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Towards Designing an Adaptive Behavior Assessment Tool in Early Childhood Special Education

Maguad, Lara[1,*] and Damian, Aida[2]
[1] Maguad Psychological Clinic & Stalwart Psychological Services, Philippines
[2] University of Perpetual Help System-DALTA Las Piñas City-Graduate Studies, Philippines
*Corresponding author: mpc.anabu@gmail.com

Abstract

The study is a test development research that focuses on measuring the level of adaptability of children aged two to five years old. Adaptive Behavior Assessment Tool (ABAT) is specifically designed for Filipino learners in early childhood special education programs who exhibit delays or have been diagnosed with developmental conditions. Likewise, it can be used as a pre-screening tool for children's adaptability in school. The study followed the design, validation, and criterion referencing process, which later evolved into five dominant stages. Phase I focused on item generation and content domain. This stage was able to produce 657 items. Phase II established the face and content validities of the instrument through the consolidated efforts of the experts. This stage was able to maintain 655 items. Phase III emphasized the initial construct validation via internal structure and consistency. The data was taken from 23 participants, which resulted in 317 accepted items. Phase IV involved final construct validation through the data from 45 participants. This phase was able to produce concurrent validity as well as measures of reliabilities like Cronbach Alpha and Split Half. From this, 262 items were finalized. Phase V developed the norm of the instrument through conversion of raw scores to mean scores and to stanine. In addition, this process enabled the researcher to come up with an ABAT examiner manual.

Keywords: test development, adaptability, early childhood, special education

INTRODUCTION

Development is a complex process by which an individual adopts and acquires various capabilities in a social setting. Bhattacharya, Ray, and Das (2017) stated that development is composed of generally five domains: fine motor, gross motor, speech and language, socio-emotional and cognitive functioning that crucially takes place in early childhood and is honed by the immediate environment. At the early stage of life, rapid physical, emotional, intellectual, and social changes occur to a child that heavily impacts his future functional skills and adaptability, whether at home, school, or another sociocultural context. Furthermore, Bick and Nelson (2016) agreed that neurological and physical developments of children are fast-changing at this period. However, developmental delays can be an issue for many toddlers and their families. As a matter of fact, Pears and colleagues (2016) reported that 58-96% of kindergarten learners with

developmental delays or disabilities seem to have not been properly prepared for their transition to school and 62% of them perform below the academic standards expected from them. From this, it can be seen that it is of paramount importance that learners, especially those in the kindergarten and grade 1 levels, be accurately assessed for functional developmental delays. The accurate assessment will provide awareness and assistance necessary to alleviate the impact of their delays which in turn lessens their risk of having poor academic performance and low educational attainment (Wheaton, Chapman, & Croft, 2016). Furthermore, the results from the assessment can help both parents and teachers to make educational decisions and to plan for the children's developmental learning, which also includes options such as enrolling children in special education or therapy centers.

In addition, it is important that toddlers and young children learn and adapt early to their environment and different situations in order to hone functional skills appropriately. The National Educational Goals Panel of the United States Department of Education of 1990 (as cited by Mead, 2017) articulated the five domains of school adaptability, namely language and literacy development, cognition and general knowledge, approaches towards learning, physical well-being, and social and emotional development. Allen and Cowdery (2014) mentioned that the said domains served as a guide for early childhood educators (ECE) in creating the existing assessment tools for a child's developmental delays and behavioral manifestations associated with it.

On the other hand, the Philippine government included the welfare of children with special needs in their legislation, which also encompassed the adaptive assessment of children's conditions. In particular, Republic Act Number 10410 or the Early Years Act (EYA) of 2013 specified that the country recognizes age zero to eight as the first crucial stage of educational development (Mateo, 2017). Furthermore, Republic Act Number 10157 or the Kindergarten Education Act of 2012 set kindergarten as the first stage of compulsory and mandatory formal education (Llego, 2018). Department of Education (2016), through its DepEd Order Number 5, series of 2013, implemented policy guidelines on the implementation of the School Readiness Year-End Assessment (SREYA) for kindergarten.

With the mentioned laws and bills passed, the awareness and necessary action to address early childhood special education needs have been proven. However, current foreign and local assessment tools of this type exhibit limitation that has to be addressed (Scott, 2016). As such, the present study aimed to develop an adaptive behavior assessment tool in early childhood special education which aims to measure the adaptive functioning of children aged two to five years old in four (4) areas of functioning: cognitive, social communication, daily living, and SEL (speech/emotional/leisure) skills. Results from an assessment using the developed tool can serve as a basis for parents, teachers, and other involved individuals to take appropriate action in case a delay has been assessed. Through the tool, the children's strengths and weaknesses can be identified and measured in order for the necessary course of action to be recommended. Moreover, the tool developed is contextualized in the Philippine setting, specifically pilot tested in Cavite province.

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METHODOLOGY

Research Design

This study utilized the descriptive-developmental method of research. This employed both qualitative and quantitative methods of gathering and analyzing data (Teope, 2014). Calderon and Gonzales (2014) described the descriptive method as an approach that focuses on prevailing conditions, or how a person, group, or thing behaves or functions at present. This method helped the researchers to know the child's performance in social and natural settings like school, play areas, and more. Moreover, a qualitative approach was employed for the in-depth analysis of the developmental delays of the participants, specifically in Focus Group Discussion (FGD). Furthermore, this study utilized a quantitative approach since part of the research involves try-out, pilot testing, and validity evaluation. The study was conducted in the province of Cavite in special education and playschools as well as therapy centers from the selected school divisions.

Respondents of the Study

The participants for pre-survey and focus group discussion (FGD) were Special Education Teachers, Early Childhood Workers, and parents of children with or without delays. On the other hand, the participants for pilot testing and actual test administration were children with special needs, whether diagnosed or just manifesting delays that were enrolled in any Special Education (SpEd), Playschool, and therapy centers. The participants of the study were composed of fourteen (14) parents, twenty-seven (27) Special Education (SpEd) Teachers, fifty-four (54) Early childhood educators, and sixty-eight (68) learners, with a total of 163 participants.

Table 1: Profile of Participants

Profile of Pre-Survey Participants

Category:	Designation:	Frequency:	Total:	Percentage:
Parents	Parent	5	**6**	**15.39%**
	Guardian	1		
Special Education (SpEd) Teachers		13	**13**	**33.33%**
Early Childhood Educators	Regular Teachers	13	**20**	**51.28%**
	Behavior Therapists	5		
	Day Care Worker	2		
Total:			**39**	**100%**

Profile of Focus Group Discussion (FGD) Participants

Category:	Designation:	Frequency:	Total:	Percentage:
Parents	Parent	**6**	**8**	**14%**
	Guardian	**2**		
Special Education (SpEd) Teachers		**14**	**14**	**25%**

Early Childhood Educators	Regular Teachers	**20**	**34**	**61%**
	Behavior Therapists	**13**		
	Day Care Worker	**1**		
Total:			**56**	**100%**

Administration participants N: 23	**Administration of the preliminary and final form Participants N: 45**
Category:	**Designation:**
2-5 years old	Learners selected from public and private Special Education Schools, Playschools, and Therapy Centers within the province of Cavite.
-diagnosed manifesting delays	

Table 1 shows the number of participants of the Pre-Survey Form Administration. It was conducted to a total of 39 participants from various institutions. Specifically, there were 6 or 15.39% Parents, or 33.33% Special Education (SpEd) Teachers, and 20 or 51.28% Early Childhood Educators. On the other hand, the Focus Group Discussion (FGD) was conducted with a total of 56 participants from various institutions. Specifically, the first group of Parents corresponds to the parents and guardians with six (6) and two (2) participants, respectively, with a total of eight (8) or 14%. On the other hand, the group of Special Education (SpEd) Teachers is composed of fourteen (14) or 25% of the participants. Lastly, the Early Childhood Educators group consists of regular teachers, behavior therapists, and daycare workers, with twenty (20), thirteen (13), and one (1) member each, with a total of 34 or 61% of the participants. Furthermore, the Adaptive Behavior Assessment tool was pilot tested on 23 learners. Part III, Social Preparation Phase, was the preparation of letters for the different Special Education Schools, Playschools, and Therapy Centers. Part IV, the Coordination Phase, was the scheduling of appointments and the preparation of materials. Part V, the Facilitation Phase or Initial Construct Validation phase was the conducting of the study. It began with the administration of the preliminary form to 45 participants.

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Data Gathering Procedure

Figure 1: Data Gathering Procedure

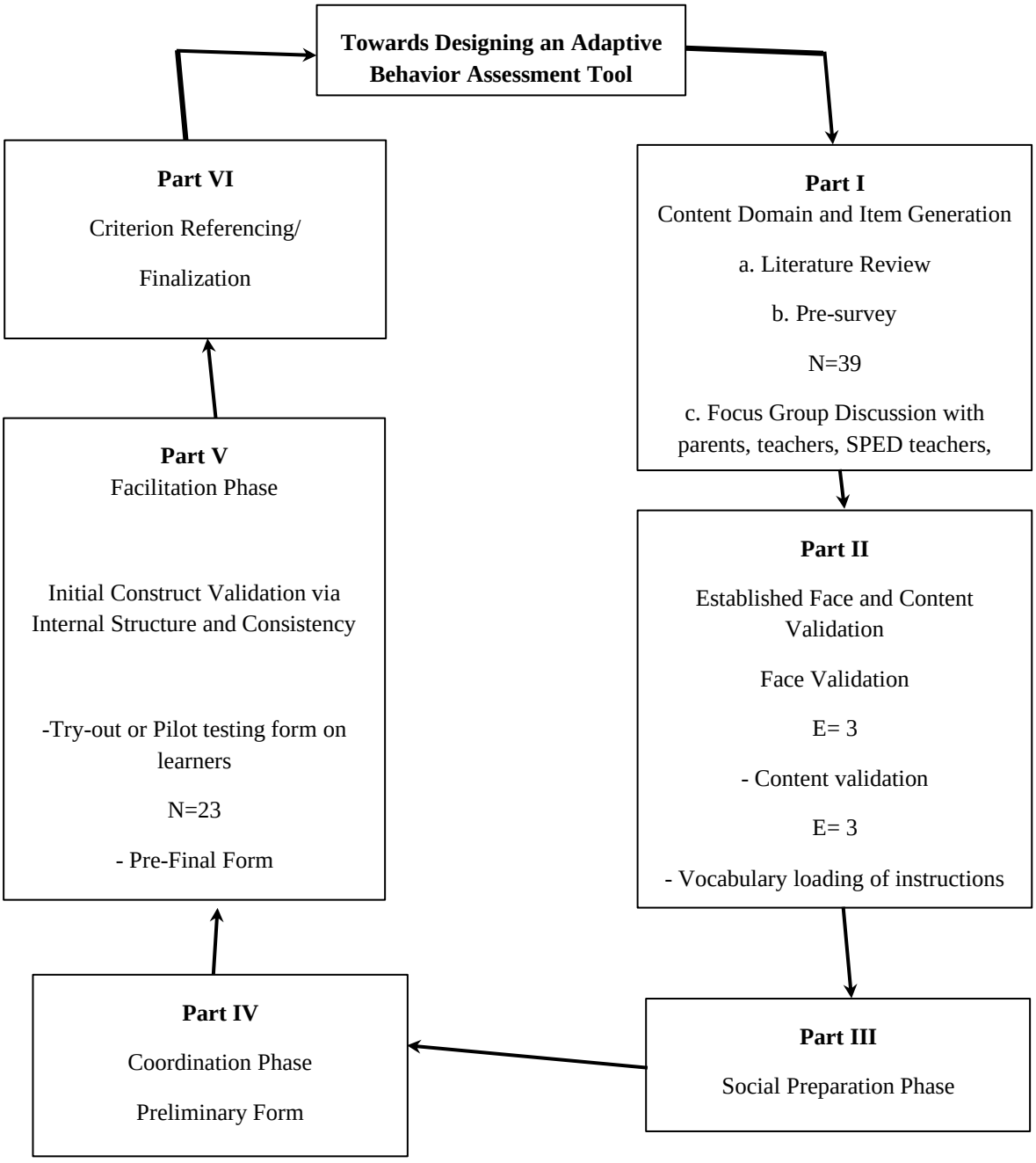

Figure 1 presents the entire procedural plan of constructing and validating the Adaptive Behavior Assessment.

RESULTS AND DISCUSSION

Table 2: Adaptive Behavior Assessment Tool Pre-Final Form Concurrent Validity

ESTABLISHED TEST: Adaptive Behavior Assessment System Third Edition (ABAS-3)	ADAPTIVE BEHAVIOR ASSESSMENT TOOL (ABAT)	Coefficient	Interpretation
Pre-Academic	Cognitive Skills (Cognitive Skills)	0.9974	Strong Correlation
Communication	Language Skills (Communication & Vocabulary @ Social Communication Skills; Speech @ Emotional-Leisure-Speech Skills)	0.7914	Strong Correlation
Socio-emotional	Social & Leisure (Social @ Social Communicaton Skills; Leisure @ Emotional-Leisure-Speech Skills)	0.6450	Moderate Correlation
Self-Care, Self-Direction and Health & Safety	Daily Living Skills (Daily Living Skills)	0.5870	Moderate Correlation
Motor	Motor Skills (Motor Skills)	0.2520	Weak Suggested: deleted

Table 2 illustrates the correlation between the Adaptive Behavior Assessment Tool (ABAT) and the established test. Correlated to the corresponding dimensions of the established test, the Cognitive Skills, Language Skills, Social and Leisure, as well as Daily Living Skills of the tool garnered coefficients of 0.9974, 0.7914, 0.6450, and 0.5870, respectively. Leaving a weak correlation coefficient of 0.2520 for the Motor Skills. Since the Motor Skills of the tool and the established test had a weak positive correlation compared to the other components, it was deleted from the test. In this regard, the Adaptive Behavior Assessment Tool (ABAT) measures similar constructs as well as the established test's component. The other components had high correlations with their respective counterparts from the established test and were therefore retained.

Table 3: Distribution of Mean Scores to Stanine Scores

Stanine Score	Percentage of scores
1	Lowest 4%
2	Next lowest 7%

3	Next lowest 12%
4	Next lowest 17%
5	Middle 20%
6	Next top 17%
7	Next top 12%
8	Next top 7%
9	Top 4%
TOTAL:	**100%**

Table 3 Adaptive Behavior Assessment Tool (ABAT) illustrates the distribution of its participants and their scores to the nine-point scale. Stanine 1 corresponds to the lowest 4% scores. On the other hand, stanines 2, 3, and 4 take places as the 7%, 12%, and 17% lower scores, respectively. Stanine 5, the middle score, represents 20% of the average scores. Moreover, stanines 6, 7, and 8 represent 17%, 12%, and 7% of the higher scores, respectively. Lastly, stanine 9 represents the top scores, which are regarded as the highest 4% scores.

Table 4: Components, Dimensions, and Sub-Dimensions of Adaptive Behavior Assessment Tool (ABAT): Preliminary, Pre-Final, and Final Forms

Initial Dimensions:	**Sub-Dimensions:**	**Dimensions:**		
		Preliminary Form:	**Pre-Final Form:**	**Final Form:**
Cognitive Skills	Memorization Skills	Cognitive Skills	Cognitive Skills (Component 1)	Adaptive Functioning
	Early Academic Skills			
Socio-Emotional Skills	Emotional Skills	Socio-Emotional Skills	SEL (Speech-Emotional-Leisure) Skills (Component 2)	
	Leisure Skills			
Language Skills	Speech Skills	Language Skills		
Socio-Emotional Skills	Social Skills	Socio-Emotional Skills	Social Communication Skills (Component 1)	

Initial Dimensions:	**Sub-Dimensions:**	**Dimensions:**		
		Preliminary Form:	**Pre-Final Form:**	**Final Form:**
Language Skills	Communication Skills	Language Skills		Adaptive Functioning
	Vocabulary Skills			
Daily Living Skills	Self-Care Skills	Daily Living Skills	Daily Living Skills (Component 1)	
	Self-Direction Skills			
	Health and Safety Skills		(Deleted)	

Motor Skills	Gross Motor Skills	Motor Skills	Motor Skills (Component 1)	(Deleted)
	Fine Motor Skills			
	Body Balance Skills		(Deleted)	

Table 4 shows that the Preliminary Form of the tool contains five (5) dimensions and fourteen (14) sub-dimensions. Cognitive Skills comprises of Memorization Skills and Academic Skills while Socio-Emotional Skills includes Emotional Skills, Leisure Skills, and Social Skills. On the other hand, Language Skills include Speech Skills, Vocabulary Skills, and Communication Skills, while Daily Living Skills comprise of Self-Care Skills, Self-Direction Skills, as well as Health and Safety Skills. Furthermore, Motor Skills are composed of Gross Motor Skills, Fine Motor Skills, and Body Balance Skills. The same table reflects that in the Pre-Final Form of the tool, after factor loading, the two (2) sub-dimensions, namely Health and Safety Skills and Body Balance Skills, were deleted, while the remaining sub-dimensions of the tool were divided into two (2) dimensions and sub-divided into five (5) sub-dimensions.

The first component comprises four (4) dimensions, namely Cognitive Skills, Social Communication Skills, Daily Living Skills, and Motor Skills. Cognitive Skills is still composed of Memorization Skills and Early Academic Skills, while Social Communication Skills includes Social Skills, Communication Skills, and Vocabulary Skills. On the other hand, Daily Living Skills includes Self-Care Skills and Self-Direction Skills while Motor Skills comprises of Gross Motor Skills and Fine Motor Skills. Lastly, the second component comprises one (1) dimension, namely SEL Skills, comprising of Speech, Emotional, and Leisure Skills. Furthermore, the Final Form is comprised of a single dimension named Adaptive Functioning composed of Cognitive Skills, SEL (Speech-Emotional-Leisure) Skills, Social Communication Skills, and Daily Living Skills. On the other hand, the Motor Skills included in the pre-final version of the tool were deleted from the final version as it has a weak positive correlation to the established test as compared to the other sub-dimension.

CONCLUSION

The preliminary form of the ABAT passed the validity and reliability screening. Analysis of the results suggested that the final form of ABAT is a psychometrically sound test with substantial reliability and validity indices. The dimension of ABAT was established statistically and theoretically. Across the findings, the retained sub-dimensions were proven correlated with one another and other instruments on adaptive functioning. Criterion referencing structure of ABAT was established by dimension and as a whole.

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