THE EFFECT OF DESIGNED MOTHER'S TRAINING PROGRAM, BASED ON THEORY OF MINDSET ABOUT INTELLIGENCE ON ATTENTION/PERSISTENCE AND COMPETENCE MOTIVATION OF THEIR CHILDREN (A MIXED METHOD RESEARCH)

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ABSTRACT

This research was administered with the aim of designing a training program for mothers based on Dweck's theory of mindset about intelligence and investigating the effect of this program on attention/ persistence and competence motivation of their children. The study was a mixed method research which consists of two qualitative & quantitative parts. The qualitative part was a grounded theory research which resulted a new training program based on mindset theory. For this reason, basic concepts were derived from 5 semi-structured interviews with experts, 3 books, 5 dissertations & 13 articles. After theoretical codings of primary data, the 6 sessions training program was prepared as result. Quantitative part was a semi-experimental research with pretest, post test and the statistical population was the mothers of 4-6 years old children in Isfahan city. Among them, 44 mothers were selected using volunteer sampling, and then randomly assigned to 2 groups of experiment and control (each group 22 person). Designed training program in previous part of research was presented to experimental group. Research instrument was preschool learning behaviors scale (McDermott *et al.*, 2002) and data were analyzed using multivariate analysis of covariance (MANCOVA). Results revealed that training program has significant effect on attention/persistence and competence motivation of children (p<0.05).

Keywords: Intelligence Mindset, Mother's Training Program, Attention/Persistence, Competence Motivation

INTRODUCTION

Every year, high-quality articles published in the finest journals demonstrate the power of psychological interventions to bring about meaningful changes in academic achievement (e.g., Blackwell *et al.*, 2007; Sherman *et al.*, 2013; Walton & Cohen, 2011).

By referring to the evidences which show the effect of mindset interventions on the formation of attitude, cognition, and behavior (Dweck, 2006), Dweck and Molden (2007) advise that the mindset which an individual holds can have "profound consequences" (p.124).

In her analysis, Dweck (2006) understood that some people believe, intelligence or characteristic traits are fixed (a belief which is been called fixed theory of intelligence or personality), instead the other group believe that intelligence or characteristic traits are changeable (a belief which is called growth theory of intelligence or personality). She also got that this twofold bias can happen regardless of paying attention to education, cognitive abilities, gender, or nationality of the people (Dweck, 2006). Those people who believe that intelligence are fixed, think that human being can or cannot have a definite level of intelligence.

For this reason, they tend to embarrass when they fail and also tend to choose the goal orientation of performance (focusing on the appearance of their ability and the fact that in comparison with the other people, how their ability can be judged) in their lifes (Blackwell *et al.*, 2007).

On the other hand failure is a motivating factor for those people who believe that intelligence is incremental (Dweck, 2000 and 2006). Based on this belief, people tend to select goal orientations like learning or mastery (focus on learning, mastering on their duty based on their achievements or their own specified criteria, achieving new abilities, enhancement or merit, trial to do a challenging job, and also trial to have insight or perception) for themselves (Blackwell *et al.*, 2007).

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If it is to be accepted that a mindset, to some extent, can impact on an individual's effort, motivation and learning, then it is important to consider how an individual can come to hold a particular mindset. Dweck and Molden (2007) posed the question, "Where do mindsets come from?" (p.134) and acknowledge that little is known about this. Dweck (2007) has hypothesized that key messages from parents, carers and teachers are likely to have profound effects on children's beliefs about the nature of intelligence.

The quality of parental involvement is found to be a mediating factor, although fairly little is known about what motivates parental involvement (Moorman & Pomerantz, 2010). Research into the role of parents indicates that parents' cognitions of intelligence influence their domain-specific behaviors towards their children (Moorman & Pomerantz, 2010; Smiley *et al.*, 2000).

Another important question that should be taken into consideration theoretically is that whether the sensitivity of the mindset about intelligence during different period of life is the same or that these believes can have different effects during important and special periods of growth and change.

The available relatively enriched research evidences have shown that the years before the elementary school period are known as one of the most sensitive periods which play a crucial role in children's growth and training because in this period their learning is deeper, faster, and easier and their abilities will improve in different aspect (Marulis & Neuman, 2010). On the other hand, the main foundation of children's personality form before the elementary school period (before the age of six) which is a base for their next growth stages (Norrish *et al.*, 2013).

McDermott *et al.*, (2002) by analyzing the learning behaviors of children in kindergarten categorized these behaviors into three factors as competence motivation, attitude toward learning, and attention/persistence. Competence motivation is child's curiosity and motivation that the child shows for understanding the learning assignments. Attitude toward learning is the general behaviors like communication with adults and their classmates in learning condition. Attention/persistence occurs when the child is paying attention and having perseverance in challenging learning conditions. As it is obvious from the factors of learning behaviors, these behaviors are necessary elements for children's learning in educational environments.

Lots of other researchers have been aligned with this study to show that learning behaviors play a crucial role for the students' educational success (Bulotsky-Shearer *et al.*, 2011; Canivez *et al.*, 2006; Han *et al.*, 2009). For this reason, if it is possible to design and operate useful interventions for preschoolers, it will be a great help for their success and educational achievement in future. Incremental/growth approach of intelligence and abilities which was proposed by Dweck (2006) is one of the suitable approaches that based on the hypothesis and principles has a great effect on children's learning behaviors. In comparison with the fact that children understand what abilities they have, an important factor which is important for children are adults and specially parents' involvement and their feedback to children's behaviors and actions (Dweck, 2000, 2006, 2007, 2008, 2010).

Results of the various studies indicated that growth intelligence mindset can have relationship with learning behaviors (Chen *et al.*, 2009; Fantuzzo *et al.*, 2011; Galindo & Fuller, 2010; Griffin, 2010; Hamre & Pianta 2007). however; it is important to know that the participated population of the available researches were the children whose age were older than preschool time and also parents were not taught any practical training about the theory of growth intelligence mindset. Therefore it seems that one of the necessities in knowledge is documenting the effect of training growth intelligence mindset to mothers on children's learning behaviors in pre-school level as one of the most sensitive levels which plans the foundation of children's future. On the other hand, training parents and teachers in order to create incremental mindset and correct their feedback to the children's failure or success may cause the transference of growth mindset to the children. In this method children have motivation, are not afraid of failure, and are eager to learn more.

The present study is to plan and operate a training program based on Dweck's theory of mindset about intelligence for the parents of 4-6 years old children, which is an important factor in the prediction of their educational success (Han *et al.*, 2009). In other word this research is up to finding an answer for this question that is there any relationship between parents training and educational program which is based

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on Dweck's theory of mindset about intelligence and learning behavior of 4-6 years old children? This research hypothesis is bellow:

There is a significant relationship between parents training and educational program which is based on Dweck's theory of mindset about intelligence on learning behaviors of the 4-6 years old children (preschoolers).

MATERIALS AND METHODS

Methodology

Qualitative Part (A Grounded Theory Research)

The grounded theory study is a kind of qualitative research methodology for the compilation of the theories which are systematically rooted in the collected and analyzed data. The ultimate goal of this approach is providing comprehensive explanations about a particular phenomenon that are obtained from the inductive study of that phenomenon. In general, this strategy converts the data from data sources to a set of codes, changes the common codes into categories and then converts the categories into a kind of theory.

The studied phenomenon may be a problem (for example in the organization) or even a text. In the first case, the researchers collect the data from the words of the interviewees, and then through classifying and coding, they ultimately derive their theory about the issue.

In texts case, the researcher studies the texts (books, magazines and other text sources) after posing a question and extracts the related data from the texts and then codifies and classifies them and finally offers their theory about the issue (Flick, 2009). Methodology recognition of this study in providing the training protocol is growth mindset theory based on the qualitative method of text grounded theory that will be discussed in more details.

Quantitative Part

The quantitative part of this mixed method study is considered as a semi-experimental research. The experimental plan which is used in the research is a two-group plan (one control group and one experimental group), with pretest and post-test. The independent variable is parent's training program which was designed as the result of qualitative part of this mixed method study (for six 90 min sessions, in six weeks) and dependent variable was 4-6-year-old children's learning behaviors (include three subscales as competence motivation, attention/persistence, attitude toward learning and total learning behaviors.

The statistical populations of this survey include mothers who have 4-6 year old child, in Isfahan city on 2015. They were selected among those ones registered in all kindergartens of Isfahan city.44 mothers were participated in the research as sample who were selected voluntarily. The age range of the mothers was 25 to 45, the selection has been done based on the academic instruction of sampling regarding sample population of the experimental researches in the field of psychology and training and education (Fraenkel *et al.*, 2012). After the voluntarily selection of the people, 44 of the research sample were categorized into 2 groups (each is 22) of control and experimental group based on random sampling. The criteria of entering the study was mother's satisfaction to participate all sessions and having a 4-6 year old child who come to the kindergarten based on weekly program, having the degree of at least diploma for mothers, not having mental retardation for children, psychosis, or severe psychological disorder for mothers. In order to measure the learning behaviors, the following tools is been used.

Research Tools

Learning behaviors questionnaire (LBQ-29) in order to measure learning behaviors of the questionnaire offered by McDermott *et al.*, (2002) is been used. This questionnaire includes 28 questions, 3 subscales as competence motivation (7 questions), attention/persistence (14 questions), and learning attitudes (40 questions). This questionnaire was answered by teachers based on the children's behavior. Answering the 3-scale questionnaire (is not correct for this child=1 to is correct for this child=3). In order to use this questionnaire in the present research, it is been translated, then made ready for the real usage. Its validity is also analyzed and confirmed by 3 experts.

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McDermott *et al.*, (2002) analyzed the construct validity of the questionnaire in some independent sample of race, gender, and age groups and confirmed three-factor solutions. Also the time reliability with the distance of 3 weeks for this questionnaire has shown that it has acceptable and suitable time stability. The convergent validity of this questionnaire and the scores of social skills` questionnaire is been confirmed, also the divergent validity of the scores of this questionnaire with behavioral problems is confirmed. McDermott *et al.*, (2002) Chronbach`s alpha of this questionnaire is reported in the level of its factors between 0.79 to 0.89. This questionnaire has been used and translated into many languages all over the world. These international evidences show the suitability of the Peruvian children between 0.71 to 0.89. Construct validity of this questionnaire in the present study is earned by EFA (in this analysis, KMO is 0.95, *Bartlett*'s test of sphericity is 5563.56 and significant (p<0.001), questions` factor loading were considered more than 0.3) that the 3 proposed factors in the main questionnaire earned. Also Chronbach`s alpha for the three sub-scales of the questionnaire (competence motivation, attention/persistence, and learning attitude) and the total questionnaire were 0.89, 0.8, 0.79, and 0.92 respectively.

RESULTS AND DISCUSSION

Findings

Qualitative Part

The First Stage: The Process of Identifying the Components and Foundations of the Growth Mindset The first stage of the research was the researcher's familiarity with Dweck's mindset theory that was done through interviews with a number of education experts who were familiar with the theory.

	in the second seco	<u>a</u>		
Characteristics (concepts)				
1.	Intelligence and talent are fixed and inborn	lset		
2.	Effort is ineffective to the outcome	pui		
3.	Goal orientation of performance	Ē		
4.	Lying about the outcomes and hiding the mistakes	eq		
5.	Fear of failure	XI		
6.	Low self-esteem	-		
7.	Transferring from parents to children through praising their intelligence an	d		
talent				
8.	Low parents' expectations from their children			
9.	Negative self-talk during challenges			
10.	Intelligence and talent can be acquired and promoted	set		
11.	Effort is the key to intelligence and capability	pu		
12.	Goal orientation of learning	imi		
13.	Enjoying the challenges	th		
14.	Welcoming the failure	MO		
15.	Positive risk taking	J.		
16.	Perseverance and consistency	-		
17.	High self-esteem			
18.	Capability of being teached			
19.	Transferring from parents to children through praising the process and effectiv	e		
feedba	cks			
20.	Increasing the parents' expectations from their children			
21.	Brain plasticity			
22.	Using the word 'yet'			
23.	Positive self-talk during challenges			

Table 4.1.1: List of General Concepts Obtained in Open Coding

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Fixed Mindset

Growth Mindset

List of minor concepts obtained in open coding has been presented in Table 4.1.2.

Table 4.1.2: List of Minor Concepts Obtained in Open Coding

Characteristics (concepts)	Example				
1.Intelligence and talent are	This belief that intelligence and talent are fixed and inborn and are recognized due to				
fixed and inborn	success or failure in a special field.				
	*				
2.Effort is ineffective to the	When people do not have intelligence and talent in a particular field, they cannot				
outcome	succeed in that field no matter how hard they try in learning and achieving success.				
2. Identifying the goal from the	Choosing the goal should be based on the amount of intelligence and people in				
kind of performance	challenges go forward until they face a problem that is the indicator of their				
I I I I I I I I I I I I I I I I I I I	intelligence and they do not continue afterwards.				
4.Telling lies about the	People conceal their failures because they consider them as the indicators of their low				
outcomes and hiding the	intelligence and weak canability				
mistakes	interingentee and weak exploring)				
5 Fear of failure	People attribute the failure to lack of ability and intelligence and consider it as a				
Shi cui of fundic	sethack				
6 Low self-esteem	People attribute failures and problems to their low intelligence and limited capabilities				
o.low sen esteem	and they lower their self-esteem				
7 Transferring from parents to	According to reliable studies praising students and children's intelligence leads to				
children	fixed mindset formation				
8 Low parents' expectations	Parents do not have enough expectations of their children and therefore they do not				
0.200 parents expectations	help their children's learning and success				
9. Negative self-talk during	People in facing challenges and problems undertake their capabilities and give up by				
challenges	saving sentences such as: "I am not intelligent enough to handle this problem"				
10 Intelligence and talent can be	Examples of people who failed in various aspects of skills and academic learning but				
acquired and promoted	achieved success by practice and effort and got higher grades in academic tests				
11. Effort is the key to	Learning is achieved through practice and effort, and leads to intelligence increase.				
intelligence and capability	Zeanning to aente fee an ough practice and enters, and reads to interingence interaster				
12. Identifying the goal from the	The objective of challenges and homework is learning and the more difficult				
kind of learning	homework the better growth opportunity.				
13.Enjoying the challenges	Challenges are considered as chances for more growing and cause intelligence				
J.J. 6	increase. Therefore, facing challenges leads to pleasure.				
14. Welcoming the failure	Failures are opportunities for learning and using newer strategies.				
15.Positive risk taking	New experiences that lead to learning should be welcomed and people should not be				
e	afraid of failure.				
16.Perseverance and consistency	The key to success is perseverance which is obtained by believing in growth mindset.				
17.High self-esteem	Do not ascribe problems and failures to their low intelligence and limited capabilities				
0	and they do not lower their self-esteem.				
18.Capability of training	Believing in fixed mindset can be changed to growth mindset through training.				
19.Transferring from parents to	According to reliable studies, praising the effort causes growth mindset and leads to				
children	academic success.				
20.Increasing the parents'	Parents with growth mindset have higher and more rational expectations of their				
expectations from their children	children and on the contrary, fixed mindset causes parents' lower expectations about				
	their children's capabilities.				
21.Brain plasticity	Brain is flexible and learning new subjects and challenging the brain lead to enhancing				
1 5	its power and ability. A confirmation to growth mindset.				
22. Using the word ' yet '	People with growth mindset in facing problems believe that they are in learning path				
<i>c y</i>	but they have not reached the goal yet, whereas, people with fixed mindset see the				
	problem as the end point.				
23.Positive self-talk during	People with growth mindset in facing problems and failures do not undertake their				
challenges	capabilities but help themselves by saying sentences like: "The harder it becomes, the				
5	more I try".				

For more information and for gathering data, some theses, articles, and books related to Dweck's mindset theory were used. In order to reach to the primary theoretical model, 3 books, 5 PhD theses, and 13 scientific articles about the Dweck's mindset theory were analyzed. In studying the mentioned resources, the related items to the purpose of this study were searched. The search process in the resources continued until the theoretical saturation (being repeated on one hand and coverage of maximum requirements on

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the other hand). It is worth mentioning that according to the circular form and intertwined stages of grounded theory, theoretical sampling (interviews, theses, treatises, articles and books) was used at every stage.

The Second Stage: Coding and Analyzing Data

The first phase of data analyzing according to grounded theory is conducted through using theoretical coding. Theoretical coding is a method for analysis of the data that are gathered in order to develop a theory in grounded theory. This method was presented by Glaser and Strauss (1967) and later developed by Strauss and Corbin (1990).

Theoretical coding consists of three steps which are "open coding", "axial coding" and "selective coding". Of course, these three types of coding should not be separated from each other, or considered different stages in the process of interpretation. But they are various procedures for working with text data that researcher moves or combines them if required. Although the process of interpretation with coding begins with open coding, selective coding becomes more prominent by getting closer to the end of the analysis process (Flick, 2009).

In this phase of theoretical sampling, theoretical saturation with emphasis on two processes was used. The first process was continuation of theoretical sampling to the point of concepts and ideas being repeated and the second process was the attempt for achieving repeated, broad, and comprehensive concepts. These two processes were continued to the point of reaching to comprehensive concepts and ideas and being repeated (occurrence of theoretical saturation) and then stopped. List of general concepts obtained in open coding that continued to the theoretical saturation has been stated in Table 4.1.1.

Open coding is the first stage of coding in grounded theory and its main goal is to transform the data and phenomena into concepts.

In this stage, it was attempted to make the process of main analysis in open coding operational which has been described by Strauss and Corbin (1990) (raising questions about the data, comparing the events, incidents, and other phenomena on the basis of their similarities and differences and then placing the similar events and incidents in a category and under a common title (Strauss and Corbin, 1990).

These codes have been shown in Tables 4.1.1 and 4.1.2. In the next step, the codes obtained in open coding were classified on the basis of the discovered phenomena in the data which were directly related to the research questions.

These codes should reflect the content of the questions more obvious. In classification of the concepts obtained from the text, concepts must get the name and title which contains the relationship between concepts. In this study, internal codes were used.

According to Flick (2009), these codes are preferred to constructed codes because they are closer to the studied data. After finishing the open coding stage, axial coding started as the second stage of the coding process and the process of connecting the subsidiary items to the main items began.

At this stage, those codes that seemed to be more viable in the later stages were selected from among the codes obtained from open coding. In fact, this stage refines, separates, systematizes, and integrates the concepts of open coding.

The main purpose of this step is reducing the initial set of codes into the high-level explanatory categories. It was done through relating the categories to each other in every possible way and by breaking the categories into controllable units as well. Choosing the names of the categories is based on the common and similar concepts that are obtained from open coding. That means the title of a category relates and connects the concepts that are related or similar. The results of this step can be seen in Table 4.1.3.

Table 4.1.5: Classification of Concepts Derived from Survey Samples based on Research Questions					
Parents with fixed mindset	Parents with growth mindset	Kind of parents' mindset			
Negative motivational framework (attitude towards effort, reacting to failure, kind of objective in learning, using effective strategies), negative self-talking in face of challenges	Positive motivational framework (attitude towards effort, reacting to failure, kind of objective in learning, using effective strategies), positive self-talking in face of challenges	Effect of parents' mindset on personal behavior			
Praising the performance and outcome, ineffective feedback, low expectations Negative motivational framework, lying about the outcomes, low self- esteem, concealing the mistakes	Praising the effort and strategy, effective feedback, using the word 'yet', high expectations Positive motivational framework, positive risk taking, perseverance and consistence, high self-esteem	Way of transferring mindset kind to the children Effect of parents' mindset on children's performance			
Learning reduction and academic failure	Learning increase, academic success, talent and intelligence increase	outcome			

Table 4 1 2. Ch

The third and final stage of coding is selective coding that will continue axial coding in a more abstract level. In fact, at this stage, the researcher reaches the theory based on the data.

Diagnosis of the finishing point of the study is one of the most important and most difficult phases of the study based on grounded theory. Flick (2009) assigns this duty to the researcher to determine when to end the sampling and coding. According to Rennie (1998), after creating several high-level categories, the researcher needs to identify the key concept of the theory.

The key concept that is a top-level category is called (central or core issue) by Glaser (1978). At this stage, the researcher's main task is diagnosing the conceptual relation that connects all higher-level categories to each other.

At the end, the selective coding was conducted and a six-session training protocol was achieved. The achieved educational model has been presented in Table 4.1.4.

coung)	
First session	Familiarization with the concept of mindset and examples of people's
	experiences when they had failed and their mindset
Second session	Identifying the prevailing mindset in parents and analyzing some
	studies about mindset effect on success
Third session	Familiarization with the ways of transferring mindset to children,
	analyzing some studies about kinds of compliments and feedback and
	their effect on performance and academic success
Fourth session	Familiarization with the brain function and approving the growth
	mindset through understanding the concepts of brain exercise and
	purposeful practice
Fifth session	Identifying the motivational framework of mindsets (attitude towards
	goal, attitude towards effort, strategy, reaction to failure), meaning of
	perseverance/consistence, and risk taking
Sixth session	Examples of effective strategies for maintaining and improving the
	growth mindset in children and increasing parents' expectations,
	questions and answers

Table 4.1.4: The Achieved Educational Model based on Categorical Classification (Selective Coding)

Then for mothers in experimental group the weekly meetings were held and preschool learning behavior survey (plbs) was conducted by the trainers of the children in both experimental and control groups of mothers simultaneously. After completing the training course for mothers that lasted for 6 weeks, the

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post-test was given to the groups; and three months later a follow-up test was given that its results are as follows.

Quantitative Part

According to Table 4.2.1, the result of the normality variables' distribution for pretest, post-test, and is in normal condition.

no.		PLBS dimensions	Experime	ntal group	Control	Control group	
			р	Z	р	Z	
1		competence motivation	0/107	0/927	0/180	0/938	
2	st	attention/persistence	0/167	0/936	0/157	0/935	
3	-te	attitude toward learning	0/635	0/968	0/265	0/946	
4	pre	learning behavior	0/435	0/957	0/154	0/935	
5		competence motivation	0/050	0/907	0/106	0/921	
6	est	attention/persistence	0/231	0/939	0/276	0/947	
7	st-t	attitude toward learning	0/472	0/960	0/107	0/922	
8	30d	learning behavior	0/833	0/947	0/263	0/946	

Table 4.2.1: Results of Shapiro-Wilk (test of normality) in pre-test, post-test

As it is considered in table 4.2.1, there is a normal distribution in learning behaviors and its dimensions in pre-test, post-test (p > 0.05). In table 4.2.2 the results of Levene's test regarding the consideration of the equality of error variances is shown.

Table 4.2.2: Results of Levene's Test for Equality of Variances in post-test							
no.	PLBS dimensions	levene test					
		р	df2	df1	F		
1	competence motivation	0/90	40	1	0/01		
2	attention/persistence	0/33	40	1	0/95		
3	attitude toward learning	0/74	40	1	0/10		
4	learning behavior	0/47	40	1	0/53		

Table 4.2.2: Results of Levene's Test for Equality of Variances in post-test

As it is considered in Table 4.2.2, in learning behaviors and its dimension, the presumption of the equality of error variances is taken into consideration (p > 0.05).

The result of the multivariate covariance analysis in poet test is shown in Table 4.2.3.

Table 4.2.3: Results of multivariate covariance analysis on PLBS & dimensions in post-test with pre-test control

no		PLBS	Sum of	df	Mean	F	Sig	Partial	Observed
			Squares		Square			Eta	Power
								Squared	
1		competence	20/40	1	20/40	4/30	0/04	0/09	0/52
		motivation							
2		attention/persistence	38/54	1	38/54	3/82	0/05	0/08	0/47
3		attitude toward	30/49	1	30/49	0/857	0/36	0/21	0/14
		learning							
4		learning behavior	313/249	1	313/249	8/49	0/001	0/17	0/81
	5	Pillai's Trace	p<0/05,2	/18 ,0/19					
	6	Wilks' Lambda	<i>p</i> <0/05, 2/	/18,0/80					
	7	Hotelling's Trace	<i>p</i> <0/05, 2/	/18,0/23					
	8	Roy's Largest Root	<i>p</i> <0/05, 2	/18,0/23					

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As it is considerable in Table 4.2.3, in the post test level there is a significant relationship between the competence motivation between the control and experimental group (p<0.05, F= 4.30). In attention / persistence, there is a significant relationship between the control and experimental group (p \leq 0.05, F= 3.82). As it is considerable in the third row of Table 4.2.3, in learning attitude there is not any significant relationship between the two groups (p> 0.05).

RESULTS AND DISCUSSION

When mothers move towards growth mindset and intelligence-related capabilities regarding their beliefs in their children, their behavior patterns in their interaction with their children primarily change in accordance with the created beliefs. In this manner, the mother in her interaction with the child is attracted to positive methods such as being led to the learning direction from every single experience even the failure or defects, supporting the autonomy and positive affection rather than destructive methods like training for performing the task, controlling and negative affection. Through this positive change in the interaction between mother and child, the children are more excited to try for their improvement and development of their capabilities and in this manner, their motivation and general learning behaviors will enhance.

In general, it can be concluded from the findings of this study that teaching the growth mindset based on Dweck's theory to the mothers can increase the level of motivation, attention, perseverance (at least three months after the training), and general learning behaviors in children. The results of this study become much more prominent by regarding the fact that learning behaviors are highly significant in the children's academic success in the formal education and after the preschool period (McDermott *et al.*, 2002; Han *et al.*, 2009).

The most significant role of this study in expanding the available knowledge about the effective interventions in guiding children to the path of success is that through training mothers on growth mindset, they and their children can be helped to move towards educational goals with more motivation and competence. More specifically, the results of this study show that teaching the growth mindset based on Dweck's theory can be used for increasing the level of motivation, competence, attention, perseverance, and general learning behavior in children; and this is an issue that has received less attention in Iran and the world.

Accordingly, it is recommended that the kindergartens and their supporting organizations provide the training courses on growth mindset for the parents and educators in order to put the children on the track of competency-based efforts and effective learning behaviors. From the research point of view, it is also recommended that in the future studies, the effect of simultaneous training of mothers and educators, and also the effect of separate training of mothers and educators (for example in the form of a pilot project of at least four groups) be investigated and compared. It is also recommended that the effect of growth mindset training for parents and children (and even teenagers) at higher levels of education on learning behaviors and motivation be examined. In the end, it is necessary to mention the study limitations in order to prevent the generalization of the results. The first limitation is that this study has been conducted on children of four to six years and their mothers, so it is necessary to be cautious in generalizing the results to other age groups. The second limitation of the study is related to the initial voluntary sampling. This type of sampling may cause volunteer effect on the results that should also be noted.

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