

Can Teachers' Self-Reported Characteristics and Beliefs about Creativity Predict their Perception of their Creativity Practices in the Classroom

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Abstract

The purpose of this study was to examine 197 Jordanian primary school teachers' creative personality, their beliefs about creativity, and creativity fostering practices. The researcher developed a questionnaire which consisted of three self-reported scales: teachers' creative personality, teachers' beliefs about creativity and teachers' creativity fostering practices. The results indicate that teachers' creative personality characteristics and teachers' beliefs about creativity are aligned with their perception of their practices for fostering children's creativity. In addition, gifted resource-room teachers, teachers from private schools and teachers with less than 10 years' experience were found to hold stronger and more positive beliefs concerning creativity than their colleagues working in regular classrooms or in government schools, and those with more than ten years' teaching experience. Moreover, teachers from private schools were found to have a more creative personality compared to teachers from government schools.

Keywords: *creativity, mainstreaming, gifted children, gifted resource-room, teachers' beliefs and practices.*

Introduction

Creativity is a human characteristic that helps young people to develop a level of adaptability to ensure that they can become part of an effective future workforce (Fazelian and Azimi, 2012). Related literature emphasises the effect of creativity on a

child's holistic development and the importance of fostering it during the early years (Starko, 2005). Since most theories of child development view young children as highly creative, many may lose their sense of creativity (Sternberg, 2003) if they miss the opportunity to develop it through a lack of encouragement and support in school settings (Farella, 2010; Asih, 2014; Hui et al., 2015). Based on this fact, socioeconomic demands and learning theories, fostering children's creativity is regarded today as a key education target by a number of education systems around the world (Kampylis, 2010) in both Eastern and Western countries (Cheung and Leung, 2014), including Australia (Kampylis, 2010), China (Chan, 2015), Finland (Saarilahti et al., 1999), Greece (Greek Pedagogical Institute [GPI], 2003), the United Kingdom (Qualifications and Curriculum Authority [QCA], 2005), the United States (Davis, 2004), and in the Middle East, including Jordan (Al-Dababneh et al., 2010).

However, despite the international and national interest in fostering children's creativity, some researchers have shown that the classroom does not appear to be a place where this occurs (Plucker et al., 2004; Aish, 2014). Some research explains this by reporting that the teaching approach employed is mainly teacher-centred, which smother opportunities for creativity by being overly didactic, have low expectations of children (Stojanova, 2010), and focus on correct responses and students' incapacity, rather than on their competencies (Alencar, 2002). Hui et al. (2015) added that teachers prefer expected ideas and discourage further exploration of unexpected creative ideas. These findings have led some theorists and researchers to study creativity and the factors that restrict the fostering of children's creativity (Kampylis et al., 2011).

Since teachers spend a considerable amount of time with children, they play a critical role in fostering or inhibiting creativity in the classroom (Aish, 2014). However, it has been recognised that in order to promote creativity there are three issues that require attention, including understanding what creativity means to teachers (Bramwell et al., 2011; Cropley, 1997; Sak, 2004), teachers' creative characteristics, and their practices for facilitating creativity (Chan, 2015; Aish, 2014). Thus, it is important to understand teachers' beliefs and personalities in relation to creativity, because when teachers are unaware of the meaning and importance of fostering creativity and how this can be accomplished, they may ignore teaching creativity (Sak, 2004; Chan, 2015).

Creative Personality

Encouraging teachers' creativity is the first step and a prerequisite for education that encourages children's creativity (Stojanova, 2010). Research has found that a teacher's creative personality will impact upon their practices for fostering children's creativity (Farella, 2010; Lee and Kemple, 2014; Chan, 2015). A teacher's creative personality is described as professional development, being highly motivated, open minded, having a high feeling of security, a tendency for novel and flexible products (Farella, 2010), goal orientation towards learning (Hong, Hartzell, and Greene, 2009), having personal intelligence, and being a hard-worker, energetic, intuitive, and confident (Bramwell et al., 2011). Hamza and Griffith (2006) added that teachers should be approachable, friendly, knowledgeable, interesting, caring, leaders, insightful, imaginative, be able to manage conflicts, minimise disruptions, and create innovative classroom activities. Similarly, Lee and Kemple (2014) noted that teachers who are open to experience and have more creativity-related experiences are more likely to espouse creativity-fostering teaching styles.

Beliefs about Creativity

Understanding teachers' beliefs about creativity plays a crucial role in altering teaching behaviours regarding the fostering of creativity (Pajares, 1992). Many researchers have tried to understand teachers' beliefs about creativity and view creativity as an abstract concept with many aspects, which make it difficult to define (Farella, 2010). Generally, creativity is considered as a process, and that all individuals are born with a different combination of personality traits (e.g. self-confidence, tolerate ambiguity, curiosity and motivation, emotional fantasy, find pleasure in challenges, involvement in tasks and tolerance of anxiety), abilities (e.g. thinking divergently, changes to their perception, and sensitivity to problems), and experiences that make them more or less able to express their creative potential (Hamza and Griffith, 2006). In this context most of the definitions agree that creativity is the production of novel ideas by individuals achieved by using their creative abilities and being open to experiences (Farella, 2010).

Many studies have revealed that teachers' beliefs regarding creativity and children's creative traits are mixed and tend to be vague (Diakidoy and Phtiaka, 2002; Fryer and Collings, 1991; Kamylyis et al., 2011; Fleith, 2000; Sak, 2004). For example, Chan and Chan (1999) found that the most teachers believed that creative attributes were being imaginative, questioning, and being quick in responding, and that creativity was also related to attributes such as being conventional or timid, lack of confidence, and conforming, while others have reported that teachers believe that creativity is related to fluency, elaboration, complexity, and making connections (Alhusaini et al., 2011). In addition, cognitive component originality, problem solving, thinking ability, and academic achievement were mentioned by teachers as components of creativity more than environmental, and personal components (Lee and Seo, 2006), while others believe that creativity is a personality trait (Fleith, 2000). However, many teachers have misconceptions concerning creativity; some believe that creativity is a rare trait of gifted people (Kamylyis et al., 2011), others tend to perceive creativity as a general ability primarily in the context of artistic projects (Diakidoy and Kanari, 1999; Kamylyis et al., 2011; Craft, 2005), and that creativity is irrelevant in abstract subjects, such as science or mathematics (Cropley, 2010), although research supports that children's creativity can be fostered in all subject areas (Craft, 2005; Kamylyis et al., 2011; Starko, 2005).

Beliefs and Practices

It can be said that teachers come to the classroom with their own beliefs, which determine many of their choices regarding how they employ creativity in the teaching process (Pajares, 1992). Some will ignore fostering creativity if they have not received the necessary and appropriate training (Kamylyis et al., 2011), or do not understand natural creativity (Kamylyis et al., 2011; Sak, 2004), and have narrow views about it (Plucker et al., 2004). Thus, if they are aware of the relationship between their beliefs about creativity and their practices in fostering it, children will do better if they are given the chance to foster their creativity (Cheung, 2012). Many studies have investigated the relationship between teachers' beliefs and their creativity practices, and have found that the nature of this relationship is still unclear, with some indicating that teachers' practices are not based on their beliefs (Cheung, 2012), although others have noted that teachers' beliefs impact upon their practices (Chan, 2015; Hamza and Griffith, 2006; Sak, 2004). However, despite the fact that fostering children's creativity is valuable and necessary, and that teachers of children, including gifted children, value creative thinking (Chan 2015; Comerford, 2012), recognising

the importance of developing children's creativity and being aware of the teaching models and strategies that promote creativity among children (Rash and Miller, 2000), it is rarely employed in their teaching (Bain, Bourgeois and Pappas, 2003). Margrain and Farquhar (2012) and Kampylis et al. (2011) emphasise this result, reporting incongruence between teachers' beliefs and their practices in the classroom regarding creativity.

Alencar (2002) tried to understand the profile of teachers who facilitate children's creativity, and found that they have good preparation, a high level of interest in their students and are disciplined. Some studies have reported that teachers involved in gifted education programmes are more likely to encourage creativity in their classroom (Hansen and Feldusen, 1994; Chan, 2015). There is a need to highlight the professional development of teachers, and to support children's self-confidence and creativity (Brinkman, 2010).

Creative teachers and creative teaching are key components in fostering creativity in young children. Recently, many countries have emphasised fostering creativity in education and have focused attention to identifying effective creative teaching methods. Cheng (2011) suggested some creative teaching strategies involved encouraging children to make connections and see relationships between unconnected items and ideas, and to employ analogies and metaphorical thinking in the teaching process. There can also be a focus on finding out about a child's own interests and encouraging them, and children should actively participate in their learning process (Stojanova, 2010). Some researchers have highlighted the role of teachers in supporting unusual ideas, providing freedom of choices, and providing an optimum balance between curriculum and freedom of expression (Runco and Albert, 1990). Such studies note that teachers can encourage creativity by asking open-ended questions, tolerating ambiguity, modelling creative thinking and behaviour, encouraging experimentation and persistence, and praising unexpected answers. Teachers who foster creativity encourage children to build their own personal interpretations of knowledge and actions (Runco, 2003), stimulate them to search for new information, respect students' contributions, use various teaching strategies, are open to criticisms made by students, and believe in their students' abilities (Alencar, 2002). Runco (2003) emphasises that one of the main roles of a teacher is providing children with the means and opportunities to become more aware of their creative potential and to develop it.

Internationally, research has been undertaken to investigate teachers' practices to foster children's creativity (Fryer and Collings 1991; Fleith, 2000; Rash and Miller, 2000; Tan, 2001; Chan, 2015; Diakidoy and Phtiaka, 2002; Kampylis, 2010), whilst others studies have examined teachers' beliefs about creativity (Beghetto and Plucker, 2006; Cassidy et al., 1995; Chang, 2003; Chan, 2015; Aish, 2014), and teachers' creative personality (Chan, 2015). However, few provide in depth information about the relationships between teachers' personality, beliefs, and practices related to creativity (Chan, 2015), either in regular schools implementing gifted education within mainstream settings or regular schools without gifted education, which remains an under-researched area internationally (Fryer and Collings, 1991; Fleith, 2000; Peter-Szarka, 2012; Rash and Miller, 2000), and in Jordan (Al-Dababneh, Ihmeideh & Al-Omari, 2010). Such comparisons could provide new insights into understanding and teaching all children, including gifted children.

The Jordanian education system has paid much attention to developing creativity among children, and there is a growing body of research related to fostering children's creativity, although creativity is still not employed effectively in most schools (Al-

Dababneh, et al., 2010). During her visits to primary schools, the researcher has noticed that creativity is not widely employed in the classroom and teachers usually depend on recalling information during the teaching process. It is unclear as to whether teachers do not employ creativity in the teaching process because they do not believe that developing creativity has a significant effect on children's development, or because they are not aware of the importance of developing creativity.

This study aims to address the gap in the research literature regarding creativity in the teaching process based on studying and comparing teachers' creative personality, beliefs, and practices in the Jordanian educational system context, which have been hypothesised to be correlated in studies undertaken in other countries (Chan, 2015; Lee and Kemple, 2014). Furthermore, gifted resource-room teachers are rarely studied compared to regular teachers who are not directly involved in gifted programmes in Jordan. Better information about the relationship between beliefs, characteristics and practices could help Ministry of Education (MoE) curricula designers, policy-makers, and training course providers, in their planning and evaluation efforts to facilitate teachers' practices for fostering children's creativity. It may also provide teachers and children's parents with valuable information concerning to what extent teachers foster children's creativity in the classroom. To achieve this aim a quantitative method of investigation was used to answer the following research questions:

- What are regular primary-school teachers' self-perceptions creative personality, beliefs about creativity, and classroom behaviors fostering children's creativity?
- Is there a connection between teachers' self-perceptions of their personalities, beliefs about creativity and classroom behaviors fostering children's creativity?
- How do regular primary-school teachers' self-perceptions of their creative personalities and classroom behaviors vary in terms of placement (gifted resource-room teachers, regular teachers), type of school (public and private schools), and level of teaching experiences (less than 10 years, more than 10 years)?

Jordanian Context

In Jordanian schools the international trend in fostering creativity has been followed and has recently been recognised as one of the aims of the educational process for all children, including gifted and talented children. In order to achieve this goal the last decade the MoE has implemented in some regular schools gifted education programmes within a gifted resource-room. Children are withdrawn from their normal education classroom for two hours each day and provided with an enrichment programme for promoting their talents and creative potential. In addition, there are creativity programmes in regular classrooms for all children (MoE, 2016).

As implementing gifted education in schools is not compulsory, the number of regular schools with gifted resource-rooms is limited, just 48/1805 primary schools (MOE, 2016). Staff work as a team in these resource-rooms, consisting of the supervisor resource-room teacher, who is usually a specialist in special education, in addition to teachers specialised in Arabic language, mathematics, science and English, who teach eight classes in a resource-room each week. Due to the Jordanian MoE's awareness of the importance of developing children's creativity and talent, curriculum designers are keen to consider creativity as an aim of the curriculum and to provide all children with appropriate opportunities to develop their creativity in the classroom (MOE, 2016). Although the increased interest in Jordan has aided the development of all children's creativity, including gifted children, it is not clear to what extent

teachers are prepared to foster creativity either in regular classrooms for all children or in gifted resource-rooms (MoE, 2016).

Research Methods and Procedures

Research Design

A quantitative method was adopted in this currently study as quantitative surveys have been previously used to examine teachers' perceptions of creativity, including 'breadth and flexibility' (Punch, 2003, p.4). Such a design can be used in different contexts, and there can be various combinations of variables, as well as different numbers of variables involved. Some teachers were directly involved with children, including gifted children in regular schools in inclusion settings, and are called 'gifted resource-room teachers' while others were not. A total of 197 usable questionnaires were analysed and three instruments were included in the survey questionnaire in order to collect data on teachers' creative personality, beliefs about creativity, and creativity fostering practices. Demographic data were also collected from the participants.

Sample and Setting

This study focused on primary school teachers in Jordan, as the primary years are crucial for promoting creativity in children, and there is a relationship between people's childhood experiences in creativity and their creativity as adults (Starko, 2005). For the purpose of this study the MoE in Jordan was contacted and asked to provide a list of regular primary schools which have or do not have gifted resource-rooms in two governorates in Jordan, Amman, and Arbid; 30% of these primary schools had gifted resource-rooms, with 80 resource-room teachers.

The first sample consisted of the gifted resource-room teachers who represent all teachers working in regular primary schools and who are directly involved in the creativity and gifted programmes which were implemented in 16 of the selected schools as a withdrawal programme into resource-rooms in order to promote children's creativity and talent. Surveys were addressed to the teachers of the resource-room for the gifted who specialised in special education, in addition to teachers of four main school subjects (Arabic language, mathematics, science, and English). Five surveys were sent to each school, addressed to the 'gifted resource-room teacher', and 66/80 teachers completed the study questionnaire. For comparison purposes other randomly selected teachers from 30 schools which did not have gifted resource-rooms were also sampled. Surveys were addressed to special education teachers and teachers of each of the four main school subjects (Arabic language, mathematics, science, and English). Five surveys were sent randomly to each school, and a total of 133 teachers completed the study questionnaire. Therefore the total number of participants was 197 primary teachers (see Table 1).

Table 1: Demographic Information of the Participants (N=197)

Variable	No.	%	
Teacher gender	Male	45	22.8
	Female	147	74.6
	Missing	5	2.5
Level of experience	Less than 5 years	86	43.7
	5-10 years	57	28.9
	More than 10 years	43	21.8

	Missing	11	5.6
Type of school	Private school	93	47.2
	Public school	104	52.8
Placement	Gifted resource-rooms	66	33.5
	ordinary teachers	131	66.5

Ethical Considerations

Official ethical approval was obtained from the MoE. Participants were initially contacted and invited to participate, and consent was obtained from the participants prior to beginning the research. Participants were informed of the research objective, assured of their rights, anonymity and confidentiality, and the proposed use of the collected data was stated clearly at the beginning of the questionnaire. The study was conducted under the ethical code of the International Review Board (IRB) at Hashemite University.

Instrumentation

The researcher developed the instrument used in this study after reviewing the literature worldwide, especially research related to teachers' creative personality, beliefs about creativity, and their creativity-fostering practices (Chan, 2015; Chan and Yuen, 2014; Aish, 2014; Soh, 2000; Al-Dababneh et al, 2010). The questionnaire included two sections; a demographic section which yielded a description of the sample used in the study, such as type of school, placement, and level of teaching experiences, while the second section examined teachers' self- perceptions of their creative personality, beliefs about creativity, and practices for fostering children's creativity in the classroom, measured using a five-point Likert-type scale ranging from [5] 'strongly agree' to [1] 'strongly disagree'. Section two consisted of three scales:

Scale 1. The teachers' creative personality (CP) scale consisted of 13 items designed to investigate the teachers' personal characteristics related to creativity (e.g. openness to experience, coping well with novelty, flexibility).

Scale 2. The teachers' beliefs about creativity (BC) scale included 8 items measuring deeply held personal viewpoints and beliefs that teachers have concerning the conception of creativity.

Scale 3. The teachers' fostering creativity practices (FCP) scale was designed to measure the behaviour and strategies displayed by teachers that foster creativity among children in the classroom. Each item in this scale tested the degree to which teachers practice fostering children's creativity in the classroom according to their perspectives. This scale consisted of 38 items with seven domains: opportunities, 7 items which refer to creating opportunities for children to work with a variety of educational materials under a variety of conditions; flexibility, 5 items indicating promoting flexible thinking in children, as well as taking children's suggestions seriously; motivation, 4 items on children's mastery of knowledge which enables them to think divergently; independence, 6 items referring to encouraging independent learning among children; self-confidence, 7 items including providing children with opportunities to deal with frustration and failure and to strengthen self-concept; judgment and evaluation, 5 items on postponing judgment on children's ideas and encouraging them to formulate their ideas more clearly before judging them, together with encouraging children to be autonomous with their own ideas; and finally, cooperative learning, 3 items relating to following a cooperative and integrative style of teaching. The domains in this scale were based on Cropley's

(1997) principle for the creativity fostering of teachers' behaviour which was adopted by Soh (2000) when compiling the creativity fostering teacher behaviour index (CFT Index).

The researcher administered the proposed questionnaire to an exploratory sample of twelve of teachers. This pilot study was designed to enable the researcher to examine the transparency of the items and the goodness-of-fit of the scale, and allowed improvements to be made to the scale to ensure its overall acceptance by the respondents. The process provided insight into how each item was understood, as well as the strategies used in formulating responses. Each respondent was asked to examine the scale items for clarity, to suggest additions, deletions, and to correct any errors in wording or procedures. Most of the suggestions were related to unfamiliar concepts and items considered irrelevant to these teachers' classroom situations. Suggestions from the pilot study were considered and some minor changes were made to the questionnaire; most of the changes were rewording and rephrasing of the scale items and no item was added or deleted.

Validity and Reliability of the Instrument

The original instrument went through a process of validation by a panel of ten experts from several Jordanian universities, including university faculty teaching staff who specialised in special education, gifted children and creativity, and teacher training. Their suggestions and comments were considered and changes were made accordingly. Items were revised until all reviewers agreed on the words used and the content validity. Following the experts' suggestions, two items were deleted from the scale and one item was added. The validation process included face validity, logical validity, content validity, and construct validity.

In order to improve construct validity a Pearson correlation matrix was used. The correlation between scale items and the total score for the scale was 0.27- 0.94, which was significant at $p=0.01$, thus the scale can be considered to be generally valid (see Appendix 1). Moreover, reliability was assessed by calculating Cronbach's alpha coefficient during a pilot study when the survey was administrated to 50 teachers who were not included in the final study sample. The coefficient alphas for the CP Scale, BC Scale, and FCP Scale were 0.96, 0.81, and 0.92, respectively, and 0.93 for the three scales overall, which reflects a good level of internal consistency.

Data Collection

The researcher conducted personal visits to schools and met with the teachers in order to acquaint them with the aim of the study. Questionnaires were then hand-delivered by the researcher directly to classrooms during the second semester of the academic year 2015/2016. Teachers were encouraged to read the items carefully before selecting the appropriate choice, and none of the survey questions were discussed. Additionally, the participants were ensured of their confidentiality and anonymity. The researcher made appointments to collect the completed surveys one week later.

Data Analysis

The survey questionnaire was analysed quantitatively using the Statistical Package for the Social Sciences (SPSS) version 22. The data collected were analysed and then expressed via means and standard deviations to answer question one. For question two, the correlations between teachers creative personality, beliefs, and practices were examined, and multiple linear regression analysis was used to identify the effect of teachers' beliefs about creativity and their creative personality on teachers' creativity-

fostering practices. An analysis of group differences using T-tests was employed for question three.

Results

Teachers' self- perceptions of their creative personality, beliefs and practices

Research question one examines teachers' creative personality, their beliefs about creativity, and practices for fostering creativity among children. Descriptive statistics, including means, standard deviations, and percentage were used to analyse the responses. As shown in Table 2, the mean value of the FCP Scale were higher (M=4.04, SD=0.41) than the CP Scale (M=3.68, SD=0.66), and the BC Scale (M=3.36, SD=0.43).

Table 2: Means and Standard Deviation

Scale	Mean	Std. Deviation	Rank	Agree %	Neutral %	Disagreed %
Creative personality	3.688	0.660	2	45.9	52.3	1.8
Beliefs about creativity	3.366	0.428	3	36.3	53.2	10.2
Fostering-Creativity practices	4.018	0.407	1	53.3	44.2	2.5

Table 3 shows that items 11, 12, 1, 7, and 13 from the CP scale had the highest mean values (3.96, 3.74, 3.73, 3.72, and 3.69, respectively), and for the same items 63.4% of teachers strongly agreed or agreed that they were working on increasing their knowledge of their specialty, with 47-49% considering themselves to be committed, to enjoy new ideas and things, and to like to discover and notice things, as well as having a strong personality. Interestingly, 35%, 51.3%, 51.3%, 52.8%, and 50.8%, respectively, indicated that they were neutral or did not know for these items, and the responses 'strongly disagree' or 'disagree' were rarely indicated for these items. In contrast, items 2, 3, 6, 10, and 16 received the lowest mean values (3.55, 3.58, 3.62, 3.63 and 3.64, respectively), and for item 2, 25.9% and between 42.1-45.2% for items 3, 6, 10, and 16, of the participants strongly agreed or agreed that they have unique ideas, think from different perspectives, enjoy making changes, are highly motivated and energetic, and enjoy teaching. Approximately half of the participants indicated a neutral response or moderate agreement with these items.

For the BC Scale, Table 3 shows that items 4, 1, 6, 2 had the highest mean values (3.77, 3.69, 3.62, and 3.58, respectively), and for these same items 62% of teachers strongly agreed or agreed that children's creativity can be improved, while approximately half strongly agreed or agreed that creativity can be achieved by all children, that children can learn how to deal with the explosion of knowledge in the world, and that child creativity is not a heavy burden in a classroom for his/her chaotic way of thinking. For the same items between 36-46% of teachers indicated they were neutral or did not know, and e responses 'strongly disagree' or 'disagree' were rarely indicated for these items. Items 5, 8, 7, and 3 had the lowest mean values (2.94, 2.99, 3.16, and 3.18, respectively), as 7.6% of teachers strongly disagreed or disagreed that there is a small percentage in every thousand children who are creative, and 10.2% of teachers strongly disagreed or disagreed that teaching children to be creative contributes to creating individuals who are incompatible with each other. In total, 17.7% strongly disagreed or disagreed that creativity is a genetic ability which cannot be learnt, while 36% of teachers strongly disagreed or disagreed that creativity is natural in some child and not in others. The majority of participants (79.7%, 77.7%,

75.1% for items 5, 8 and 7, respectively) and some participants (42.6% for item 3) indicated that they were neutral or did not know with regards to these items. It should be noted that a few also indicated that they strongly agreed or agreed with the content of these items.

Table 3: Means, standard deviation, rank, and percentages for teachers' creative personality, beliefs about creativity, and their perception of their practices for fostering children's creativity in the classroom

No.	Scale/ items	Mean*	Std	Agree %	Neutral %	Disagree %
Scale 1. Creative Personality						
11	I am working on increasing my knowledge in the field of my specialty	3.96	.871	63.4	35	3
12	I am committed	3.74	.838	48.4	51.3	0
1	I enjoy new and different things and ideas	3.73	.847	48.2	51.3	0
7	I like to discover and notice things around me	3.73	.847	47.2	52.8	0
13	I have a strong personality	3.72	.813	49.2	50.8	0
9	I have a flexible mindset and accept different points of view	3.69	.839	46.8	52.3	1
8	I easily express my thoughts and my views	3.69	.828	45.2	54.8	0
14	I have a strong sense of security.	3.65	.798	46.7	52.3	1
16	I enjoy teaching	3.64	.860	43.6	54.8	2
10	I possess high motivation and the energy to accomplish	3.63	.788	45.2	54.3	1
6	I enjoy making changes.	3.62	.815	42.1	57.4	1
3	I think from different perspectives	3.58	.736	43.1	56.9	0
2	I have unique ideas	3.55	.695	25.9	55.3	0
Scale 2. Beliefs about Creativity						
4	Children's creativity can be improved in the classroom	3.77	.753	62.2	36.5	2
1	It is expected that creativity in all children can be achieved	3.69	.776	54.9	42.1	3
6	Children can learn how to deal with the explosion of knowledge in the world	3.62	.827	50.5	46.2	3.5
2-	A child's creativity is a heavy burden in the classroom due to his/her chaotic way of thinking	3.5	.869	51.7	41.1	7.1
3	Creativity is natural; some child has it and others don't	3.18	.971	36	42.6	21.3
7-	Creativity is a genetic ability	3.16	.779	17.7	75.1	7.2

	which cannot be developed in the classroom					
8-	Teaching children to be creative contributes to creating individuals who are incompatible with each other	2.99	.639	10.2	77.7	12.1
5-	There is a small percentage in every thousand children who are creative	2.94	.594	7.6	79.7	12.6
Scale 3. Fostering Creativity Practices						
1.	Self- confidence	4.223	.462	76.6	22.4	1
2.	Motivation	4.079	.476	69.5	29	1.5
3.	Opportunities	4.052	.454	69	28.5	2.5
4.	Flexibility	4.039	.494	64.5	34.5	1
5.	Self-evaluation and judgment	3.941	.518	57.4	39.6	3
6.	Independence	3.920	.477	57.9	40.9	2
7.	Collaboration	3.869	.684	58.4	34.5	7.1

*ranging from 1= strongly disagree to 5= strongly agree

When considering the FCP Scale, Table 3 shows that most practices that teachers reported represent fostering children's self-confidence, with a mean of 4.22, and the majority of participants (76.6%) indicated that they strongly agreed or agreed. This was followed by teachers' self-perceptions of their practices to foster children's motivation, opportunities, flexibility, self-evaluation and judgment, and independence (mean values 4.07, 4.05, 4.03, 3.94, 3.92, respectively) with 69.5%, 69%, 64.5%, 57.4% and 57.9%, respectively, of participants indicating that they strongly agreed or agreed. Teachers' self-perceptions of their practices for encouraging collaboration received the lowest mean value of 3.8, with 58.4% of participants strongly agreeing or agreeing that they teach children in a way that promotes collaboration between children in their classroom (see Appendix 2).

Relationships between Variables

Research question two examines the connection between teachers' creative personality, beliefs, and their self-perceptions of their practices regarding creativity. The Pearson correlations between these three scales are shown in Table 4. As can be seen, teachers' self-perceptions of their creativity practices were significant and moderately positively correlated with teachers' creative personality and with beliefs about creativity. However, although teachers' beliefs about creativity correlated positively and significantly with their creative personality, this correlation was weak. This result reflects the fact that teachers are more likely to put their own creative personality and beliefs into practices for fostering children's creativity.

Table 4. Correlations analysis between Teachers' CB Scale, CP Scale, and FCP Scale

Scale	BC	CP	FCP
BC		.165*	.441**

CP			.333**
<i>p</i> < 0.01; * <i>p</i> < 0.05; <i>n</i> =197; BC= Beliefs about Creativity; CP= Creative Personality; FCP= Fostering-Creativity Practices			

To determine the effect of teachers' beliefs and creative personality on the total sum on the scores from all seven sub-scales of creativity-fostering practices, a multiple linear regression was performed to determine the overall strength of the relationship, R^2 , between the dependent variable (creativity-fostering practices) and each independent variable combined, (Keith, 2015). A summary of the regression analysis is presented in Table 5. This was a statistically significant model ($F(2/194)=34.871$, $p<.001$), with the adjusted R^2 indicating that 25.7% of the variance in fostering creativity practices could be explained by the variances in the two predictor variables. Both teachers' beliefs ($B= 0.377$, $p<.001$) and creative personality ($B=0.165$, $p<.001$) were shown to be significant predictors of teachers' self-perceptions of fostering creativity practices.

Table 5. Summary of Regression Analysis for Variables Predicting teachers fostering children's creativity.

Independent variable	Dependent variable	B	Std. Error	<input type="checkbox"/>	T	Sig
BC	FCP	.377	.059	.345	6.358	0.000**
CP		.165	.039	.466	4.290	0.000**

Differences between Groups

The final objective of this study is to answer research question three which is concerned with any significant differences between the three scales and the following independent variables: type of school, placement, and level of experiences. A t-test for independent samples was employed to answer this research question.

Placement was used as an independent variable to determine whether teachers' creative personality, beliefs about creativity, and practices for fostering children's creativity in the classroom differ for gifted resource-room teachers ($n=66$) compared to ordinary teachers who are not involved directly with gifted education programmes ($n=133$). Table 6 shows that for the BC Scale, gifted resource-room teachers scored significantly higher ($M=3.662$, $SD=0.248$) compared to ordinary teachers ($M=3.21$, $SD=0.42$); $t(190.48)= 9.292$, $p= 0.000$). For the CP and FCP scales, the results reveal that there were no statistically significant differences between these two groups of teachers.

Table 6. Results of the T-test According to Placement

Scale	Resource room teachers (n=66)	Other teachers (n=133)	Degrees of freedom		P
	M(SD)	M(SD)	t-value	df	
BC	3.662(0.248)	3.217(0.422)	-9.292	190.48	.000**

The type of school was also used as independent variable to determine whether teachers' self-perceptions of their creative personality, beliefs, and practices regarding creativity differ between teachers working in public schools ($n=93$) versus private

schools (n=109). Table 7 shows that for the CP and FCP scales, private school teachers scored higher (CP: M=4.07, SD=0.56; FCP: M=4.09, SD=0.40) than public schools teachers (CP: M=3.34, SD=0.53; FCP: M=3.95, SD=0.39). There was no statistically significant difference between these two groups of teachers for the BC Scale.

Table 7. Results of the T-test According to Type of School

Scale	Private schools(n=93)	Public schools (n=109)	Degrees of freedom		P
	M(SD)	M(SD)	t-value	df	
CP	4.0703(0.5686)	3.346(.5388)	9.174	195	0.000**
FCP	4.0931 (0.4086)	3.951 (0.3958)	2.478	195	0.014*

Note: **p<.01; *p<.05

Data concerning teachers' experience were grouped and a t-test for an independent sample was used to determine whether teachers' self-perceptions of their creative personality, beliefs and practices related to fostering creativity differed for teachers with less than 10 years' experience (n=144) compared to teachers with more than 10 years' experience (n=44). As shown in Table 8, teachers who have less than 10 years' teaching experience BC Scale scored significantly higher (M=.3.44, SD=0.39) for the BC scale than teachers with more than 10 years' experience (M=3.17, SD=0.49). The results for the CP and FCP scales reveal that there were no statistically significant differences between these two groups of teachers.

Table 8. Results of the T-test According to teachers' level of experiences

Scale	Less than 10 years (n=140)	More than ten years (n=44)	Degrees of freedom		P
	M(SD)	M(SD)	t-value	df	
BC	3.440(.3928)	3.176(.4943)	3.646	182	0.000**

Note: **p<.01

Discussion

Fostering children's creativity is considered a key objective of educational systems around the world including Jordan. As teachers are the main people who are responsible for this process, assessing Jordanian regular primary school teachers' self-perceptions of their creative personality, beliefs about creativity, and practices for fostering children's creativity was the major aim of this study. In total, 197 primary school teachers were asked to respond to three scales through a questionnaire.

Teachers' Creative Personality, Beliefs and Practice

The results indicate that teachers' perceptions about their practice for fostering children's creativity were higher than their perceptions about their creative personality and beliefs about creativity, although the mean score for the CP scale higher than that for the BC scale. This means that although teachers have moderate beliefs about creativity, and about half of teachers reported that they are unsure about the nature of creativity, although some have positive beliefs, they reported that they were working to foster children's creativity and they have a creative personality. These results are in line with findings from other studies (Cheung, 2012), which highlight discrepancies between teachers' self-perceptions of their beliefs and their practices. This may indicate that teachers have a lack of knowledge about the meaning of creativity, which

may due to pre-services programmes rarely addressing the topic of fostering children's creativity in Jordan (Abu-Hamour and Al-Hmouz, 2013). This result also suggests that not only is having appropriate beliefs about creativity a factor that contributes to fostering creativity practices in the classroom. However, these results should be treated with caution as they are from teachers' self-reported data, and practices were not observed directly. This needs to be taken into consideration, as it has been found in other studies that teachers' self-perceptions of their beliefs are not always in line with their perceptions of their practices to foster children's creativity (Aljughaiman and Mowrer-Reynolds, 2005; Fleith, 2000; Fryer and Collings, 1991).

The results reveal that the majority of teachers employ instructional practices to promote children's self-confidence, motivation, flexibility, self-evaluation and judgment, and independence, through providing children with opportunities to engage in creative activities. Teachers practice in fostering collaborations between children received the lowest scores with more than half of the participants reporting that they teach children in a way that promotes cooperative groups. This result is not surprising for teachers in Jordan, who usually undergo high quality pre-and in-service teaching preparation (Moe, 2016), in addition to their high commitment to their duties to teaching children, as noted by the researcher during her visits to the primary schools. This result is consistent with the results of Fleith (2000) and Fryer and Collings (1991).

Teachers' creative personality was represented in their professional development, which had the highest mean values, while around half of the teachers considered themselves to be committed, to enjoy discovery, and have a strong personality. In contrast, some frequently teachers characterising themselves as possessing originality received the lowest mean values, followed by flexibility (thinking from different perceptions), being motivated, and enjoying teaching. This means that teachers consider themselves to have a good background, to be committed and have a strong personality, but they need training to demonstrate more originality and flexibility. Motivation was influenced by low salary, crowded classrooms, and curriculum requirements which take time to complete, and such factors are considered challenges for Jordanian teachers (Studies Informatics and Economics for Center Phenix, 2014).

The most frequently expressed belief was that children's creativity can be improved, which had the highest mean values. Of teachers in this sample, 62% believed this, followed by around half of teachers who believed that creativity can be achieved by all children, that children can keep themselves up-to-date with knowledge, and that they welcome children's creativity. These results are consistent with those of other studies (Aljughaiman and Mowrer-Reynolds, 2005; Fleith, 2000; Diakidoy and Phtiaka, 2002; Aish, 2014), and several theories of creativity (Kampylis, 2010), which stipulate that the creative potential is a common characteristic of all children that can be improved with appropriate interventions. However, other studies disagree with the results of this study and have found that teachers believe that creativity is a rare phenomenon which not all people possess (Diakidoy and Kanari, 1999; Fryer and Collings, 1991), as indicated by a few teachers in this study. It can be concluded that there is some disagreement and inconsistency between teachers' beliefs around the world concerning children's creativity. It is worth noting that more than half of the teachers in this study seemed to contradict themselves, as just a few disagreed and the majority responded that they did not know if there is a small percentage of children who are creative, if fostering children's creativity leads to creating incompatible individuals, that creativity is a genetic ability which cannot be learnt, and that not all children are naturally creative. This inconsistency in teachers' beliefs could mean that

they lack appropriate knowledge concerning the nature of creativity, or that most of the teachers in this study believed that all children have a creative ability, but few may develop it in clear way or to a high level, as Asih (2014) confirmed. This explanation is supported by creativity theories which see creativity as a general ability which all children have. Gardner (in Davis, 2004) referred to this as 'little C' creativity, and most of the teachers in this study, as well as many other teachers have indicated that only a few individual or gifted persons can display high levels of creativity, described as 'big C' in the creativity model (Fryer and Collings, 1991; Plucker et al., 2004). Thus, teachers in this study may present practices for fostering creativity only for children with high level of abilities.

Relationships between Variables

It was found that teachers fostering creativity practices were significantly and moderately positively correlated with their creative personality and beliefs about creativity. This means that these teachers' perception is that they practise what they themselves believe about creativity. Regression analysis found that both teachers' beliefs about creativity and their creative personality were significant predictors of teachers' perceptions of their practices. This result is supported by theories (Runco and Albert 1990) and studies (Asih, 2014; Chan, 2015), which have revealed that there is a relationship between individual beliefs, personality and behaviours. However, other studies disagree with this result and have reported that teachers' motivation and beliefs do not significantly predict most of the creativity-fostering instructional practices (Hong et al., 2009).

Demographic Variables and Group Differences

Obviously there are other factors which influence teachers' perception about their perceptions of their creative personality, beliefs, and practices regarding creativity. The results show that gifted resource-room teachers scored significantly higher than regular teachers for the BC scale. This can be attributed to a number of different reasons. It could suggest that ordinary teachers as well as gifted resource-room teachers have an adequate ability to foster children's creativity, since both groups of teachers are graduates from the same universities, and have the same opportunities to work in schools with or without gifted resource-rooms. In contrast, gifted resource-room teachers, whose job it is to develop children's gifts and creativity, may have more understanding in terms of creativity, although they may not foster more creativity or have a more creative personality compared to ordinary teachers. This result is similar to the findings of Chan (2015), who reported a significant but small difference between teachers' beliefs for those who were directly involved with gifted education and who were not, but did not find differences in creativity-fostering practices between the two groups of teachers. This may indicate that training in gifted education may not be the only/primary indicator of fostering children's creativity, and that there are other factors of greater influence, such as environmental support. However, Cheung and Hu (2011) found that teachers who are in directly involved in gifted education rate themselves higher in terms of their creative characteristics and competencies compared to those who were not.

The results also showed that for the CP and FCP scale, private school teachers scored higher than public school teachers. This may be due to a lack of opportunities, facilities and encouragement in government schools compared to private schools. A similar finding was reported by Tasaduq and Azim (2012), who noted the effect of environment support on developing children's creativity and teachers' perceptions of

their practices. Private schools in Jordan usually employ standards when selecting teachers according to their professional and high level of skills through interviews; although government schools use the same standards, there are no interviews and so the interpersonal skill and competences of candidates cannot be examined in the same detail.

Finally, it was shown that teachers who have less than 10 years' teaching experiences scored significantly higher for the BC scale compared to teachers with more than 10 years' experience. This result is similar to that of Forrester and Hui (2007), where differences were found for teachers' experiences relating to teachers' creative personality and creativity practices.

Conclusions and Recommendations

In light of the above discussion, it can be concluded that teachers are more likely to put their beliefs and creative personality into their practice. In addition, gifted resource-room teachers, teachers from private schools, and those who have less than 10 years' experience, hold stronger and more positive beliefs about creativity than their colleagues working in regular classrooms or in government schools, and those with more teaching experience.

To advance our understanding of how teachers think and act, future research should be undertaken in order to obtain a complete picture of creativity and practices used to foster children's creativity as perceived by teachers, principals, and students using qualitative methods. To increase teachers' awareness of the importance of fostering children's creativity, conducting further studies to investigate the effectiveness of fostering children's creativity in developing Jordanian children's thinking skills is also recommended. Finally, it is hoped that this study might provide valuable insights for decision-makers regarding the importance of fostering creativity and its integration into teaching.

Implications

This study has addressed a research gap in creativity studies, as no previous studies in Jordan have focused on the relationship between teachers' perceptions of their beliefs, personality, and practices related to creativity, and gifted resource-room teachers. Although the small sample size of this study limits the generalisation of the findings, it nevertheless contributes some evidence about how teachers promote creativity, and has implications for teachers' professional development. It can also help teachers to increase their knowledge of what creativity is, improve teachers' characteristics, and encourage practical help for fostering children's creativity. Although current reforms in Jordan call for more creative education, change is not likely to occur without proper support to help teachers to translate policy into actual practice. The results of this study can be used by educationalists to aid in understanding teachers' beliefs and practices in order to help them to develop sensitive and relevant programmes that support using creative teaching strategies. This study could also help the MoE and universities to provide teachers with pre-service and in-service training programmes for establishing inclusion settings in schools, with the aim of fostering all children's creativity, including gifted children and children with disabilities. The MoE needs to provide government school teachers with a more supportive environment for fostering children's creativity and talents. In future research, other research techniques could be used, including classroom observations and interviews, while other factors which influence teachers' practices should be examined.

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Appendix 1. Pearson correlation coefficient

CP Scale		BC Scale		FCP Scale			
Item No.	Item correlation with Total Score	Item No.	Item correlation with Total Score	Item No.	Item correlation with Total Score	Item No.	Item correlation with Total Score
1	.941**	1	.652**	1	.275**	20	.431**
2	.830**	2	.629**	2	.631**	21	.410**
3	.820**	3	.625**	3	.544**	22	.588**
4	.806**	4	.589**	4	.573**	23	.556**
5	.882**	5	.414**	5	.565**	24	.559**
6	.870**	6	.682**	6	.545**	25	.602**
7	.879**	7	.406**	7	.387**	26	.407**
8	.913**	8	.307**	8	.504**	27	.484**
9	.353**			9	.455**	28	.455**
10	.865**			10	.593**	29	.506**
11	.928**			11	.389**	30	.532**

12	.899**			12	.404**	31	.459**
13	.902**			13	.481**	32	.511**
				14	.517**	33	.447**
				15	.642**	34	.518**
				16	.449**	35	.594**
				17	.614**	36	.534**
				18	.584**	37	.531**
				19	.474**	38	.513**

** $p < 0.01$; * $p < 0.05$

Appendix 2. Teachers' creativity fostering practices

No.	Domain / items	Mean*	Std	Agree %	Neutral %	Disagree %
<i>Domain 1. Opportunities</i>						
26	I encourage children to take the initiative and to ask questions of themselves	4.18	.726	84.2	14.2	1.5
6	I am keen on creating a quiet classroom environment that enables students to understand what is expected of them	4.18	.724	84.2	14.2	1.5
27	I expose children to educational situations that provoke thinking	4.18	.724	81.2	18.8	0
22	I use a variety of sensory experiences (experiences, events, methods, phenomena) and help students practice to use them to produce ideas	4.04	.794	75.2	23.4	2
1	I expose children to learning situations that challenge their ability	3.97	.735	82.2	14.7	3
8	I offer rich and diverse educational resources for use by children to accomplish the required tasks	3.96	.810	73.6	26.4	4.1
4	I show children's work to others	3.85	.823	59.9	39.1	1
<i>Domain 2. Flexibility</i>						
29	I encourage students to observe what is	4.18	.673	84.8	15.2	0

	happening in the educational situations they face as this allows students to get more out of what they are told to do					
16	I encourage children to discover different point of views and ideas, in order to rearrange their ideas	4.11	.765	83.3	15.2	3
3	I encourage children to diversify their ideas, and reformulate them in different way	4.04	.703	79.2	20.8	1
30	I teach my students to find and understand the relationships between seemingly unconnected ideas and to complete them	4.01	.763	76.6	20.8	2.5
5	I use open-ended questions such as: "What happens if ..?, What do you think ..?, What do you see ..?" To help students to think in unconventional ways	3.87	.871	58.3	40.6	2
<i>Domain 3. Motivation</i>						
32	I discuss with the children their ideas, and urge them to think	4.21	.694	84.7	14.2	1
13	I am keen on children acquiring basic skills and knowledge	4.15	.719	81.2	17.8	1
9	I am keen to provide children with clear directions inside my classroom	4.09	.774	76.1	22.8	1
2	I offer enough time for students to achieve the planned objectives, each according to their abilities	3.87	.692	74.1	24.9	1
<i>Domain 4. Independence</i>						
10	I encourage students to show what they have learned on their own	4.13	.721	80.5	19	1
34	I encourage children in their achievement to satisfy themselves and their interests.	4.04	.785	76.1	21.3	2.5
20	I offer enough space to practice independent activities and work	3.90	.764	69.9	28.6	2
12	I encourage pupils to collect evidence by searching the	3.89	.906	71.1	22.3	8.1

	available resources using clear search mechanisms					
21	I teach children to identify problems and define them by themselves	3.82	.896	67	26.4	8.1
24	I encourage children to explore and search when necessary to clarify the ideas presented to them	3.77	.871	67.5	24.4	9.1
<i>Domain 5. Self-confidences</i>						
31	I use positive feedback and reinforcement to encourage children to create unique solutions and to assess their performance	4.39	.688	88.3	11.7	0
38	I provide my frustrated students with psychological support	4.30	.705	87.8	11.2	1
28	I respect children's suggestions and accept them, even if they do not agree with my own	4.27	.659	88.3	11.7	0
36	I am keen to listen to my students	4.25	.804	84.3	13.7	2
11	I display to children my confidence in their ability and potential.	4.13	.709	80.7	19.3	0
19	I listen to my students' suggestions and questions even if they are not practical or useful	4.13	.859	78.2	18.8	4
33	I focus on children's achievements and not on their mistakes	4.09	.730	78.2	20.8	1
<i>Domain 6. Assessment and Judgment</i>						
35	I encourage children to experiment with what they have learned in different situations	4.11	.789	81.2	16.8	2
37	I encourage children to present their ideas, and analyse and evaluate them before I do	4.11	.748	80.2	18.3	1.5
14	I involve children in choosing methods that they can learn through	3.98	.782	75.6	20.8	3.6
25	I encourage children to generate unique ideas	3.78	.838	58.3	39.1	3
18	I am keen on sharing with children assessments of their work	3.74	.952	63.9	24.9	12.2
<i>Domain 7. Collaboration</i>						
17	I offer opportunities to children for free and autonomous expression of their ideas in the classroom in different ways (verbal, written, graphic, motion, work, etc.)	3.90	.739	72.6	24.9	2.5
15	I encourage students to ask questions and make suggestions	3.88	.805	63	36	1
23	I allow children to show other	3.83	.969	70.6	18.8	12.7

	children their work and then modify it					

ranging from 1= strongly disagree to 5= strongly agree