

Meta-Cognitive Thinking Skills of Arabic Teachers and their Basic Stage Students in Jordan: Evaluation Study

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Abstract

This study aims to recognize the meta-cognitive thinking skills of Arabic teachers and their basic stage students in Jordan. An observation form list which proved credible and consistent was used to identify these skills which consisted of three main domains distributed onto sub-skills for each domain. Thirty-six tenth grade classes of 6 Arabic teachers at 6 schools in the Irbid city, Jordan, were observed. The meta-cognitive skills used by the teachers and their students were registered. Findings show that the skills highly centered on domains of planning, monitoring, and controlling. Evaluation domain, findings reflect considerable drop though. Therefore, the study presents several suggestions and recommendations.

Key words: skills, meta-cognitive thinking, basic stage.

Introduction

Reading is a very complex mental and thoughtful process as it is related to the physical and mental activity of man. It requires minute understanding and profound thinking as well as the ability to connect the reading material parts so that the reader can infer, react, and communicate. Reading is mainly the interaction of the reader with the text and deducing what is needed to be employed such as experiences to face everyday life matters and situations (Atiyah et al. 1996).

Arab and foreign school students at different educational levels suffer from poor reading in general, and declining level at reading comprehension with its different levels and skills in specific. American Department of Education studies in 1991 found negative results about the reading of American grade eight students and their reading comprehension level. Findings showed that 74% had a primitive and poor reading level, 23% read well, and only 30% were excellent. It was also found that 25% of the whole students did not have the basic reading skills. Those findings were attributed to the traditional methods and not using advanced cognitive strategies and skills (U.S Department of Education, 1990).

The situation in Jordan is not different, since most teachers' performance is not affected by educational development plans. The teacher is the core of the teaching learning process in the classroom. Most of the questions the teacher asks are of poor thinking skills, and rarely begin with "How", "Why", or "What if" (Jerwan, 1999). Several studies were conducted which detected the poor level students had in reading comprehension as they were still very primitive and did not exceed the literal level of decoding words and vocalizing them as per students' views. They were still ignorant of the proper reading methods, purposes and to deal with a reading material (Bani Yassin, 2010; Ashour and Meqdadi, 2005; Mheidat, 2003. Sameer, 2002; and Hazaimah, 1998). A study by 'Aamaireh (2004) found that students lack the reading comprehension skills which would enable them to understand the content of a text. Nasr (2003) indicated that the method most Arabic teachers take to teach reading comprehension is traditional where the teacher has the main role whereas students are mere listeners. Here, the teacher deals with the class students as one group and focuses on explaining and memorizing which is very harmful to scientific and cognitive achievement. This present study is a try to review the traditional teaching method and employ proper teaching strategies to remedy the damage in the reading comprehension that the students suffer from, and help them acquire reading skills that would enable them to improve their thinking and cope with the huge scientific and mental development.

Improving reading and reading comprehension is the aim of this study by taking the meta-cognitive skills as a remedy method to achieve it. The possibility of doing so, i.e. employing the meta-cognitive thinking skills to improve reading comprehension clearly explains that it is the substance of the issue. The cognitive school suggests that it is possible to train students to use cognitive and meta-cognitive strategies which this study tries to impose as a true action.

The "meta-cognitive" expression is used to describe the high level thinking. It is the type of thinking that requires controlling the cognitive processes involved in learning and activities such as planning how to approach a certain study task, monitor comprehension range, and evaluate accomplishment progress. All these activities are meta-cognitive by nature. Since meta-cognition naturally plays a crucial role in successful learning, it is important to study the meta-cognitive activity as well as its growth and development to teach students apply what abilities and cognitive resources they have to well control meta-cognition (Livingston, 1997).

The meta-cognition term appeared as a result of researchers' attempts to know why students fail to employ their knowledge and use the cognitive strategies they had training on at the proper place. It was found that various students were unable to use their cognitive strategies at situations similar to the original one they had training at (Vaidya, 1999; Pressly Woloshyn, 1995).

The meta-cognitive term is related to John Flavell (Flavell, 1976). He suggests that the meta-cognition refers to the learner's cognitive processes knowledge and all that would come out of the related results such as the appropriate features of information or data. This has two parts of activities: Knowledge about cognition and Regulation of cognition (Baker & Brown, 1984a).

The knowledge of cognition is related to one's knowledge of his/her personal cognitive resources and the extent of comfort as a person learning with the teaching situation. The two phases of meta-cognition: knowledge by cognition and cognition control and regulation are amongst the crucial and decisive elements of successful learning and effective reading and studying (Brown, 1980; Baker & Brown, 1984a). Although, they are closely related, these two phases of meta-cognition have different features. Knowledge about "static" cognition can be explained and developed at a later age (Brown, 1982) as it is exposed to error. This means that the young or the adult may believe that they have, for example, correct information about reading which later appears that it is not. Cognition control and regulation is "relatively unstable" and rarely can be explained, and it is unrelated to age (Brown, 1982). Jacobs & Paris (1987) describe the three components of controlling and regulating cognition: Planning, Evaluation, and Monitoring.

Planning consists of stages and processes of setting objectives and activating proper pre-cognition and its resources as well as adjusting time and selecting appropriate strategies. Evaluation requires the person to define the level of the reading material. Studies about the degree of students' evaluation of what they have learnt from reading show that readers' guessing or assessing is of limited relation with the results of the tests that actually take place (Bruning, Schraw & Ronning, 1995). Monitoring which is the third component of controlling and organization requires the person to investigate the range of progress and select appropriate amending strategies when they appear that they do not work properly.

As for reading specifically, the ability to evaluate and monitor is called comprehension monitoring. To be more specific, comprehension monitoring means the person's realizing the type, level and degree of comprehension. Moreover, it means what he / she should do when detecting shortcomings in comprehension (Dole, Duffy, Roehler & Pearson). Readers would relatively progress, for instance, when the reading homework is easy, so they explain the meanings quickly at a moment of disorder, complexity or any other comprehension problem.

Some researchers isolated some meta-cognitive skills and stated that any program to teach thinking skills should include training on these skills besides the cognitive ones. Moreover, it should not be assumed that students may indirectly act well by studying the content. Thinking skills about thinking or meta-cognitive thinking skills of students should be developed to guide them to practice self-guided and self-initiated thinking (Jerwan, 1999).

If the aim is improving students' meta-cognitive abilities, they will need to have three types of the content knowledge besides realizing it. These types are declarative, procedural, and conditional knowledge (Peirce, 2003).

Declarative knowledge is the true information that man knows and can be informed or declared by saying or writing. Procedural knowledge, means knowing how something works, and the implementation steps of a certain process such as knowing the weight and speed of something and how calculations can be done accordingly. Conditional knowledge is exemplified in knowing the time of using a procedure, a skill, or a certain strategy and when not to use it. In other words, when a certain procedure of work succeeds, under which conditions, and why it is better than another one (Pierce, 2003).

Although older individuals use the controlled organizational activities more than the younger, they do not always use them. Young children even watch their activities, whereas old skillful readers realize their controlled organizational activities when they fail to comprehend what they read.

Meta-cognitive activities include planning, monitoring, selection, and evaluation. Brown (1980) indicated the complexities of these cognitive activities to the good reader (skillful reader) which proves that the effective reader uses the following activities:

1. Clarify the aim of reading, i.e. understand requirements of the task.
2. Know the important phases of the task.
3. Focus attention on the text main content rather than on the less valued.
4. Monitor current activities to define comprehension of what is read.
5. Embark on self-revision process and investigation to define aim achievement or not.
6. Conduct a correction procedure (amendment) if a comprehension error is noticed.
7. Overcome obstacles and mind distractions.
8. Various planned and studied activities which make reading an effective activity for collecting

information.

Meta-cognitive knowledge shows three variables: Person, Task, and Strategy. The person variable in meta-cognitive knowledge includes all what one has of beliefs about his/her nature and other people's natures as cognitive processors (parties carrying out cognitive processors) (Flavell, 1979). Task variable is defined: available information to carry out something. Strategy variable of meta-cognitive knowledge indicates the general and partial aims which readers realize and achieve while carrying out a cognitive task.

Meta-cognitive activities affect knowledge by learners realizing their strong and weak aspects and try to remedy their defects. Two of these activities are: modeling and prompting. Both of them are used as meta-cognitive supports. Modeling means open and clear training of limited meta-cognitive strategy. To ascertain the success of the model applied on the students in this sequence, they are given the facility of practicing the strategies during conducting the study and clearly comparing their performance with the model. A procedure is carried out to amend the ineffective study methods which would appear after the comparison.

Prompting is another activity which aims to support the meta-cognitive, and it means using prompts such as cards to help students generate meta-cognitive questions.

Literature Review

The researchers found 8 Arabic and English studies which have been categorized into two areas. The first is about studies applied on Arabic. It has three studies. The second is about English. It has 5 studies. These studies are approached chronically, from the recent to the earliest. After being reviewed, a conclusion is made to find how the studies would benefit the present research, and how it could be special and different from the other studies. Here is a review of these studies.

Shroof (2002) conducted a study which aimed at detecting the effect of using meta-cognitive strategies in reading comprehension by female grade ten students at the educational directorate of Al-Rusaifah, Jordan. All tenth grade female students (1462 students) made the study society. Sixty five students were randomly selected. The researcher prepared a list of the two strategies: self-monitoring and summarizing. The list had seven skills about the two areas of self-monitoring and summarizing. The researcher made program aimed at teaching the skills to the students. She also prepared a test to detect the effect of the skills on comprehension. Conducting the study and collecting the data, T test was used to compare the two groups. Findings showed that there are significant differences for the experimental group.

Smadi and Nasr (1996) conducted a study which aimed at detecting Jordanian secondary school students' awareness of the mental processes accompanying reading strategies for comprehension purposes. The effect of the two factors of gender and academic stream was investigated. Study sample consisted of 915 male and female second secondary class students at 21 secondary schools. The two researchers used an instrument which was a graded scale that measured the range of mental and performance processes awareness accompanying reading strategies. The scale consisted of 54 mental processes covering eight sub-domains related to knowledge awareness and organizing awareness.

Findings showed that the means of the sample estimations on the awareness range scale were high and almost similar. The obscurity and ambiguity clearance domain scored first amongst the eight domains, whereas the procedural cognition domain came last. Findings also showed a statistical significant difference amongst the sample individuals' means at the knowledge awareness attributed to the stream and for the scientific stream students. However, there were no significant differences amongst the sample estimations means of the awareness organizing, nor at the whole scale attributed to gender, stream or the interaction between them.

Hajjaj (2000) conducted a study which aimed at knowing the literal, deductive, and evaluative reading comprehension level of the sixth grade students. The sample consisted of 122 male and female students distributed to four classes: two experimental and two controlled. Six texts from the book "Our Arabic" were chosen. The test was multiple choice exam. The study found the following results:

- Pass percentage at the literal comprehension level was 84%, the deductive 57%, and the evaluative 65%. This indicated that the students' literal comprehension was high, whereas the deductive and the evaluative were medium.
- Students were poor at the deductive comprehension of the two skills of recognizing the sub-idea from the main, and predicting the results.
- Students were poor at the evaluative comprehension of judging the reading material to be true or false.

Studies applied on English language

Qudah, Khataibeh & Mheidat (2002) conducted a study that aimed at detecting the effect of brain storming in reading comprehension. All 1995 / 1996 grade nine students at the Kerak Educational Directorate, Jordan, were the society of the study. The total number of students was 1090 (male and female). The study sample, which was intentionally selected, consisted of four grade nine classes: Two experimental classes from Prince Al-Hassan

Secondary School, and two controlled classes from Kerak Secondary School. Two tests were prepared by the researchers. The first: Comprehension test to measure students' reading comprehension, and the Second: Limited structure test, to measure the students' linguistic capability. The analysis of covariance was used to detect the achievement differences between the controlled and experimental groups. Findings showed that there were significant differences for the experimental group which was taught by using the brain storming method.

Hoppes (2000) conducted a study aimed at identifying the effect of teaching a strategy related to the main idea and self-monitoring in comprehending the reading text. Sample was taken from grades six, seven and eight. Findings showed significant differences for the experimental group. Alhejawi (1998) investigated the effect of training at the meta-cognitive strategy and learning types of Arab students at the Yarmouk University, Jordan to improve the reading comprehension in Arabic. One hundred and fifty Arab students at the Arabic 100 course were divided into three groups. Two of which were experimental and one as a controlled group. Findings revealed significant differences for the meta-cognitive strategies. A study by Nabeel (1994) entitled "the effect of training on cognitive and meta-cognitive strategies in reading comprehension of grade nine female students in English". Fifty three students were given a cloze test to decide the reading levels (high, medium, and low), and divided into two groups: experimental and controlled. Findings showed no significant differences, or any interaction between the teaching method and students reading level. Jamal (1996) carried out a study entitled "The Effects of a Training Program According Several Strategies in Reading Comprehension of Grade Ten Female Students in English Class". Findings showed significant differences for the experimental group. The most effective strategy was the cognitive.

Literature Review Discussion

This study takes a primary idea from methods of some previous studies and their strategies and develops them to cope with its purposes. All cognitive and meta-cognitive strategies used in these studies are investigated. Therefore, the researchers prepared a meta-cognitive thinking skill observation card of the students and their teachers. Moreover, they formulated the problem of this present study represented in its two questions. The literature reviewed in this study indicates the importance of the cognitive and meta-cognitive strategies for the reading comprehension. Findings of the previous studies ascertained the importance of reading in general and reading comprehension in specific. Most Arab and foreign studies confirmed students' poor reading comprehension. The study by Hajjaj (2000), for example, found that the literal comprehension level was high, whereas deductive and evaluative comprehension level was medium. Findings of Smadi and Nasr's (1996) study showed the estimated means of the awareness range scale were high and greatly similar.

Most studies aimed at improving students' reading comprehension by using cognitive and meta-cognitive strategies. Study findings by Shroof (2002), Hoppes (2000), Alhejawi (1998), and Jamal (1996) showed the effectiveness of meta-cognitive strategies at developing the reading comprehension. Study findings by Qudah, Khtaibeh, and Mheidat (2002) detected the effectiveness of brainstorming strategy – connected to meta-cognitive strategies – at developing the reading comprehension. The study by Nabeel (1994) found no significant differences between the experimental and controlled groups, neither any interaction between the teaching method and female students' reading level. It is worth mentioning here that previous study samples were students, whilst this study's consisted of students and teachers.

Study Problem

Knowledge of reading and reading comprehension is one of the important elements that help students cope with problems they encounter in their general life, and how to solve them reasonably. It is hoped that the meta-cognitive thinking skills raise students' thinking level (Obaidat and Aljerrah, 2011; Zimmermann, 2003; Shroof, 2002).

In spite of the importance of the meta-cognitive thinking skills, this importance of the skills is not clear especially in teaching, or properly not considered. Moreover, this importance is not reflected in the methods of those in charge of teaching Arabic to our school students as it is hoped to be. Students' reading specifically in Arabic lessons is still below the required level. It is still noticed that Arabic teachers focus on literal and explanatory understanding of the reading text, not on advanced levels of reading understanding (Khdheir, Khawaldeh, Magableh, and Bani Yassin, 2012; Smadi & Nasr, 1996). If meta-cognitive thinking skills raise students' thinking nature, will those teaching them use their appropriate strategies? Do those teaching them guide their students to think about the procedures and processes they carry out by training them on the necessary skills before, during, and after the lesson? Therefore, this study tries to answer the following two questions:

- What are the meta-cognitive thinking skills that the Arabic teachers use in teaching reading at the basic grade ten classes?
- What are the meta-cognitive thinking skills that the basic grade ten students use in Arabic classes?

Importance of the Study

The importance of this study stems from the significance of developing our students different types of thinking since we specially live a time that requires thinking about what we embark on. Therefore, it is necessary to develop our students' awareness of what they carry out during their studying and dealing with the subject of reading. This study also motivates teachers and students to use specific strategies and skills when they do something. It is a theoretical background and training material for those in charge of preparation programs for preparing teachers and in-service training. It also sheds light on an important side of thinking (meta-cognitive thinking skills), especially for those preparing curriculum and text books where they directly or indirectly include some of these skills in the curricula so that teachers would develop them for the students.

Study Terms

Meta-cognitive thinking skills, skills resembled – attached – in three domains: planning includes six skills; monitoring and controlling include eight skills; and evaluation includes three skills.

Study Limitations

This study is limited to the following:

1. This study is limited to the Arabic teachers and grade ten students at the schools of Zarqa Educational Directorate, Jordan 2011 / 2012.
2. This study is limited to some grade ten reading topics.
3. The meta-cognitive thinking skills are limited to those carried out by the teacher or guide the students to apply so that they would be aware of their thinking method and use this awareness in planning, monitoring, and evaluation during the lesson:
 - Planning, identifying aims, setting proper plans, and identifying main resources before the reading process.
 - Monitoring and self-controlling; individual awareness of duties, achievements, needs and uses of appropriate strategies to implement reading.
 - Evaluation; ability of continual revision, performance analysis, and effective strategies during and after reading.

Method and Procedures

This study aims at identifying the meta-cognitive thinking skills at teaching reading and which the Arabic teachers and their grade ten students use. Identifying these skills, the following procedures are taken:

Study Site

Schools at the Zarga Educational Directorate of the Jordan Ministry of Education form the site of the study for the feasibility of observing teachers and students at these schools. Six schools are selected: three for boys and the same for girls.

Study Sample

To identify the meta-cognitive thinking skills of the teachers and students, six Arabic teachers of grade ten and their students at six schools are selected: one teacher at each participating school. Class observations are carried out about grade ten reading topics from text books. Table No. 1 below shows participants' classifications and numbers.

Table No. 1: Teachers and students participating in the study

School	Sc 1	Sc 2	Sc 3	Sc 4	Sc 5	Sc 6	Total
Class	Ten	Ten	Ten	Ten	Ten	Ten	6
Teacher	1	1	1	1	1	1	6
Students	22	20	25	20	25	35	147

The study sample is characterized with the following aspects:

- Teachers' (male and female) experience is more than five years.
- Teachers' supervision and administration reports are graded between good and excellent.
- All teachers have the BA degree in Arabic language and literature.
- The content is limited to some reading topics from grade ten textbook.
- Students repeating their classes are excluded from the study results.

Study Instrument

To identify the meta-cognitive thinking skills which the Arabic teachers and their students use, the researchers prepared a class observation card (appendix 1). They also used some instruments from the previous studies mentioned in the literature review such as, Jamal's (1996) and Shroof's (2002).

The instrument of this study registers information about: school, class, teacher, unit, and lesson. It also observes the meta-cognitive thinking skills which the teacher uses or guide students to at the reading lessons. To verify the instrument credibility, it is checked by a group of referees (university staff, educational supervisors, and school teachers) to ascertain measuring the meta-cognitive thinking skills used by the teachers and students at teaching and learning reading. Referees notes were very helpful in the instrument development. Enhancing the credibility of the research, the researchers took the following steps:

- Field visits to teachers and students at real classroom situations to observe and literally register what goes on in the class in a specially prepared card.
- Observe teachers and student' movements by machine recording.
- The researchers distributed the roles of analyzing written or recorded situations and measured the agreement degree amongst analyses, hitting 0.95

Study procedures

1. Planning stage: To collect the data; the agreement of the concerned state circles should be obtained, visiting the schools involved, meeting the Arabic teachers and school principals, and identifying the topics in the grade ten Arabic textbooks.
2. Design the study instrument.
3. Field visits. Full recording of teachers and students' practices.

Every teacher had three visits for each reading topic, i.e. 6 visits per teacher as showed in table 2 below.

Table 2: Number of teacher class observations and students interviews

School	Teacher	No. of observations	No. of students
Sc. 1	T. 1	6	5
Sc. 2	T. 2	6	5
Sc. 3	T. 3	6	5
Sc. 4	T. 4	6	5
Sc. 5	T. 5	6	5
Sc.6	T. 6	6	5

4. Observe students' acts and record the skills they use in the reading class with the observation instrument.
5. Interview some students at every school and class (see table No. 2).
6. Review data after reading what has been written and compare it with the literature review and the nature of practice ascertaining that all of what has been written explains the true meta-cognitive skills during teaching reading then analyze and ascribe them.

Study Findings

Answering the first question about identifying the meta-cognitive skills used by the Arabic teachers and teaching reading to the tenth graders, six class situations are observed for each teacher. The observations are analyzed by using the observation card described in the appendix, and showed in table 3 below.

Table 3: Meta-cognitive thinking skills used by teachers

Domain	No.	skills	frequency	%
Planning	1	Train students to focus on main ideas and concepts	12	5.5
	2	Train students to join meanings dynamically	13	6
	3	Train students how to decode symbols to know the meaning of words	15	7.3
	4	Motivate students' sentimental interaction with the reading text	25	10
	5	Explain how students realize the importance of what they read	10	4.6
	6	Motivate willingness to ask questions by using advanced thinking techniques like thinking aloud	10	7.1
Monitoring and Controlling	1	Encourage students to imagine	22	11.4
	2	Encourage students to predict	23	10.6
	3	Encourage students to organize	15	6.9
	4	Encourage students to debate	12	5.1
	5	Get students to deduct beyond debate and interpretation	11	4.5
	6	Train students to find core elements in the text and connect and add to them	17	5.5
	7	Train students how to summarize the text in their own words	9	3.5
	8	Help students to bear their learning responsibility (self – monitoring)	12	4.5
Evaluation	1	Judge findings accuracy and competence	10	3.5
	2	Evaluate used methods and strategies	8	2.5
	3	Judge success of methods in overcoming difficulties	7	2.5
Total			223	100

Answering the second question including meta-cognitive thinking skills used by grade ten students at reading, the skills have been registered through observing class cases of the teachers and record them in the observation instrument. Recorded interviews of some students from these classes were conducted, and they were requested to think loudly when they answered the questions. The researchers analyzed the interviews recordings. Analysis showed that the students used the meta-cognitive thinking skills while answering the questions with nearly the same order. It was noticed that most of the skills centre at the planning and observing domain, whilst identifying strategies or method of encountering difficulties or mistakes or writing down any idea they would think of were absent, though. Moreover, students did not show any skills within this domain regarding ascertaining steps sequence, transferring ideas, or detecting mistakes and correcting them. It is noticed that students' main concern has been to suggest fragmented solutions without clear and accurate definition of strategies.

In the evaluation domain, students' answers reflected the absence of its skills. Ascertaining accuracy and competence of the results or success of the method and appropriateness of the styles applied was not among their priorities. It was noted that their main concern was to embark on reading and answer the questions in any way and end the task without thinking about the correctness of the result or any other skills of this domain. Watching students' skills during observation or interview, it was also noticed that they do not differ from those used by their teacher. These skills were limited, though as it has been mentioned above. Moreover, it was also noticed that the use ratio at grade ten varies.

Discussion of Findings

The study aimed at knowing the meta-cognitive skills of the Jordanian basic stage Arabic teachers and their students.

As table 3 above shows, most of the skills used by grade ten teachers are within the two domains of planning and monitoring with only some skills and on the expense of other skills. It is also noticed that many skills within this domain are missing. In the planning domain, the frequency mean of skills used by grade ten teachers is 14.2. Item 4, "motivates students' emotional reaction with the reading text", scored the highest frequencies compared to items 5, "explains how a student realizes the importance of the reading text", and item 6, "motivates asking questions by using advanced thinking techniques such as thinking loudly". In the control and monitoring domain, the frequency mean of the skills used by grade ten teachers scored 15.1. Item 2, "encourages students to guess" scored the highest frequencies, whereas, item 7 "trains students how to summarize the text in their own words

scored the lowest. The small variation between the frequency means of the skills used by grade ten teachers in the two domains of planning and monitoring is attributed to the integration between these two domains.

The evaluation domain is very low with a skill frequency mean scoring 8.3. The first, "judges the accuracy and competence of results", scored the highest frequencies, whereas the third, "judges the success of methods at overcoming difficulties", scored the least as the skills used were very low. The findings show that the basic stage teachers depend only on the textbook, or they are not well acknowledged of such skills. This meets what has been stated by Madkour (2007). When they were asked about the absence of these skills in their discussions, the teachers said that they did not have training on such skills at university studies or in service.

Findings of this study agree with the findings of some other studies which investigated the strategies used by teachers. Most of the studies show that the teachers rely on the school textbook (Nabeel, 1994; Jamal, 1996).

Elaborating on the answer of the second question about meta-cognitive thinking skills used by grade ten students in reading, it is found that students reflect what their teachers give them. The skills the teacher used in every class were limited which in turn were reflected by the students. This agrees with what had been stated by Mheidat (2003). Students' nonuse of meta-cognitive skills in the two domains of monitoring and controlling and evaluation is related to the no training to use these skills and their dependence on what the teacher uses or that they have in their textbooks in the class. Studies of Hoppes (2000), Alhejawi (1998), and Jamal (1996) showed the effectiveness of training students to practice the meta-cognitive strategies to improve reading comprehension. The study by Wase' (2008) found significant differences for the experimental group means over the controlled at the meta-cognitive skill scale at the whole and sub domains of planning, monitoring, and evaluation. This is attributed to the effectiveness of the problem solving program. This agrees with the findings of Shroof (2002) stating that not training the students reflects the skills they use in the class. Smadi and Nasr (1996) also ascertained that students of different levels and streams were not exposed to direct and intended teaching of these processes in the lessons of reading. A study by Hajjaj (2000) also found that students' literal comprehension level was high where as the deductive and evaluative level was medium. There are other studies which agree with these findings such as Roman (2000), Khabti (1999), and Dennison (1994).

This would contradict what some educationists have mentioned about the possibility of indirectly teaching these mental processes during students' interaction with the lessons of reading and literature by the using of teaching methods which concentrate on students' participation (Zimmermann, 2003; OTuel & Bullard, 1993; Dole et al, 1991).

Recommendations

The researcher recommend that teacher preparation programs at the faculties of education should include courses focusing on thinking skills in general and meta-cognitive thinking skills in specific. Teacher in service training should include training teachers to use meta-cognitive skills. It is also recommended that a training program of meta-cognitive skills and knowing its effect on achievement should be set. Finally similar studies at different educational levels for other school subjects should be carried out.

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Appendix

Observation card of meta-cognitive thinking skills practice range in teaching reading

Domain	No.	Skills	Skill Availability	
			Frequency	Unavailable
Planning	1	Train students to focus on main ideas and concepts		
	2	Train students to join meanings dynamically		
	3	Train students how to decode symbols to know the meaning of words		
	4	Motivate students' sentimental interaction with the reading text		
	5	Explain how students realize the importance of what they read		
	6	Motivate willingness to ask questions by using advanced thinking techniques like thinking aloud		
Monitoring and Controlling	1	Encourage students to imagine		
	2	Encourage students to predict		
	3	Encourage students to organize		
	4	Encourage students to debate		
	5	Get students to deduct beyond debate and interpretation		
	6	Train students to find core elements in the text and connect and add to them		
	7	Train students how to summarize the text in their own words		
	8	Help students to bear their learning responsibility (self – monitoring)		
Evaluation	1	Judge findings accuracy and competence		
	2	Evaluate used methods and strategies		
	3	Judge success of methods in overcoming difficulties		
Total				

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