

Development and Validation of School Preparedness Checklist

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DOI: <https://doi.org/10.70670/sra.v3i4.1109>

Abstract

School preparedness is a crucial part of a child's early education. In Pakistan, parents often overlook the importance of school readiness, which can lead to failure and difficulty adjusting to school. This study aimed to validate an indigenous checklist for assessing preschoolers' preparedness, derived from previous research. The checklist includes 27 items rated on a 3-point Likert scale. The participants were from the Twin Cities, and data from 300 children were collected. The data were analyzed using exploratory factor analysis in SPSS, resulting in 8 factors. The checklist has a good reliability of .79, and further research may explore additional factors.

Introduction

Schooling has been a focus of research since its advent, but the focus has shifted to the idea of school readiness (UNICEF, 2012) as there is a correlation between readiness at school entry and success in later life, suggested by Matthews et al. (2010). School preparedness is operationally defined as an inherited quality that enables a child to participate in the school (May & Kundert, 1997). This should not be understood as readiness for learning (Kagan et al., 1995).

Discussion on school preparedness was first started in the US in the 1960s. Different views regarding the idea of school preparedness emerged; survival skills (Kagan, 1992), obedience (Janus & Offord, 2000), innate abilities (Kagan & Snidman, 1999), adaptation (Janus et al., 2014), etc., but no common agreement was found across cultures for school preparedness in a child (Britto & Ulkuer, 2012). Initially, information about colors, letters, and alphabets was used to assess readiness, but this was disregarded because it implied that all children were equal in capabilities (Kostelnik et al., 2011). Vygotsky (1978) suggested in his socio-constructivist model that all children have different levels of intelligence. Brown & Lan (2015) proposed that when a child has achieved specific milestones concerning cognition, physical, emotional, and social aspects, only then is school readiness optimal.

School preparedness is characteristic of the concept of 'transition'. The word "transition" indicates the time a child starts formal schooling, either directly from home or any preschool program. The transition period is a very critical time of a child's life when they are going from a period of immense growth and learning, but this is also a very vulnerable time for the kids as they are transitioning from one phase to another, this is the foundation time for a lifetime (Cheadle, 2008; Fabian & Dunlop, 2007) and this varies across cultures because of the difference in the context. There

is an increase in acceptability on the topic of transition, its impact on academic achievement, and how to support it (Britto et al., 2013; Emond & Coad, 2019; Markström & Simonsson, 2017).

According to the Human Development Report of Pakistan, the rate of literacy is only 49.9% and it stands in the 136th position. The literacy rate for females is 33.8, while 47.18 in males, according to the data center of UNESCO, which indicates that people in the sixth largest country in the world are unable to get basic education. Regardless of the increase in the rate of literacy as well as the number of graduates, Shami & Hussain (2005) pointed out that the level of skills and manpower is very low from the demanded level in Pakistan; very few people are skilled in their respective fields. Research has pointed out that children who are not ready for school are found to be unsuccessful (Doherty, 1997) and have poor social skills and are more likely to have problems in dealing with behaviors (Connell & Prinz, 2002; NICHD, 1999). School preparedness has a direct relationship with positive attributes such as autonomy, the feeling of solace, even if any emotional support of parents or caregivers is not present, more intention to learn something, and the ability to communicate with other school fellows and adults (PACEY, 2013). Such people are found to be more successful in late stages of life and also more productive citizens of countries (Doherty, 1997).

School preparedness is a term that is new to Pakistani parents. No study has been conducted on what parents think is the right age for going to school in Pakistan. The National Education Management Information System collects data annually in Pakistan regarding the condition of education from the public as well as the private sector. The data collected in 2005-2006 showed that a million children were currently enrolled in pre-primary school, but no data were found on the preschoolers (Lynd, 2007).

There are several domains of school preparedness, which include physical health and well-being, social competence and emotional maturity, different approaches to learning, language and cognitive development, and communication skills (Doherty, 1997; Kagan, 1992). Similarly, Janus & Offord (2000) describe five different domains of school readiness, which include domains that range from cognition to the general knowledge of a child. Lewit & Baker (1995) have explored that the most (above 75%) of the participant teachers reported that children who are physically active, well-nourished, and relaxed are more likely to do well in school, and the parents also indicated the same. Social development is the capacity to develop and maintain relationships with the peer group and the adults. Different variables such as cooperation, understanding, empathy for others, the capacity to treat people fairly, and the ability to differentiate between actions. Hartup (1992) researched that social development in children is a predictor of development in adults. Kagan et al. (1995) introduced approaches to learning as a domain of school readiness and identified it as a fundamental construct that has a direct impact on the early achievement of a child in mathematics, socio-emotional development, and book reading (Malone et al., 2006). Kagan et al. (1995) suggested that this domain includes different traits such as gender and temperament, the behavior and susceptibility influenced by the culture, and the learning styles. Young children learn these skills by participating in experiences through play, which increases cognitive abilities such as attention span, recognizing rules, and controlling impulses to achieve a larger goal (Tomlinson, 2012). Language development is a critical dimension of school readiness (Boyer, 1991), as it helps in giving symbols to different concepts. There are two different theories of cognition, which are the great works of Piaget (1952, 1954, 1965) and Vygotsky (1978). Both of these theories suggest that knowledge comes from the child's ability to think, and they construct their own understanding of the world, as well as through their interaction with adults and other children.

Theoretical Background

The concept of school preparedness varies in different perspective of theory explained by different people; (i) The maturationist view claims if a child is not ready for school than that is his individual fault and not the fault of environment and the child only needs 'the gift of time' than any

other thing to be ready (Banerji, 1992), (ii) The environmental/empiricist view propose that school readiness is based on what a child knows and how they behave. This is the result of how a child has been told about things, (iii) The idealist/nativist view states that children are ready for school when they are mature enough to have self-control, peer friendships, and the capacity to follow the instructions, (iv) The social constructivist view claims that readiness of school is embedded in the cultural and social context of a child rather than inherited or demonstrated by the environment, (vi) The interactionist view considers all the factors and perspectives of school readiness i.e. an instrumental relationship between school and child in the promotion of school readiness (Meisels, 1996).

In developed countries, school preparedness is taken very seriously; a child is taught the basic school preparedness techniques from the very start of developmental age, which gives them independence and the required skills for school preparedness. However, there is a lack of understanding of school readiness in developing countries. Mostly in developed countries, children are prepared when they start their schooling, but this is different for developing countries like Pakistan, where, when a child starts schooling, they are expected to know everything taught to them in school. Therefore, considering these differences, an indigenous tool was developed to measure the level of preparedness for school. This research aims to validate the preparedness of the school checklist, including internal consistency and determining its factor structure.

Method

Sample

Gorsuch (1983) and Kline (1994) recommended a sample of at least 100 subjects. Cattell (1978) recommended a three to six subjects per variable; Everitt (1975) and Nunnally (1978) suggested sampling at least ten times as many subjects as variables. The total number of items in this scale was 27, and according to the rule of thumb, the subject-to-variable ratio should be at least 10 cases for each item in the instrument being used, so the sample size is 270 for this checklist. The sample consisted of pre-school children, both male and female, and their mothers were the informants. Purposive sampling technique was used to collect the data for children with the inclusion criteria of age 3-4 years old, who were about to start school.

Procedure

The instrument was named “Preparedness for school checklist”. The instrument was based on 27 items, and those items are based upon five domains, namely, self-help, academic, developmental/cognitive, socio-emotional regulation, and behavioral problems. The scale had a three-point Likert scale: 0 = Never, 1 = Sometimes, and 2 = Always. The research questions were based on five domains of child development to ensure that the child has met the requirements to go to school: 1 to 9 items for socio-emotional regulation, 10 to 13 for cognitive development, 14 to 15 for behavioral problems, 16 to 21 for the self-help category, and 22 to 27 for the academic domain.

Results

Exploratory Factor Analysis (EFA) was conducted to validate the scale and its 27 items. IBM Statistical Package of Social Sciences, Version 20.0, was employed. The Kaiser-Meyer-Olkin measure of sampling adequacy was .806, above the commonly recommended value of .6, and Bartlett’s test of sphericity was significant ($\chi^2(300) = 1916.521, p < .001$) (Table 1).

Secondly, the communalities were all above .3, i.e., .4 to .7, further confirming that each item shared some common variance with other items (Table 2).

Principal components analysis was used because the primary purpose was to identify and compute composite scores for the factors underlying the scale. Initial eigenvalues of 8 items are above 1.0 (Table 3).

For the final stage, a principal component factor analysis of the 27 items, using varimax with Kaiser Normalization, was conducted. The analysis sorted 27 items into 8 factors. Each of the factors is defined by the highest loading item in each of these factors (Table 4).

Internal consistency for each of the scales was examined using Cronbach's alpha. Overall scale reliability was 0.79. All factor alphas were moderate: Academic skills 0.82 (6 items), Social emotional skills 0.65 (4 items), Self-help 0.64 (5 items), Learning abilities 0.50 (3 items), Following orders 0.50 (3 items), Sharing and friendship 0.49 (3 items), Aggression 0.39 (2 items), and Self-control 0.36 (2 items). No substantial increases in alpha for any of the scales could have been achieved by eliminating more items. Descriptive statistics were calculated. The skewness and kurtosis were well within a tolerable range for assuming a normal distribution (Table 5).

Table 1. KMO and Bartlett's Test (N=300)

KMO Measure of Sampling Adequacy	Bartlett's test of Sphericity		
	χ^2	df	Sig.
.806	1916.521	351	.000

Table 2. Communalities using Principal Component Analysis (N=300)

Items	Initial	Extraction
1	1.000	.681
2	1.000	.542
3	1.000	.633
4	1.000	.475
5	1.000	.458
6	1.000	.543
7	1.000	.759
8	1.000	.499
9	1.000	.523
10	1.000	.534
11	1.000	.519
12	1.000	.465
13	1.000	.580
14	1.000	.618
15	1.000	.636
16	1.000	.633
17	1.000	.595
18	1.000	.419
19	1.000	.410
20	1.000	.462
21	1.000	.525
22	1.000	.595
23	1.000	.641
24	1.000	.556
25	1.000	.629
26	1.000	.729
27	1.000	.666

Table 3. Total Variance using Principal Component Analysis (N=300)

Items	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Var	Cum %	Total	% of Var	Cum %	Total	% of Var	Cum %
01	5.41	20.03	20.04	5.41	20.04	20.04	3.16	11.71	11.70
02	2.27	8.42	28.46	2.27	8.42	28.46	2.18	8.08	19.78
03	1.63	6.04	34.51	1.63	6.05	34.50	2.08	7.71	27.50
04	1.45	5.38	39.88	1.45	5.38	39.89	1.84	6.82	34.32
05	1.34	4.97	44.86	1.34	4.98	44.87	1.71	6.31	40.63
06	1.18	4.21	49.08	1.14	4.21	49.08	1.58	5.85	46.48
07	1.06	3.94	53.04	1.06	3.94	53.02	1.44	5.34	51.87
08	1.01	3.74	56.76	1.01	3.74	53.76	1.33	4.93	21.87
09	.98	3.63	60.39						
10	.97	3.46	63.86						
11	.87	3.24	67.11						
12	.82	3.06	70.14						
13	.81	2.98	73.13						
14	.74	2.73	75.86						
15	.71	2.61	78.48						
16	.68	2.54	81.07						
17	.64	2.37	83.41						
18	.62	2.31	85.72						
19	.59	2.21	87.93						
20	.55	2.05	89.99						
21	.51	1.88	91.87						
22	.46	1.71	93.58						
23	.42	1.59	95.17						
24	.37	1.396	96.57						
25	.36	1.342	97.917						

26	.30	1.121	99.037
27	.26	.963	100.00

Note. % of var = percentage of variance; Cum % = Cumulative percentage

Table 4. Principal Component Analysis using Varimax with Kaiser Normalization (N=300)

Items	Component							
	AS	SES	SH	LA	FO	SAF	AG	SC
26	.830							
25	.774							
27	.711							
24	.672							
23	.629							
22	.514							
02		.634						
09		.619						
08		.483						
04		.464						
20			.403					
17			.746					
16			.743					
18			.592					
19			.382					
21				.622				
12				.602				
11				.475				
13					.729			
10					.646			
05					.473	.347		
07						.803		
06						.659		
14							.697	
15							.693	
03								.715
01								.710

Note: AS – Academic Skills, SES- Social Emotional Skills, SH-Self-help, LA- Learning Abilities, FO- Following Orders, SAF- Sharing and Friendship, AG- Aggression, SC- Self-Control

Table 5. Descriptive and Reliability Analysis

Scales	Items	M (SD)	α	Skewness	Kurtosis
Preparedness for School Checklist	27	35.3 (7.03)	.79	-.72	.66
AS	06	9.28 (2.74)	.82	-1.0	.74
SES	04	5.61 (1.80)	.65	-.58	-.19
SH	05	5.99 (2.19)	.64	-.23	-.31
LA	03	4.79 (1.28)	.50	-1.0	.62

FO	03	3.67 (1.54)	.50	-.32	-.46
SAF	03	2.53 (1.20)	.49	-.36	-.90
AG	02	.843 (1.04)	.39	1.1	.57
SC	02	1.64 (.990)	.36	.10	-.39

Note: AS – Academic Skills, SES- Social Emotional Skills, SH-Self-help, LA- Learning Abilities, FO- Following Orders, SAF- Sharing and Friendship, AG- Aggression, SC- Self-Control

Discussion

In the present study, the researcher attempted to develop and validate the "Preparedness for School Checklist," which is an important milestone for the educational system in Pakistan. As research from the past has put a great emphasis on the tendency of a child's readiness before entering school, there was no standard tool available in Pakistan that could measure if a child is prepared enough to enter school, interact with the environment, and begin learning. Therefore, this study is an effort to develop a standardized school preparedness checklist.

The initial items for the checklist were developed based on five domains, named self-help, academic, developmental/ cognitive, socio-emotional regulation, and behavioral problems, as suggested by the theories of school readiness and preparedness. After performing revisions and peer review, 27 items were selected from the main item pool, which was then presented to the sample of 300. The parents of the children from both genders provided information about the school preparedness of their child on a Likert-type scale. After collecting data, it was subjected to factor exploration, but prior to factor extraction, several tests to check for the statistical significance of the data were performed. These tests include KMO, Bartlett's test for Sphericity, commonalities, and percentage variance for each factor was calculated (See Table 1). After performing EFA, an 8-factor structure was finalized for the checklist (See Table 4). The reliability, internal consistency, and values for skewness and kurtosis are also within the acceptable range (See Table 5).

The first factor of the checklist is named Academic Skills. The items which measure this dimension are 23, 24, 25, 26, and 27. As the name suggests, this factor taps the academic knowledge and motor skills that a child needs to master before entering school. The leading indicator of this factor includes whether a child can recognize colors, numbers, letters, and the concept of size and shapes. This domain also includes indicators, which measure whether a child has developed enough motor skills to hold a pencil or carry other objects. A child will be considered to have academic abilities if he/she score high on this checklist domain. So, this checklist domain suggests that for a child to perform excellently in school, they should develop appropriate motor skills. A study also suggests that a child's school readiness can be enhanced by promoting the development of motor skills of a school-going child (Jones et al., 2021). Moreover, Magnuson et al. (2007) suggested that academic skills and maturation contribute to preschoolers' school readiness.

The second factor of this checklist is named Social-Emotional Skills. Items 2, 4, 8, and 9 measure this domain of the checklist. Social-emotional skills, as the name indicates, include traits like understanding one's own and others' emotions and showing empathy to others. The leading indicator of this domain includes whether a child can be involved in group activities, cooperate with other group members, and respond to the emotions of others. A child who scores high in this domain is considered to have enough socio-emotional skills, recognized as having less separation anxiety from their parents and forming new bonds with teachers and peers at school.

Moreover, they will be able to regulate their emotions and understand others. The results of a recent study suggested that academic achievement depends upon children's engagement with peers and teachers, as it increases a child's phonological development and vocabulary (Rojas et al., 2023).

The third factor of the checklist is named Self-Help. It is measured by items 16, 17, 18, 19,

and 20. Self-help refers to a child's ability to care for themselves. The leading indicators of this domain are if a child can go to the toilet and clean themselves, if the child can eat by him/herself, if the child can look after his/her belongings, etc. A child will be considered sufficient in self-help if they score high in this domain. It is also suggested by a research study that a child must have self-care skills in order to be identified as school-ready (Oktay & Unutkan, 2005).

The fourth domain of this checklist is named Learning Abilities. It was measured by taking scores on items 12, 21, and 11. This domain taps a child's cognitive skills or executive functioning. A child with learning abilities will be intelligent enough to learn and assimilate new information from the class and further build upon the existing knowledge. The learning abilities help a child regulate attention, behavior, and emotion, which will further help them make appropriate judgments and learn within the new environment. It also taps into the information if the child can differentiate between the authority figure and the peers and regulate their behavior according to their relationship with the authority figure and the peer group. A study suggests that a child's academic performance is enhanced when cognitive skills, such as attention span and working memory, are efficient (Welsh et al., 2010).

The fifth domain of the checklist is named Following Orders. For measuring this domain, responses against items 6 and 7 are obtained. This domain taps into whether a child can follow orders/instructions/guidelines, perform a task, or obey their teacher. If a child scores high in this domain, they will be considered competent enough to understand and follow the instructions and work to complete a task. A child's ability to understand and follow instructions will help him/her to perform the tasks accurately. A research study also suggested that an individual's ability to follow instructions, take turns, and follow directions enhances school readiness (Ritblatt et al., 2013).

The sixth domain of this checklist is named Sharing and Friendship; it is measured using items 6 and 7. In this domain, it is measured whether a child can share his/her belongings with others while performing tasks or can share food items with others. It is the determinant of healthy social interactions among peer groups in school that help children develop healthy habits and make the working environment around them pleasant. A study suggests that sharing and caring among peers help them develop bonds and friendships, which further leads to appreciation from each other, thus increasing their self-esteem. Therefore, working in an environment where others accept a child and can integrate within a group further enhances a child's learning abilities. Research also suggested that in order to increase readiness, a child's social skills should be promoted (Williamson, 2023).

The seventh domain of the checklist is named Aggression. It is measured by taking responses against items 14 and 15. It taps if the child is having self-harm or fighting tendencies. The leading indicators of this domain measure whether a child, when angry, tends to inflict harm on others or oneself. If a child possesses aggressive abilities, it can adversely impact his/her school performance. As it will become more likely for a child not to be able to form friendship bonds with others, it can lead to rejection from the peer group (Yue & Zhang, 2023). Therefore, a child's aggressive behavior must be replaced by self-control so that he/she will progress in academic life.

The eighth domain of this checklist is named Self-Control. It is measured using items 1 and 3 of the checklist. A child is said to have self-control if he/she can recognize a growing array of feelings in themselves and others. They are identifying solutions to simple problems, with support, using strategies like deep breaths and self-talk to calm down. Research has suggested that preschoolers' self-control or self-regulation predicts a child's performance later in life (Skibbe et al., 2011).

Conclusion

This research addresses a gap in early education in Pakistan by creating a relevant and reliable tool for practitioners: a 27-item Preparedness for School Checklist. The tool is dependable and has strong psychometric properties at the scale level, making it user-friendly for parents, teachers, and program administrators. Using data from 300 preschoolers, we found adequate sampling adequacy ($KMO = .806$), a significant Bartlett's test, and a clear eight-factor solution—covering Academic Skills,

Social-Emotional Skills, Self-Help, Learning Abilities, Following Orders, Sharing and Friendship, Aggression, and Self-Control—with acceptable internal consistency ($\alpha = .79$) overall. The checklist's subsections showed moderate reliability, offering solid, concise measures for early scale development. Overall, the checklist provides a meaningful and developmentally appropriate description of school readiness in Pakistan.

The societal value of this instrument is immediate because it provides a low-cost method of 'first screening' for children who may need help (e.g., self-help, emotion regulation) before they start school. This allows schools and parents to take a more proactive and preventive approach rather than reacting after issues arise.

It also assists preschool educators in organizing their lesson plans, including classroom routines, allowing children with lower academic-motor skills to concentrate on fine-motor activities while engaging in other exercises like turn-taking and peer play that foster social skills. Furthermore, it provides local education officers, authorities, and NGOs with a reference for evaluating community preparedness, helping to ensure a more equitable distribution of underallocated resources such as teacher aides, school readiness initiatives, and parent training, particularly in regions with significant gaps.

The findings also provide well-founded suggestions for improvements that could upgrade the instrument from being just "promising" to a recognized "field standard." This involves developing psychometric techniques, such as confirmatory factor analysis (preferably with ESEM) for the eight-factor model, as well as testing for test-retest reliability and the validity—both convergent and discriminant—of the related developmental measures. Furthermore, when interpreting grade predictions, particularly for advanced developmental milestones and the onset of formal education, it is important to consider nuances. To enhance accuracy, scales like Self-Control and Aggression should be supplemented with additional items. Consistent application of norms and screening cut-off points across relevant demographic factors such as age and sex is essential, ensuring broad representation across different urban and rural areas and among various language groups. To promote widespread adoption, providing a self-contained handbook along with a mobile app or web interface for caregivers and educators would be highly advantageous. This platform could offer customized, automated, and profile-specific feedback tailored to each developmental domain.

In conclusion, this research study fills a long-standing measurement gap and presents a practical, culturally relevant checklist to improve school-entry readiness. It also demonstrates how to validate and efficiently scale using psychometrically robust tools. This checklist offers a key metric to support data-driven policies, improve preschool pedagogy, and, most importantly, give children better educational and life chances from the start.

Author Note

We have no conflicts of interest to disclose

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