

THE META-COGNITION SKILLS ON IMPROVING THE INSTRUCTIONAL AFFAIRS IN MANAGERS VIEW

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Abstract

This research has investigated the effect of meta- cognition skills on improving the instructional affairs in the view of high schools managers. The research method is descriptive- survey. The size of selected samples are 97 person (55 male and 42 female). The means of collecting data is a researcher- made question air in closed 25 closed answered questions about seven variables of research, analyzing duties, self- stimulation, self- controlling, self- observing, self- judgment, reaction to themselves and the different view of male and female managers about the effect of Meta cognition skills. For determining internal and external validity was used experts views. It was used Cronbach's alpha coefficient for specifying the questionnaire reliability. It was used inferential and descriptive statistics for analyzing data. Findings show that meta- cognition skills recognition effect on improving instructional affairs. Analyzing duties, self- stimulation and self- controlling have respectively the most effect on improving instructional affairs. The effect of meta-cognition skills in the view of male and female managers is different.

Key words: meta- cognition, improving instructional affairs, managers

1. Introduction

In Information age, education is considered as a complex beyond the discipline, culture and civilization and there is a hope that the result of 21st century education is more than only a moral nurture (Maktabi & Hanifi, 2005: 8). At the present time, education system is not to transfer the knowledge and the school role has been differed from the past. Education deals with the man/ human being as a whole instead of subjects and pays attention to all dimensions of life.

Teachers and principals in the new system of education play a role as an assistant in human development rather than an information transmitter, he or she is a questioner, rational and active student rather than a receptive and passive listener. Today, the Scientific ability of teacher has been gradually vanished by achieving Internet and various ways to get information and naturally, being influenced by global and non- native culture. Thus, education efficiency is forced to choose the new function coordinated to the time spirit.

Selection and achievement to different dimensions such as definitions, objects, structure, content, management and human resources in our country also forms the changes and attitudes resulted from the present time developments, forming new needs and expectations

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from education (Ashiaeyan, 2010: 10). Today is a very complex world with different features and expectations rather the past. Education is on a different way to prepare the people to face the challenges of this very complex era which needs reconstruction and renovation. Education can nurture a human being coordinating to the expectations and features of new world that increases the judgment capacity, critical thought, meaningful literacy, assistance and service fields in people (Ghorchian, 2003: 67). Nurture young people and adolescents results in creating healthy, dynamic and developed society who have meta-cognition features (self-boot, self-observing, self- controlling, and self-judgment) and have their movements and development rule in the life as independent people. Creating the meta-cognition capacities in young people and adolescents needs the principals who act with meta-cognitive process and be a model to develop the above-mentioned capacities in teachers and students (Jafari & Maktabi, 2008: 38). On the other hand, efficient management needs the capacities for the management on her/ him self and on the environment. In fact, her/ his self management is the pre need and introductions for management on environment and others. As Webster (2002) said, managers require the knowledge and meta-cognitive abilities for better self- management (Cooper, 2004: 48). Meta-cognition skills cause the increase of self-esteem and self-efficacy of the person by influencing on self- confidence and improve her/ his general skills (Kleitman & Stankov, 2007: 170). The, meta-cognitive skills is one of the necessary skills that school principals should have. And if they show and use these skills, they can provide efficient students and school environment can become an efficient and dynamic environment. In fact, training is one of the most important issues and programs in each organization and strengthens human force and warrants the future successes. Improvement of training affairs creates deeper insight and vision of knowledge and higher cognition and more ability and skill of employed people in the organization to perform the certain duties and finally results in achieving the organizational objects with more and better efficiency and efficacy (Cheraghi, 2008: 62). So it is necessary to train this kind of knowledge and skills to the people who are belonged to education system, particularly principals. Because being aware of any kind of knowledge for principals, teachers and school teaching group is certain, It changes their functions, so should develop thought and ideas and provide conditions where thinking skills are developed instead of transmission and accumulation scientific information. In fact, in education systems of developed countries, the attempt is planning curriculums and teaching methods and also compiling of learning activities is formed based on meta-cognition theory. The usage of meta-cognition theory in teaching has been promoted in Iran for a decade (Jafari and Maktabi, 2008: 45).

Therefore, according to what has been said, It can be concluded that today, one of the most important objects in the country's education and discipline system, for all students in different grades, is to create the good opportunity to develop the thought and self- cognition using new and modern education methods.

Not using the new models and systems of management in managing the great affairs of country: Lack of evaluation system of executive organization' function and following the goals achievement, expected plans and result, irrational time of being the principal in executive systems, lack of laws, standard orientation and meritocracy in selecting and promoting the workers and dismiss, appointment and change of principal are most important challenges in administrative and executive system in management section (Bahramian, 1999: 19). Meta-cognition skills include consciously control of learning, strategy, programming and adopting, controlling and considering the learning process, errors re-correction, analyzing the impact of learning strategies and the change of behaviors and methods, when they are necessary (Ridley et al, 1992: 293).

The meta-cognition strategic knowledge includes steps which are considered to adjust the developments in activities following as programming, forecasting, evaluation and supervision (Brown, 1982: 177).

Cross & Paris divided meta-cognition knowledge into three groups and defined them as:

1. Declarative knowledge: knowing the factors which influence on human cognition.
2. Procedural knowledge: understanding and using the skills or activities procedure.
3. Conditional: knowing the time when the special strategies are necessary and why these strategies influence on human cognition (Kharrazi, 2005: 44).
4. Niazazari suggested four-step meta-cognition performance, as:
5. Cognitive evaluation and knowing the prior-knowledge, evaluating the mental temperature of individual.
6. Programming, voluntary attention to the details and creating the commitment, motivation of informed attempt, determining the necessary information and materials for activity, determining the methods of using the resources, and procedures and determining goal selection reason and its procedures.
7. Self-regulatory, self-boot skills, see-Gray and self-judgment.
8. Continuous supervision and review, supervision on the function based on the objects and reviewing the processes and activities.

Various researches have been done on meta-cognitive areas and skills in different subjects which some of them are:

Findings obtained from Ashiaeeiyan investigation (2010), as "studying the main components of management based on meta-cognition with Damavand and Rudehen schools training manager's performance" indicated that the management based on meta-cognition in six main component is named and divided as "analyzing the duties", "self-motivation", "self-control", "self-observe", "self-judgment" and "reaction to himself" that this component has a positive impact on managers performance. Also, this investigation indicates that there is no meaningful difference between the average rates of management used based on meta-cognition and the different levels of management background.

Maktabi investigation's findings (2009), as "illustrating the conceptual framework of academic management based on dimensions and components of meta-cognition for elementary schools' principals" indicated that academic management based on meta-cognition in elementary schools, named with main dimension of forecasting, performance, meditation, self-efficacy and management on her/himself, has been studied and its coordination has been proved by the authorities and search route analyzing test.

Ghorchian research's findings (1991) in workshops and seminars as "meta-cognition strategies" have new approach in compiling and learning academic management strategies for school principals in different educational levels, accompanied with meta-cognition training and the components of its strategies, show their application in management world. Studies show that meta-cognition and meta-cognitive attitude have not still entered into different levels of education and academic management of educational levels.

Finding obtained from Valizadeh's research (2001) as "the assessing the psychology of impact of strategies meta-cognitive training on reading and comprehending of 1st grade male students in Tabriz high school" showed the main issue was that if strategies meta-cognitive training will increase the comprehension, reading and learning speed. Also, there is a positive relationship between meta-cognitive knowledge and educational progress, meta-cognitive knowledge and learning speed, comprehension and educational progress. Meta-cognitive strategic training has a positive and meaningful impact on comprehending in <001 level and on reading in >05 level, but has no meaningful impact on learning speed. Also, findings show that there was a positive and meaningful relationship between meta-cognitive knowledge and comprehension of meta-cognitive knowledge and reading of educational

progress and meta-cognitive knowledge of comprehension and educational progress. But, there is no meaningful relationship between meta-cognitive knowledge and learning speed. Chegeni's research findings (2007) as "assessing the relationships between creativity and meta-cognition in 16- year female students of high school in one of the Tehran central areas" indicated that: there is a relationship between meta-cognition and creativity in some subscales which this relationship is negative in some dimensions and is positive in others. But, generally most relationship is between worry and creativity dimensions that is meaningful and negative. In other word, more creativity, less and limited worry and more worry, less creativity.

Findings obtained from Kumar research (1998) as "impact of meta-cognition on management decision making, requirements for management development "showed that knowledge, perception and adjustment influence the management decision making as the main components of meta-cognition . Also, knowledge, perception and adjustment have an influence on the talent structure in management decision making. Principals trained in meta-cognition get marks higher than other principals and experts.

Morbini Schubert's research findings (2008) as "meta-reasoning as an integral component of self-knowledge reasoning " studied the relationship between traditional meanings and showed that the emphasis of main concept is on supervision control in goal level by reanalyzing the general frame work of Cox & Raja. Function control depends on the reasoning rate in the goal level and the relationship between reasoning in the goal level and action and meta-reasoning depends on the knowledge that the person is forced to meet while he/ she uses it. Detection between action level, goals and meta-reasoning depends on the knowledge which has been used at the time of programming and also the programming based on reasoning has steps that reach the person from general goal to partial goals. The result of this framework is the emphasis on self-management, self-development and self-assessment.

Findings obtained from Alexei V. Samsonovich et al's research (2008) as "meta-cognitive self-consciousness" have shown two levels of cognition by representing a general framework of meta-cognitive from Cox & Raja.

Fig. 1: Cox & Raja meta-cognitive framework (2002)



When cognitive system becomes aware of itself, the capacity of its self-perception control accompanied with beliefs and individual values increases and due to that, self- management or management on her/ himself is necessary in thinking and acting processes and will be activated. They explain that the person first acts and then gets ideas and understands from the environment and others, these understanding make him to ask "why did I do so? After that the person will reach to the reasoning step and assesses its procedure by supervising the action and thought: meta-reasoning or meta-cognition, and after this, selects the informed action by controlling the performance based on meta-cognition.

They, according to 3-steps cycles of meta-cognition components, also introduce three steps of pre-performance, performance, post-performance as forethought, performance and self-reflection and introduce several components and subcomponents for each of them.

Cooper's research findings (2005) as "meta-cognition in elderly people "have searched following objects: Is there any difference between meta-cognitive awareness of bachelor's degree and master's degree graduators? Dose the meta-cognitive awareness increase with the age? Dose meta-cognitive awareness increase according to the teachers' experienced age? Are the meta-cognitive skills different between men and women? Do the professors act in a different way with different aged students, according to meta-cognitive skills? This research

showed that meta-cognition increase with the age and academic experiences. The meta-cognitive discipline is influenced specially by increase in age and experience. Previous ideas about completing the meta-cognition in youth and adolescence have been discussed. Knowledge of teachers and professors about meta-cognition skills is important for either teachers or students. Meta-cognitive skills are not different between men and women.

Findings of Bryanet research (2006) as improvement of training and decision makers through self- adjustment skills "showed that self-perception, self-efficacy and self-awareness are the factors of success for successful people in decision making. Meta-cognition and self-effectiveness will be improved by training, academic skill and experience.

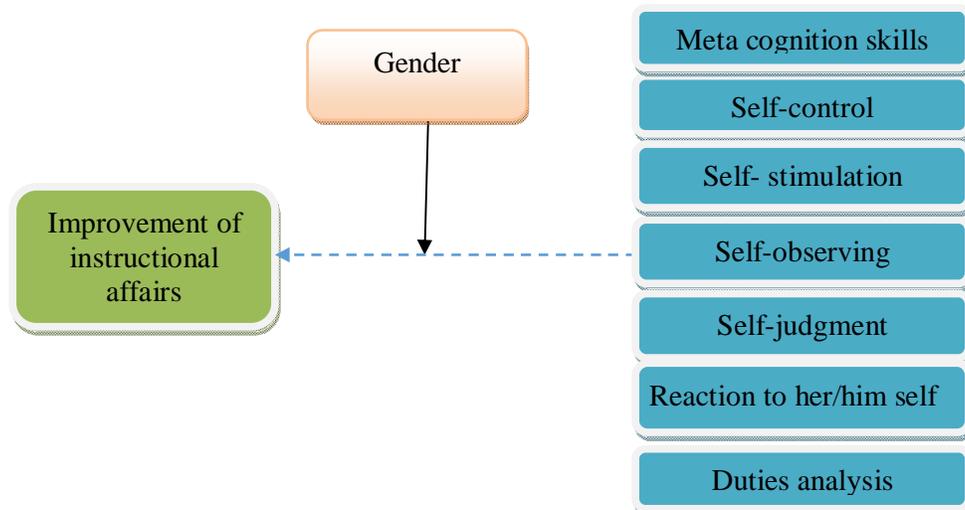
Kleitman and stonkov research findings (2007) as "self- confidence and meta-cognitive processes", by measuring the skills such as: general skills of problem solving, programming and performance skills, solution making skills, problem evaluation skills, on principals of different levels show that mentioned skills in high level principals was significantly higher. Three general problem solving skills, social judgment, meta-cognition process in managers and superior leaders were higher. Superior managers use the problem solving and self-judgment skills and this results in the better performance.

Findings obtained from Gravill (2002) as "meta-cognition and the impact of self-efficacy and self-awareness" indicated that meta-cognition through self- supervision and self-adjustment skills plays a key role in people's self- management and has a positive influence on the principals' performance.

The researcher, according to the extension of this issue and satisfying his curiosity, tries to find the answers of these main questions: "How efficient are the meta-cognitive skills in improvement of training affairs of high school principals in Sari?"

According to theoretical basics, mentioned above, figure 2, and shows this research framework.

Fig. 2: Research framework



2. Research Goals and Hypotheses

Given the importance of the recognizing of the managers' meta-cognitive skills in nurturing efficient students and in making a dynamic and effective school environment, it also causes the better performance of principals. The present research studies the impact of meta-cognition skills on instructional affairs improvement at the point of view of Sari high schools managers. According to theoretical and experimental basics, the hypothesis of this research are: 1- Self- controlling of managers influence on instructional affairs improvement. 2- Self-stimulation of managers has an impact on instructional affairs improvement. 3- Instructional

affairs improvement is influenced by self-observing of managers. 4- The managers' self-judgment influences the instructional affairs improvement. 5- Self-reaction in managers has an impact on instructional affairs improvement. 6- Analyzing the duties by managers influences the instructional affairs improvement. 7- Male and Female managers' opinions about the impact of meta-cognition skills on improving instructional affairs are different.

3. Methodology

The research method is descriptive-survey. The statistical society are all managers of Sari high schools. Sampling method is simple random. Kerjeki - Morgan table was used to determine the sample were selected.

To collect the information was used are searcher-made questionnaire included 25 closed answered questions about six variables of research (managers self-controlling, self-stimulation, self-observing and self-judgment, managers' reaction to themselves and analyzing the duties by managers).

To determine questionnaire external and internal validity was used expert view. The amount of alpha coefficient was 0/89.

The SPSS software was used to analyses data included description statistic ways (mean and standard deviation) and inferential statistics (single group t-test and analysis of variance). For reviewing the normality of variations was used Kolmogorov-Smirnov test.

Table 1. Kolmogorov-Smirnov test

<i>variables</i>	<i>P- Value</i>	Test result
self- controlling	.09	Normal
self- stimulation	.21	Normal
self- observing	.17	Normal
self- judgment	.37	Normal
managers' reaction to themselves	.25	Normal
analyzing the duties by managers	.07	Normal
meta- cognition skills	.94	Normal

According to table 1, the P- Value of all research variations is upper than 0/5 so, it is concluded that research variables have normal distribution. So, to review the research hypothesis is used parametric tests (single group t-test).

4. Research Findings

The descriptive reviewing of meta-cognition seven dimensions' data, mean and standard deviations are as table 2.

Table 2. The descriptive statistics results of meta-cognition skills dimensions

		df	Mean	SD
Self- controlling		97	4.24	.36
Self- stimulation		97	4.26	.42
Self- observing		97	4.06	.44
Self- judgment		97	4.16	.41
Managers' reaction to themselves		97	4.20	.47
Analyzing the duties by managers		97	4.42	.41
Meta- cognition skills	Male	55	4.34	.20
	Female	52	4.14	.28

The result of table 2 show that the higher mean is related to manager's meta-cognition skill and the lower mean is related to manager's self-stimulation.

4.1. First hypothesis: Managers' self-controlling effects on improving the instructional affairs.

Table 3. The result of self- controlling

Variable	t- test	Managers' number	df	Significance level	Mean difference
self-controlling	23.99	97	96	0.000	1.24

According to the table 3 and significance level (0.000), it is showed that there is meaningful difference between managers' self-controlling present condition and expected mean 3. Comprising the means shows that managers' self-controlling mean is higher than expected mean. So, it can be said with 95 Percent assurance that the rate of Sari high schools managers' Self-controlling is higher than mean level.

4.2. Second hypothesis: Managers' self-stimulation effects on improving the instructional affairs.

Table 4. The result of self- stimulation

Variable	t- test	Managers' number	df	Significance level	Mean difference
self-stimulation	27.42	97	96	0.000	1.26

According to the table 4 and significance level (0.000), it is determined that there is meaningful difference between managers' self-stimulation present condition and expected mean3. Comprising the means shows that managers' self-stimulation is higher than expected mean. So, it can be said with 95% assurance that the rate of Sari high schools managers' self-stimulation is higher than mean level.

4.3. Third hypothesis: Managers' self-observing effects on improving the instructional affairs.

Table 5. The result of self- observing

Variable	t- test	Managers' number	df	Significance level	Mean difference
self- observing	22.36	97	96	0.000	1.06

According to the table 5 and significance level (0.000), it is determined that there is meaningful difference between managers' self-observing present condition and expected mean3. Comprising the means shows that managers' self-observing is higher than expected mean. So, it can be said with 95% assurance that the rate of Sari high schools managers' self-observing is higher than mean level.

4.4. Fourth hypothesis: Managers' self-judgment effects on improving the instructional affairs.

Table 6. The result of self- judgment

Variable	t- test	Managers' number	df	Significance level	Mean difference
self- judgment	23.87	97	96	0.000	1.14

According to the table 6 and significance level (0.000), it is determined that there is meaningful difference between managers' self-judgment present condition and expected mean3. Comprising the means shows that managers' self-judgment is higher than expected mean. So, it can be said with 95% assurance that the rate of Sari high schools managers' self-judgment is higher than mean level.

4.5. Fifth hypothesis: Reaction of managers to themselves effects on improving the instructional affairs.

Table 7. The result of managers' reaction

Variable	t- test	Managers' number	df	Significance level	Mean difference
Managers reaction	20.46	97	96	0.000	.89

According to the table 7 and significance level (0.000), it is determined that there is meaningful difference between reaction to themselves and expected mean 3. Comprising the means shows that managers' reaction to themselves is higher than expected mean. So, it can be said that the rate of Sari high schools managers' reaction to themselves is higher than mean level.

4.6. Sixth hypothesis: Analyzing duties by manager's effects on improving the instructional affairs.

Table 8. The result of analyzing the duties

Variable	t- test	Managers' number	df	Significance level	Mean difference
Analyzing the duties	23.30	97	96	0.000	0.09

According to the table 8 and significance level (0.000), it is determined that there is meaningful difference between Analyzing duties by managers and expected mean 3. Comprising the means shows that analyzing duties by managers is higher than expected mean. So, it can be said with 95% assurance that the rate of Sari high schools managers' analyzing duties is higher than mean level.

4.7. Seventh hypothesis: There are different views about the effect of meta-cognition skills on improving the instructional affairs.

Table 9 .the result of managers' meta- cognition skills

Variable	t- test	Managers' number	df	Significance level	Mean difference
Meta-cognition skills	26.75	97	96	0.000	1.22

According to the table 9 and significance level (0.000), it is determined that there is meaningful difference between the view of managers about the effects of meta-cognition skills on improving the instructional affairs. The mean of women's answers are higher than mean. So, it can be said with 95% assurance that the view of men is more positive than women.

5- Discussion and Conclusion

Evaluation of the first special hypothesis indicated that self-control of principals influences the improvement of instructional affairs. The results of other researches showed that the control of performance based on the goals' fulfillment rate, controlling the self-learning with asking the question and self- evaluation, thought on learning process, adjustment of checklist of what is needed during setting the subjects, identifying the success and failure reasons influence the goal-related duties performance. The results of this part of research is consistent with the results of Ashnaeeiyan's studies result that has indicated that one of the components is self- control meta cognition which influences the improvement of principals' performance, also is consistent with the results obtained by Alexy, and Samsonovich et al (2006), showed that performance control according to meta cognition selects the informed action which is consistent with these results.

Assessing the second special hypothesis of research showed that self-stimulation of principals influence the improvement of instructional affairs. Other researches results indicate that self-efficacy belief (self-esteem) has an impact on desirable expectations and inherent interest to the work, concentration, high motivation, self-confidence and need to progress.

These results are consistent to the results of Greiviel (2002), Kleitmann & Stankov (2007) investigations stating that Meta cognition through self-supervision and self-regulatory, self-stimulation and self-confidence skills has a key role in self-management of people, and has a positive impact on principal's performance. Evaluation of the third special hypothesis of research showed that managers self-observing influences the instructional affairs improvement. Other researchers' finding identified that cognitional supervision has been effective on functions and thought and recording the function report, assessing the students' activities and their function report's recording, studying the teacher's activities and their function report's recording, investigating the other school activities and recording of their function report. This part of research is consistent with Ashnaeeiyan's investigations results (2010) which has indicated one of the meta-cognitive components is self-observing and influences the principal's performance. Assessing the fourth special hypothesis of research indicated that the principals' self-judgment influences the training affairs improvement. Other researcher's findings identified that evaluating the environment analysis and its efficient factors is effective in its function, assessing its performance by using the goals and objects, expected results, criteria and standards, comparing its performance to other schools and performance evaluation according to colleagues' opinions. These results are consistent with Kleitmann & Stankov (2007) results which have shown that principals use problem solving and self-esteem skills and create their better performance.

Studying the fifth special hypothesis of research indicated that the principals' reactions to themselves influence the improvement of instructional affairs. Other researcher's findings identified that reconsidering and review of activities and processes has been effective for goals fulfillment, modification of inappropriate function by comparing to colleagues' opinions. This part of research is consistent with the results obtained by

Ashnaeeiyan (2010) which indicate one of the meta-cognition components is principals' reactions to themselves. Studying the sixth special hypothesis of research indicated that instructional affairs improvement is influenced by the analyzing the duties carried out by principals. Other researcher's findings identified that object determination influences the programming to achieve the object, estimating the required time to do the actions and prioritizing various duties according to their importance. The results of this part of research is consistent with the results obtained from Ashnaeeiyan (2010), Morbini, Schubert (2008) studies that have indicated that programming based on reasoning has steps which bring the person from general object to the partial ones. The seventh special hypothesis assessment showed viewpoint of male and female principals about the impact of Meta cognition skills on instructional affairs improvement is different. The result of this part of research is inconsistent with the results obtained by Cooper (2005) which has indicated that Meta cognition skills are the same between women and men. So it is clear in this research that knowing the impact of meta-cognitive skills influences the efficiency, efficacy and the improvement of schools instructional affairs ; it is suggested that paying attention to and knowing the meta-cognitive skills should be developed by principals. By holding training courses, the principals will get familiar with meta-cognition skills. The principals increase their capacity of instructional affairs improvement by using the meta-cognitive skills. They should pay attention to the importance and the use of meta-cognitive skills by principals to improve the instructional affairs. Benefiting from valuable experience and successful programs of different countries in applying the meta-cognitive skills, providing the guideline for successful use of the meta-cognitive skills, holding the scientific, applied and

professional conferences for getting the principals familiar with and persuading them to meta-cognitive skills are important.

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