

The Saudi Version of the Gifted and Talented Checklist for Parents: An Instrument for Rating the Characteristics of Gifted Kindergarten Children

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Early identification of gifted children is a major trend in contemporary education. However, there is a noticeable paucity of tools for identifying gifted kindergarten children in Saudi Arabia and other Arab countries. Furthermore, there is a paucity of tools to assess parents' views of their children's giftedness. The present study was therefore conducted to develop a Saudi version of the gifted and talented checklist for parents. The study aimed to adapt the gifted and talented checklist for parents and establish its validity and reliability in the Saudi environment. The checklist was translated, adapted, and validated by a cohort of experts in gifted education, assessment and evaluation, and educational psychology. Discriminative, construct, and factorial validity of the checklist were established. Its reliability was also established by internal consistency and split-half methods. The study recommended that the checklist be used for identifying gifted children in the target population.

Keywords: *Identification of gifted children, characteristics of gifted checklists, kindergarten, Kingdom of Saudi Arabia.*

Introduction

Parents can be the first to identify children's giftedness, as children's giftedness shows itself early in the family. Thus, parents can play a significant role in identifying and enhancing children's giftedness, which is a very profitable investment. Therefore, it is important that



parents can access identification tools with good psychometric characteristics, so their identification of giftedness can be sound and effective.

Research has shown that checklists and inventories developed to rate the characteristics of gifted students contribute greatly to the identification of the gifted. They provide realistic and direct evidence of children's behaviour and they are based on contemporary psychological and educational measurement theories that focus on observation as a method of assessment. Such checklists and inventories connect the psychometric perspective and the impressionistic behavioural perspective in the identification of the gifted (Bakhiet, 2006).

The National Association of Gifted Children (NAGC) suggests that classroom observations of students' behaviours collected by specifically designed inventories and interviews can provide beneficial supplementary data, especially for children whose giftedness does not appear in traditional achievement and ability tests. To control observers' bias in identification, the association recommends that validated tools with good psychometric indices be used in data collection. Additionally, directors of programs are required to make sure that individuals collecting this kind of data have sufficient training in how to use tools and identify giftedness based on their results. Hence, the use of checklists for identifying giftedness was adopted by the NAGC in its position statement that was approved in October 2008 (NAGC, 2013).

Rating checklists were developed in psychological measurement and children psychiatry in the early 1970s. The Education Department in New York City approved the use of checklists rated by teachers in 2007-2008 and allocated them one-third of the score on which basis children from kindergarten to the third grade were admitted to the gifted programs. They were also adopted by school administrations in Atlanta State in 2011-2012 as a prior qualification for student admission to gifted programs.

The development of giftedness identification tools underwent six stages from 1950 to 2000 (Mawhiba, 2013). The use of checklists to rate the characteristics of gifted students officially started in the third stage beginning from the middle of the 1960s and their use continued throughout the following three stages up to the present time.

Checklists rated by parents have had special importance in the identification of the gifted because schools, according to Webb, Janet, Amend, and DeVries (2012), often ignore gifted students and fail in identifying them. The reason for this is that children's giftedness may not be evident in the classroom. Therefore it is not unusual that teachers may fail to refer very brilliant children to giftedness testing. This makes the availability of other information sources about children very beneficial.

Checklists for rating the behavioral characteristics of gifted students have been widely used in Arab countries in all educational stages: the elementary school (Abdulmajid Jelas & Ishak, 2012; Bakhiet, 2006, 2008a, 2008b, 2013, 2015; Aldaham, 2013; Alzayat, 1988; Abdullah, 2013; Almutairi, 2005; Alhajeri, 2015; Wadi, 2016), elementary and intermediate schools (Alharbi & Aljoghayman, 2017; Aldahmalawi, 2009; Alzobaydi, Kathem & Hamdan, 2015; Aboud, 2017; Housein, 2007), the intermediate school (Bakhiet & Housein, 2015; Alhajaj, 2013; Almolla, 2018), intermediate and secondary schools (Hararah, 2018; Abo Nawas, 2014; Almo'meni, 2018; Qoblan, 1995), the secondary school (Alazeri, 2002; Alawamlah, Alremawi, Samir & Alsaraj, 2008; Alfarah, Yaqoub, Alsaraj, Abdulmohsen, 2008; Alqamsh, 2007), and postsecondary education (Yousri, 2014).

The gifted and talented checklist for parents "Things my Child has done" was developed by Saylor (2006) to rate characteristics of gifted children. It consists of 15 Likert scale items and an open-ended question asking parents to write any important observations about children that are not included in the 15 items. The 15-item version is an update of two previous versions, the first of which consisted of 11 items and the second of 13 items. Since 2006, the Gifted and Talented Checklist for Parents began to be used extensively for identifying gifted children in kindergarten.

Surveying the literature on the identification of gifted students in peer-reviewed journals from 2004 to 2009, Bakhiet (2012) found that 31 studies explored the behavioral characteristics of gifted students via checklists completed by teachers, parents, peers or children themselves. This number represented 20% of the studies published in the field in that period. Furthermore, the study documented the paucity of research on the identification of gifted preschoolers. The largest number of identification studies (52.9%) was conducted on elementary school students followed by secondary school students (12.7%). Studies conducted on kindergarten children represented only 6.4%.

Preschool and Kindergarten Interest Descriptor (PRID) was the first international instrument to be widely used to identify the characteristics of kindergarten gifted children. It was developed by Rimm (1983) and it consisted of 50 items covering signs of giftedness: multiple interests, curiosity, independence and persistence, imagination, purposeful play, social acceptance, and authentic thinking. Teachers and parents respond to the 50 items independently using a 5-point scale (Alrawsan, 1996).

Widely used checklists for rating characteristics of gifted children were found to be highly valid and reliable (e.g., Lee, Pfeiffer, 2006; Petscher, Li, 2008; Pfeiffer, Petscher, & Jarosewich, 2007; Pfeiffer, Petscher, 2008; Rosado, Pfeiffer, & Petscher, 2008; Siu, 2010). Other international studies investigated other tools for identifying kindergarten gifted children (e.g., Gathie, 2004; Deleeuw, 2002). Deleeuw (2002) explored the views of teachers

and parents about the identification of gifted preschoolers. Data were collected using the questionnaire of behavioral characteristics of gifted children from 3.5 to 6 years. About 76% of parents reported the importance of early identification of gifted children and their inclusion in programs to enhance their aptitudes. About 91% of parents and teachers identified the most important behavioral characteristics they found most revealing of giftedness in kindergarten children. These included superior mental ability in solving problems in the classroom, academic superiority in mathematics and science, and superior cognitive development. Gathie (2004) investigated the identification of giftedness in early childhood using a sample of 15 gifted children between 3 to 5 years. The researcher collected data about the children via interviews with parents. She also observed the children during activity, play, and drawing. She concluded that gifted children have the behavioral characteristics of curiosity, motivation, independence, creativity, strong memory, quick assimilation, broad interests, and social relations and cooperation. Real experiences were found to play a significant role in enhancing giftedness at an early age.

A survey of Arab literature reveals that extensively used criteria for the identification of the gifted in the Arab context are checklists of behavioral characteristics, scholastic achievement, and IQ scores respectively. It also reveals that identification criteria differ by the educational stage. Behavioural characteristics have been found to be the most extensively used criteria with preschoolers (Abo-Hashem, 2003).

Checklists for rating giftedness in preschoolers captured considerable interest in Arab countries. What follows is a brief account of research on the identification of giftedness in kindergarten children.

Using the descriptive-analytic method, Rahbini (2019) investigated kindergarten teachers' awareness of giftedness indicators in preschoolers in Jeddah. She used a questionnaire that had two parts. The first part had initial data of the teachers of the children in the sample. The second part consisted of two dimensions, each consisting of 22 items. The first dimension measured awareness of giftedness behavioural indicators and the second measured giftedness cognitive indicators. The sample consisted of 306 randomly selected kindergarten female teachers. Overall, awareness of both behavioural and cognitive indicators of giftedness was found to be high. Significant differences in awareness were found between public and private kindergarten teachers in favour of public kindergarten teachers.

Oweis (2018) explored teachers' ratings of distinctive developmental characteristics of kindergarten children. Participants were 400 male and female children between 3 to 4 years and 38 female kindergarten teachers. Tools used were Good Enough - Harris Drawing Test, a researcher-developed checklist to rate developmental characteristics of gifted children between 3 and 4 years, and Traits of Creative Preschoolers (3-5 years) Checklist. The data

revealed a significant relationship between children's scores on the two checklists of developmental characteristics and traits of creative preschoolers. Traits of creativity could be predicted by dimensions of the developmental characteristics checklist. Also, a significant relationship was found between children's scores on the developmental characteristic's checklist and their scores on the IO scale.

Bakhiet and Abdullah (2017) examined the validity and reliability of the gifted and talented checklist for parents in the Sudanese environment (Sayler, 2006). A total of 271 male and female Sudanese kindergarten children participated in the study. Data analysis established the checklist's face, discriminative, construct, and factorial validity. Internal consistency and test-retest methods proved the checklist to be quite reliable.

Aljarallah (2017) sought to extract the psychometric characteristics of the Gifted Rating Scale - Preschool in Kuwait. The scale was administered to 152 male and female children from nine kindergartens in three school districts. The scale's criterion-related validity was established by relating it to the Behavioural Characteristics Checklist (correlations ranged from 0.753 to 0.874), the Primary Test of Nonverbal Intelligence (correlations ranged from 0.517 to 0.841), and Torrance's Thinking Creatively in Action and Movement Test (correlations ranged from 0.417 to 0.486). Reliability coefficients by test-retest, internal consistency, and split-half methods ranged between 0.832-0.931, 0.984-0.994, and 0.974-0.993 respectively. Raters' reliability coefficients ranged between 0.659 and 0.732. All values of validity and reliability were significant at ≤ 0.01 . Results revealed no significant differences in scores by gender, whereas significant differences were found by study level and age. Mean scores increased with age. The extracted psychometric characteristics proved that the Gifted Rating Scale - Preschool can distinguish gifted children.

Aboud, Al-Zarah, Abdulfatah, Al-Batrawi and Al-Hassan (2014) attempted to develop and standardise a battery for identifying gifted preschoolers. The battery included tests and scales for identifying gifted children according to various criteria covering facets of giftedness and creativity in children. These included three sub-tests of cognitive ability: verbal, quantitative, and non-verbal. Included also were creativity scales, motor ability tests, and the Behavioural Characteristics Checklist. Tests and scales were administered to 306 prekindergarten children in Hasa to extract their validity and reliability coefficients. Validity and reliability coefficients were found to be satisfactory. Male children outperformed female children in the quantitative cognitive ability sub-test. Male children also outperformed their female counterparts in the first situation of the creativity scale that required performance and manipulation. Female children, on the other hand, outperformed in the fourth situation that required painting and drawing. The cut off score at which the child can be described as gifted in cognitive ability was 46 (the highest score attained by children was 35). The composite

score of all tests was 56. The cut off scores of creativity scales, motor ability tests, and the behavioral characteristics checklist were 45, 22, and 48 respectively.

In Shonaykat's (2013) study, a scale to identify gifted kindergarten children was developed and it proved to be valid and reliable. It was also used to explore the difference in performance by type of school and gender. It had 135 items distributed under eight dimensions: physical, emotional, kinetic, personal, language, cognitive, social, and interests. Its concurrent validity was established in relation to the Stanford Binet Scale and its reliability was established by test-retest, interrater, and internal consistency methods.

Al-Jounayd (2013) attempted to identify significant personal traits and behavioural characteristics of Bahraini gifted kindergarten children. The sample consisted of 38 children, 19 males, and 19 females. They were purposively selected from various geographical regions to be representative of Bahraini kindergarten children. The proposed scale had 78 items measuring motivation (17 items), learning (13 items), artistic talent (13 items), leadership (13 items), creativity (10 items), and psychomotor talent (12 items). Scale's interrater and construct validity were established. Correlation coefficients between dimension scores and the total score ranged between 0.65 and 0.95. Its reliability was established by computing alpha Cronbach's coefficients of internal consistency. Alpha coefficients of scale dimensions ranged between 0.92 and 0.98. The highest scores attained by the sample were on psychomotor talent (88.4%), followed by motivation (78.7%) and artistic talent (78%). Significant differences ($p=0.05$) were found in favour of female children in artistic, leadership, and creativity. The other dimensions did not show significant gender differences. The researcher recommended using various methods to identify gifted young children, so their skills can be enhanced from an early age.

In Saudi Arabia, Hariri (2012) conducted a study to standardise the PRID scale in Buraidah. The scale was administered to 109 five-year-old children. The researcher checked the scale's face validity by getting it referred by a jury of specialists. The validity of items and dimensions were tested by computing their correlations with the total score. Concurrent validity was tested in relation to teachers' and mothers' ratings. The scale yielded reliability coefficients of 0.92 (split-half), 0.96 (internal consistency) and 0.91 (test-retest).

Yahya and Shonaykat (2012) extracted validity and reliability indices of the scale for identifying gifted kindergarten children in a study conducted on 100 male and female children selected purposively. The scale consisted of eight dimensions: physical, health, cognitive, emotional, social, personal, language, and interests. The scale yielded good indices of content, construct, concurrent and discriminative validity. Its alpha coefficients of internal consistency ranged between 0.93 and 0.98. Reliability coefficients by test-retest ranged between 0.82 and 0.95.

Attiyat and Salama (2009) developed a scale to be used in rating behavioral characteristics of kindergarten gifted children. The scale covered five dimensions: creativity, psychomotor skills, motivation, artistic and music interests, and leadership, and social acceptance. A total of 600 kindergarten children were randomly selected to participate in the study. Principal Component Factor Analysis revealed five main factors: psychomotor skills, creativity, leadership and social acceptance, superiority, and artistic/music interests.

Al-Joghayman and Abo-Ferash (2007) conducted a study to develop a checklist for identifying behavioral characteristics of gifted preschoolers (3-6 years). The proposed checklist was administered to 49 children and it proved to have good inter-rater reliability and internal consistency ($\alpha=0.93$). It had four factors: language, interests, learning, and personal traits. Children's characteristics were rated by teachers.

Abdulmajeed and Al-Joghayman (2007) and Al-Joghayman and Abdulmajeed (2008) sought to develop and standardise a checklist for identifying the behavioural characteristics of gifted Saudi children who deserved to be admitted to programs for the gifted. The checklist was judged by 18 specialists and was then administered by 50 teachers to 539 male and female kindergarten children in Riyadh, Sharqiyah, and Jeddah. Factor analysis revealed five factors. Reliability was tested by alpha Cronbach and split-half methods and was found to be 0.84 in both cases. Significant differences were found in favour of older children. Percentile criteria were extracted to interpret the score obtained on the checklist.

In Jordan, Attiyat (2006) developed a scale to rate behavioral characteristics of gifted preschoolers via surveying related literature and the views of children's parents and teachers. The preliminary version of the scale consisted of 109 items measuring seven dimensions of behavioural characteristics: psychomotor skills, musical interests, motivation, leadership, creativity, mental processes, and learning. The scale was face-validated by 16 experts in educational psychology, measurement and evaluation, psychological and educational counselling, and special education. Factor analysis revealed seven factors and item loadings ranged between 0.26 and 0.66. Test-retest reliability coefficients were 0.80 (fathers), 0.84 (mothers), 0.86 (teachers) and 0.84 (total). Split-half reliability by Spearman-Brown equation was 0.89. The alpha coefficient for internal consistency was 0.96.

In Kuwait, Al-Shimri (2005) investigated the effectiveness of a training program in developing teachers' skills in identifying gifted children by their behavioral characteristics. One of the tools used was the PRID checklist for identifying gifted preschoolers. The researcher tested the checklist's reliability by the test-retest method. A total of 40 teachers completed the checklist for a group of Kuwaiti children. The reliability coefficient obtained was 0.84.

Another Kuwaiti study targeting the PRID checklist was conducted by Al-Otayshan (1999) who developed an inventory of gifted kindergarten children's characteristics. The inventory included for dimensions: learning, motivation, creativity, and leadership. Alpha reliability coefficients for the four dimensions were 0.95, 0.84, 0.92, and 0.78 respectively.

In Iraq, Ahmed (1999) standardised the Jordanian version of the PRID checklist on kindergarten children in Baghdad to adapt an Iraqi version of the checklist. A total of 416 children were randomly selected from kindergartens in the four general school administrations in Baghdad. The checklist was tested for concurrent validity and its reliability was established by test-retest and analysis of variance methods. This Iraqi version was then used in a number of Iraqi studies (Al-Jizani & Al-Mousawai, 2008; Radam, 2010; Al-Zobaedi, 2001). In the study by Al-Zobaedi (2001) children who completed kindergarten (100 male and female children) and others who did not join kindergarten prior to school (100 male and female children) were compared in terms of giftedness and divergent thinking based on the PRID checklist. The obtained means were higher than the theoretical mean. Indices were statistically significant for first graders of the elementary school whether or not they attended the kindergarten. Al-Jizani and Al-Mousawai (2008) explored the behavioural characteristics of preschoolers in kindergartens and the effect of the two variables of the order of the child in the family and gender on the interpretation of variance in behavioural characteristics in four dimensions of giftedness: psychomotor skills and motivation, leadership and communication, mental processes, and creativity. Participants were 178 children from kindergartens in Maysan City. The researchers developed a scale for rating the behavioral characteristics of gifted preschoolers that had several dimensions: psychomotor skills, motivation, leadership and communication, creativity, and mental processes. Types of validity established included face, content, and discriminative validity. Reliability was established by alpha Cronbach and test-retest methods. Radam (2010) investigated giftedness in children and its relation to some variables. Participants were 170 mothers of kindergarten children. The PRID checklist was tested for face validity (agreement percentage was 100%) and discriminative validity. The alpha coefficient for internal consistency was 0.93.

Nothr (1998) aimed to identify the characteristics of Kuwaiti gifted kindergarten children. Participants were 300 children, 300 parents, and 150 teachers. The study used a scale measuring behavioural characteristics in the dimensions of learning, motivation, creativity, leadership, and psychomotor skills. Results revealed significant differences between parents and teachers in the five dimensions. Parents' mean scores in the dimensions of motivation, leadership, and creativity were higher than those of teachers. Teachers' mean scores were higher in the dimensions of learning and psychomotor skills. Results also revealed that learning characteristics were more evident in females, whereas leadership and psychomotor skills were more evident in males.

Al-Shafaei and Mohammed (1991, 1992) standardised Rimm's Group Inventory for Finding Creative Talent (GIFT) in the Egyptian environment. GIFT was developed at Wisconsin University in 1975. It was initially developed in three versions to be used with children from kindergarten to the sixth grade of elementary school. It was tested for validity and reliability in the United States, Israel, France, and Australia. The original inventory had 36 items in each of the three versions. After it was modified in 1980, it had 32, 34, and 33 items in the three versions respectively with 25 items common to all versions. Al-Shafaei and Mohammed standardised it on a sample of 535 rural and urban children (286 males and 249 females) from kindergarten to the fifth grade of the elementary school in Faiyum, Egypt. The inventory correlated with teachers' ratings but did not correlate with Torrance Scale (Form B). It achieved peripheral comparisons validity in its three dimensions and differences were significant at the 0.01 level. Items correlated significantly with dimensions they belonged to. The reliability coefficient by the test-retest method was significant ($p=0.05$).

Al-Batsh and Al-Rawsan (1991) investigated factors of the Jordanian version of the PRID scale for identifying gifted preschoolers. The scale was administered to 194 male and female children from 3-6 years. Factor analysis of the obtained data revealed five factors that explained 24.49% (multiple interests), 25.72% (purposeful play and social acceptance), 20.24% (imaginative thinking), 18.50% (independence and perseverance), and 10.66% (original thinking).

Al-Rawsan, Al-Batsh, and Qatami (1990) developed a modified Jordanian version of the PRID scale for identifying gifted preschoolers. The scale was administered to 194 children in Amman. Concurrent validity of the scale was established by testing its correlation with McCarthy scale of cognitive ability ($r=0.76$; $p=0.001$) and teachers' ratings of children's achievement ($r=0.76$). Reliability coefficients by split-half, internal consistency, and test-retest methods were 0.89, 0.84, and 0.83 respectively. Item analysis yielded high correlations with the exception of four items.

The previous survey of related literature shows interest, both international and regional, in scales for identifying giftedness. It also shows that these scales have good psychometric characteristics, so they have been used officially in gifted programs. It is also observable that previously surveyed scales are too long, even though recent trends in psychological measurement recommend the use of short tools. Most of these scales are not for use by parents. They are school-based, which makes them of little value when used by parents. Also, they are not based on things that children do. Furthermore, literature reported the paucity of standardised tools that are developed specifically for the Saudi context. All these reasons provided the rationale for conducting the present study to develop a tool for identifying the characteristics of gifted Saudi kindergarten children. What makes the introduction of such a

tool to the Saudi context an urgent need is the paucity of tools for identifying giftedness in kindergarten children.

Statement of the Problem

The identification of gifted children entails the presence of tools having good psychometric characteristics to be used in this important stage of gifted education and programs. Among these tools are scales for diagnosing the behavioral characteristics of gifted children, especially those designed for kindergarten children. The unavailability of such tools in the Saudi context along with the multiplicity of gifted programs provided the rationale for conducting the present study. Accordingly, the study explored the psychometric characteristics of the gifted and talented checklist for parents in Riyadh. More specifically, the study addressed the following two questions:

1. What are the validity indices of the gifted and talented checklist parents need for identifying the characteristics of gifted kindergarten children in the Saudi context?
2. What are the reliability indices of the gifted and talented checklist -parents need for identifying the characteristics of gifted kindergarten children in the Saudi context?

Aims of the Study

The present study aimed to test the validity and reliability indices of the gifted and talented checklist - parents for identifying the characteristics of gifted kindergarten children (Sayler, 2006) in the Saudi context.

Significance of the Study

This study is expected to introduce a tool with good indices of validity and reliability to be used for referring gifted children to gifted programs in Riyadh. This tool which is completed by parents is an additional important criterion that enhances the results of other criteria. The study is based on the orientations of the school emphasising the role of behavioral characteristics in the identification of the gifted.

Delimitations

Participants of the study were kindergarten children from Riyadh, the capital of Saudi Arabia, and data were collected in the second semester of the academic year 1441.

Definition of Terms

The Gifted and Talented Checklist - Parents for Identifying Gifted Children

It is a checklist developed by Sayler (2006) to rate the characteristics of gifted kindergarten children. It is an update of previous two versions. This checklist is completed by parents.

The Saudi Version

It is a version of Sayler's gifted and talented checklist -parents adapted and administered in Saudi Arabia. This version is expected to meet the characteristics of psychological and educational measures, e.g., objectivity, validity, and reliability.

Kindergarten

It is the stage that precedes the elementary school. However, there are discrepancies in naming it, so it is given different names: kindergarten, nursery, early childhood education, and preschool education. Whatever the name used to describe it, it refers to "the educational institutes that receive children at the age of three, care for them, encourage their physical, mental and psychological development, and facilitate their transition from family life to school education" (Mohammed, 2017).

Method

Participants

Participants in the study were 615 parents: 599 mothers (97.4%) and 16 fathers (2.6%). The completed the checklist (100% completion rate) for their kindergarten children who were three (N=64, 10.4%), four (N=90, 16.6%), and five years (N=459, 74.6%). The participants were selected from kindergartens in Riyadh to represent different economic and social levels based on the classification of neighbourhoods where the kindergartens are situated. Of those participants 300 (48.8%) were male and 315 (51.2%) were female children. Out of the total number of kindergartens that participated, 249 (40.5%) were governmental, 303 (49.3%) were private and 63 (10.2%) were international.

Instruments

The instrument used in the study was the gifted and talented checklist parents (Sayler, 2006) for rating the characteristics of gifted children.

Statistical Analysis

The statistical program IBM SPSS STATISTICS 26 was used to compute means, standard deviations, independent sample t-test, Pearson correlations, alpha Cronbach, Spearman-Brown and Guttman equations, and factor analysis.

Results

First: Results of the first research question about the validity of the checklist in the Saudi environment

Face Validity

The Arabic version of the checklist with its guide and response instructions was presented to five specialists in gifted education and psychological measurement in Saudi Arabia. The received feedback was supportive of the checklist as being suitable for measuring giftedness in young children. The agreement percentage was higher than 80%.

Discriminative Validity

To perform discriminative validity, the children in the highest and lowest 27% of the scores were compared. The t-test for the independent sample was then performed. Results of these statistics were as follows:

Table 1: T-test to examine the discriminative validity of the checklist

Group	N	M	SD	df	t-value	Sig.
The highest 27%	166	159.08	24.502	330	33.473	.000
The lowest 27%	166	95.03	3.332			

As listed in Table 1, there were statistically significant differences between the two groups in favour of the highest 27% group. This indicates that the checklist is valid and can discriminate between the two groups.

Construct Validity

The construct validity of the checklist was examined by internal consistency and factorial validity:

(a) Internal Consistency

To establish the internal consistency of the checklist, Pearson correlations among items, and the total score were computed. These results were as follows:

Table 2: Pearson correlations between items and the total score

Item	Total score	Item	Total score
1	0.554**	9	0.754**
2	0.694**	10	0.710**
3	0.627**	11	0.783**
4	0.732**	12	0.657**
5	0.738**	13	0.791**
6	0.738**	14	0.791**
7	0.783**	15	0.714**
8	0.706**		

Table 2 reveals that there are statistically significant ($p=0.01$) correlations among items and the total score. This indicates that the checklist is internally consistent.

(b) Factorial Validity

To examine the factorial validity of the checklist, the researchers used Principal Components Exploratory factor analysis with Varimax rotation. These results are shown in figure 1 and tables 3, 4, 5, and 6.

Figure 1. The scree plot of the extracted factors

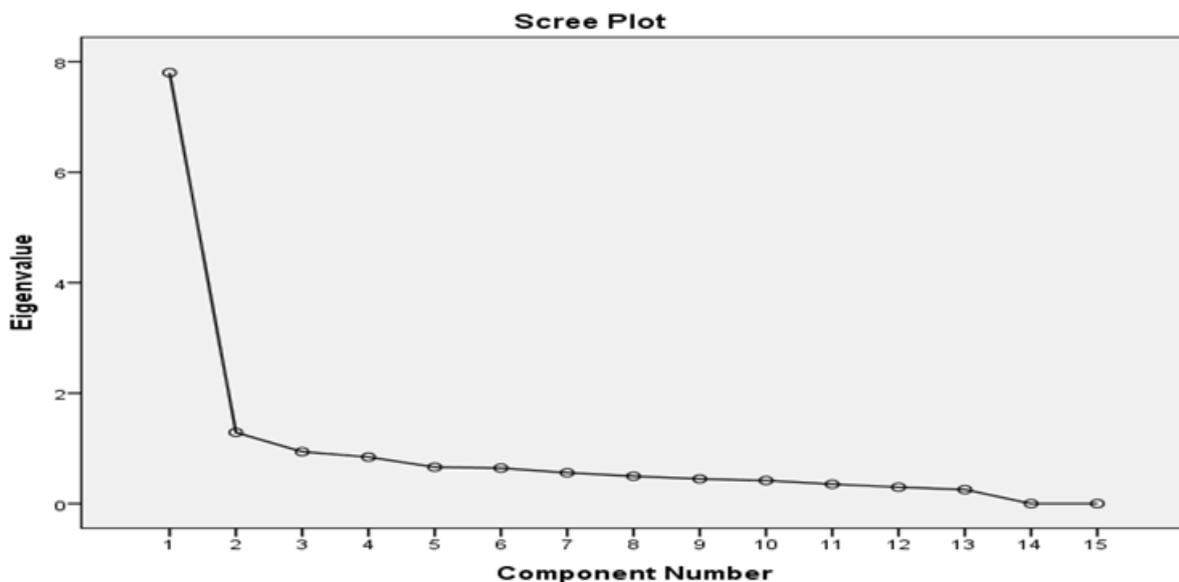


Table 3: Item correlation matrix

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00	.491	.318	.358	.450	.450	.327	.274	.441	.348	.344	.358	.364	.364	.325
2	.491	1.00	.467	.497	.430	.430	.490	.473	.604	.503	.544	.428	.434	.434	.457
3	.318	.467	1.00	.408	.389	.389	.392	.453	.452	.444	.496	.328	.427	.427	.457
4	.358	.497	.408	1.00	.509	.509	.694	.454	.459	.502	.538	.457	.497	.497	.547
5	.450	.430	.389	.509	1.00	1.00	.577	.453	.539	.398	.493	.344	.431	.431	.416
6	.450	.430	.389	.509	1.00	1.00	.577	.453	.539	.398	.493	.344	.431	.431	.416
7	.327	.490	.392	.694	.577	.577	1.00	.554	.516	.522	.545	.461	.593	.593	.493
8	.274	.473	.453	.454	.453	.453	.554	1.00	.554	.474	.579	.415	.483	.483	.473
9	.441	.604	.452	.459	.539	.539	.516	.554	1.00	.520	.629	.447	.503	.503	.460
10	.348	.503	.444	.502	.398	.398	.522	.474	.520	1.00	.591	.387	.533	.533	.555
11	.344	.544	.496	.538	.493	.493	.545	.579	.629	.591	1.00	.508	.550	.550	.606
12	.358	.428	.328	.457	.344	.344	.461	.415	.447	.387	.508	1.000	.592	.592	.395
13	.364	.434	.427	.497	.431	.431	.593	.483	.503	.533	.550	.592	1.00	1.00	.564
14	.364	.434	.427	.497	.431	.431	.593	.483	.503	.533	.550	.592	1.00	1.00	.564
15	.325	.457	.457	.547	.416	.416	.493	.473	.460	.555	.606	.395	.564	.564	1.00

Table 3 shows the items correlation matrix for the gifted and talented checklist - parents for rating the characteristics of gifted children.

Table 4: Communalities of the gifted and talented checklist – parents

Item	1	2	3	4	5	6	7	8
Communalities	0.378	0.504	0.394	0.545	0.886	0.886	0.609	0.496
Item	9	10	11	12	13	14	15	
Communalities	0.586	0.537	0.630	0.506	0.791	0.791	0.551	

Table 4 shows communalities of the items of the gifted and talented checklist - parents for rating the characteristics of gifted children.

Table 5: Latent root values and percentages of explained variance

Factors	Solution before rotation			Solution after rotation		
	Latent root	% of variance	Cumulative variance	Latent root	% of variance	Cumulative variance
1	7.801	52.009	52.009	5.220	34.797	34.797
2	1.289	8.592	60.601	3.871	25.803	60.601

Table 5 shows latent root values and percentages of explained variance. It is obvious that the rotation produced two factors.

Table 6: Factor loadings after rotation

Items		1	2	3	4	5	6	7	8
Factors after rotation	1	.275	.510	.505	.552	.191	.191	.583	.566
	2	.550	.494	.374	.490	.922	.922	.518	.419
Items		9	10	11	12	13	14	15	
Factors after rotation	1	.520	.656	.665	.686	.873	.873	.675	
	2	.562	.328	.433	.188	.172	.172	.308	

Tables 4-7 show that the factor structure of the checklist is good. The checklist proved to have two factors with items 2, 3, 4, 7, 8, 10, 11, 12, 13, 14, and 15 loadings on the first factor and items 1, 5, 6, and 9 loadings on the second factor. Examining the content of items resulted in labelling the first factor *creative and emotional characteristics* and the second factor *reading and learning characteristics*.

Second: Results of the First Research Question about the Reliability of the Checklist in the Saudi Environment

Internal Consistency

Examined by different methods, the checklist yielded internal consistency coefficients of 0.933 by alpha Cronbach equation, 0.789 by split-half method, and after modified it yielded consistency coefficients of 0.882 and 0.882 by Spearman-Brown and Guttman equations.

Item Contribution to the Checklist's Total Reliability

Table 7: Item contribution to the checklist's total reliability

Item No.	Scale Mean if item deleted	Scale Variance if item deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	124.35	749.503	0.506	0.932
2	124.91	728.026	0.654	0.929
3	124.88	724.942	0.571	0.931
4	124.87	712.942	0.690	0.928
5	125.75	689.867	0.685	0.928
6	125.75	689.867	0.685	0.928
7	125.76	679.760	0.736	0.927
8	125.57	701.490	0.652	0.929
9	125.24	699.364	0.709	0.927
10	125.17	710.001	0.662	0.929
11	125.15	698.464	0.744	0.926
12	125.28	710.137	0.597	0.930
13	125.59	680.242	0.747	0.926
14	125.59	680.242	0.747	0.926
15	125.15	708.906	0.666	0.929

Table 8 shows that items are similar in their contribution to the checklist's total reliability, with item correlations ranging from 0.926 and 0.932.

Discussion

The present study explored the validity and reliability of the gifted and talented checklist - parents (Sayler, 2006) for rating the characteristics of gifted kindergarten children in the Saudi environment. The analysis revealed that the checklist has good face validity with an agreement percentage on items of higher than 80%. It proved to have good discriminative validity, as it discriminated between the highest and the lowest 27% of the scores. Regarding internal consistency, items correlated significantly with the total score. It also proved to have good factorial validity. Factor analysis proved the scale to have two factors on which items loaded significantly. As to reliability, the checklist yielded high-reliability coefficients by internal consistency and split-half methods.

These findings are to a large extent in line with most literature that the researchers surveyed in this study. Furthermore, the checklist met all psychometric conditions recommended in recent psychological measurement references (American Educational Research Association, 1999; Anastasi & Urbina, 1997; Bagozzi, 1993; Gregory, 2004; Moss, 2007). These results

indicate that the checklist is suitable for use with the study's population. Therefore, it can be used reliably to refer children to gifted programs. It can also be used in research on gifted children.

In conclusion, data analysis in this study indicates that the gifted and talented checklist - parents for rating the characteristics of gifted kindergarten children have good psychometric characteristics that render it suitable for use in gifted education in Saudi Arabia. The scores of the two dimensions of the checklist can be used separately to assess each dimension of giftedness. What makes the checklist of additional value for the identification of gifted children is that it is completed by parents. It can therefore be used with checklists completed by teachers and children themselves to give a more comprehensive picture of giftedness in young children. The checklist is also important for future research in the field.

Recommendations

In the light of the results about validity and reliability indices of the gifted and talented checklist for parents for the purpose rating the characteristics of gifted kindergarten children, the checklist is recommended for the purpose of identifying gifted kindergarten children in Saudi Arabia. The checklist is also recommended for research purposes. A final recommendation is to replicate the study with a much larger sample to produce further confidence in generalising results.

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