

CHAPTER 5: SUMMARY AND CONCLUSION

The main findings of the study delineated in Chapter 4 are discussed below. The implications of these findings for instruction are also considered, following which a number of suggestions for further research are proposed.

5.1 Discussion of the Main Findings

5.1.1 Inference Making Ability of the Treatment and Comparison Groups

Prior to the provision of direct instruction in inference making, the Treatment and Comparison groups did not differ significantly in their inference making ability. Similarly, a significant difference was also not detected in the inference making ability of the High Proficiency subjects of the two groups, nor was a significant difference discerned in the inference making ability of the Low Proficiency subjects of the two groups, as measured on the Pretest. The two sets of subjects were, thus, 'equivalent' in their inference making ability prior to the provision of direct instruction in inferencing.

Subsequent to the provision of direct instruction in inference making, a Posttest was administered. The between-groups *t*-test indicated that the inference making ability of the Treatment group was significantly better than that of the Comparison group.

This finding indicates that intervention in the form of direct instruction in inference making was successful in improving the inference making ability of the subjects in the Treatment group. The efficacy of explicit training in inference making is attested to by Poindexter and Prescott (1986) who assert that it is "a useful tool in helping children answer text-based reference

questions" (p.911). Their study, like the present study, demonstrated that subjects who underwent instruction in inference making recorded improved scores on the posttest.

It was also found that the inference making ability of the Low Proficiency subjects of the Treatment group was significantly better than that of their counterparts in the Comparison group after the provision of direct instruction in inference making.

The fact that the provision of direct instruction in inference making resulted in an improvement in the inference making ability of the Low Proficiency subjects from the Treatment class is consistent with the conclusion reached by Hansen & Pearson (1983). They assert that direct instruction is most effective for students who normally face difficulty in completing higher level comprehension tasks. Poor readers such as these require the teacher's clear explanation concerning the task assigned to them as well as how to go about doing it.

On the other hand, in the case of the High Proficiency subjects, those from the Treatment group obtained a mean score which was 14.16 percentage points higher than the mean score obtained by their counterparts from the Comparison group. However, a significant difference in the inference making ability of the High Proficiency subjects of the Treatment and Comparison groups, as measured on the Posttest, was not detected.

The fact that a significant difference in the performance of the two sets of High Proficiency subjects was not detected may be explained by the view held by certain experts (e.g, Hansen & Pearson, 1983) that good readers are able to discover the strategies they need in order to infer on their own. It is likely that the High Proficiency subjects from the Comparison group may have

developed their ability to infer despite the less intensive exposure to such instruction which they encountered in their English lessons. Thus, while there is a large difference, in terms of percentage points, in the inference making ability of the High Proficiency subjects of the Treatment and Comparison groups, this difference is, however, not statistically significant.

5.1.2 Performance of the High and Low Proficiency Subjects on the Pretest and Posttest

A comparison of the performance of the High and Low Proficiency subjects of the Treatment class on the Pretest with their performance on the Posttest indicated that both sets of subjects recorded substantial gains in their mean scores on the Posttest. While the High Proficiency subjects recorded a gain of 21.25 percentage points, the Low Proficiency subjects recorded a gain of 17.5 percentage points.

The results of the between-groups repeated measures ANOVA for a 2 x 2 design indicated that the main effects, Treatment Condition and Language Proficiency, were significant. Both the High, as well as the Low Proficiency, subjects thus performed significantly better on the Posttest than they did on the Pretest. This improved performance in inference making can be attributed to the Treatment, that is, the provision of direct instruction in inference making.

Additionally, the ANOVA findings indicate that the High Proficiency subjects differed significantly in their inference making ability from the Low Proficiency subjects both before, as well as after, the provision of direct instruction in inference making.

Provision of instruction in inference making resulted in a significantly improved performance by both sets of subjects on the Posttest as compared to their performance on the Pretest. However, provision of instruction in inference making was unable to eliminate the difference in the inference making ability of the two sets of subjects due to their language ability. Language Proficiency was therefore a crucial factor in determining the performance of the two sets of subjects. Instruction in inference making did not enable the Low Proficiency subjects to narrow the gap in performance between themselves and the High Proficiency subjects.

The findings above reflect those of the Carr, Dewitz and Patberg (1983) and Hanson and Pearson (1983) studies which demonstrated that below average readers benefited greatly from instruction. Additionally, the 1987 study by Dewitz, Carr and Patberg found that the above-average readers did better compared to their below-average counterparts, a finding that is also true of the present study.

5.1.3 Comparison of the Performance of the High and Low Proficiency Subjects on the Four Inference Types

The between-groups *t*-test comparing the mean scores obtained by the High and Low Proficiency subjects of the Treatment group on the four inference types on the Pretest indicated that the High Proficiency subjects had performed significantly better on two of the inference categories: the Logical Informational and Elaborative Informational. However, a significant difference was not detected between the two sets of subjects in their performance on the

two other inference categories: the Logical Explanatory and the Elaborative Explanatory (Table 4.10).

It has already been established that the High and Low Proficiency groups were significantly different from each other in their overall inference making ability as measured on the Pretest (Section 5.1.3). Scrutiny of the performance of the two sets of subjects on the four inference types indicates that this difference can be attributed to a difference in their ability to make Logical Informational and Elaborative Informational inferences. These two categories of inferences are used to determine the people, things, time, place and general context of given events (Chikalanga, 1993). The High Proficiency subjects are significantly better in making these inferences than the Low Proficiency subjects.

In contrast to this, the two sets of subjects are not significantly different in their ability to make Logical Explanatory and Elaborative Explanatory inferences. These are inferences pertaining to the motivations of characters, causes and consequences of events and actions stated in the text, and the conditions which enable events and actions to occur (Chikalanga, 1993). The Explanatory inferences are more difficult than the Informational inferences. The two sets of subjects do not differ in their ability to make the Explanatory inferences; the High Proficiency subjects are, however, significantly better than the Low Proficiency subjects in making the Informational inferences. Thus, the difference in overall inference making ability between the two groups can be traced to this difference in making the Informational inferences.

The more accomplished performance of the High Proficiency subjects in making the Informational inferences may be attributed to one or both of the following: their superior language proficiency; and, their ability to develop the

required strategies for drawing such inferences on their own, prior to the provision of direct instruction on inference making (Hansen & Pearson, 1983).

Additionally, the poor performance of the Low Proficiency subjects on the Pretest may be attributed to the fact that the teaching of reading comprehension to poor readers does not usually emphasize comprehension and critical thinking. Instead, more often than not, the focus is on decoding strategies (Irvin, 1990). This assertion by Irvin is supported by the findings of the study by Durkin (1978-79). The Durkin study reveals that more classroom time is spent giving assignments and asking questions to check comprehension than on direct comprehension instruction.

Irvin (1990) further asserts that most students do not naturally acquire the comprehension processes required when reading written text nor are they able to cope with any miscomprehension.

More importantly, Irvin (1990) also asserts that metacognitive skills are usually not fully developed in students until late adolescence. This is evident in the fact that both the High as well as the Low Proficiency subjects encounter difficulties in making the more difficult Explanatory inferences.

5.1.4 Performance of the High and Low Proficiency Subjects on the Four Inference Types on the Pretest and Posttest

On the Posttest, the between groups *t*-test indicated that the High Proficiency subjects had performed significantly better than the Low Proficiency subjects on three categories of inferences. These three categories of inferences were the Logical Explanatory, Elaborative Informational and Elaborative Explanatory categories (Table 4.11).

It has already been established that the High and Low Proficiency groups were significantly different from each other in their overall inference making ability as measured on the Pretest and Posttest (Section 5.1.3). A close examination of the performance of the two sets of subjects on the four inference types indicates that the nature of the difference between the two sets of subjects on the Pretest and Posttest is quite distinctive.

As has already been mentioned in 5.1.4, on the Pretest, the difference in overall inference making ability between the two groups could be attributed to the differential ability of the two sets of subjects in making Logical Informational and Elaborative Informational inferences.

On the Posttest, direct instruction has benefitted the Low Proficiency group in that there is now no longer a significant difference between the two sets of subjects in their ability to make Logical Informational inferences. However, it should be noted that the Logical Informational category is the easiest of the four categories of inferences. It would appear that direct instruction in inference making has, in fact, benefitted the High Proficiency subjects to a much greater degree since they are now significantly better in making three of the four categories of inferences.

Direct instruction in inference making has thus accentuated the difference in inference making ability between the High and the Low Proficiency subjects. The High Proficiency subjects appear to have benefitted more from this instruction since the number of inference categories in which they are significantly better has increased from two to three after the Treatment. Also, before instruction, the two sets of subjects were similar in their inference making ability on the more difficult of the Logical Explanatory and Elaborative Explanatory inference categories. After instruction, however,

there is a similarity in inference making ability between the two sets of subjects only in the easiest of the four inference categories – the Logical Informational category.

Next, the within-group performance of the High and Low Proficiency subjects on the Pretest and Posttest is considered.

In comparison to their performance on the Pretest, after the provision of direct instruction in inference making, the High Proficiency subjects performed better in three of the four inference types on the Posttest. The only exception was the Logical Informational category (Figure 6). The Low Proficiency subjects, on the other hand, performed better on all four categories of inference types on the Posttest (Figure 7). Provision of instruction in inference making, thus, benefited both the Low as well as the High Proficiency subjects of this study.

The gains made by the Low Proficiency subjects in all four categories of inferences seems to confirm Holmes' (1983) assertion that poor readers experience difficulty answering implicit questions even if they possess adequate prior knowledge. She contends that it is, therefore, to the benefit of these poor readers "if they are made aware of what they know and do not know so that they are attentive to contradictory and new information in the materials they read" (p. 17). The provision of direct instruction in inference making in this study appears to have succeeded in doing this.

An unexpected finding was that both the High and Low Proficiency subjects recorded their lowest score on the Logical Informational category of inferences on the Posttest. The Logical Informational category of inferences is the easiest of the four inference categories.

The reason for this small increase in the mean score of what is supposed to be the easiest of the four inferences types can only be speculated upon. It could be due to the fact that, during training, the teacher gave more emphasis to the more difficult categories of inferences: Logical Explanatory, Elaborative Informational and Elaborative Explanatory. More time was spent on modeling, explaining, and providing guided practice in these three categories of inferences compared to the time spent on the Logical Informational category. This emphasis may have helped the subjects to develop their inference making ability in these three inference categories.

In summary then, the findings indicate that the Treatment class improved in their inference making ability as compared to the Comparison class on the Posttest. Both the Low Proficiency, as well as the High Proficiency subjects performed significantly better on the Posttest as compared to their respective performances on the Pretest. However, the provision of direct instruction in inference making appears to have benefited the High Proficiency subjects more than it did the Low Proficiency subjects of the Treatment class. Whereas, on the Pretest, the High Proficiency subjects had performed significantly better on two inferences types, on the Posttest, they performed significantly better than the Low Proficiency subjects on three inference types

5.2 IMPLICATIONS FOR INSTRUCTION

The findings from the present study have demonstrated that provision of instruction in inference making, based on a direct instruction paradigm, has resulted in a significant improvement in the Treatment group's ability to infer. Additionally, the study has demonstrated that this direct instruction has significantly improved both high as well as low language proficiency readers' inference making ability.

The effectiveness of direct instruction in strategy instruction, specifically in inference making, as illustrated in this study, implies that the teaching of reading must be 'strategic' (Irvin, 1990). The emphasis in reading comprehension instruction must shift from its preoccupation with the products of reading to the processes of comprehension (Durkin, 1978-79; Simpson, 1985). Teachers need to accept that the goal of reading instruction is to help learners become independent readers. Teachers need to demonstrate to their learners how to deal with and overcome instances of miscomprehension. To ensure that teachers are really dealing with comprehension processes, they need to evaluate whether their current reading comprehension methodology encourages their students to think and learn independently (Simpson, 1985).

Additionally, embracing a view of reading as being 'strategic' requires that teachers change "their conception of the teachers' role in the teaching of reading" (Irvin, 1990:121). Irvin suggests that teachers must play a more direct and active role if they wish to help their learners become strategic and independent readers. In fact, Baumann (1984a), succinctly puts this point across in his assertion that in any strategy instruction "the teacher should teach the lesson, not the textbooks, games, or media" (p. 113). The goal of

developing strategic and independent readers would be difficult, if not impossible, to achieve if teachers merely play the role of facilitators or managers of learning. In the same vein, Pearson suggests that "educators replace the metaphor of teacher as manager with teacher as teacher" (1985:737). In other words, the teacher should teach in a reading lesson and this includes modeling, explaining, guiding and providing feedback to the learners.

What exactly is entailed in this more direct and active role that teachers are required to play is further elaborated upon by Dole, Duffy, Roehler and Pearson (1991). In their view, the teacher needs to "provide sufficient scaffolding (using examples, explicit instructions, modeling and elaboration) necessary for students to learn particular strategies" (p. 256). These exhortations by educators in the field of reading that teachers actively assist their learners to develop as effective and strategic readers clearly implies that the view of the teacher's role being limited to that of assigning tasks and assessing learners' comprehension (Durkin, 1978-79) is outmoded. Teachers need to provide reading comprehension instruction which will allow students to become proficient and flexible strategic readers, aware of, and able to use, a range of comprehension strategies.

The finding in this study that instruction in inference making strategies is beneficial to both low as well as high language proficiency subjects has implications for the role of such instruction in the classroom. This finding implies that instruction in inference making should be provided to both high as well as low proficiency students, and should be carried out in the normal classroom, as part of the reading curriculum designed for all students, a view advocated by Dewitz, Carr, and Patberg (1987). It is important that strategy

instruction in inference making not be viewed as being necessary only for deficient readers.

The need to provide explicit instruction in inferential strategies in the classroom also has implications for teacher training. Trainee teachers need to be taught how to provide effective instruction, not only in strategies which will enhance inferential processes, but in other reading processes as well. It should not be assumed that trainee teachers will be able to pick up such instructional skills on their own. Pearson and Dole, for instance, are of the view that "modeling and guided practice [are] harder for teachers to learn and will [require] extensive teacher training to implement successfully in classrooms" (1987:160). They further assert that it takes time for teachers to get used to modeling comprehension strategies as they are not used to the think aloud process.

Teacher trainers thus need to demonstrate to their trainees what is entailed in explicit strategy instruction, and how such instruction is to be implemented in the classroom. To be able to do this, teacher trainers must themselves, first, be aware of the different strategies; and, second, be capable of demonstrating and modeling these strategies confidently and effectively. It is only by doing this that teacher trainers can ensure that trainee teachers will be able to effectively implement such strategy instruction in their own classrooms with their own learners.

The focus of the present study was on the provision of direct instruction in strategies that would enhance the subjects' ability to infer. The view that the ability to infer is the key to understanding written texts is subscribed to by many reading experts (Davey and Macready, 1985; Johnston, 1983; McIntosh, 1985; and, Winne, Graham and Prock, 1993;). Chikalanga, for example, asserts that

"reading teachers should spend more of their instructional time developing inferential comprehension" (1993:931). McIntosh (1985) also suggests that teachers increase the number of inferential questions they ask and that they make a deliberate effort to limit the number of literal questions they ask. She contends that it is impossible for teachers to determine the inference making ability of their learners and their comprehension of whatever is read if they do not ask inferential questions. Chikalanga (1993) further suggests that inferential comprehension be introduced as early as possible at primary level, a suggestion which reflects the urgency generally felt by educators that this skill be developed even among very young learners.

The importance of inferential processes in reading comprehension is thus clear. Nonetheless, it is advocated that instruction in inference making should be a part of the array of reading comprehension processes in which explicit instruction should be provided. The fact that this study has focused on the provision of direct instruction in inference making should not be misconstrued to mean that the other comprehension processes are not important. Due attention must also be given to the provision of instruction in the other comprehension processes.

Among the strategies that research has shown to be demonstrably effective are the use of question-answer relationships (McKinney and Raphael, 1983), the use of textbook lookback strategies (Alexander, Hare, Haynes and Winograd, 1984), the use of mental imagery (Bales and Gambrell, 1986), and the use of graphic and contextual information (Leslie, 1980). Proficient readers are able to use different strategies for different reading goals and different text types (De Britto, Oka and Paris, 1983; Kaur, 1993). Provision of explicit

instruction in a variety of strategies is necessary to equip readers with a repertoire of strategies which will enable them to do this.

5.3 LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FURTHER RESEARCH

The findings of the present study have various limitations due to two reasons: (i) the text types used; and, (ii) the task employed in the data collection.

The texts that were used for instruction as well as for the Pretest and Posttest were narrative texts. As such, it is not possible to generalize the findings pertaining to inference making ability in the present study to other texts genres. McIntosh (1985), for instance, cautions that it cannot be assumed that because a student reads well in narrative texts, s/he will read equally well in expository texts. It is, therefore, suggested that future research investigating the effectiveness of direct instruction on inference make use of expository or descriptive texts to extend the findings of this study.

Additionally, the task employed in the data collection – the use of multiple-choice questions (MCQs) in the Pretest and the Posttest – may have effected the scores obtained. In answering MCQs, the subjects needed only to choose the correct option. It is true that in answering MCQs the subjects still needed to possess the ability to integrate textual information with their prior knowledge or to select appropriate information from their existing prior knowledge in order to draw inferences. Having done this, however, the subjects needed only to recognize the key to each item. Answering open-ended questions would make the task more demanding. The subjects would

need to draw on their prior knowledge as well as string their ideas into grammatically correct sentences. This would prove especially difficult for Low Proficiency subjects. More research is required to determine if task type significantly affects the performance of the subjects on the inferencing measure.