

Smart-School-In-A-Bag Using Dynamic Learning Program Pedagogy For DepEd Enhanced Alternative Learning System 2.0

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ABSTRACT

The purpose of this study was to assess the effectiveness of the implementation of SMART-SCHOOL-IN-A-BAG (SIAB) and Dynamic Learning Program (DLP) teaching pedagogy in ALS instruction and to come up with recommendations to improve the program further. The Embedded mixed method was utilized with 13 ALS facilitators and 200 ALS learners from different ALS centers of the Department of Education-Division of Lapu-Lapu, Philippines. Data were collected via face-to-face interviews, observations, and survey questionnaires provided by Smart Communications Inc. through the universal sampling method for ALS facilitators and simple random sampling method for 200 ALS learners. Descriptive statistics for the quantitative data and MAXQDA 11 for the qualitative data were used to analyze the data of this study. The findings indicated the program's strengths, Facilitators agree that the DLP lessens their work and the SIAB program addresses the 21st-century learners. Furthermore, they agreed that technology is a useful resource that increased student engagement in the classroom. The results of the analysis showed the effectiveness and utilization of SIAB and DLP in ALS Instruction as a teaching tool. The program provides a user-friendly environment and suitable for all ages, as expressed by our respondents. It is a suitable tool and can be operated in an online or offline mode. Concerns on data connectivity can be address by offline learning materials downloaded to the gadgets deployed. It was suggested to implement and promote the transformation of learning and the development of 21st-century skills.

Keywords

Development Education, SMART-SCHOOL-IN-A-BAG (SIAB) and DLP pedagogy, Embedded mixed method, Lapu-Lapu City, Cebu

Introduction

Technology plays a vital role in today's reality. Now we see different sectors in society rely heavily on technology. The education sector has much to gain with the advancement of technology. Technological integration will significantly benefit students and teachers as well. In the K-12 curriculum, the integration of digital technologies has rapidly increased. "The K to 12 graduates are equipped with the information, media and technology skills, learning and innovation skills, life and career skills and communication skills required to meet the challenges and take advantage of the opportunities of the 21st century." (DepEd Order 21, 2019, p. 6). A new ALS K-12 curriculum was established to offer the blueprint for ALS, known as the DepEd Order no. 013 s. of 2019, Enhanced ALS 2.0 in 2019. The curriculum is benchmarked on the DepEd K to 12 formal school curriculums. It focuses on the 21st-century skills of information, media, technology skills, learning and innovation skills, communication skills, life, and career skills. Implementing the Alternative Learning System (ALS) 2.0 helps develop the needed 21st-century knowledge and non-formal students' skills

(<https://www.deped.gov.ph>). ALS facilitators try their best to provide such a varied group with a meaningful learning experience. If teachers understand and get the necessary professional development in their fields, they can adapt to technological tools; hence student learning and motivation may increase.

For educators who want to teach students effectively in the 21st-century, professional development is essential (Bettis, 2015). Professional technology development is necessary for educators to increase teacher effectiveness and simplify teaching practices in classrooms while developing skills to encourage exploring different and new technology tools (Mazzella, 2011). Although there are complicated considerations like, for example, how technology has been implemented in various classrooms in different school systems throughout our country and how much money is used to buy technologies from each school, these investments are eventually taken to account by schools. To make it possible for teachers to use technology to enhance their learning for learners, they must first understand and know how to use various tools. Secondly, and more importantly, teachers must consider these

tools in the context of their learning environment and their learning results (Philip & Garcia, 2013). Teachers need to meet the demand for globalization, which prepares students as an integral part of their classroom experience, with technology that transforms communication and application methods and content to the 21st-century model (Berry, 2013). Although other stakeholders play an active role in students' learning, teachers are the most important participants in how technology is used in the classroom and how it increases students' academic performance. Some of the ALS centers were very remote, limiting their access to technological resources. With these, Smart Communications Inc., the Philippines' leading mobile network for call, text, and Internet services, launches its program enabling education through technology by offering digital learning packages.

One of the Digital Learning Packages, which supports the ALS program of the Department of Education, is the Smart School-in-a-Bag Program (SIAB). Smart Communications INC. has launched a School-in - a-Bag initiative to provide remote students with the opportunity to learn using digital technology education tools they have never seen at all. SIAB Program is a portable digital classroom intended for public elementary or secondary schools. For hard-to-reach areas, mountain, and the coastal regions, it could be used formally or non-formally and in areas without electricity. The SIAB was used in different learning contexts, including indigenous people, multi-grade ALS learners. School-in-a-Bag can be for on-grid (with electricity) and off-grid (without electricity) areas. The on-grid areas include equipment (projector, DVD player, laptop, student tablets, and Smart Bro Pocket Wi-Fi), training for DLP, online content (MTB app, and K-12), monitoring and evaluation, and teacher training.

The one for off-grid areas, however, also contains power sources (i.e., solar panels). Aside from the School-in-a-Bag equipment, teachers are also trained on Central Visayan Institute Foundation Dynamic Learning Program (CVIF-DLP), an innovative, low-budget disaster-resilient teaching pedagogy, and it is a system of teaching that focuses on student activity rather than on traditional lecture. The SIAB addresses the no device, no connectivity, lack of classrooms, and teacher's

problem(<https://smart.com.ph/About/learnsmart/programs-projects/school-in-a-bag>). This research is important because it informs educators and education leaders of the impact educators can have on planning and executing technology into the classroom curriculum during their skills, experience, and technical training.

This study aims to assess the ongoing implementation of the SIAB with dynamic learning program teaching pedagogy to provide evidence of its impact on the learners and the issues and concerns encountered that can serve as a basis for program enhancement.

Literature Review and Theoretical Background

This research was anchored on the constructivist theories of Piaget and Dewey and TAM Theory. Teachers explore and sample different technology integration methods and tools. Working from Piaget's self-learning theory, educators learn through constructing logical steps (Piaget, 1980), one after another, based on what they already know and have recently discovered. Adding Dewey's belief that learning was grounded in life experiences (1938), technology blends with the constructivist's theory of learning through doing. Technology integration provides learning by exploring, inquiring, experiencing, and building on Dewey's (1938) constructivist theory. The TAM theory comprises various parts representing the process of ICT acceptance by the users, including behavioral intention, perceived usefulness, and perceived ease of use. While perceived usefulness refers to the degree to which a person believes in using a particular technology by improving the job performance, perceived ease of use refers to the importance of technology in being user-friendly. Generally, TAM theory was developed to measure technology's effectiveness or success in understanding a particular system's value and efficacy. It is also considered one of the most influential theories in contemporary information systems research (Ghavifekr & Rosdy, 2015).

Along with this theory is the conceptual aspects of the research, which was anchored on Republic Act No. 10533 (RA 10533), otherwise known as the Enhanced Basic Education Act of 2013 and the DepEd Order no. 013 s. of 2019, Enhanced ALS 2.0 on the 2019 ALS K to 12 Curriculum.

The theories, RA 10533, and DepEd Order no. 013 s. of 2019 emphasize the research's significance. The researcher is aware of ALS education's status in preparation for incorporating ICT with education to understand the need for ICT convergence and education in these current times. In principle, the ALS offers a second chance to former students who did not complete basic education in the formal school system. The proposed framework includes various factors directly associated with the study's core aim that explains how knowledge and perceptions will affect the perceived usefulness and ease of use of ICT integration. The elements embedded in the conceptual framework have been meticulously interlaced so that the interrelationship among them constitutes to measure their effectiveness on ICT integration by teachers. However, teachers' intention to integrate ICT is the main variable that supports the key elements in the above framework, such as ease-of-use, functionality, flexibility, accessibility, and integration. Also, teachers' intention to use the technology is strongly influenced by their perceptions of the usefulness of the system and perceived ease of use and determines their actual use of ICT. The proposed framework has guided this research in investigating the factors affecting technology integration by school teachers (Ghavifekr & Rosdy, 2015). Smart Communications Inc. partnered with Coalition for Better Education, an organization with the vision to enhance and improve its education system. It promotes collaboration among sectors of education and other groups or organizations that advocate for education.

As part of the "School-in-a-Bag" program, Smart Communications has worked with DepEd, and a range of universities, nongovernmental organizations, and local community organizations to develop custom apps for teaching basic literacy and numeracy skills along with culture and stories from different regions.

The goal to integrate the SIAB tool and DLP teaching pedagogy by teachers is the primary variable that supports the critical elements in the above framework, such as ease-of-use, functionality, flexibility, accessibility, and integration. Teachers' objective to use the technology is strongly influenced by their perceptions of the system's usefulness and

perceived ease of use. In this context, they were using SIAB and DLP in the ALS Lapu-Lapu Division; the researcher wants to find out the changes brought by the program, perceptions, and experiences of the ALS facilitators and learners. The proposed framework has guided this research in investigating the factors affecting teachers' technology integration as a basis for program enhancement. The Dynamic Learning Program focuses on the "learning by doing" concept. It is student-centered. It is a teaching method that focuses not on classroom classes but student work. DLP supports student individual education. The DLP gradually enables a wide range of learners to achieve superior academic performance with process-induced learning as a new paradigm that superseding teacher-induced learning (Carpio-Bernido & Bernido, 2004). This will help alleviate the shortage of mobile teachers, improve the low number and quality of Community Learning Centers, and fill the gap in the availability of learning modules and other resources nationwide. The program will augment teaching facilities in the ALS environment.

Teachers with adequate technology training are more likely to increase confidence by using technology. The technological formation has, therefore, shown a positive impact on teacher efficiency in classroom integration. (Hoye, 2017). The results indicated that the teachers were positive about technological integration and experiences. Teachers saw the integration of technology as beneficial and essential for students to use the skills of the 21st century. Teachers also identified the need to develop technology, online resources, a supportive culture, and established technology standards to ensure the effective integration of technology within schools (Pattman & Concordia, 2019).

Objective of the Study

The research's main objective is to investigate the changes brought about by Smart School-in-a-Bag and the implementation of the Dynamic Learning Program at Alternative Learning System (ALS). The researcher believes the study will provide adequate information needed to successfully integrate the ALS facilitators' SIAB tool with DLP in teaching and learning. This study's results will identify the influential factors that contribute to effectively using ICT in teaching and learning

and come up with recommendations on how the program can be further improved.

Methodology

An embedded mixed methods research design was used to identify and describe the strength and weaknesses, and best practices utilized in SIAB and DLP integration in ALS instruction. The research designs use a two-step design whereby the quantitative component's data is collected, followed by qualitative data to explain, elaborate, or clarify the quantitative results (Creswell, 2014). his study adopts an embedded mixed methods research design to assess SIAB and DLP implementation's effectiveness to come up with recommendations for program enhancement. The embedded mixed-method study design aims to collect quantitative and qualitative data or sequentially to have one type of data playing a supporting role for the other form of data to determine what recommendations should be taken to improve SIAB and DLP further. The research participants for the quantitative phase of this study consisted of total population sampling on 12 ALS facilitators and a simple random sampling method for the 200 ALS learners of the Division of Lapu-Lapu City. Due to the very small sample sizes, total population sampling was used, and all the facilitators were given the questionnaire. The quantitative phase using survey questionnaires with open-ended questions has two parts and was administered to the ALS facilitators and learners five months after program implementation to determine their perceptions about the program and the frequency use of SIAB during the program implementation. FGD guide was used in collecting qualitative data of the program. According to Creswell, "The researcher might collect both quantitative and qualitative data concurrently and integrate or merge the two databases by transforming the qualitative themes into counts and comparing these counts with descriptive quantitative data." For this study, the quantitative data was the teacher perceptions of

SIAB and DLP's effectiveness to support student learning, as indicated by the survey responses.

This quantitative data was turned into counts through the facilitator's use of a Likert scale to record the degree to which they felt the program integration prepared them to support their learning. By embedded mixed methods designs, the qualitative data illustrate the quantitative data, producing a deeper understanding of how the SIAB program with DLP impacts ALS facilitators and learners and the issues and concerns encountered to develop recommendations for program enhancement. On the survey, ALS facilitators and learners could volunteer to participate in a follow-up interview. Those who volunteered were contacted via email, and an interview was scheduled. Interviews were conducted face-to-face or electronically depending on the participant and the researcher's location, time, and availability. All participants were asked permission to record interviews.

Findings

A survey on the SIAB and DLP was administered among 13 ALS facilitators and 200 ALS learners. The. The qualitative data collected through focus groups supported and enhanced the quantitative findings in this study. The information gleaned through the survey responses, in-depth interviews, and focus group discussion were analyzed to generate themes. The researcher assessed the transcripts' accuracy and created categories and sub-categories according to the study's objectives. The data were analyzed using MAXQDA, a qualitative data analysis software.

Through the content analysis process, six categories emerged: SIAB and DLP as an instructional tool, perceived strength of the program, perceived facilitators' challenges, perceived changes encountered by the facilitators, perceived changes to ALS learners, and the aspects of SIAB and DLP for Improvement (See Figure 1).



Figure 1. Emerging themes and related codes

Throughout the interviews, the most frequently reported subtheme was related to SIAB and DLP's opportunities to become an effective teacher. Facilitators shared the use of SIAB and DLP to differentiate instruction and to engage students in learning. Technology lends itself as a tool that creates innovative and engaging content to help teachers revolutionize the learning process (Lin & Jou, 2013). In this vein, a participant (R1/F) stated, "SIAB is the aid needed by teachers/facilitators like us to ensure the effectiveness of both teaching and learning process especially in ALS that we are handling multi-level classes." Another participant (R10/F) commented, "SIAB and DLP provide lots of opportunities for an effective teaching."

Facilitators also reported that classes using SMART School-In-A-Bag with DLP had improved students' class attendance, increased student engagement and collaboration in class, developed effective learning and created a fun learning environment. The overall findings show that SIAB and DLP is a great tool and resource to enhance learning was noted as the most shared response from facilitators. The data indicated that the facilitators and learners enjoyed using technology because it provided another way of learning, allowing them to interact with each other, especially learners from far-flung areas. Another participant (R5/M) commented, "The videos and the interactive activities excite the learners every time the lesson is presented and

allows them to engage more in the lesson." Another participant (R3/F) stated, "The learners are looking forward to going to the centers because the lessons were presented differently, and the tablets provided by SIAB helped their learning enjoyable."

The second theme emerging from the respondents' views was related to the perceived strength of the program. Almost all the facilitators recognized that the SIAB and DLP impacted their role as facilitators and how they plan instruction and develop learning opportunities for their learners during the focus group discussion. ALS facilitators teach a very diverse group – from young children (sometimes as young as ten years old) to the elderly. The ALS facilitators stated that the most challenging group of learners to teach was adult illiterate, those who never went to school or had to leave school early in life. Among the younger population, the most challenging ones mentioned as an "extra challenge" are street children. This group includes members of the Southern Indigenous Group, usually referred to as "Bajaus" (Arzadon & Nato, 2015). Smart Communications INC. has been active in supporting ICT integration trained facilitators on making CVIF DLP LAS and 21st century learning to adopt the program. The ready-to-use Learning Activity Sheets developed by the Central Visayan Institute Foundation (CVIF) were made available at <http://www.dlp.ph>, and there is an e-learning platform for the ALS available for the facilitators. Supported by Smart and PLDT-Smart Foundation (PSF) for over a decade, CVIF-DLP is one of only three supplemental learning materials endorsed by the DepEd. The innovative teaching pedagogy fosters the highest level of creativity and productivity, while its systems-based scientific approach for enhanced independent learning is crucial in today's highly digital time. (<https://smart.com.ph/About/newsroom/full-news/2020/10/05>). Overall, facilitators expressed that the program's most perceived strength is that the LAS "Learning Activity Sheet," the learners could learn independently, the SIAB address the needs of 21st-century learners, and LAS in DLP lessened the facilitators' work. For some respondents (R1/F, R8/F, and R10/F), DLP lessens their work handling multi-grade classes. The respondent (R5/M) also expressed, "Instructional materials simulate hands-on

experience through interactive games installed in tablets." Another respondent (R2/F) added, "LAS helps students to be independent and responsible since they have their own portfolio and copy the LAS by hand word for word." Furthermore, "SIAB provides anytime, anywhere 21st-century education for all learners" (R7/F). The technology itself is classified as a potential barrier to technological integration. Teachers may refrain from integrating technology into their teaching if they experience failure in equipment, slow internet access, or inadequate software (Zhao & Frank, 2003). The most-reported challenges encountered in implementing the program. The most common challenges are an insufficient number of materials, lack of equipment and tools to accommodate the learners and the access and support needed during the program implementation. Related to the facilitators' challenges, one participant (R13/M) stated, "More equipment so all centers can experience the tool." Some respondents (e.g., R3/F, R10/F, and R11/F) suggested Smart support if help is needed on the DLP implementation and equipment failure and updates. Another participant (R9/M) commented, "Smart to provide more learning materials that can be access offline since slow to no internet connections and fluctuating internet connections were experienced especially on ALS centers located on far-flung barangays." Other participants (R1/F) added, "Lacking tools since not all of the learners can use the gadgets and can sometimes cause arguments among learners." Among the reported effects are the enhanced teaching pedagogy and helping facilitators learn how to create LAS and incorporate ICT into learners' performance. In this sense, a participant (R5/M) stated "DLP improved our teaching skills and maximize learning". Activities in the CVIF-DLP are designed for all types of learners. Multi-domain learning pertains to learners' writing activities; since writing, usually in cursive, stimulates information retention, also referred to as the 'dynamism' in the brain, from which the approach's name was derived. The learners are provided with individual learning activity sheets (LAS). Each LAS is equivalent to one activity, whatever the type of activity may be (i.e., notes, seatwork, quiz). Each activity has its small learning targets later directed into a more advanced competency. With the use of the LAS,

the learner possesses the ability to focus on the smaller bits of knowledge he or she must have before proceeding to a more complex learning goal. Another participant (R10/F) commented, "There is a difference in student engagement compared to the traditional method of handling the class. The students were motivated, and class participation increases".

All the changes were found to be positive for learners who have different capacities and needs. It addressed the needs of the 21st-century learner, promotes positive well-being, and improved learners' performance. Through the program, the facilitators customize learning programs around needed competencies based on the ALS K to 12 Curriculum while ensuring integration with the skills training component among the learners. The SIAB and DLP help respond to learners' needs and expectations. As given in Table 20, the ALS learners' views SIAB and DLP activities have positive effects on the development of individual or group work skills. In this vein, some participants (e.g., R14/F, R46/M, R131/F, and R199/M) stated that SIAB tools, especially on APPS installed on tablets, make the class more engaging and fun. Another participant (R77/F) pointed out, "Classes with SIAB is a meaningful experience." Another participant (R44/M) also added, "The videos on disaster preparedness, wellness, and the interactive e-books are beneficial in learning." According to participant R41/F, "Videos in SIAB are concrete and relevant to our own life experiences." Another participant (R19/M) suggested that all learners were engaged in the lesson and added, "Everyone is involved in class using the interactive games installed in the tablets during class activities."

After five months of using the contents of SIAB as technological tools and the DLP as a teaching strategy, the following aspect should be improved: the need for more SIAB equipment to accommodate all the ALS Centers, need for guidance or instructions, and if possible, training sessions on how to apply the contents of the SIAB, more MTB Apps considering the ALS learners who are benefiting from SIAB. Most of the respondents' suggestions were related to more SIAB equipment to accommodate all ALS Centers. In this sense, a participant (R12/M) stated "More SIAB equipment like tablets and projectors for the ALS centers to support the

needs of all learners". Another participant (R13/M) commented "Provide more equipment and DLP materials on the ALS learning strands that fit the capabilities of learners to help them enrich their learning experiences". For example, a participant (R6/F) suggested that "There should be more MTB Apps since majority of ALS learners are not equip in speaking and understanding English". SMART Communications Inc. gives importance to facilitators' being in equipping the facilitators on training. Still, some need follow-up training, especially on the use of SIAB apps and DLP implementation. One participant (R7/F) stated that "You need to educate us more on using some of the Apps and LAS preparation for ALS." Another point that some participants addressed was related to making learning an enjoyable experience by adding SIAB gadgets. A participant (R3/F) suggested that "We are all hoping that we will be given chance to do hands on with sufficient number of devices since we are doing it in rotation basis so everybody can experience the tool." Creative fun activities were certainly seen to be important for students to be engaged in the lesson. One participant (R2/F) stated, "My class during the SIAB implementation brought changes especially on my learners in the island of Olango where their access to technological resources is limited, I hope we will be able to find donors to provide us the tool."

ALS learners have an overall positive perception of the program's implementation based on the results. They strongly agree on all program indicators, especially on improving their interest, participation in-class activities, and discussions. They were able to navigate the gadgets and installed apps and activities. Integration of the tool improved interest and the usefulness of its application to real-life problems. It offers digitized materials readily available to navigate through the materials installed, making learning faster and better. Learners' perception of integration is enjoyable, comfortable, and encourages collaboration with others, thereby improving their school performance. The utilization of SIAB and DLP in ALS instruction helps a lot to improve every learner's understanding. Another thing about the SIAB is you can bring your device to download learning materials. Multi-grade teaching would be easier and will have better functional learning due to the flexibility of the tool. SIAB

offers mobile phones and other gadgets to monitor or TV, DVD, and other reading materials. Facilitators can make use of all gadgets for reporting, tutorials, and online support instructions. SIAB and DLP make lessons more comfortable management to optimum level since it addresses students' diverse needs of different levels. SIAB and DLP are disaster-resilient, supports off-grid locations and multi-level learners' needs. Learners can readily self-select on the devices appropriate tool from SIAB to aid them in completing the task. The mobility, portability of the SIAB and DLP makes it easy for transport, and sharing is also an added plus for ALS teaching. The facilitators agree on all indicators of the program's usefulness and importance of SIAB and DLP Pedagogy in ALS. The findings indicated that many respondents have an overall positive perception of infusing the SIAB and DLP in ALS teaching and learning. The facilitators were passionate about using technology for various reasons and had a positive outlook on the program. Although the overall perception was positive, some negative and neutral viewpoints emerged. The data indicated that a small percentage of participants had mixed feelings about infusing SIAB and DLP in ALS teaching. Additionally, a few facilitators were adamant about not using technology in the classroom because of the comfort level. The inadequate curriculum and training need to use technology appropriately and poor signal, especially on ALS centers located off-grid. In addition to the need for facilitators training on SIAB implementation on educating the use of Apps, facilitators emphasized the lack of resources available to them that there should be more MTB Apps since most ALS learners are not equipped in speaking and understanding English. Smart to provide more materials and training, more tablets, and mobile Apps, and a DepEd seminar in implementing DLP. Addressing issues such as these are ways in which schools can support integrating technology in teaching and learning.

Conclusion

Based on the findings of this study, the following conclusions were drawn:

The first stage of technology-infused teaching with dynamic learning program pedagogy using

Smart School-in-a-Bag must effectively ensure that facilitators and learners can make the best use. Thus, preparations for the implementation of technology-based teaching with new pedagogy begin with proper training and must be supported by the top academic management. The SIAB recipient was effectively introduced to ALS Lapu-Lapu Division. Following its objective of building ICT literacy and interest among ALS facilitators to incorporate ICT into education and enhance the teaching and learning process, the project components, including the provision of tools and resources in the SIAB, were appreciated, and fully utilized by the recipient. When the integration of technology in the classroom is introduced from the start, and ongoing maintenance is adequately given, technology-infused teaching can bring tremendous success and benefits to facilitators and learners.

The use of SIAB and DLP, particularly in education and learning, is more realistic, so facilitators must have time to study and explore. The program was generally successful in bridging and building ICT literacy for the ALS facilitators. The SIAB provided access to technology for remote ALS centers. It helped to reduce the number of non-readers in their centers. While there were some obstacles, such as a small cellular signal, a variety of devices, the center found a way to overcome that, and the program gave students empowerment. SIAB was incorporated into the different subjects through ALS Centers, and several learners benefitted. Facilitators are also improving their DLP skills. The curriculum has made many significant improvements to facilitators and learners. It helped facilitators learn how to incorporate LAS and ICT into their learners' activities. As far as learners are concerned, their needs have been addressed and strengthened as 21st-century learners. The integration of SIAB into the classroom with DLP needs to be taken seriously to increase its educational system. This will help improve national education's global status and create a more robust future workforce. The government must strengthen and change the facilitators' beliefs in incorporating the instrument into the classroom for SIAB and DLP to be appropriately used. The position of facilitators is the key to the effective and successful implementation of all new policies. Changes are influenced by new technologies and

devices for communication, which is meant to be readily accessible to students at school or home. Furthermore, the need for facilitators to be literate, use SIAB and DLP to develop their teaching methods and approach in the handling of multi-grade learners is intended to encourage successful learning and meet the demands of teaching skills 21st century. However, there were problems encountered during the implementation of the SIAB program related to internet connectivity, and the issues were: no available internet connection, slow internet connection, and fluctuating internet connection. Incapability buildings, the problems were: a short training period and lack of hands-on exercises. In the SIAB program's utilization, the issues were: difficulty on DLP use, insufficient gadgets causing limited access to units. The issues were no technical support and no replacement of defective parts and units on maintenance and sustainability. Program results indicate that facilitators, in general, agree on the efficacy of SIAB, especially in allowing learners to learn from collaborative learning, and the findings of learners support the efficiency of SIAB in promoting and making learning easier more fun for them.

References

- [1] Arzadon, M. M., & Nato, R. (2015). The Philippine Alternative Learning System:
- [2] Expanding The Educational Future Of The Deprived, Depressed, and Underserved. University of the Philippines Diliman.
- [3] Berry, P. (2013). The impact of globalization and technology on teaching business communication. *American Journal of Business Education*, 6(1), 57-66.
- [4] Bettis, S. A. (2015). The effect of technology professional development
- [5] program on K-5 teachers' levels of technology integration: An action research study. (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3742946).
- [6] Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage.
- [7] Creswell, J.W. (2014) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Sage.
- [8] Carpio-Bernido, M.V., & Bernido, C.C. (2004). Science, culture and education
- [9] for change, Part I: innovative strategies for secondary education in the Philippines. *Transactions of the National Academy of Science and Technology*, 26(2), 243-267, Philippines.
- [10] Ghavifekr, S., Abd Razak, A.Z., Ghani, M.F.A., Ran, N.Y., Meixi, Y. & Tengyue,Z. (2014). ICT Integration In Education: Incorporation for Teaching & Learning Improvement. *Malaysian Online Journal of Educational Technology (MOJET)*,2 (2), 24-46.
- [11] Hoyer, S. R. (2017). Teachers' Perceptions of the Use of Technology in the Classroom and the Effect of Technology on Student Achievement Pattman, C. M., & Concordia. (2019). *Technology Integration Experiences and Perceptions of Southeastern Secondary Teachers*.
- [12] Mazzella, N. (2010). What are we learning about technology integration and professional development? *Educator's Voice*, 4, 42-49.
- [13] Philip, T., & Garcia, A. (2013). The Importance of still teaching the igeneration:
- [14] New technologies and the centrality of pedagogy. *Harvard Educational Review*, 83(2), 300-319.
- [15] Pattman, C. M., & Concordia. (2019). *Technology Integration Experiences and Perceptions of Southeastern Secondary Teachers*.
- [16] Piaget, J. (1980). *Les formes élémentaires de la dialectique*. Paris: Gallimard.
- [17] Zhao, Y., & Frank, K.A. (2003). Factors affecting technology uses in schools: An ecological perspective. *American Educational Research Journal*, 40, 4, 807-840. doi:10.3102/00028312040004807URL:
- [18] <https://smart.com.ph/About/learnsmart/projects/school-in-a-bag>
- [19] <https://www.deped.gov.ph>
- [20] <https://smart.com.ph/About/newsroom/full-news/2020/07/13/dlp-online-forum-2020>
- [21] DepEd Order 21, 2019, p. 6