EARLY VIEW

ICT Literacy Index of ESL Teachers: Expectation Vs. Reality of DepEd Computerization Program In Pedagogy

Michael Estremera

[a] DepEd, Tugos Elementary School, Sorsogon City
[b] Sorsogon State University, Philippines

*E-mail: estremera_michael@yahoo.com

Abstract: The present paper investigated the ICT literacy index of ESL teachers utilizing descriptive-quantitative method of research. This was undertaken by assessing the skills along the areas of ICT integration in pedagogy. Data shows that ESL teachers have moderate to high index along the areas of ICT literacy. Majority are categorized under advanced or merely moderate user of ICT in their pedagogical practice. These areas are along basic skills, software applications, production, and data management. Be that as it may, the ESL participants need further upskilling on hardware management and information management. Taking into consideration these results imply that, there are gray areas which need to be unraveled by the department along the computerization program to realize the purposes of execution. The researcher concludes that ESL teachers possess varying ICT literacy indexes. Given these data, there is a need to give due attention to the concerns of teachers along ICT literacy aspect to achieve optimum efficacy of the DepEd computerization program. Teachers need to be upskilled on the digitalization of classrooms.

Keywords: ESL teachers, information communication and technology (ICT), literacy index, pedagogical practices, pedagogy

INTRODUCTION

Department order no. 78 s. 2010 dubbed as DepEd Computerisation Programme (DCP) has equipped the public schools nationwide with computers, laptops and other technologies with the expectation of enhancing the pedagogical practices of ESL teachers. Nonetheless, based on UNESCO Institute for Statistics, the status quo of Information and Communication Technology (ICT) in Education in Asia revealed that there had been no data yet as to ESL teachers teaching and using ICT. In fact, only two 2% of the public school teachers were trained to use ICT (Paňares, 2017). To substantiate the preceding order, it is of no doubt that ICT practically plays a pivotal role in the pedagogical practices of ESL teachers. In fact, Collins et al. (2017) and Courts (2012) postulated that integration of technology into the learning process brings new opportunities nowadays. Computers indeed have some attributes that, when used correctly, can facilitate student learning. It offers the ability to provide instruction at any phase, in some place and at any pace, thus generating an extremely flexible learning environment whether through providing more interaction with content or more interaction with other people, computers can support actual learning.

This is further underpinned by Healy (2012), who similarly conjectured that technology could inspire and excite many educators; but, it can also strike fear in the hearts of even the most forward-thinking teachers who deem technological apparatuses to advance effective teaching performances. Concerns about the extent of technology should be included in any given lesson, or what kind of technology might improve the quality of learning of students are extremely important features to the use of technology in pedagogy. It has also been almost a decade since the inception of computerisation era, but still, the expectations seem truly far from reality to date as many ESL teachers are still groping as far ICT integration in pedagogy is concerned. There has been dearth of concrete and tangible data whether the

said program has prospered or not. The conduct of the present academic piece will potentially offer data on the success index or even the other way.

RESEARCH OBJECTIVES

The chief aim of this paper is to provide comprehensible data by evaluating the success or failure index of the computerisation programme by the Department of Education, Philippines after 12 years since its implementation. According to the Joint Committee on Standards for Educational Evaluation, program evaluation as a method of research is a means of systematically evaluating an object or educational programme (Joint Committee on Standards for Educational Evaluation, 2012). As accentuated by Sanders (2000), evaluation of school programme is indispensable to provide feedback which could serve as basis for policy revision and refinement. First, it envisioned to highlight the ICT literacy index of ESL teachers in the site of interest along basic computer literacy, knowledge in using software, knowledge in using hardware, information management, data management, and production management. Utilising the same data, the researcher hopes to establish if there are significant differences in the ICT literacy indexes exploiting the same variables. Upon extracting the data, themes had been developed to provide parallelism of results.

By the same token, the result of this investigation will provide direction to the Department in curriculum writing and programme development along ICT integration in pedagogy. The findings of this academic piece will provide a concrete and comprehensive picture of assessment and evaluation of ICT implementation in the sample Division, thereby providing a reference and relevant investigations in other Divisions across the country. On a final note, this paper can likewise be of assistance to education program supervisors in devising monitoring schemes for ICT integrative instructions. The findings of this investigation may serve as reference in planning and designing trainings for professional development of teachers.

LITERATURE REVIEW

Relevance of ICT

Taking a closer perspective of the interplay between ICT utilisation and pedagogical practice, many research are vouching the claim that certainly, there are countless improvements that have transpired brought by integration of ICT in classroom milieu. In effect, Sen (2014) as mentioned by Chau (2020) indicated that there are substantial empirical research works that confirmed students' constructing knowledge, skills and mastering advanced thinking skills are evident infusing ICT. For instance, a research work on the effects of using interactive white board in teaching English on 146 primary school students in Turkey demonstrated that interactive whiteboard enhanced the students' English academic success compared to the blackboard.

To supplement, ICT can even be used to compose multi-authored texts, select from a wider range of audiences throughout the world, as well as exercise choice of medium and design while composing (Hopkins, 2007; Higgins, 2007; Courts, 2012). These bear significances to the present study which also identified similar strategy, particularly the use of the internet and internet-based materials in classroom instruction. This investigation however, dealt with the general overview of ICT implementation through an assessment of the program by the ESL teachers. As to second language (L2) learning, there has also been foreseen positive effects of infusing ICT in foreign language teaching (Isisag, 2016).

Moreover, Pritchard (2007) and Obilisteanu (2015) enumerate certain widely agreed features of information communication technologies with big impact on teaching and learning such as speed, capacity, communicability, interactivity, nonlinearity and multi-modality. ICT enables actions and interactions to be taken remarkably fast. For instance, messages can be sent, and replies be received in minutes or even seconds. The capacity of the internet is enormous, providing access to an incredibly

large amount of information. It also provides means of communicating within and beyond the classroom. ICT has created enormous opportunity for learners to enhance their communicative abilities both by individualising practice and by tapping into a global community of other learners

ICT Issues in Pedagogy

Despite the noted boons side of ICT implementation in the teaching-learning process considering Philippines, ensuing issues and concerns pertaining to ICT integration still persist (Estremera, 2019). This is likewise confirmed by the findings of De la Rosa (2016) who asserted that the novice teacher views ICT use as time-consuming and does call for a more knowledgeable manipulation of technological devices. The experienced teacher gives more favour to the advantages ICT contributes to language teaching, but views insufficiency of resources and services like limited Internet access as detrimental to effective ICT integration. On a larger scale of scrutiny, Pelgrum (2001) gathered data on the perceptions of educational practitioners (at the lower secondary level) regarding obstacles that seriously impede the realisation of ICT-related goals of schools. Findings reveal that there were hindering factors such as insufficient number of computers, teacher lacks ICT knowledge/skills, and not enough computers with simultaneous access to WWW.

As a matter of fact, the issues of ICT in pedagogy almost resemble from country to country. According to Empirica's (2006) European study, it was found that the lack of access was the largest blockade and that different challenges to using ICT in teaching were reported by teachers, for instance, lack of computers and lack of adequate materials. Correspondingly, Korte and Hüsing (2007) concluded that in European schools there are some infrastructure barriers such as broadband access not yet being made available.

METHODOLOGY

The researcher employed the descriptive–quantitative method of research to accordingly delineate the intervening variables of the present academic piece. Descriptive method refers to the frequency and mean to properly describe the literacy index. Conversely, the quantitative part involves the use of ANOVA to determine the significant difference among the ICT areas. The research site has four districts with approximately 12–15 school per district. Accordingly, the participants to this academic undertaking were the ESL teachers who are in charge of ICT integration in their pedagogical practice handling English subject commonly. There were actually 78 ESL teachers who participated representing the 20% population of the two districts in the research site. Others were not considered as participants as this violates the principle of purposive sampling adopted by the researcher. The selection was done primarily on basis of their contribution and information desired to ensure high validity and reliability gauge. Foremost, ICT coordinators and ESL teachers were likewise selected since they are in close monitoring of the ICT equipment, and they may have gaps and issues relative to ICT literacy and its relevance to language learning.

Furthermore, the key instrument in this study was a researcher-made questionnaire which obtained 0.87589 Cronbach alpha dry-run reliability result. It was administered to the respondents to determine the literacy index along the various areas of ICT. Besides, to accordingly quantify the index, the 5-point Likert Scale (Beginner, Learner, Advanced, More Advanced and Expert) was adopted. As a research protocol, the researcher sought permission from the Schools Division Superintendent to conduct this study. A letter was then written and sent to the public school's district supervisors and school heads of the respondent schools. To aesthetically and accurately highlight the data, the researcher utilised online quantitative software application.

DATA ANALYSIS AND FINDINGS

ICT Literacy Index
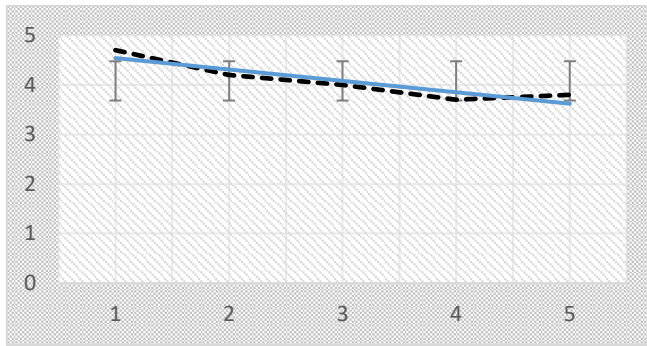
Figure 1. Basic Computer Literacy Index

Captured by Figure 1 is the literacy index of ESL participants in the City Division of Sorsogon. As to basic computer literacy, it is noticeable that 4 indicators obtained numerical ratings of 4.2, 4.0. 3.7 and 3.8 interpreted as "more advanced". However, the respondents are on "expert" level along basic computer operation with a numerical rating of 4.7. This result may mean that teacher respondents are aware of the policy of DepEd along ICT integration in the teaching-learning process. This is connected to the flagship program of Tinio (2002) who posited that the Department of Education (DepEd) is also exerting efforts to advance the integration of ICT in both elementary and high school education in the country. Among the many programmes of DepEd is to fully implement the use and integration of ICT in the teaching learning practices in the series of trainings of teachers. DepEd has also been planning to connect to the internet all 6,650 public high schools in the Philippines through its Adopt-A-School programme.
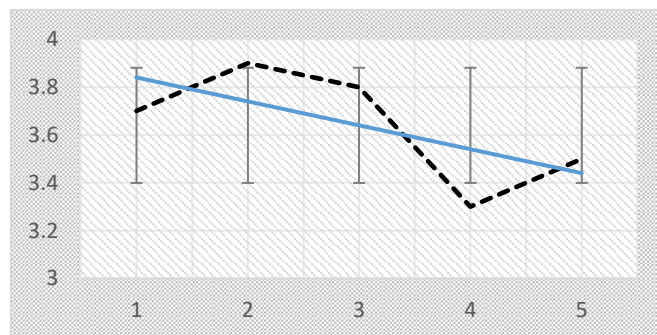

Figure 2. Software Index

To supplement, ESL participants scored 3.7, 3.9, 3.8 and 3.5, respectively which fell under "more advanced" level. These are along creating and sharing knowledge instantly, enabling browser-based documentation, customisation - has full access on how the base is displayed, and attaching images/files insertion of objects and many more. They also obtained a rating of 3.3 considered as "advanced" level. In fact, this claim shows connection to the perspective of Rimando (2009) who conjectured that the importance of technology has been streamlined to the vision and mission of the Department of Education. Philippine national policy has, therefore, been formulated to advance the use of ICT in education. In March 2001, the Senate Committee on Education in cooperation with the DECS launched Project CARES. Project CARES was designed to upgrade the use and application of ICT in public elementary and secondary schools nationwide. The project's primary concern is to provide public schools and district offices with computer-based management and operations support tools and eventually make elementary and high school principals more efficient and productive in their work as school administrators.

As to hardware management, teacher participants scored differently along the 5 sub-indicators. In truth, they obtained numerical ratings of 3.3, 3.2, 3.1 and 2.8 categorised under "advanced" level. But they are considered under "more advanced" with 3.5 rating level on a claim that they know how to store files on computer storage devices.
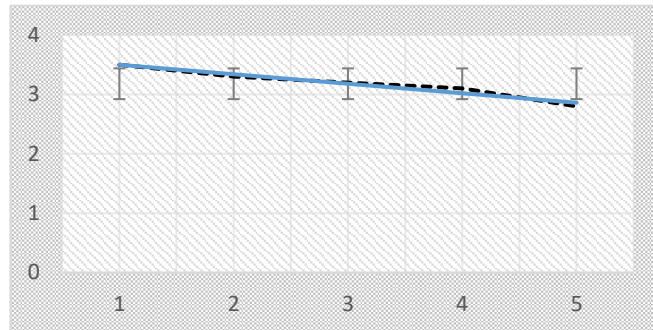

Figure 3. Hardware Index

This bears direct connection to the goal of the Philippine Education Technology Master Plan is to deliver quality education that is accessible using information technology and other innovative technologies. Under this framework, DepEd is implementing an ICT plan for Basic Education which has several objectives. The first is to provide the physical infrastructure and necessary technical support to make ICT accessible to students, teachers, administrators and school support staff. Secondly, it aims to develop teacher competence in the use of ICT and in the design, production and use of ICT-based instructional materials (Patil, 2015).
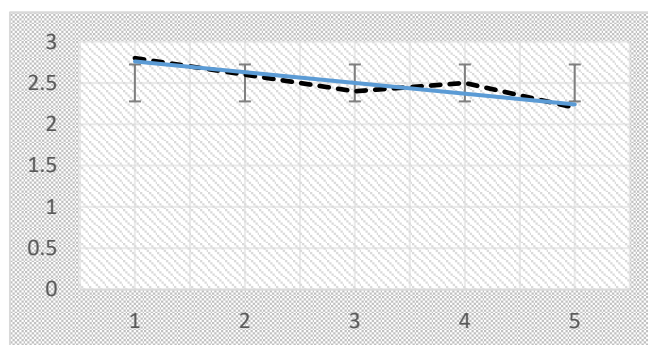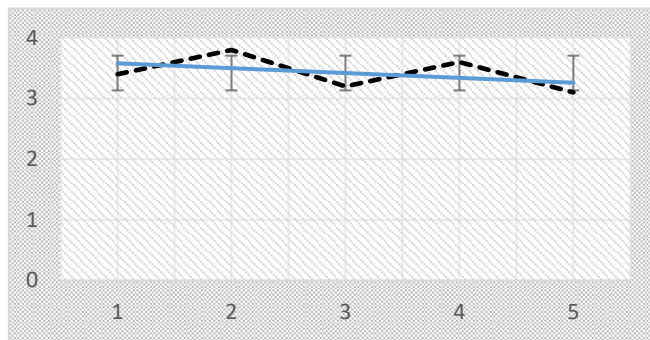

Figure 4. Information Management Index

Conversely, ESL teachers are considered *learners* in behavioural and organisational theories also in operations management. Insofar as data management, teachers are considered *learners* in defining data in database, manipulating data in database, retrieving data in database, and in manipulating data format, field name etc. These areas got ratings of 2.4, 2.3, 2.3 and 2.2. Teachers probably have considered the advantages of ICT in the classroom albeit there are areas in which they need to master. This is underpinned by the statement that the use of the computer and the internet has become a necessary skill to master in the globalised world. In the field of education, this skill has become critical. From Computer Assisted Language Learning (CALL) to Information Communication Technology (ICT), teachers and researchers have long been interested in the uses of new technologies in teaching. ICT have brought new opportunities to restructure the language teaching-learning setting. It has opened new avenues and brought new challenges to language learners as well as teachers. ICT is often argued to increase motivation and is frequently linked with learner autonomy – the ability to take charge of one's own learning (Pritchard, 2007).
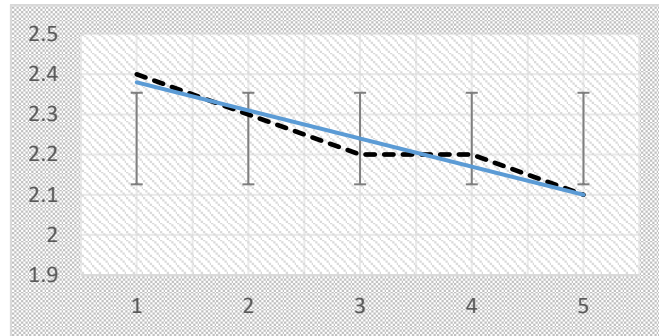
Figure 5. Data Management Index

Figure 5, on the other hand, shows that participants are considered not so literate in defining and manipulating data in database, retrieving data in database, and at least manipulating data format, field name, etc. This matches to their mean scores of 2.4, 2.3, 2.3, 2.2 and 2.2, respectively which fall *learner* category index.


Figure 6. Production Management

As for the production management index, ESL teachers are considered more advanced in printing visual aids/ instructional materials, etc. and in reproducing copies of papers quickly with ratings of 3.8 and 3.6. The rest of the indicators such as creating shapes more accurately; illustrating modular arts; and text printed out can be glued onto sheet material fell under "advanced" level with 3.4, 3.2 and 3.1 numerical ratings. The teachers possibly are fully cognizant of countless benefits if their skills in ICT are on high level in the interest of the learners. This is supported by the idea of Chau et al. (2020) who explained on the importance of ICT in education. He explained that ICT can even be used to compose multi-authored texts, select from a wider range of audiences throughout the world, as well as exercise choice of medium and design while composing.

Difference in the ICT Literacy Indexes

Determining the significant difference will highlight the gray areas of the efficacy computerisation programme as well as a determining factor to launch trainings to teachers to improve their pedagogical practices (Isha et al., 2020).
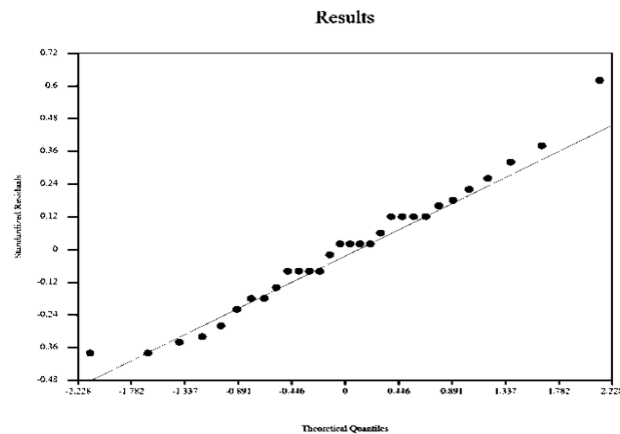
Figure 7. Analysis of Variance

Thus, plotted in Figure 7 is the significant difference between and among the variables under study. Utilising online ANOVA calculator, it yielded an *f*-value of 24.7984 and *p*-value of 0.0002 @ 0.05 level of significance leading to rejection of null hypothesis. This simply presupposes that there are significant differences in the ICT literacy indexes of the ESL teachers. There could be areas of ICT where ESL participants are proficient and, on the other hand, there are also areas which need some intervention at the local or even school level to reach the high index of ICT literacy.

DISCUSSION

The Expectation

Through the findings and careful analysis of data, it uncovered one lexis – the expectation. The Department of Education expected that through the computerisation program implemented almost 12 years ago, it will practically transform the abstract concepts of the students into tangible reality by integrating ICT in the teaching – learning process. It specifically expected that teachers are already ICT-capable to optimise the efficacy of ICT in pedagogy since its implementation. In fact, the department has helped a lot in this aspect, to some extent. As vouched by the study of Tomaro (2018), ICT helps make schools into dynamic, collaborative and informative learning institutions where students can become more motivated, inquisitive and creative learners. It develops the students to become independent learners and nurture in them the attitude and capacity for lifelong learning. It links up the students with the vast networked world of knowledge to enable them to acquire broad understanding, knowledge and global outlook providing them with the resources for the development of a creative mind. As to second language (L2) teaching-learning process, there has also been noted positive effects of infusing ICT in foreign language teaching (Isisag, 2016). Likewise, Pritchard (2007) and Obilisteanu (2015) enumerate certain extensively agreed features of information communication technologies with big influence on teaching and learning such as speed, capacity, communicability, interactivity, nonlinearity and multi-modality. ICT enables actions and interactions to be taken remarkably fast. For instance, messages can be sent, and replies be received in minutes or even seconds.

The Reality

To highlight the reality aspect of this paper, there is a need to consider the data at hand and of the existing studies locally at least to bridge the present paper to existing body of knowledge. Since the participants represent 20% population of the research locale, results may also reflect the same literacy index and ICT issues and concerns to some non-participant teachers such as classroom modernity, apathy, and even reluctance to embrace the digital era. There could also be issues along internet connectivity and technical know-how of implementers. This is where the interventions and in-service

trainings will come-in. Thus, taking into account the findings, it shows that ESL teachers have moderate to high index along the areas of ICT literacy. Majority are categorised under advanced or merely moderate user of ICT in their pedagogical practice. These areas are along basic skill, software applications, production, and data management. Be that as it may, the ESL participants need further upskilling on hardware management and information management. Taking into consideration these results may imply that, there are aspects indeed which need to be unraveled by the department along the computerisation programme. This is linked to vista of Rodrigo (2009) who stressed that the Philippine government and the private sector needs initiated programs in line with ICT implementation in schools. He underscored further that teachers need trainings in computer literacy. He believes that ICT will improve teaching and learning and afford the country a greater state in today's knowledge society. His work is directly relevant to the researcher's study for it considers the need for teacher training in line with ICT. This paper also suggests the idea as contributory factor for the enhancement of ICT literacy program implementation.

The same perspective is accentuated by Manluna (2015), that to address the need to modernise the classroom coupled with the belief that acquisition of new technologies improves learning, people are in a rush to outfit the classroom with computers and provide internet connectivity, thinking that increase in student-computer ratio and the availability of a gateway to the so-called information superhighway can make the classroom a better teaching-learning place. This is a common misconception among the public elementary and secondary schools in the country.

CONCLUSION

The consistent findings have paved the way for the concluding statement of this paper. While the department has gone a long way already in terms of modernisation in the digital epoch, to be at par with fast rising countries in Asia, there is a need to give due attention to the concerns of teachers along ICT literacy to achieve optimum efficacy of the DepEd computerisation programme. One implication highlighted by the present study is that, ESL teachers being the primary dispensers of knowledge need to be upskilled on the digitalisation of classrooms specially that the present challenges of pandemic necessitate ICT prowess. This way, issues and concerns of ESL teachers relative to ICT integration in pedagogy will be unraveled, in one way or another. As underscored by Gomez (2006), the main reasons for the ineffectiveness of ICT integration in classrooms is the existence of misconceptions on the use of ICT, poor ICT literacy, and the lack of materials and human resources in the schools. The works of Rodrigo and Gomes are directly relevant to the researcher's work which also focuses on ICT integration in classrooms and schools in general.

In the same vein, there is a need to determine the readiness and acceptability of ICT integration in the classroom to determine ICT knowledge, skills and attitudes of faculty and students in the sample schools. Trainings and competencies of teachers and the availability of ICT facilities in the schools and community are essential features of computerisation (Nacario et al., 2014).

CONFLICT OF INTEREST

The author declares no conflict of interest to any entity in any form.

REFERENCES

Chau, K. T., Zainuddin D. A. B., Ling S. K., Ng L. M., & Yang, J. (2020). The perception of teachers towards smart board technology in a Malaysian primary school. *International Journal of Information and Education Technology,* 10(6), pp.

Collins, A., & Bronte-Tinkew, J. (2010). Incorporating technology into out-of-school time programs: Benefits, challenges, and strategies. child trends.

Courts, B., & Tucker, J. (2012). Using technology to create a dynamic classroom experience. *Journal of College Teaching & Learning, 9*(2), pp.

Dela Rosa, J. O. (2016). Experiences, perceptions and attitudes on ICT integration: A case study among novice and experienced language teachers in the Philippines. *International Journal of Education and Development using Information and Communication Technology*, 12(3), 37-57.

Estremera, M. L. (2019). ABC-ICT integration model (2018) towards effective and efficient school-based online enrolment: Educational e-Governance. *International Journal on Engineering, Science and Technology,* 1(1), 38–48.

Gomez, P. (2006). Teacher training on ICT. Retrieved from http://training.gomes.com/pub.teacher-training.pdf

Grabe, G. (2015). *Integrating technology for meaningful learning*. Houghton Mifflin.

Healy, S. (2012). Quick hits for teaching with technology: Successful strategies by award winning teachers. Indiana University's Faculty Colloquium on Excellence in Teaching (FACET). Indiana University Press.

Higgins, S. (2007). Does ICT improve learning and teaching in schools?. A Professional User Review of UK research undertaken for the British Educational Research Association (BERA).

Hopkins, D. A. (2007). *A perspective on education change and school effectiveness.* London.

Isisag, K. U. (2016). *The positive effects of integrating ICT in Foreign Language Teaching. ICT for Learning* (5th ed.).

Joint Committee on Standards for Educational Evaluation (2011). *The program evaluation standards*. Newbury Park, CA: Sage.

Korte, W. B., & Hüsing, T. (2007). Benchmarking access and use of ICT in European schools 2006: Results from Head Teacher and A Classroom Teacher Surveys in 27 European countries. *eLearning Papers, 2*(1), 1-6.

Manluna, R. P. (2015). *Speech in the Visayas Cebu College*. Professional Education Division.

Nacario, C. P., Osea, G. B., Foronda, V. R., & Lirag, Ma. T. B. (2014). Readiness and acceptability of information and communication technology integration in basic education. Retrieved from https://ejournals.ph/article.php?id=5739.

Nor Asniza I., & Hazri J. (2020). Pedagogies towards enhancing students' intellectual capital in Malaysian secondary schools. *Asia Pacific Journal of Educators and Education, 35*(2), 57–76. https://doi.org/10.21315/apjee2020.35.2.4

Obilişteanu, G., & Brânduşa-Oana, N. (2015). Teacher control in the second language classes. International Conference: Knowledge-Based Organization, 21(2), 618–623. https://doi.org/10.1515/kbo-2015-0105

Pañares, N. (2017). Abstract DepEd Computerization Program: Venue for Improving Teachers Pedagogy. Conference: DLSU Action Research, Action Learning International Conference at De La Salle University, Manila.

Patil, M. R. (2015). ICT based language teaching and learning approaches for undergraduate. Retrieved from mangalkumar@yahoo.co.in

Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: Results from a worldwide educational assessment. *Computers & education*, *37*(2), 163-178. https://doi.org/10.1016/S0360-1315(01)00045-8

Pritchard, A. M. (2007). *Effective teaching with internet technologies*. London, UK: Paul Chapman Publishing.

Rimando, T. P. (2009). Senate DepEd set computer project for public schools. *Manila Bulletin*.

Rodrigo, Ma. M. T (2009). Information and communication technology use in the Philippine public and private school.

Sanders, J. R. (2000). *Evaluating school programs: An educator's guide.* Thousand Oaks, CA: Corwin Press.

Sen, M. & Agir, A. (2014). The effects of using an interactive white board in teaching English on the achievement of primary school students. Hasan Ali Yücel Eğitim Fakültesi Dergisi Cilt: 11.

Tinio, V. L. (2002). Survey of ICT utilization of in the Philippine public high schools. Retrieved from http://www.fit-ed.org/downloads/ICT%20Utilization%20Survey.pdf

Tomaro, Q. V. (2018). ICT integration in the educational system of Philippines. *Journal of Governance and Policy*, 5(3), pp.