The Impact of Meta-Cognitive Teaching Strategy on the Improvement of the Contemplative Thinking Skills

Jamal Al-Khaldi & Mohammed Awamreh
Faculty of Arts, Educational sciences Dept
Al-Zaytounah University
Amman 11733 Jordan

Abstract

This study aims at building a meta-cognitive teaching strategy in Islamic Education courses, and measuring its effect on the improvement of contemplative thinking skills among 8th grade students in Jordan. The study sample comprised a control group which consisted of 31 students, and an experimental group that included (30) students. The questionnaire that was used to measure the contemplative thinking skills consisted of (36) articles, distributed over four topics. The results of the study indicated that there was a significant effect of the meta-cognitive teaching strategy on the improvement of contemplative thinking skills, in favor of the experimental group students, in comparison with the control group students.

Key words: meta-cognitive teaching strategy, contemplative thinking, Islamic Education.

1. Introduction and Literature Review

The global trend for thinking development has gained priority in the cotemporary educational theories. Specifically, there is an increasing interest in that kind of thinking that gets students involved in cognitive, and mental processes. Thus, it becomes crucial to trigger students to think and contemplate so as to cope with the accelerating developments in various aspects of life and to be able to face daily challenges positively.

The meta-cognitive theory proposed by Flavel in 1970s is one of the most important cognitive fields that aim at developing thinking. The meta-cognitive thinking refers to one's awareness of thinking, and the processes they use in different learning situations so that they can observe and control thinking, make knowledge construction active and easy, and use their abilities to direct, organize, plan and modify cognitive behavior (Belet & Guven 2011, Shaheen and Rayyan 2011).

The terms 'meta-cognitive thinking', 'meta knowledge', 'thinking about thinking' and 'awareness of thinking' are used as synonyms for 'meta-cognition', which, in turn, means one's awareness of their cognitive processes, mental activities, as well as learning and self-control techniques that are used in learning, understanding, planning, management and problem-solving (Ersozlu and Arslan 2009).

Vagle (2009) puts meta-cognitive thinking at the highest level of mental activity since it keeps individuals aware of themselves and others during thinking to solve problems. The objective of meta-cognitive thinking, as 'Assass (2011) and Abu Nahel (2010) see it, is observing and controlling mental activity as well as guiding it to solve problems and take the right decisions. It is noted that the previous definitions agree on the importance of the role that meta-cognitive thinking plays in developing thinking, solving problems as well as one's control over their education through thinking about thinking processes.

In order to enable students to get access to the fields of meta-cognitive thinking, learners need to follow a number of procedures and processes before, during and after learning. These processes and procedures will enable them to remember, form meaningful phrases, plan, analyze needed information and correct it. Therefore, learners will be able to solve the problems they encounter. This process is well-known as meta-knowledge strategies (Henson and Eller 1999, Seung 2002). Sahin (2011) concluded that meta-knowledge strategies are complex intellectual skills that are considered important components of smart behavior for processing information. On the one hand, these skills get better as individuals grow older, and as they get through various experiences on the other hand. Through the use of cognitive abilities effectively to face the demands of thinking, the intellectual skills control all activities directed at solving different problems.

Thus, the importance of meta-knowledge strategies lies in developing the learner's positive attitudes. Learners become aware of the information they have or need. They also become fully aware of their mental strengths and weaknesses, and their abilities to organize the knowledge they acquired. They can listen to their thinking and talk about their contemplative thinking processes surpassing the superficial or random understanding of things. All of these things enable learners to obtain self-management of knowledge, the most important part of meta-knowledge, which aims at helping learners to increase their awareness of learning through controlling and guiding their behavior.

Educators as Stenberg (1986), Jacobs and Paris (1987) pinpoint that meta-knowledge strategies include three main skills:

  a. Planning: relates to the learner's ability to choose a goal, the suitable strategies to achieve it, organize the procedures to accomplish it, realize the possible obstacles and errors and how to deal with them, and predict the potential or desired consequences.
  b. Observing and controlling: can be achieved by keeping a pivotal objective, maintaining the order of the mental or performance processes, scheduling the fulfillment of the secondary goals, timing the movement to the next step or process, discovering the obstacles and errors, recognizing the ways to overcome these obstacles and errors, and modifying behavior if that is necessary to eliminate them.
  c. Evaluating: can be applied through evaluating the extent to which the goal was achieved, judging the precision and adequacy of the results, evaluating the used techniques, evaluating how the issues and difficulties were handled, and finally evaluating the effectiveness of the plan and its fulfillment.

Contemplative thinking is one of the thinking types that are closely related to meta-knowledge strategies. John Dewey considers it as a profound conscious thinking that aims at improving performance and interpreting events through the contemplation about the situation and making the necessary plans to understand it. That helps arrive at making right decisions, solving problems and connecting learning to real world.(Moallen1997, Phan 2007, McNaught 2010). Thus, meta-knowledge strategies are a method of teaching that allows learners to use their own skills so as to develop independent learning, which, in turn, enables them to assume responsibility for learning process as well as controlling it. This will connect right contemplative thinking that is based on high cognitive skills with mental self-organization before, during and after learning.

Contemplative thinking interacts with most thinking patterns. Moreover, every step of critical thinking, problem-solving method and deduction- as other thinking patterns- generally include contemplative thinking that cannot be dispensed with since it helps recognize different aspects of the situation and disambiguate it. Therefore, it becomes easier to come up with scientific conclusions that help find reasonable solutions for the problems (Norton 1997, Kuiper & Pesut 2004, Hong & Choi 2011). Based on what we have presented so far, contemplative thinking can, then be defined as mental process that individuals take during encountering a particular problem or addressing a certain subject. Contemplative thinking, thus, enables them to set hypotheses, present reasonable interpretations and suggest solutions so that they can recognize the consequences of the problem and analyze its components which, in turn, will lead to solving that problem or situation (McNaught 2010). Dewey put three essential keys to prepare individuals for contemplation: open mind, self-motivation, and responsibility (Xie, Ke, & Sharman 2008). Schon (1987) found out that contemplative thinking passes through three stages: Reflection for action, reflection in action, and reflection on action.

In light of what we have presented so far, it is likely to develop students' ability to think in general, and to contemplatively think in particular by using strategies of meta-knowledge and by training them how to think about thinking taking into consideration that the Islamic education has sought to establish young people's positive thinking and make them well-prepared to deal with the challenges of their time effectively and efficiently. Therefore, many verses in the scripture (Quran) referred to contemplation and the use of the mind and not to feel satisfied with superficial thinking. With the interest of the Islamic Education with contemplation, the good teacher's role becomes crucial. S/he creates opportunities for their students and leaves periods of silence so that student can contemplate answers and alternative answers without being reckless, random or intimidated. The teacher can also give students questions that challenge their thinking but, at the same time, develop their ability to think, analyze and recognize what is happening, think about it, ask questions, clarify different aspects of the problem, use all senses, listen to others, have mutual trust, and be persistent when facing a vague problem.

These all will create interactive thinking skills that form a learning course where students move from one thinking skill to another smoothly.

2. The Study

2.1 Study Objectives

The objectives of this study are as follow:

1. Recognize some of the meta-knowledge strategies that can be used in teaching Islamic Education through an educational program that combines the meta-knowledge strategies with the topics of the Islamic Education following clear and flexible steps.
2. Develop contemplative thinking skills of the targeted subjects.
3. Recognize the effects of using meta-knowledge strategies on contemplative thinking.

2.2 Study Issue

In response to meeting the needs of the educational field, this study aims at building learning strategies that provide students with different thinking strategies. This becomes more urgent with the constant increase of global calls for training students to think about thinking and incorporating different thinking skills in the syllabi. The researchers, therefore, found it necessary to design a learning program that is based on meta-knowledge strategies and that measures the efficiency of such strategies in developing contemplative thinking.

2.3 Importance of study

The importance of the study lies in attracting the attention of the teachers, supervisors and authors of the Islamic Education courses to the value of teaching students how to think. This can be accomplished by incorporating the thinking skills in the syllabi in terms of planning, performance and evaluation. The study also provides an educational program that combines meta-knowledge thinking and contemplative thinking skills for teaching the topics of the Islamic Education in accordance with clear and flexible steps. Finally, it is hoped that the study will achieve harmony and integration between the Quran's calls for thinking, contemplation, as well as carrying that out practically through the use of the syllabi that are closely related to Quran, and coping with national and international trends that call for promoting leaning which is built on thinking.

2.4 Study limitations

The subjects of the study were eighth grade students who are enrolled for the academic year 2011/2012 in one of the governmental schools that are run by the Ministry of Education in Jordan. The program was confined to the lessons of the Quran unit, Islamic Fiqh (jurisprudence) unit, and the prophet's seera (biography), that were included in the first semester of the Islamic Education textbook.

2.5 Terminology

The terms below have the following definitions

Meta-knowledge strategies: a number of planned procedures that learners take before learning, during it, and after it while depending on planning, observing, and controlling skills that the researchers have already designed.

Contemplative thinking skills: a mental activity in which learners contemplate a certain situation and analyze its components in order to come to conclusions and evaluate them in light of the preset plans for the Islamic Education lessons. A questionnaire that included 36 sub-skills divided into four major fields has been used to measure this skill.

The educational program: is a set of activities and techniques that the researchers have designed in accordance with the combination model that brings together meta-knowledge strategies such as modeling, self-questioning, thinking loudly and summarizing.

3. Methodology

3.1 subjects

All the subjects who participated in this study were students in Abu Huraira school, one of the schools which are run by Amman First Directorate. Two 8th grade sections were chosen randomly from 4 sections. a 31-student control group were chosen randomly as well. The experimental group consisted of 30 subjects.

3.2 Methodology

In this study, the semi-experimental approach was used because of its applicability to our case. The aim was to investigate the effect of using meta-knowledge learning strategies that are based on planning, observation and controlling on developing contemplative thinking skills. The experimental design was as follows:

Experimental group O_1 X O_2
Control group O_1 O_2

where O_1 represents the measuring of the pre-test of the contemplative thinking skills, and O_2 represents the measuring of the post-test of the contemplative thinking skills. X stands for the experimental treatment, which is the meta-knowledge learning method.

The study was carried out according to the following steps:

1. Analysis of the targeted learning units which consisted of a Holy Quran unit, a unit about the prophet's biography, and an Islamic Fiqh unit. All these units were chosen from the 8th grade book. The aim of choosing these units was to identify the most important experiences that the students will go through and expect the productions that they may achieve.
2. Preparing study plans for the targeted units in accordance with the meta-knowledge learning strategies.
3. Stating the actual teaching procedures and setting them for judgment.
4. Designing a questionnaire for measuring meta-knowledge thinking skills, and setting it for judgment.
5. Meeting with the 8th grade Islamic Education teacher, who is expert, competent and holds an MA degree. The aim of the meeting was to familiarize him with the study goals as well as train him to apply the meta-knowledge learning strategies. During the meetings, the researchers answered the teacher's questions, and kept in touch with him all through the process of conducting the program.
6. Applying the pre- and post-tests on the experimental and control groups.
7. Filling out the students' responses and analyzing them statistically.

3.3 Study method

In order to achieve the goals of the study, the researchers used the educational program: a number of orderly and organized activities and educational experiences that the researchers selected according to meta-knowledge learning strategies so as to develop contemplative thinking skills. The program consisted of 17 classes that were held twice a week. Each class consisted of a logical set of activities and meta-knowledge experiences. Based on what have been found in the literature, a training module was designed to develop the students' contemplative thinking skills by using meta-knowledge learning strategies that were set specifically for the 8th grade lessons of Quran, prophet's biography and Islamic Fiqh (jurisprudence). After analyzing the above-mentioned units and lessons and anticipating the expected outcomes, the lessons were redesigned according to the meta-knowledge strategies through a set of homework assignments, materials and tools that help students to understand school subjects in a better and faster way. The educational program consisted of four ordered steps that represent modeling: self-questioning, talking about thinking, thinking loudly, and summarizing a thinking process. Finally, the program has been put in effect after checking its integrity, applicability and measurability of the contemplative thinking skills.

4. Results

The means and standard deviations were calculated for the pre- and post-tests for both of the control and experimental groups. Table (1) below summarizes the main results:

According to table (1) above, the mean average of the experimental group for the post-test was 4.25, which is obviously higher than that of the control group (1.10). In order to see whether this difference was significant or not (where $\alpha \leq 0.05$), an ANOVA was used for each skill:

Table (1): Means an standard deviations (ST) for the pre- and post-tests of the control and experimental groups.

Skill	Group	Pre-test		Post-test	
		Mean	ST	Mean	ST
Producing contemplative knowledge skill	control	1.06	0.09	1.09	0.16
	experimental	1.06	0.10	4.07	0.41
Contemplative dialogue to detect errors	control	1.03	0.06	1.13	0.21
	experimental	1.04	0.09	4.30	0.54
Interpretation of information skill	control	1.03	0.07	1.07	0.16
	experimental	1.03	0.05	4.40	0.40
Arriving at conclusions and suggesting solutions skill	control	1.12	0.13	1.13	0.13
	experimental	1.13	0.20	4.25	0.30
Overall skills	control	1.06	0.05	1.10	0.12
	experimental	1.06	0.06	4.25	0.25

Table (2): ANOVA results of the two groups for the post-test for 'producing contemplative thinking' skill

skill	Difference source	Square counts	Degree of freedom (df)	Average of square counts	F-value	p-value
Producing contemplative thinking	Pre-test	0.108	1	0.108	1.113	0.296
	group	135.515	1	135.515	1402.591	0.000
	error	5.604	58	0.097		
	total	141.160	60			

Table (2) shows that there is a significant difference for the effect of using meta-knowledge learning strategies on developing 'producing contemplative thinking' skill for the experimental group in comparison with the performance of the control group. This indicates that there is a positive correlation between meta-knowledge learning strategies and students' having contemplative thinking production skill such as being aware of learning tasks, asking open and profound questions, thinking loudly, and coping with vagueness.

Table (3): ANOVA results of the two groups for the post-test for 'contemplative dialogu'e skill

skill	Difference source	Square counts	df	Average of sq counts	F-value	p-value
contemplative dialogue	Pre-test	0.794	1	0.794	5.200	0.026
	group	154.055	1	154.055	1009.390	0.000
	error	8.852	58	0.153		
	total	162.944	60			

As shown in the table above, there is a significant difference for the effect of using meta-knowledge learning strategies on developing 'contemplative dialogue' skill for the experimental group in comparison with the performance of the control group. This indicates that there is an effective increase in developing the students' ability to practice this skill such as formulating hypotheses, finding alternatives solutions to problems, being interested in the details, fixing mistaken opinions, and building constructive criticism.

Table (4): ANOVA results of the two groups for the post-test for 'interpretation of info' skill

skill	Difference source	Square counts	df	Average of sq counts	F-value	p-value
Interpretation of information	Pre-test	0.184	1	0.184	2.066	0.156
	group	169.258	1	169.258	1896.360	0.000
	error	5.178	58	0.089		
	total	174.992	60			

It is clear in table (4) that there is a significant difference for the use of meta-knowledge learning strategies on developing the 'interpretation of information' skill for the experimental group in comparison with the control group. This can be referred to the effectiveness of the strategies used for developing the students ability to practice the sub-skills of this skill such as the ability to summarize ideas, reading between the lines, giving Islamic justifications, and analyzing the most important factor.

Table (5): ANOVA results of the two groups for the post-test for 'Coming to conclusion and suggesting solutions' skill

skill	Difference source	Square counts	df	Average of sq counts	F-value	p-value
Coming to conclusion and suggesting solutions	Pre-test	0.075	1	0.075	1.456	0.233
	group	148.436	1	148.436	2895.891	0.000
	error	2.973	58			
	total	151.714	60			

It is clear in table (5) that there is a significant difference for the use of meta-knowledge learning strategies on developing the 'Coming to conclusion and suggesting solutions' skill for the experimental group in comparison with the control group. This can be referred to an effective increase of the students ability to practice the sub-skills of this skill such as organizing and ordering ideas according to their importance, analyzing the relationship between Islamic concepts, providing evidence in case of accepting or rejecting deductions, producing the maximum number of solutions, and the ability to imagine and predict.

Table (6): ANOVA results of the two groups for the post-test for the study's overall skills

skill	Difference source	Square counts	df	Average of sq counts	F-value	p-value
Overall skills	Pre-test	0.083	1	0.083	2.219	0.142
	group	151.064	1	151.064	4054.204	0.000
		2.161	58	0.037		
		153.759	60			

After disregarding the pre-test differences between the two groups, the ANOVA results of the two groups' performance for the pot-test show that there was a significant difference (at a p-value α ≤ 0.05) between the performance of the experiment and control group for the pos-test. The F-value was (4054.204), which is higher than (F) critical value at df (1, 58) and p-value (α ≤ 0.05). This is, in fact, what the calculations of the average means in table (1) have indicated.

The previous results confirm the effectiveness of using meta-knowledge strategies in developing the students' contemplative thinking skills. This is congruent with related studies (Caliskan & Sunbul 2012, Tashman et al 2011, Arslan & Ersozlu 2009, Rabab'ah 2009). The findings of these studies indicated that there is a positive connection between meta-knowledge learning strategies and contemplative thinking skills. The researchers refer that to the role that meta-knowledge learning strategies play in learning since these strategies take students as an active pivotal factor armed with a wide range of thinking and mental activity, as well as ability to address various problems objectively and orderly. They will, thus, feel that learning is fun, enjoying, and comfortable, and consequently, they will assume responsibility, have self control and self-discipline. As a result, adopting meta-knowledge strategies become a viable choice because of its positive effect on developing thinking skills generally and contemplative thinking in particular.

5. Recommendations and Future Research

5.1 Recommendations

At the end of this research, a number of recommendations are in order here:

1. Holding training courses for the Islamic Education teachers that address and utilize modern teaching methods and aim at developing the use of meta-knowledge learning skills.
2. Enrich studying curricula with a number of experiences and activities that develop students' contemplative thinking skills.

5.2 Further research

In light of the findings of this study, further research in this field is needed:

1. Conducting a study to recognize the factors that affect the development of meta-knowledge skills.
2. Conducting an analyzing study for the Jordanian curricula to find out their contribution to the development of meta-knowledge skills.
3. Conducting a study that aims at analyzing the content of Islamic Education courses in Jordan so as to investigate the availability of contemplative thinking skills.

References

Arabic references

Abu samak, Ahmed Abdel-Aziz (2010). *?athar at-tadrees bil-kharaa?et al-mafaahimiyya wa-s-sard al-qasasi al-matbou' bi-l-?as?ilati as-saaberati fii taHseel al-seerati an-nabawiyya wa tanmiyati mahaaraat at-tafkeer at-ta?Ammuli lada Taalibaati l-marHalati l-?asaasiyyati fii dawlati l-?imaarati --'rabiyyati l-muttaHida.* PhD, Amman Arab University.

Abu-NaHil, Jamal Abdel_nassir (2010). *Mahaarat t-tafkeer t-ta?Ammuli fii muHtawa minhaaji t-tarbiyati l-?islaamiyyati li-S-Saffi l-'aasheri l-?asaasi wa mada ktisaabi T-Talabati laha.* MA, Islamic University, Gaza.

Rabaab'a, Mohammad (2009). *?athar staatijiyyatai t-tadreesi t-tashaaruliy wa-l-Hiwaar wa-T-Tareeqati l-?i'tiyaadiyyati fi-t-ttaHseeli wa tanmiyati t-tafkeeri t-ta?ammuli fii mabHathi t-tarbiyati l-?islaamiyati lada Talabati l-marHalati th-thaanawiyyati fi-l-rdun.* PhD, Amman Arab University

Shaaheen, Mohaamed and Adel Rayyan (2011). Darajati mtilaaki Talabati th-thaanawiyyati l-'aamma li-mahaarat maa waraa?i l-ma'rifa. *Majalat Jaami'at l-Khalil li-l-buHuth.* 6.1 195-223.

Tashman et al (2012). ?athau stixdaami staatijiyyatai ath-thakaa?aati l-muta'addidati wa-xaraa?eti l-mafaahimiyyati fi tanmiyati t-tafkeeri t-ta?ammuli fii mabHathi jughraafia l-waTan l-'arabi lada Talabati mu'allimi Saff fii jami'ati l-isra'. *Majalat l-jaami'ti l-?islaamiyyati li-d-diraasati ti-tarbawiyyati wa-n-nafsiyyati.* 20.1 243-281.

'ssas, FatHiyya Ma'touq (2011). Madastixdaami mahaarat maa waraa? l-ma'rifati fi-l-baHath t-tarbawiyy min xilaali diraasati l-muqarrarti l-?ulya fii kulliyyati t-tarbiyati li-l-banaat, *Majalat l-'Olum t-tarbawiyyati wa-n-nafsiyya.* Bahrain Univerity. 12.2 14-45.

English references

Belet, Dilek; Guven, Meral (2011). " Meta-cognitive strategy usage and epistemological beliefs of primary school teacher trainees", *Educational Sciences: Theory & Practice.* 11:1 51-57.

Caliskan, Muhittin; Sunbul, Ali (2011)." The effects of learning strategies instruction on meta- cognitive knowledge, using meta-cognitive skills and academic achievement, primary education sixth grade Turkish course sample". *Educational Sciences: Theory & Practice.* 11:1 148-153.

Ersozlu, Zehra; Arslan, Mehmet (2009)." The effect of developing reflective thinking on meta-cognitional awareness at primary education level in Turkey", *Reflective Practice.* 10:5 683-695.

Henson, K; Eller, B(1999). *Educational psychology for Effective Teaching*, second edition, Boston, London, New York, Wadsworth publishing company.

Hong, Yi-Chun; Choi, Ikseon (2011). "Three dimensions of reflective thinking in solving design problems: a conceptual model", *Educational Technology Research & Development.* 59:5 687-710.

Jacobs, J; Paris, S(1987). "Children's meta-cognition about reading, Issues in definition, measurement and instruction", *Educational Psychologist.* 22:3-4 255–278.

Kuiper, Ruth; Pesut, Daniel (2004). "Issues and innovations in nursing education promoting cognitive and meta-cognitive reflective reasoning skills in nursing practice, self-regulated learning theory", *Journal of Advanced Nursing.* 45:4 381-391.

Moallem, Mahnaz (1997). "The continue and nature of increase reflective teaching: A Case of an expert middle school science teacher ", *Clearing House.* 70:3 143-157.

Norton, Janet (1997). "Locus of control and reflective thinking in preserves teachers", *Education, Academic premier.* 117:3 401-412.

Phan, Huy (2007). An examination of reflective thinking, learning approaches, and self-efficacy beliefs at the University of the South Pacific: a path analysis approach, *Educational Psychology.* 27:6 789-806.

Sahin, Abdullah (2011). "Evaluating pre-service Turkish teachers' reflective thinking tendencies according to various variables". *Electronic Journal of Social Sciences.* 10:37 108-119.

Schon, Donald (1987). *The* reflective *practitioner, how professional think in action.* London: Temple Smith.

Seung, Yoeun (2002). "Empowering early childhood teacher to keep teaching fresh as lifelong learning", *Education, Academic premier.* 123:2 334-339.

Sternberg, Robert (1986). *Intelligence applied: Understanding and increasing your intellectual skills*, New York: Harcourt, Brace Jovanovich.

Vagle, Mark(2009). "Locating and exploring teacher perception in the reflective thinking process", *Teachers and Teaching*. 15:5 579-599.

Xie, Ying; Ke, Fengfeng; Sharma, Priya (2008). "The effect of peer feedback for blogging on college students' reflective learning processes", *Internet & Higher Education*. 11:1 18-25.

McNaught, Keith (2010). "Reflective writing in mathematics education programmes", *Reflective Practice*. 11:3 369-379.

Appendix: Contemplative thinking skills: distributed according to skill type

SKILL	No.	SUB-SKILL OR INDICATOR	PROFICIENCY				
			1	2	3	4	5
FIRST FIELD							
Producing contemplative knowledge	1	I am fully aware of my task					
	2	I ask open and profound questions					
	3	I describe Islamic concepts accurately					
	4	I connect concepts efficiently					
	5	I contemplate my actions and thinking					
	6	I am able to learn from my mistakes.					
	7	I think loudly					
	8	I realize differences of viewpoints					
	9	I am able to put up with vagueness					
SECOND FIELD							
Contemplative dialogue to detect errors	10	I can find shortcomings and vagueness in different subjects					
	11	I set a series of hypotheses to solve problems					
	12	I am fully able to formulate hypotheses and alternatives					
	13	I follow a logical order when presenting ideas					
	14	I am interested in details, and never accept simplified ideas					
	15	I can fix wrong ideas					
	16	I can investigate and judge the accuracy of ideas under question					
	17	I listens to my classmates to know their opinions and argue for/against their ideas					
	18	I believe in thinking diversity and constructive criticism					
THIRD FIELD							
Interpretation of information	19	I give information that helps find out facts					
	20	I can summarize ideas					
	21	I give convincing explanations for various situations and fact					
	22	I can read between the lines					
	23	I can give Islamic justifications					
	24	I clarify thought relatedness between subjects					
	25	I establish a good relationship between causes and effects					
	26	I present logical and convincing solutions, as well as novel relevant ideas					
	27	I can specify the most important factors					
THE FOURTH FIELD							
Arriving at conclusions and suggesting solutions	28	I order ideas according to importance					
	29	I use previous experiences to come to conclusions					
	30	I analyze the relationships between different Islamic concepts					
	31	I provide evidence when accepting or refusing deductions					
	32	I concentrate on the real reasons behind the problem					
	33	I can imagine, predict and evaluate					
	34	I slow down before taking decisions					
	35	I can produce the maximum number of ideas and solutions					
	36	I can arrive at clear conclusions					