Research Article

The Impact Training of a Program on Improving the Cognitive Competencies of Teachers in Identifying Gifted Preschoolers

Alia Mohammed AL-Oweidi[1]

Abstract
This study aims to investigate the effectiveness of using a program in improving teachers' skills in identifying gifted preschoolers. A total of 30 teachers (15 in the experimental group and 15 in the control group) participated in the program. A cognitive competency scale was constructed and used for pre- and post-measurements. The results showed that several competencies are low .These competencies include knowledge of early talent indicators during the first 3years of child, knowledge of the cognitive, creative, and social characteristics of gifted kindergarteners, ability to determine the criteria diagnosis in identifying gifted kindergarteners, and the ability to use IQ and creative tests in identifying gifted kindergarteners, depend on results of the degree of competences, the program give information to raising competences teacher in identifying gifted preschool, Results show that the program is effective by using the means and ANCOVA results.

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[1] Al-Oweidi, Alia, Associate Prof, Special Education Department, The World Islamic Sciences and Education University, Amman, E-mail: alia.oweidi@wise.edu.jo

Introduction

Preschool program is a crucial stage; thus, educators must focus on identifying and screening preschoolers to provide them with appropriate services (McGraw, Hotzman, Coyin, & Miles, 2016). Teachers recognize the importance of screening and identifying students to place gifted children in appropriate educational placement (Havigerova, 2014; Pfeiffer & Blei, 2008).

Professional training and new ideas and materials are crucial for teachers to evaluate and screen gifted preschoolers (McClain & Pfeiffer2012; Masters, 2013; Jung & Worrellm, 2017).

Educators recognize the importance of early identification and intervention for preschoolers who show exceptional and high potential or ability according to their parents (Acar & Cayirdag, 2016**)**.

Early educational intervention for gifted preschoolers and kindergarteners increases their extraordinary achievement ability and reduces any problems that may emerge in social, behavioral, emotional, and/or educational aspects (Kaya, 2013; Foreman & Gubbins, 2015). However, many early childhood education teachers are not qualified to identify gifted preschoolers. Few preschool teachers who are equipped with information or trained to identify young gifted children are limited (Assovline & Lupkowski-Shoplik, 2012; Lohman, Korb, & Lakin, 2008).

Accurate identification of gifted preschoolers is necessary for teacher planning services. Here, the identification process is considered a real problem (Glassman, Gambrell, & Stebbins, 2013). Reasons may be attributed to the difficulty in identifying gifted young students, the absence of a consensus on defining gifted children, and the lack of screening instruments and scales for such children. However, IQ tests, teacher rating scales, and creative thinking tests, such as Torrance, are attempts for early identification of giftedness in children (Bui, Craig, & Imberman, 2014; Dia, Swanson, & Cheng, 2011).

The present study offers programs to preschool teachers to identify gifted students by training them on using instruments for evaluation and identification. The concept of giftedness encompasses many dimensions. It relates to characteristics that are related to personality in behavior and cognition aspects. Theories of giftedness hold multiple perspectives about the concept of giftedness and the screening and identification of gifted students (Brown & Johnson, 2010; National Association for Gifted Children, 2015).

More than three decades ago, Renzulli defined giftedness in the "Three Ring Model" by determining the three characteristics of a gifted individual; these characteristics are creativity, task commitment, and above-average ability. This author explained giftedness as a potential in an individual's development that is significant in learning and production (Renzulli & Gaesser, 2015; Renzulli, 2010).

Gagné explained giftedness in his differentiated model as that has a natural ability, and is influenced by environmental and intra-personal catalysts that enable the potential of a gifted individual (Heller & Kemp, 2004; Dalforno, Bahia & Veiga, 2015).

Preschool is an important opportunity for developing students and is a source of learning outside the family. That is, preschool is an avenue where a child can learn in addition to the family context. Child's learning is determined by his attitudes, characteristics, skills, strategies, knowledge, and interests. Most studies have focused on facilitator's teaching (Sternberg & Davidson, 2005).

Given that the concept of inclusive education has focused on developing the potential of all children through inclusive requirements, the concepts expected to be satisfactory. All students exhibit the right to challenge and develop their learning. However, many children lack the opportunity to develop in their school during their kindergarten stage. Student identification must begin at this stage, particularly for schooling and development. Examining the requirements of all students enables teachers to provide the students with the appropriate necessary services (Coa, Jong & Lee, 2017).

Preschoolers can be recognized by a teacher as evidence of potential giftedness or can be identified as gifted to achieve inclusiveness in the classroom. Thus, their requirements must be identified and screened to understand their special educational requirements. (Hodge & Kemp, 2006). The identification of giftedness in childhood education is complex given teachers 'lack of knowledge in early identification of potentially gifted children (Chaffey; Bailey & Vine, 2015).The regular curriculum does not satisfy the requirements of gifted children (Neber, 2004), and gifted children may behave disruptively and may have low expectations if unchallenged (Corte, 2013).

Some young children can be identified as gifted. "The longitudinal study by Gottfried, Bathurst, and Guerin (1994) found that the advancement could be detected as early as 18 months of age, while the seminal study by Roe dell, Jackson, and Robinson (1980) investigated the quantitative and qualitative ways that gifted preschoolers expressed their abilities" (Sarophim & Maker, 2010).Robinson and Robinson (1992) focused on the demanding environment and stimulation of young children and followed them in accordance with their potentials. Early childhood teachers can also observe gifted children who tend to engage in social situations earlier than their peers (Robinson, 1993) and conform to the behavior of their age group (Sarophim & Maker, 2010).

Preschool is a crucial stage and opportunity for child development and the main source of learning outside the family context. Here, teachers determine the children's learning procession the basis of their individual characteristics, skills, attitudes, levels of interest, and prior knowledge. These factors explain why

research on education considers different developments when studying the preschool stage. Most studies have concentrated on the environments of development. Given the emergence of the concept of inclusive education, focus on development is also important, especially when considering factors that impact the development of child potential (McClain & Pfeiffer, 2012; Masters, 2013; Jung & Worrellm, 2017).

A child's needs must be met in school. All children have the right to be educated, supported, and challenged in their learning. Giftedness is considered a special requirement due to the specific care and challenge that gifted students require, and any gifted students must learn and engage in school. However, many children do not have the opportunity to be supported in their school learning due to non-challenging school curriculums (Bui, Craig & Imberman, 2014; Dia, Swanson & Cheng, 2011).

Preschool is crucial to a gifted child. At this stage of development, some preschoolers can be recognized by a teacher as gifted or exhibit potential giftedness. For this identification and screening, teachers must understand the characteristics of a gifted child to enable his recognition. Even if they do not label such a child as gifted, they can discover his/her characteristics through his/her development features (Heller & Kemp, 2004; Dalforno, Bahia &Veiga, 2015).

The identification of giftedness in preschool is complex because of the lack of standards to early identify the child potential. However, such identification may succeed due teacher's ability to understand that certain features can be easily observed when she decides to identify gifted child in a certain educational phase. Therefore, she must explore special features in students, such as enthusiasm in learning, curiosity, opportunities of creative expression in different domains, and social relations according to theories of giftedness (Acar & Cayirdag, 2016).

Method
This study includes a quantitative research with descriptive approach. Different experts have analyzed and reviewed the study in terms of validity and reliability. The sample in this study has been preschool female teachers. The data has been analyzed according to the ANCOVA. Quasi Experimental design (Control and Experimental Groups) has been applied in the study.

Participants
A total of 30 preschool female teachers participated in the program (i.e., 15 in the experimental group and (15) in the control group.

Table 1.
Research Design Model

G1	O1	O2
Experimental group	Pre Test	Post Test
	X	
	Treatment	
G2	O1	O2
Control group	Pre Test	Post Test

Data Collection

A total of 30teachers were nominated (15 control and 15 experimental), whose cognitive competencies were evaluated by using a scale that consisted of 15 items. The program was designed and judged by specialists in giftedness and talent (n=5).

Scale was developed to measure and verify the validity and reliability of cognitive competencies of gifted preschoolers. A sample of the training program was determined, and its steps were explained in detail**.** The duration and place of implementation of training were determined in a school in Irbid City**.**

The cognitive competency scale was applied to check the teachers' ability to identify the gifted preschoolers in the study sample (Pre-test). The training program was applied to the study members from 23/9/2017 to 5/11/2017.

The cognitive competency scale was applied to identify the gifted preschoolers from the study sample (Post-test**.)**

Measurement Instrument

A scale that consists of 15 items was developed to achieve the goal of this study. The items were derived from the literature review that is related to the assessment of giftedness in preschool. Validity and reliability were investigated by reviewing the scale from five reviewers in special education. They provided several comments and suggestions, which were considered. The agreement was 90%. Cronbach's alpha reliability was 0.83 in total degree (appendix 1). A program was designed, as presented in this Table 1.

Table 1.
Research Procedure

N	Aim	Content	Materials	Evaluation
1	It is to acquire teachers gifted detention	- Renzulli detention - Gagne -The National Association for Gifted Children in the United States	- Whiteboard - Sheets - Data show	Asks and answers in groups
2	It is to acquire	-Cognitive	- Whiteboard	Asks and answers

	teachers gifted characteristics in preschool	characteristics -Creative characteristics -Behavioral characteristics	- Sheets - Data show	in groups
3	It is to acquire teachers criteria in identifying giftedness	- Cognitive ability - Creative -Academic achievement - Sensor motor skills	- Whiteboard - Sheets - Data show	Asks and answers in groups
4	It is to train teachers to build a rating scale to identify gifted in preschool	- Rating scales - Checklists	- Whiteboard - Sheets - Data show	Asks and answers in groups
5	It is to train teachers to use intelligence tests to identify gifted in preschool	- Beint SB 5 - WIPCI - Raven matrix test - Good enough test	- Whiteboard - Sheets - Data show - Raven matrix test -Good enough test	Asks and answers in groups
6	It is to train teachers to use a creative test to identify giftedness in preschool	- Torrance test	- Whiteboard - Sheets - Data show - Torrance test	Asks and answers in groups
7	It is to acquire teachers and recourses of gifted in preschool	- Name of books - Web sites	- Whiteboard - Sheets - Data show	Asks and answers in groups

Results

Teachers' level of competencies in identifying giftedness in preschool was determined by calculating the means and standard deviations (SDs). Table (1) summarizes the results. This cut-off point depended on teachers 'degree of knowledge in identification.

Means between 3.1–4, 2.1–3, and less than 2 correspond to high, moderate, and low competencies.

Table 2.
Means and SDs of Teachers' Level of Competencies in Identifying Giftedness in Preschool

	Items	Ms	SDs
1	I can distinguish talent, giftedness, and creativity.	2	0.93
2	I have knowledge of early talent indicators during the first 3years of child.	1.13	0.35
3	I have knowledge of the cognitive characteristics of gifted kindergarteners.	1.33	0.49
4	I have knowledge of the social characteristics of gifted kindergarteners.	1	0.00
5	I have knowledge of creative characteristics of gifted kindergarteners.	1.53	0.52
6	I can observe the characteristics of giftedness in the kindergarten stage.	3.07	0.46
7	I have knowledge of methods and instruments used to identify giftedness in the kindergarten stage.	2.37	0.64
8	I can determine the criteria diagnosis in identifying gifted kindergarteners.	1.4	0.63
9	I can use IQ tests in identifying gifted kindergarteners.	2.27	0.60
10	I can use creative tests to detect talented kindergarteners.	1.95	0.57
11	I can interpret the data obtained from instrument diagnosis results.	3.43	0.52
12	I can construct rating scales of behavioral characteristics of talented kindergarteners.	2.87	0.59
13	I have knowledge of specialized scientific references (e.g., Arabic or foreign) in detecting talents.	2.90	0.72
14	I have knowledge of recourses (e.g., websites) in the field of identifying giftedness in kindergarten.	3.87	0.35
15	I have knowledge of the formal official responsibility for detecting gifted kindergarteners in Jordan.	2.47	0.74
	Total degree	2.26	0.28

The results summarized in Table (1) showed that several competencies are low. These competencies include knowledge of early talent indicators during the first 3years of child, knowledge of the cognitive, creative, and social characteristics of gifted kindergarteners, ability to determine the criteria diagnosis in identifying

gifted kindergarteners, and the ability to use IQ and creative tests in identifying gifted kindergarteners.

Table 3.
Means and SDs of Pre and Post of Groups

		N	Mean	SDs	Std. Mean Error
	Control	15	2.251	0.441	0.11
Pre	Experimental	15	2.4063	.41708	.104
	Control	15	2.36	0.401	0.09

According to the results displayed in Table (1), the skills increased in the post evaluations, and the means in the pre- and post-testwere2.40 and 3.68, correspondingly.

Table 4.
ANCOVA Results of Pre-test and Post-Test Evaluation

Source	DF	Sum Sq	Mean Sq	F Value	P
Pre	1	0.85	0.82	2.31	0.09
Group	1	55.62	54.62	22.63	0.001
Error	13	0.452	0.15		
Total	15	56.998			

The ANCOVA results also showed significant difference between pre- and post-evaluation for post-test, thereby indicating that the program effectively increases the cognitive competencies and skills in identifying gifted kindergarteners.

Discussion

The low level of cognitive skills among teachers can be explained by the lack of pre-service training in the course of studying courses during teaching at the university stage, also their is weakness of the training that given to teachers by the school administration in holding training workshops to improve the level of skills of teachers to identify gifted students $(0.05 = \alpha)$ between the experimental and control groups in acquiring cognitive competencies to determine pre-school talent by variable (treatment). This refers to the ability of the program to improve the level of knowledge and performance skills of teachers in the detection of gifted students in the kindergarten stage. This result was attributed to the precise and detailed steps and procedures that used various means to develop the cognitive competencies of the sample members. Before school use tools to detect talented children. The program ensures the practical application of all skills included in the

program to improve cognitive skills. Focusing on actions rather than results has a significant impact on the cognitive skills of teachers.

Conclusion

The assessment of giftedness in preschool is necessary for many reasons. This approach not only enables identifying gifted preschoolers but also allows monitoring the progress and growth of these students and evaluating the educational interventions that are provided to them. This study suggests that preschool program administrators need to focus on identifying gifted preschoolers. Parents and teachers recognize the children's requirements in order to place them in stimulating environments, such as in-service training and adequate instructional materials. In addition, school systems must allocate adequate funds for identifying gifted preschoolers**.**

Teachers in regular classrooms must also receive professional training in identifying gifted children. Administrators must be aware of the importance of identifying gifted preschoolers**.**

Overall, teacher observations have been verified to be a valuable assessment tool for providing effective screening of gifted preschoolers in regular classrooms.

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Appendix 1.

Dear Teacher

The researcher is conducting a study on the impact of a training program on improving the cognitive competencies of teachers in identifying gifted preschoolers.

To achieve the objective of the study, a measure was established to determine the cognitive competencies in identifying gifted preschoolers.

Please provide the appropriate information by placing a (√) in the bracket provided to represent your answer**.**

Note that the information will be treated for scientific research only.

	Items	4	3	2	1
1	I can distinguish talent, giftedness, and creativity**.**				
2	I have knowledge of early talent indicators during the first 3years of child**.**				
3	I have knowledge of the cognitive characteristics of gifted kindergarteners**.**				
4	I have knowledge of the social characteristics of gifted kindergarteners**.**				
5	I have knowledge of creative characteristics of gifted kindergarteners**.**				
6	I can observe the characteristics of gifted kindergarteners**.**				
7	I have knowledge of methods and instruments used to identify gifted kindergarteners**.**				
8	I can determine the criteria diagnosis in identify in gifted kindergarteners**.**				
9	I can use IQ tests in identifying gifted kindergarteners**.**				
10	I can use creative tests to detect talented kindergarteners**.**				
11	I can interpret data obtained from the instrument diagnosis results**.**				
12	I can construct rating scales of behavioral characteristics of talented kindergarteners				
13	I have knowledge of specialized scientific references (e.g., Arabic or foreign) in the detection of talent				
14	I have knowledge of recourses(e.g., websites in the field of identifying giftedness in kindergarten)				
15	I have knowledge of the formal official responsibility of detecting gifted children in the kindergarten stage in Jordan**.**				