevant information on how to teach students with learning disabilities, they were able to generate ideas on how to cope with their students with disabilities. Once they are successful it will enhance their proficiency in class management.

Furthermore the findings showed that there were changes after the general educators had undergone the experiment. The five modules used in the experiment had helped the general educators to apply new strategies such as differentiated instruction and collaborative consultation to sustain diverse student learning.

According to the findings the general educators who were participants in the experiment, fared well in the post test as they had a better understanding of how to implement inclusiveness within the classroom during the teaching and learning process.

Moreover, the findings from the observation showed better results of how to manage a diverse class. This was visible from the results of the observation, which was done on one of the teachers who had experienced the experiment. There were improvements in the planning of the lesson for all abilities in the various visual aids he used and in the opportunities, he gave to the students with special needs during oral activities.

From the findings on 'significant changes' it can be clearly assumed that if in-service general educators were given extra assistance in managing diversity they will be able to teach diverse students successfully. The findings also revealed that aspects such as managing a diverse class can be sustained by using suggested strategies at in-service courses such as the one proposed in this study. The comments of the general

educators were that the programme was a good one as it had given new ideas to handle a class of diverse students.

The findings from the observation also confirmed that the five modules introduced through the intervention had impacted the general educators positively. This was noticeable in their evaluation of the presentations where the scores in the polygon of distribution were skewed to the right indicating a satisfactory score.

Finally, in connection with social interaction between the teachers and the students with disabilities during the process of teaching and learning, the findings implied that those teachers who had the knowledge about disabilities and how students with disabilities learn, are at an advantage to handle the interaction of a class of diverse students favourably.

### **Theoretical Implications**

The researcher used concepts from the theoretical framework and the conceptual framework of this study as the foundation, to develop the training programme. The findings reveal that these theories can be applied well in the case of teaching diverse students especially in social development and social learning. The conceptual framework revealed the structure used to impact teaching and learning in inclusive education. The theoretical framework referred to theories such as social development, social learning, ecology of human development and models on teacher training. The conceptual framework revealed the structure used to impact teaching and learning in inclusive education.

The findings support the modules used in the training, that were based on the conceptual framework which denoted the main areas of important elements most needed for inclusive educational practices. Previous studies in the literature review

referred to in the theoretical framework of this study, supported the concept of teacher education and competences needed for successful inclusive education (Ainscow, 2011). The findings support this notion.

The Teacher Training Programme proposed in this study would affect the awareness and the readiness of general educators to manage diversity successfully. The findings show that the general educators were academically equipped and prepared to cater to diversity in the most appropriate way. The positive findings of changes in general educators proved that this would happen as the general educators would understand that students with disabilities have strengths to be motivated and encouraged for academic purposes.

It can be viewed in the findings that the general educators who had undergone the treatment, mentally accepted their vocation as a dedication to improve the performances of the students with disabilities. Through the findings it may be noted that having participated in the in service course the general educators realized that they were responsible for the social development of the students with disabilities whereby they would become future citizens who would be responsible for themselves as well as for the country.

Findings also showed that general educators going through the Teacher Training Programme had gained in their knowledge, values, skills and emotions. With their level of teacher competency elevated, general educators felt satisfied as their ability to manage a diverse class had been successful. This experience of success in turn raised their confidence and helped them overcome the apprehension of facing a class where there were students with various disabilities. Their approach towards individual students with or without disabilities was uncomplicated as their awareness of the nature of the various disabilities had been enhanced at the in service training

course where the proposed Teacher Training Programme had been carried out. Furthermore the positive findings on significant changes in teachers reveal that students with disabilities would be motivated and encouraged to be academically better when general educators have grasped essential elements in dealing with diversity. Their academic performance would improve as they had been made to realize that they have to be independent individuals in the future.

With regards to the social integration of students with disabilities with the normal students the findings point out that teacher proficiency greatly helps in this sector. General educators through various activities would assist them to mingle with the students without disabilities, and this would help students with special needs to turn out to be socially adaptable. . Later on as adults these students with disabilities would find it comfortable to merge with society. Findings prove that this is possible with teacher competence elevated. Such adults could contribute towards social transformation of the nation where people with disabilities are accepted as normal residents culminating in an inclusive society. Such an inclusive society is being forecast by scholars and writers of education globally.

### **Methodological Implications**

Although the methodology used in this study had been used several times before, this is the first time it has been used for the purpose of probing a teacher training and an in service programme. The method was of an experimental nature; the quasi experimental design, which is suitable for the social sciences that entails the use of intact groups such as the secondary schools from where the study selected the control and the experimental groups. The method needed to utilise general educators from

secondary schools that were involved in inclusive education and this was appropriate for this study that was designing a teacher training programme.

The methodology facilitated the investigation of the six research questions, through the pre and post-tests. Comparisons between the control and the experimental group to examine the effects of the treatment were uncomplicated, using this method.

Additionally, the instrument used in this method, supported the analysis with ease for assessing the validity and reliability through the responses of the general educators from the selected secondary schools. The method selected further paved the way for the experiment to be completed successfully as it was conducted in a secondary school for the general educators who were currently teaching students with learning disabilities.

In this study the target population was a representative of the whole population and such a selection would support the generalization of the study to the whole population comprising general educators handling inclusion in schools in Malaysia.

The time frame for the investigation was approximately four months during school term in the chosen secondary schools, to complete the experiment. The time frame in this method also played a crucial part in the study as the general educators had ample time to try out what they had internalised during the experiment. The findings in the observation clarify this as proved by the general educator whose teaching process showed better performance after the experiment.

The quasi experimental design also supported the intent of the present study by allowing for significant changes to develop in the process of learning and teaching. It must be revealed here that the methodology chosen had greatly impacted this study, at every stage, from pilot testing to the stage where the experiment was conducted and the results procured throughout the analysis and the interpretation of the findings.

### **Limitations of the Study**

One short coming of this study is that it could not cover a programme for general educators dealing with students in the severe and profound categories of disabling conditions; the reason being the choice of mainstream admission of the students within the mild diagnostic category, in most inclusive schools in Malaysia. It is suggested that future research could delve into this area. However, 'The Individuals with Disability Education Act (IDEA, 2004)' recognizes that it is not appropriate to place all children in the regular education classroom. This study could not cover the role of school administrators and parents in inclusive education as it would need more areas of investigation which could not be coped with and the availability of time too did not permit. This is seen as very crucial for successful inclusive education because the success of inclusion does not only depend on the proficiency of general educators but a great deal on the support extended by the administrative sector. Parents too need to play a greater role in their close relationship with their children with disabilities. The researcher discovered that presently school administrators know that inclusive education is taking place in their premise but are not aware what inclusive education is, nor its benefits. Their interests are inclined towards the achievements of the normal students in the public exams as they are held accountable for it if there is a decline in the results in public exams. The principal has to clarify the reasons for the decline in the presence of a board of officers from the education department of the state. Furthermore the school principals are pressed for time to arrange for teachers to attend the numerous courses arranged by the Ministry of Education. Many of these courses are not targeted at inclusive education as it is a relatively new area and not much information and awareness of the philosophy of inclusion is available. Therefore teachers and the administration are highly satisfied with the integrated special

education programme with which they are more familiar. In fact in most secondary schools in Malaysia, the integrated special education programme is co-running with inclusive education and the special education teacher is the one responsible for including the students with disability into the mainstream. There is not much interaction between the special educator and the general educator as even the staff rooms are in different locations. This study could not verify if there was collaborative consultation between them. The difference lies in the fact that general educators have a different training from the special educators. As long as there are special education classes within the same school this difference will definitely exist. Most of the general educators feel that the students with special needs are not 'teachable' and that they are the responsibility of those trained in special education. Therefore teacher education needs to be revamped to accommodate more inclusive education. The researcher is of the idea that the teacher trainers themselves need training in disability studies a new area in the teacher education system. Ideas could be extracted from what has been planned by other countries.

The experiment was carried out in a secondary school which is named as school 1. The choice was made by a random flip of the coin selection. In this school, it was compulsory for all teachers to attend In-service Training (Latihan Dalam Perkhidmatan – LDP) courses arranged by the Ministry of Education. It was with great difficulty that the researcher obtained the principal's permission to grant time for the intervention. At one moment during the first meeting between the researcher and the principal, she suggested that the experiment be completed within a week, which proved that the principal was not supporting the benefits of research or she was too concerned about the time that would be absorbed for the intervention.

It was the practice in the school not to request teachers to be in the school on a Saturday as it was a day for them to be with their families. The researcher was allocated time after school hours to conduct the experiment. The attendance was not affected as the teachers signed the attendance register when they came for the intervention. Another factor that controlled the attendance was their interest the general educators showed in participating in the experiment.

The school provided the 'Seminar room' where desks and tables were tightly fitted and arranged for the daily activities of the school. As the projector for power point presentations was in this room the researcher had to do her experiment in this area although there were constraints such as freedom of movement and lack of space for teacher activities.

The session allocated for the experiment was after school hours. The general educators had been teaching for about seven hours. When they came for the experiment some of them were already fatigued. So to refresh them the researcher arranged for some snacks and drinks throughout the intervention and also gave them some tokens before each session began. It would have been an added support for the researcher if the principal of that school had realized that the experiment conducted in her school would help her teachers as well as the future general educators in inclusive settings.

The principal's attitude was more of a negative one, unlike that of the teachers teaching in that school, and the local education department which was very supportive of the research. The principal considered the researcher's presence as more of an interruption in the way she made arrangements for the allocation for intervention time. When the time came for the researcher to observe the general educators for the protocol observation, the principal only offered one class. The researcher could not observe more classes as the teachers were called for meetings etc. This proved that some school



principals do not support research and this attitude is greatly detrimental to education as a whole especially to inclusive education.

On the whole the researcher found the premise quiet and was favourable for the experiment to be conducted successfully on each occasion without bias of location.

### **Recommendations from the Study**

Inclusive education means the schools have to cater for the special needs students. Therefore it is recommended that the school curriculum be adapted to provide for all students: normal as well as those with special needs. It is also recommended that general educators in inclusive secondary schools in Malaysia be equipped with information on the causes of the various learning disabilities, the reasons for their occurrences and adequate information on inclusive education. Teachers may have a positive attitude towards the implementation of inclusive education but are not sure of its benefits.

The data analysis of all categories of investigation in this study present the view that professional development, enhances the general educators' capacity to handle diversity. Therefore it is advisable for school principals to take the initiative to make in-service training courses available for the teachers especially those handling diversity. The local education department could support and help in the arrangement for such courses to take place in all inclusive secondary schools and also monitor the success rate of the special needs students' progress.

The data analysis of the comparison between the control and the experimental group reveals clearly the fact that if general educators get a relevant training their proficiency in the teaching process is highly impacted. This will benefit the students with disabilities to a great extent.

This study also points out to the important involvement of the principal and school administration and parents to support inclusion. The study also exposed the general educators to experts such as the speech therapist and physiotherapist to understand the importance of their involvement and how it re-enforces student ability. Schools catering for inclusive education need to invite such experts to share knowledge and their expertise.

The aim of inclusion is to create social awareness and support social behaviour among students with special needs and this begins in the school itself. It is suggested that students with disabilities be encouraged to take part in all activities with those students without disabilities. In this way students with disabilities will learn how to behave in a social context and students without disabilities will learn how to respect those with disabilities.

It is recommended that in service courses and more training to be made available for general educators who have to teach diverse students. General educators will not be confident in handling diverse classes if they lack knowledge in the recommended segments for inclusive education to be successful..

The five modules introduced in this study played a crucial role throughout the intervention especially in influencing essential competences of general educators in their performance in a diverse classroom. As such the most significant specific recommendation would be the introduction of the five modules in the teacher training programme to all general educators in inclusive settings, in all secondary schools in Malaysia. This must be the priority of the Ministry of Education of Malaysia and the national teacher education system in Malaysia.

The inclusive school could utilize and maximize what is already available in the school when implementing the inclusive culture. For use of libraries and science

laboratories the schools could employ the use of lifts specially for those with special needs to reach the various units or use classes on the ground floor for these purposes.

Inclusive education is relatively new in Malaysia and therefore more awareness programmes should be encouraged. All schools and the local education departments are obligated to play a greater role in maintaining the significance of inclusion. This would take place only if there is an agency such as the “European Agency” to monitor inclusion in South East Asia namely in Malaysia, Indonesia and Sulawesi and it could be referred as “The South East Asia Bureau for Special Education and Inclusion.” This agency could cover the problems faced by each community in South East Asia in implementing inclusive education. The initial agency could start in Malaysia incorporating professionals from universities who are involved with special education to helm the movement. Members from the other countries could be recruited as they come forward to involve themselves. It is recommended that the Ministry of Higher Education in Malaysia should take the lead in promoting Inclusive Education in order to bring about social transformation.

Schools in Malaysia conduct meetings for parents annually. Such meetings should involve parents of students with special needs too. The inclusive school could utilize and maximize what is already available in the school for accessibility when implementing the inclusive culture. The school principal, the teachers, the administrative staff and the whole school itself need to support inclusive education by adopting an inclusive nature in all activities executed by the school with the collaboration of parents of normal as well as students with special needs. The school could also arrange for visits and outings for all students including the students with disabilities. The school needs to promote inclusive education in every way not only

just within the classroom. The general outcomes for the students with disabilities and those without need to be considered.

The prominent question to be asked is, “Have all general educators in all inclusive secondary schools in Malaysia been given adequate training to teach students with disabilities especially those with learning disabilities” The data analysis of all categories of investigation in the current study presents the view that professional development, enhances the general educators’ capacity to handle diversity. Therefore it is advisable for school principals to take the initiative to make in-service training courses available for the teachers especially those handling diversity. The local education department could support and help in the arrangement for such courses to take place in all inclusive secondary schools and also monitor the success rate of the special needs students’ progress.

The data analysis of the comparison between the control and the experimental group reveals clearly the fact that if general educators get a relevant training their proficiency in the teaching process is highly impacted. This will benefit the students with disabilities to a great extent. The use of differentiated lesson planning and instruction as suggested in the study must be enforced in inclusive practices to maximise learning. Differentiated instruction appeals to the varied learning styles and approaches of all students and the outcome will be better cognitive achievements for students with special needs.

An elevation of elements such as knowledge, skills and self – efficacy through presentations and discussions results in teacher confidence which is essential to upgrade teacher proficiency to manage diversity. Such activities besides strengthening the confidence of general educators, increases teacher student rapport.

This study also points out to the important involvement of the principal and school administration and parents to support inclusion. The study also exposed the general educators to experts such as the speech therapist and physiotherapist to understand the importance of their involvement and how it re-enforces student ability. Schools catering for inclusive education need to invite such experts to share knowledge and their expertise.

The aim of inclusion is to create social awareness and support social behaviour between students with special needs and their normal peers, and this begins in the school itself. It is suggested that students with disabilities be encouraged to take part in all activities with those students without disabilities. In this way students with disabilities will learn how to behave in a social context and students without disabilities will learn how to respect those with disabilities. Future studies could explore the area of social behaviour in students with special needs and the influence of inclusive education with regards to this behaviour. The final and a very significant recommendation for the future will be to study society's judgement on inclusive education and its impact on the public.

A key part as suggested by the European Agency (2014) is to ensure the success of inclusive education for policy makers and teacher trainers is to have regular exposure to schools because those in positions of authority spend insufficient time in schools observing, consulting or teaching. This includes both local and study visits to other districts and countries.

This study also discovered that teachers lacked familiarity with basic concepts related to diversity and to factors considered in the interventions process for diverse learners. Therefore it is recommended that this factor be taken into consideration by researchers interested in the process of teacher competency in inclusive education.

### **Recommendations for Future Research**

Future research needs to cover the various difficulties facing general educators in inclusive settings and how best to overcome them. Difficulties such as obtaining assistive technology for those in need, class environment, accessibility and acquiring suitable readers such as story books for students with special needs.

Recommendations for future researchers are based on the limitations of this study. Future research could encompass research on specific areas such as administration, parents' role, funding and policies that support inclusion. It is also recommended that secondary schools in Malaysia should cater for the use of the library by students with special needs. Majority of the schools where inclusive education has started, have not considered accessibility to the library and the use of the science laboratories which are usually situated on the second and third floors of the school where there are no lifts. This is an added burden for those students with special needs.

Future research could concentrate on collaboration with parents and the society to improve inclusive educational practices. The current study has covered inclusive education in secondary schools. Suggestions are made to develop the designing of a programme for in service training for primary school general educators in inclusive educational contexts. The five modules used in this research could be modified and other essential elements included. Teachers may have a positive attitude towards the implementation of inclusive education but are not sure of its benefits. It is recommended that future research covers the positive gains made by students in inclusive education in secondary schools in Malaysia. The benefits of inclusive education cognitively and socially should be investigated.

It is also recommended that in future, studies be done on parental views on the implementation of inclusive education in secondary schools and ways of enhancing

the benefits of inclusion in the educational arena. It is stressed that issues that develop within the introduction of inclusion, need to be surveyed and highlighted for further recommendation, on how to limit or erase such issues. The final and a very significant recommendation for the future will be to study society's assessment of inclusive education and its impact on the public.

The European Agency (2014) recommended that the introduction of policies that strengthen the rights of learners to attend mainstream education should be accompanied by appropriate provisions such as early intervention. Another recommendation was that teachers will need to take responsibility for all learners and develop knowledge and skills that will enable them to respond to diverse learner needs that they will finally encounter.

Increasing the focus on the rights of young people, as is being done in United Kingdom (Wales) and supporting their participation in decision making.

Policy makers and teacher trainers need to have a sound knowledge of inclusive education because they are responsible to promote inclusion in all areas of work for which they are responsible. The introduction of policies that strengthen the rights of learners to attend mainstream education with appropriate provisions such as early intervention. The 'twin-track' approach which teachers and those who train and employ them need to be embraced for future success in inclusive education. With reference to literature that portrays people with disabilities in the inclusive classroom, the present study encourages more novels concerning disabilities to be attempted by future researchers.

Future research could encourage successful inclusion of students with autism by finding ways of increasing knowledge among teacher candidates in research based

teaching strategies that could improve general educators' attitudes that at present seems to be negative as stated in scholarly articles.

Further research is needed to scrutinise whether 'prior experience' and exposure to disabilities determines attitudes of general teachers and to what extent it helps in the dispositional development of those involved in inclusive settings. Future researchers could delve into the process of evaluating student success, as teachers are more concerned with the results obtained in public exams.

Inclusive education in higher institutes of learning could pose a problem as Infrastructural facilities within institutions, attitudes towards persons with disabilities, transportation facilities, and lack of support services are a few areas, which hinder the entry of students with disabilities into higher education. It is recommended that future research takes interest in this sector for inclusive education to be successful in universities. Teacher experience and knowledge regarding the population of students with autism is particularly important to the cause of inclusive education. Appropriate supports, instruction and inclusion for these learners are highly dependent on teachers' knowledge and skills. Thus it is for future research to investigate on teacher proficiency in supporting special educational needs students with autism.

Inclusive education is relatively new in Malaysia and therefore more awareness programmes should be encouraged. All schools and the local education departments are obligated to play a greater role in maintaining the significance of inclusion. This would take place only if there is an agency such as the "European Agency" to monitor inclusion in South East Asia namely in Malaysia, Indonesia and Sulawesi and it could be referred as "The South East Asia Bureau for Special Education and Inclusion." This agency could cover the problems faced by each community in South East Asia in implementing inclusive education. The initial agency could start in Malaysia



incorporating professionals from universities who are involved with special education to helm the movement Members from the other countries could be recruited as they come forward to involve themselves. It is recommended that the Ministry of Higher Education in Malaysia should take the lead in promoting Inclusive Education in order to bring about social transformation.

Further research is critically needed to investigate factors that may impact on the intention of the Ministry of Education and also parents to include students with additional learning needs into regular classrooms especially those students who have been diagnosed with learning disabilities and learning difficulties.

To promote inclusive education amidst the rapid rise in enrolment of students with special needs in most secondary schools, future researchers could review debates concerning inclusive education in Malaysia and examine how inclusive education is currently being implemented and how it is viewed by the Malaysian Ministry of Education, including strategies taken by other countries.

Schools have been influenced by the concept of inclusion for decades .Inclusion has also contributed a lot to the teaching and learning process and practical experience of schools. However, it is now realized that all that has been achieved is through the efforts and determination of researchers, policy makers, agencies, administrators and educational systems in various countries. Even the analysis by certain researchers prove that satisfactory results of inclusion were achieved only after reforms and innovations had been implemented. In future, research could elaborate on what kind of reforms and innovations were enforced to bring about the changes in educational settings that led to the implementation of inclusive education in many countries. Researchers could also explore how inclusive education had influenced the schools and what kind of practical experiences the schools had acquired.

Presently social diversity is now obvious in all countries in the global arena. This can be seen in all schools where inclusive education has been implemented. Research shows that there are complex ways by which a student with disabilities has the opportunity to succeed in the world. Future research could investigate how a student with special needs overcomes all hurdles to achieve success as a student and as an adult. Finally future research could investigate what kind of class and school environment would bring about success to the implementation of inclusive education. The Inclusive Education Report (2013) on 'The Inclusion in Education: towards equality for students with disability' paper is a literature review of over 170 pieces of research. The report identifies that the greatest barrier to children with disability being included at school is discriminatory attitudes. Future research could investigate on discrimination in the Malaysian context.

Future research could investigate if supervision of teachers in inclusive settings will help'. In a study on 'Supervision as a Prevention and Support to Teachers in Inclusive Education,' Potmesilova (2013) found that in accordance to the obtained results, supervision as a special psychological support is badly needed. This is to help in the development of their attitudes, opinions and concerns while being focused on the process of inclusion.

It is recommended that general educators and parents of students who have been mainstreamed need to promote positive Individualised Education Plans. Future researchers could investigate this area. Another area to be recommended for future research is "the preparation of pre service teachers for inclusive education". This will need what is already known about 'inclusion' and a model could be drawn for this purpose. Whitworth (1999) recommends a model in her study for this purpose.

The inclusive school could utilize and maximize what is already available in the school when implementing the inclusive culture. For use of libraries and science laboratories the schools could employ the use of lifts specially for those with special needs to reach the various units or use classes on the ground floor for these purposes.

Schools in Malaysia conduct meetings for parents annually. Such meetings should involve parents of students with special needs too. The inclusive school could utilize and maximize what is already available in the school for accessibility when implementing the inclusive culture. The school principal, the teachers, the administrative staff and the whole school itself need to support inclusive education by adopting an inclusive nature in all activities executed by the school with the collaboration of parents of normal as well as students with special needs. Recommendations for future research, ends with the suggestion that further research is required to assess the impact of professional development on general educators in inclusive secondary schools in Malaysia. It is recommended that general educators and parents of students who have been mainstreamed need to promote positive Individualised Education Plans. Future researchers could investigate this area.

Another area to be recommended for future research is “the preparation of pre service teachers for inclusive education.” This will need what is already known about ‘inclusion’ and a model could be drawn for this purpose. Whitworth (1999) recommends a model in her study for this purpose.

Recommendations for future research, ends with the suggestion that further research is required to assess the impact of professional development on general educators in inclusive secondary schools in Malaysia.

## **Conclusion**

This study contributes towards the existing knowledge in the teacher preparation field and in the in-service course training department, for all educators supporting inclusive education. The positive findings from the analysis, lead to the belief that general educators in inclusive practices will find the training programme supportive and beneficial in the teaching and learning process for inclusive education.

A deficiency of an understanding of significant elements supporting inclusive education can be overcome through the use of in service training programmes such as the one suggested. In line with what is stated in the Organization for Economic Cooperation and Development (OECD) project 2010 on “Educating Teachers for Diversity”, it is emphasized that teacher educators themselves need to be well prepared for the various challenges of inclusive education.

The fundamental perception garnered throughout the process of this study is that: the success of inclusive education predominantly lies in a refined educational scheme of teacher preparation, an interaction of theory and practice, for teaching, assisting and motivating special educational needs students in all inclusive secondary schools in Malaysia. This scheme should incorporate the domain of ‘values’ which can be defined as equality, respect, trust, compassion and honesty to favour inclusive education.

The phenomenon of inclusive education had been researched extensively pertaining to all aspects: such as issues, benefits, attitudes and the baton has been passed to the present researchers to take over the research of its educational perspective which this study had ventured into and has successfully emerged with the Teacher Training Programme. It is not enough generating a programme but it will be worthy only if it is put into good use by the teacher educator domain.

Special educational needs students require competent teachers who are able to foster the needed motivation, values, confidence and support for them to become part of society. It is crucial that society views persons with disabilities as regular human beings who are part of this world and not as 'different human beings'. This notion can only be fostered at an early school going age by teachers who have imbibed such values themselves. This study is the first small step into the future general educators' practical journey towards creating social transformation through inclusive education.

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## LIST OF PUBLICATION & PAPER PRESENTATION

### List of Publications

#### Published in:

1. Journal of Business and Social Sciences 2015  
*Inclusive Education for Social Transformation*  
<http://dx.org/10.1016/jsbspro.2015.01.370>
2. Journal of Special Needs Education Vol.5 2015  
The official journal of the National Association of Special Education, Malaysia. *Significant Concepts for General Educators in Inclusive Secondary Schools in Malaysia.*
3. Journal of Special Needs Education Vol. 6 2016  
The official journal of the National Association of Special Education, Malaysia. *Effects of Teacher Training Programme (TTP) on Teacher Awareness and Readiness in Secondary School Inclusive Classrooms.*

### List of Paper Presentations

1. Paper presentation at : Global Conference in Business and Social Sciences on 15/12/2014 at Nexus, Bangsar South.  
*Inclusive Education for Social Transformation.*
2. Paper presented at Seminar Kebangsaan Majlis Dekan – Dekan Pendidikan, IPTA , 2014 at University Malaya, Faculty of Education.  
*Creating a Future Inclusive World.*
3. Paper presented at: Conference bersama Indonesia (2014) di Fakulti Pendidikan , UM, “Estee” *Diversity in its Various forms and in Autism Spectrum Disorder.*

**APPENDIX I - VARIOUS DISORDERS THAT CAUSE LEARNING  
DISABILITIES**

**Various Disorders that Cause Learning Disabilities**

## Various Disorders that Cause Learning Disabilities

Disorders	Description
1. Autism Spectrum Disorder (ASD)	It is a pervasive developmental disorder, first discovered by child psychiatrist, Leo Kanner in 1943. One of the deficits is in the social communication area. A learning disorder may occur within this spectrum. It is a complex neurodevelopmental disorder with typical symptoms that include difficulty communicating with others, the inability to form social relationships, and repetitive movements such as rocking and twirling, or even self-abusive behavior such as biting or head-banging.
2. Cerebral Palsy	This is an impairment of movement. It is a static condition as it does not worsen as the child grows (Barratt, 2008, p. 30). Learning disabilities and learning difficulties do co-occur within this impairment. There are three main types of Cerebral Palsy. They are: Spastic Cerebral Palsy. This is the most common type of Cerebral Palsy and falls into three main categories which are: Spastic Diplegia: indicating both lower limbs are involved. Spastic Hemiplegia: indicating that the whole of one side of the body is affected Spastic Quadriplegia: indicating that all four limbs are affected
3. Down Syndrome	Down Syndrome occurs because of a chromosomal disorder. There is an extra 21 <sup>st</sup> chromosome. The medical name is 'Trisomy 21'. The characteristics of people with this disorder is the typical flat face and slanting eyes varying degrees of intellectual disability, characteristic facial features and, often, heart defects and other problems.
4. Specific Learning Disabilities	The term 'Specific Learning Disabilities' (SLD) means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written" People with learning disabilities learn differently and may need a variety of instructional practices to learn effectively. This may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations
5. Slow Learners.	A "slow learner" is not a diagnostic category, it is a term people use to describe a student who has the ability to learn necessary academic skills, but at rate and depth below average same age peers.
6. Attention Deficit Hyperactivity Disorder (ADHD)	According to the Oxford Medical Dictionary (2002), Attention Deficit Hyperactivity Disorder/ADHD is a mental disorder marked by a gross level of excessive activity and an impairment of the ability to attend. Learning is impaired as a result and behavior is disruptive.