Designing an Open and Blended Learning Readiness Survey for Open High School Learners

Louie G. Monteroso [1]   Amelia M. Bonotan [2]

[1]Saint Peter Academy of Alegria, Inc.; [2]Cebu Normal University, Philippines

Abstract

The implementation of Open High School Program (OHSP) of the Department of Education in the Philippines has encountered many learning engagement and motivation issues based on a SEAMEO evaluation report. As there is no standardized instrument available to measure the readiness of students for blended instruction, the researchers want to address this "gap" by 1) designing a tool that can measure accurately the OHSP learners' level of readiness to engage in open and blended learning, 2) establishing evidences of the instrument validity and reliability. An Open and Blended Learning Readiness Survey for potential OHSP learners was developed adapting the steps in instrument construction by Colton and Covert (2007). A pilot test was conducted to 50 potential OHSP learners during the first half SY 2016-2017. The analyses of the results of such tests provided evidence that the instrument will produce consistent results over a period of time even if administered on different occasions. Furthermore, this instrument proved to be valid as it would measure what it intends to measure as far as the open and blended learning readiness of high school learners is concerned.

Keywords: Blended learning; Open High School Program; Survey; Engagement; Motivation.

I. Introduction

In the 2000 World Declaration in Dakar, several countries around the world pledged to achieve the six goals related to *Education for All* (EFA) by the year 2015. This declaration emphasized that each country pledging support will develop a National EFA Plan of Action. In 2005, the Philippines presented the country's National Action Plan to achieve *Education for All* by 2015 entitled "Functionally Literate Filipinos: An Educated Filipino."

One of the activities of the 2005 Philippine EFA 2015 National Action Plan was to enhance and expand alternative modes of delivering Formal Basic Education (FBE) instruction to provide every pupil/student access to quality teaching-learning based on her/his special needs and circumstances he/she is in. The examples of alternative delivery modes in the plan include distance learning, multi-grade schooling, community-based/home-based learning, ISOSA, IMPACT, and Project EASE (Effective and Affordable Secondary Education). Open High School Program (OHSP) is an expansion of Project EASE. Since 2005, upon the presentation of National Action Plan, the Department of Education (DepEd) has issued policy statements and guidelines on the implementation of OHSP which was spearheaded by the Bureau of Secondary Education (BSE) of the Department of Education (DepEd) and South East Asia Ministers of Education Organization Innovation and Technology (SEAMEO INNOTECH). The program was first implemented in five pilot schools in 1995.

DepEd and SEAMEO INNOTECH articulated that OHSP aims to achieve the following objectives: 1) afford all elementary graduates, high school dropouts, and successful examinees of the Philippine Educational Placement Test (PEPT) a chance to complete secondary education; 2) avert school leaving by offering an alternative delivery mode to encourage potential high school dropout to finish secondary education; 3) maintain

and/or increase participation rate and thereby reduce the number of high school dropouts; and 4)increase achievement rate in secondary schooling through quality distance education.

Principally addressed to elementary graduates, high school drop-outs or successful examinees of the Philippine Educational Placement Test (PEPT), its aims as articulated by DepEd and SEAMEO INNOTECH, is to increase participation rate or reduce the number of high school drop-out, increase achievement rate in secondary school by offering an alternative delivery mode such as quality distance education.

In 2012, consultation meetings for the evaluation of the OHSP began. To show its support to DepEd's K-12 reforms, SEAMEO INNOTECH funded the evaluation study in cooperation with the OHSP Coordination Team of DepEd. They explained that it was appropriate to evaluate OHSP to find out how it has been implemented, what challenges were faced by implementers, how key stakeholders view the program, what aspects of the OHSP need to be improved to make it a viable educational option for secondary school students, how it improves access to secondary education, and the extent to which the program has contributed to the advancement of functional literacy in the country. At the same time, the evaluation was conducted to examine OHSP's responsiveness to the newly approved K-12 curriculum.

In the report, areas of challenges and weaknesses were identified. Almost half of the school respondents (n=67 or 43.22%) identified students' characteristics as the number one challenging aspect in the implementation of OHSP [1]. The students' ability to engage in open and blended learning, their attitude toward school and their motivation to meet school requirements were seen as challenging characteristics.

These findings have prompted the researchers to explore on these challenging students' characteristics. They surveyed the literature for a possible tool to use to gauge students' readiness for alternative modes of learning. They realized that missing is a research instrument for this precise purpose. This prompts them to develop and validate a survey instrument that measures the learners' readiness for open and blended learning program.

1.1 Objectives of the Study

As professionals who favor open and distance education and as potential teacher-facilitators in an OHSP, the researchers want to contribute to the knowledge-base of innovative education delivery modalities by developing an instrument to determine the learners' level of readiness to engage in open and blended learning; examining the validity and reliability of the said instrument; and establishing evidences of instrument validity and reliability.

1.2 Review of Literature

The literature on open and blended learning has thrived in various scholarly journals and databases. Data sets of these studies were gathered from various data sources that include undergraduate students, junior managers, lecturers, and subscribers. All these sources are also known as open and blended learners.

In some studies, the characteristics and profiles of open learners became the focal points. In one study, learners' characteristics such as general attitude, specific motivation, learning anxiety, learning strategies, age, educational qualifications, job tenure, and management experience were examined in relation to learning scores, reactions to the program and changes in job behavior [2]. It was found that learning score was predicted by the learners' general attitude, the use of analytic learning strategy and age. Furthermore, significant relationship was found between learning score and changes in job performance. In another study, the profiles of secondary school distance e-learners were examined[3].The results revealed that secondary distance e-learners are more likely to be females who are completing a demanding academic program, positively disposed toward school, not employed in a part-time job, and confident of their computer and reading abilities.

Other studies have shifted their attention to the learners' experiences, learning styles, and learners' participation and engagement in Massive Open Online Courses or popularly known as MOOCs. Ahn, Butler, Alam and Webster [4] focused on the importance of examining alternative, large-scale learning activities that promote participatory learning environments, while Saadatmand and Kumpulainen [5] focused on the learners' experiences and perceptions of learning in connectivist MOOCs. Specifically, their study examined the learners' experiences and participation in dealing with resources and tools, learning activities and network engagement. The study of Chang, Hung & Lin [6] highlighted the learners' experiences, learning styles and intentions to use MOOCs. They found that learners with high reflective learning style have less experience in using MOOCs The results of the study also showed that learning styles influence learners' intentions [6]. In a case study conducted by Waite, Mackness, Roberts and Lovegrove [7], the triggers for active participation by new and experienced MOOC learners were explored. They found that engaging the expertise of experienced learners and developing the participatory skills of the new ones are key strategies in facilitating and organizing MOOCs.

Taking a different path, some studies underscored the perceptions and satisfactions of learners in open and distance education. Cole, Shelley and Swartz [8] conducted a three-year study on student satisfaction. Their study revealed that convenience was the top reason for satisfaction, while lack of interaction was top reason for dissatisfaction. Overall, the study's findings support the importance of student satisfaction to student retention. Likewise, Korasiga [9] studied the perceptions of students about the factors that contributed to the success of attending open and distance education. The results of this study were used by universities to improve the services in order to reduce dropout rates, attract students, retain and improve their image. In another study, the learners' satisfaction towards support services delivery was analyzed [10]. The study's findings showed that there were significant differences among students in their satisfaction with learner support services provided by their study centers.

Other aspects of open and blended Learning such as the learning preferences, goals, achievements and challenges of learners also caught the researchers' attention. Bonk, Lee, Kou, Xu and Sheu [11] examined these aspects by inviting MIT Open CourseWare subscribers to complete open-ended and close-ended surveys. They found that subscribers preferred a wide range of devices and places to learn. Curiosity, interest and internal need for self-improvement were the motivational factors for subscribing. Freedom to learn, resource abundance, choice, control and fun were the factors that lead to success or personal change. Learning both specific skills and more general skills were considered by the respondents as achievements. However, it was found that time, lack of high quality open resources and membership or technology fees were the top obstacles that the learners faced. Focusing on the challenges faced by open learners, Ramphal & Sookdeo [12] found empirical evidence that learners felt that studying through open and blended learning was difficult for them. Moreover, they found that study guides were inadequate and not student-centered.

The studies on open and blended learning and MOOCs have taken different paths. Most of these studies has examined and explored factors that may contribute to a successful learning. However, only a minimal amount of scholarly work is done to determine the readiness of students to open, distance and blended learning, the students' attitude toward their learning centers and facilitators and the students' motivation to complete their requirements and finish their studies. These are the aspects that need similar amount of attention. Exploring these characteristics of Open High School System (OHSS) students, particularly in the Philippines, would be the prime mover of this research endeavor.

1.3 Materials and Methods

In the development of the instrument, the researcher employed the process of instrument construction by Colton and Covert [13] as shown in Figure 1.
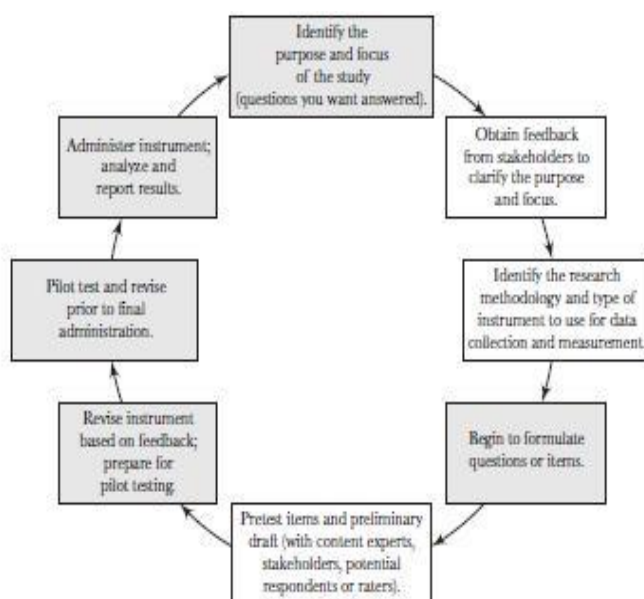
Fig. 1. Steps in the instrument construction process. Adapted from "Designing and Constructing Instruments for Social Research and Evaluation," by David Colton and Robert W. Covert, 2007, p.18.

1.4 Instrument Development

Based on the process of instrument construction by Colton and Covert [13], the researchers started with a statement of purpose which was based on the results of an evaluation report on the implementation OHSP by DepEd. The results triggered in the researchers the interest to develop a valid and reliable instrument that will help address some of the issues of the implementation. The next step was to obtain feedback from different stakeholders to achieve clarity of purpose. School heads, potential teacher-facilitators, and potential OHSP learners were consulted for this purpose. After considering the stakeholders' feedback, the third step was to identify the research methodology and the appropriate type of instrument to use for data collection. Since the primal purpose was to determine the readiness of OHSP learners to engage in blended learning, the researchers wanted to develop a blended learning readiness survey. Then the formulation of items follows. To be able to complete the step, the researchers started with a review of the literature on blended learning readiness to identify the constructs that can be defined and operationalized. Part of this step was the preparation of the table of specifications (TOS) as shown in Table 1. From these defined and operationalized constructs, the items for the survey were formulated.

Table 1. Table of Specifications

Constructs	Operationalized	Suggested Item Stems
Learning Independence	A. Learners can follow and work on modular activities on their own.	A. I can do online learning activities without help from anyone. SA-A-D-SD
	B. Learners can perform self-assessment and reflection.	B.1. After I go through the learning activities, I gather my thoughts on how to apply what I have learned.

The next step involved the pre-testing of the instrument and preparation of the preliminary draft. During the pre-testing, content experts, potential teacher-facilitators and potential OHSP learners were consulted prior to pilot testing. To proceed, feedback from the aforementioned stakeholders were considered for the revision of the instrument. After the revision, the instrument was pilot tested to 50 potential OHSP learners. The results were subjected to validity and reliability tests that led to the preparation of the final draft. The final draft was again administered to another group of 50 potential learners. The validity and reliability of the instrument were computed using the SPSS before it was confirmed to be ready for administration.

1.5 Open and Blended Learning Readiness Survey

The OHSP learners' readiness to engage in online and blended learning was measured through a researchers-made Likert-type scale instrument. The items of the Likert-type scale were formulated based on the constructs identified through the review of literature conducted before the formulation of items. These constructs were defined and operationalized prior to the formulation of the items. The items on the survey form focused on the constructs, namely: a) learning independence; b) attitude towards open and blended learning; c) technology readiness; and, d) motivation. These constructs were translated into statements that OHSP learners could fully understand. The survey form assessed the learners' level of agreement to the statements, thus the 5-point scale contained the following: 1=Strongly Disagree; 2=Disagree; 3=Not sure; 4=Agree and, 5=Strongly Disagree. The survey form was pre-tested and pilot tested on potential OHSP learners.

Two groups of respondents were assembled. Each group was given sufficient time to respond to the survey. During the initial round of pilot testing, the researchers as the instrument designers distributed the survey forms to the first 50 potential OHSP learners during the pilot testing. These potential OHSP learners are ages 15-19 years old, considered at risk of dropping out and are interested in studying secondary school via open and distance learning. The forms were given with cover letters addressed to the respondents. The learners were briefed regarding the importance of the project and encouraged them to respond as honestly as they could as they complete the thirty-item form, assuring them that strict confidentiality will be observed. The survey was conducted in a group setting to obtain a 100% retrieval rate, and the answered survey forms were collected immediately after the time allotted for a particular group. The researchers then tallied the first set of responses from the learners for reliability and validity analyses. The first pilot test group was also asked to give feedback on the form-clarity of the language for consideration in the revision of the instrument.

The data gleaned from the first testing was subjected to item and factor analyses. These analyses helped the researchers to delete and modify some items in the instrument. The 30-item instrument became 21-item survey after the analyses. After revision, the second round of pilot testing was conducted to the second group of respondents following the same procedure. The data obtained from the second pilot-testing was again tested for reliability and validity. Using SPSS, the researchers analyzed the results and finally crafted a 20-item survey form ready for administration.

1.6 Reliability and Validity Analyses

Colton and Covert [13] suggested that in order to produce valid and reliable information, the instrument must establish evidences of validity - face validity, content validity, criterion validity and construct validity and reliability.

Face validity is determined on the basis of examining the appearance of the instrument determining whether the items really measure what they intend to measure. To establish evidence of face validity, the researchers conducted interviews with content experts, potential teacher-facilitators, the school Guidance Counselor and the potential OHSP learners. Feedback from these stakeholders was considered to determine whether the items in the instrument could produce the readiness level that it intends to measure.

Content validity requires content experts to help the instrument designers determine whether the items are representative of the defined and operationalized constructs. In this process, content experts such as the school's ICT Coordinator and Guidance Counselor were consulted prior to the pre-testing of the instrument. Moreover, a

study of the literature on blended and open learning readiness was conducted to ensure that the instrument covers the variables that it intends to measure.

Criterion validity is a validity test that requires the instrument designers to compare the responses of the respondents to the responses to items in other similar existing instruments. To establish criterion validity, the responses to other existing instruments that measure the same variables were analyzed. The instrument designers found high correlation in the data or the responses produced by the instruments.

Construct validity analysis is conducted to gather evidences showing strong relationship among the items in the instrument. Such evidences could be produced through item and factor analyses. To determine the underlying factors that contribute to the relationship among the items, Exploratory Factor Analysis (EFA) was conducted. The determination of items that are considered representative of a particular factor was based on the Eigenvalues of over 1.00. Specifically, the Principal Component Analysis (PCA) as extraction method was used. Table 3 shows these values which were considered for the revision of the instrument.

The researchers also used Cronbach's alpha coefficient value of at least 0.7 for item analysis.

In this instrument, reliability was determined using Cronbach's alpha which was calculated using SPSS. Reliability refers to the consistency of an instrument to produce the same information over a period of time on different occasions it is administered [13]. Reliability analysis measures are shown in Table 2 in the results and discussion section of this paper.

II. Results and Discussion

Using the reliability statistics and item-total statistics for reliability analysis, the first round results of the pilot testing of the instrument revealed that nine of the 30 items had coefficients of "Cronbach's alpha if item deleted"greater than the overall Cronbach's alpha of .741. These figures helped the instrument designer to delete the nine items from the instrument making it a 21-item survey. After revision, the survey was prepared for the next round of pilot testing.

Table 2. Cronbach's Alpha Coefficients During Pilot-testing

Pilot-Test Periods	Overall Cronbach's Alpha	No. of Items	No. of items deleted
Round 1	.741	30	9
Round 2	.845	21	1

The second round results were analyzed using similar reliability measures applied during the first round. One of the 21 items was found to have an "alpha if item deleted" greater the overall alpha of .845. That lone item was removed from the instrument to have a 20-item survey. The second round results were also subjected to exploratory factor analysis. As already mentioned, the determination of items that are considered representative of a particular factor was based on the Eigenvalues of over 1.00. The factor analysis conducted after the second round of pilot testing resulted to only 6 components as shown in Table 3.

Table 3. Initial Eigenvalues

Component	Total	Cumulative %
Attitude to school and program stakeholders (APS)	6.647	33.236
Internet and technology access (ITA)	3.546	50.966
Independent learning readiness (ILR)	2.700	64.466
Blended-learning motivation (BLM)	2.135	75.139
Classroom-based instruction readiness (CIR)	2.030	85.290
Attitude to learning technology (ALT)	1.074	90.661

Based on the same factor analysis of the results of the second round pilot testing, the items that are representative of a particular factor or component were identified. The instrument designer used the Varimax Rotation to identify these items. Table 4 shows the Rotated Component Matrix after applying the Varimax Rotation method with Kaiser normalization, capturing a cumulative variance of 90% of the variability of the construct, students' readiness for open and blended learning.

Table 4. Rotated Component Matrix

Items	Components					
	APS	ITA	ILR	BLM	CIR	ALT
1. Thinking of school as a ggood place for learning	.923					
2. Seeking help from other stakeholders	.880					
3. Becoming part of the program	.824					
4. Believing in the teacher-facilitators	.683					
5. Completing the modules	.664					
6. Doing online and classroom-based tasks	.610					
7. Perceiving the school's program as well-managed	.597					
8. Having the right place to do online tasks		.924				
9. Having the resources to do online searching		.735				
10. Having the applications to online learning		.607				
11. Doing learning activities on one's own			.960			
12. Summarizing one's understanding of the learning activities			-.818			
13. Answering questions on one's own			.797			
14. Enjoying both online and classroom-based activities				.897		
15 Becoming competent				.700		
16. Having the excitement to accept feedback				.665		
17. Spending time in the classroom for instructions					.908	
18. Spending time for face-to-face interactions					.622	
19. Having the desire to learn how to download and upload files						.853
20. having the eagerness to navigate computers						.684

The results of both validity and reliability tests led the researchers to prepare the final draft of the instrument for administration. Moreover, the results of both tests gave confidence that the instrument will produce the same results over a period of time even if administered on different occasions. Based on the same results, this instrument had produced evidences that it would measure what it intends to measure as far as the open and blended learning readiness of high school students is concerned.

III. Conclusion and Recommendation

To address the issues of readiness and motivation of potential OHSP learners, the researchers intended to 1) develop an instrument that would determine the OHSP learners' level of readiness to engage in open and blended learning, 2) examine the validity and reliability of the abovementioned instrument, and 3) establish evidences of instrument validity and reliability. To meet the demands of these objectives, the steps in the instrument construction process by Colton and Covert[13] was employed.

An Open and Blended Learning Readiness Survey for potential OHSP learners was developed adapting the foregoing process. Two pilot-testing were conducted to produce a valid and reliable instrument which will serve useful to schools that will offer OHSP. The results of those tests provided evidence that the instrument will produce consistent results over a period of time even if administered on different occasions. Furthermore, this instrument had proven that it would measure what it intends to measure as far as the open and blended learning readiness of high school students is concerned.

This instrument will be useful in the efforts to determine the readiness of potential OHSP learners to engage in an open and blended learning environment. Recognizing the learners' readiness level will support schools in deciding who among their applicants deserve admission to the program. Hence, with the use of this instrument, motivation, engagement and attitudinal issues will be minimized if not totally eliminated.

The researchers recommend the following: 1) It would be good for the OHSP stakeholders-school administrators, potential teacher-facilitators, and OHSP learners-to conduct and participate in a readiness survey to address issues of learning engagement and motivation, 2) To consider the readiness level of the learners in the implementation of OHSP since they will be the stakeholders who will experience the curriculum on daily basis, 3) The survey results can be used as basis for refinement of the instrument and for decisions on admission, and 4) The practice of conducting a survey on readiness is not limited to one program only, but can be replicated by other program coordinators for a school-wide curriculum implementation and enhancement.

References

[1]Southeast Asian Ministers of Education Organization (2014). Evaluation of the open high school program in the Philippines. Retrieved from http://www.seameoinnotech.org/wpcontent/uploads/ 2015/02/OHSP_V6.pdf

[2]Warr, P., & Bunce, D. (1995). Trainee characteristics and the outcomes of open learning. Personnel Psychology, 48(2), 347. Retrieved from http://search.proquest.com

[3]Kirby, D, & Sharpe, D. (2010). High School Students in the new learning environment: A profile of distance e-learners. The Turkish Online Journal of Educational Technology, 9(1), 83-88. Retrieved from http://search.proquest.com

[4]Ahn, J., Butler, B., Alam, A., & Webster, S. (2013) . Learner participation and engagement in open online courses: Insights from the peer 2 peer university. MERLOT Journal of Online Learning and Teaching, 9 (2), 160-171. Retrieved from http://search.proquest.com

[5]Saadatmand, M., & Kumpulainen, K. (2014). Participants' perceptions of learning and networking in connectivist MOOCs. MERLOT Journal of Online Learning and Teaching, 10(1), 16-30. Retrieved from http://search.proquest.com

[6]Ray, I. C., Yu, H. H., & Lin, C. F. (2015). Survey of learning experiences and influence of learning style preferences on user intentions regarding MOOCs. British Journal of Educational Technology, 46(3), 528-541. doi:http://dx.doi.org/10.1111/bjet.12275

[7]Waite, M., Mackness, J., Roberts, G., & Lovegrove, E. (2013) . Liminal participants and skilled orienteers: Learner participation in a MOOC for new lecturers. MERLOT Journal of Online Learning and Teaching, 9(2), 200-2015. Retrieved from http://search.proquest.com

[8]Cole, M. T., Shelley, D. J., & Swartz, L. B. (2014). Online instruction, e-learning, and student satisfaction: A three year study. International Review of Research in Open and Distance Learning, 15(6) Retrieved from http://search.proquest.com/docview/1634145893?ac countid=141440

[9]Korasiga, V. R. (2012) . Customers relationship management in open distance learning institutions. International Journal of Applied Services Marketing Perspectives, 1(2), 177-187. Retrieved from http://search.proquest.com

[10]Okopi, F., & Ofole, N. (2013). Assessing learners' satisfaction towards support services delivery in National Open University Nigeria: Implications for counseling services. I-manager's Journal on Educational Psychology, 7(2), 1-10. Retrieved from http://search.proquest.com

[11]Bonk, C. J., Lee, M. M., Kou, X., Xu, S., & Sheu, F.-R. (2015). Understanding the Self-Directed Online Learning Preferences, Goals, Achievements, and Challenges of MIT Open Course Ware Subscribers. Educational Technology & Society, 18 (2), 349–368.

[12]Sookdeo, B., & Ramphal, R. R. (2013) . Overcoming obstacles to learning: Guidelines for teaching, learning and support in open distance learning. African Journal of Business Management, 7(27), 2712-2719. doi: 10.5897/AJBM12.795

[13]Colton, D., & Covert, R. (2007). Designing and Constructing Instruments for Social Research and Evaluation, California: John Wiley & Sons, Inc.