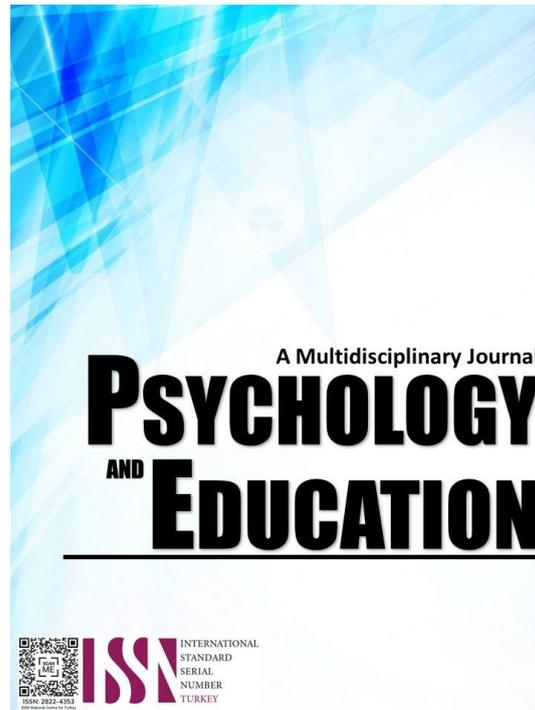


**EDUCATIONAL TECHNOLOGY CAPABILITY OF  
PUBLIC ELEMENTARY SCHOOL HEADS,  
TEACHERS AND LEARNERS IN BATARAZA II  
DISTRICT, DIVISION OF PALAWAN**



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## Educational Technology Capability of Public Elementary School Heads, Teachers and Learners in Bataraza II District, Division of Palawan

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### Abstract

The study determined the educational technology capability of the public elementary school heads, teachers, and learners in Bataraza II District, Division of Palawan, for the school year 2022–2023. Twelve public elementary school heads, 63 public elementary school teachers, and 55 sixth-grade learners served as the study's respondents. The study analyzed the demographic profiles of the school heads and teachers as to their positions, highest educational attainment, and training related to educational technology, and the profiles of the learners as to the ICT resources available and used at home. Most of the school heads in Bataraza II District are full-fledged head teachers, striving to better themselves educationally, and have yet to receive any higher educational technology training. Moreover, most teachers have never been promoted since they entered the Department of Education, have not taken any units in master's degrees; and have not had any higher level of training related to educational technology. Also, most students have cell phones with keypads to communicate with their families, friends, and relatives. The data showed that most school leaders need to do more to help teachers use educational technology to teach in different ways. This is because most teachers do not have enough training, knowledge, or opportunities to use educational technology to help and improve learning. On the other hand, most teachers have limited access to different educational technology tools, which may be attributed to the schools' lack of computer units, power supplies, and stable internet connectivity. Also, most learners need more access to educational technology tools and other devices due to the absence of computer rooms, learning applications, and other computer-based learning opportunities in schools. Most school heads have issues and challenges with the sustainability of ICT services due to insufficient school funds and the learners' limited knowledge of ICT resources due to limited access and exposure to their use and application to the learning process. On the other hand, most teachers have trouble with how well their students know how to use basic ICT tools and equipment because they do not have those remote areas and opportunities to use them. Moreover, most learners need help with the teaching hours spent and hands-on opportunities in using computers and other applications, gadgets, and costly internet connectivity to improve learning.

**Keywords:** *educational technology, practices, issues and challenges, profile*

### Introduction

Many scholars and even the simplest people define education as helping improve lives. It is a process of acquiring knowledge through infinite means. Thus, no one has ever said that he stops learning for as long as a person's heart beats; he continues to learn. According to Clark (2022), "lifelong learning" is the concept of pursuing additional education and the development of other skills beyond an individual's formal or compulsory education.

On the other hand, technology refers to the computer or digital age used to advance human life and other living and non-living things that depend on it. According to Rockbridge (n.d.), technology is an integral part of society—no one can escape it. Even though technology is a common factor in everyone's lives, it impacts them differently.

Separately, "education" and "technology" as terms convey different meanings but entail a meaningful contribution to the field of knowledge when combined

to form "educational technology." Educational technology refers to technological tools and equipment that use or impact the teaching and learning process. According to Lathan (n.d.), the theory and practice of employing new technology to design and implement novel educational methods for learning and student accomplishment is the emphasis of educational technology. Educational technology is never limited to integrating technological tools in the teaching and learning process but also deals with innovative strategies and techniques to improve and advance educational methods for quality and responsive learning.

Today, educational technology is helping educational institutions worldwide provide quality education services. It assists school administrators in efficiently managing a school, aids teachers in designing, planning, and delivering the lessons; and helps learners understand the concepts, especially those that are complex in form. According to Loyola University Maryland School of Education (2022), educational technology in education is essential because it helps today's teachers integrate new technologies and tools



into their classrooms. Teachers can upgrade and improve the learner-centeredness of their classrooms. It enables teachers to engage students in unique, innovative, and equitable ways.

The use of educational technology as an aid in the educational process has been an advantage. It is accessible in urban areas, as these places have a continuous supply of power. Schools in urban areas are more often entitled to receive computer packages and other technological tools, as the primary consideration in giving such programs is the sustainability of the school's services with a source of electricity. However, it has been a disadvantage in most rural schools, as many areas still need access to electricity and internet connectivity. The computerization program still needs to materialize. Though some other schools already have solar-powered energy, the supply of power it generates to run a computer room is limited.

Whatever the status of the government computerization programs and the efforts in providing public schools with technological tools to aid the teaching and learning process, lacking such things in some schools could not be regarded as an excuse. Padayachee (2017) argued that a lack of ICT resources could hamper the kind of education learners receive, with implications for their performance. Learners have to fare very well wherever they are today, whether in schools that do not have access to electricity, internet connectivity, or ICT resources or in those schools that have everything a learner could dream of. The competition level is soaring globally and even locally. Learners must acquire many skills in school and at home in order to succeed in the future labor or employment market. They can only achieve these things if they have developed an amazing basic skill to correct and handle difficult things that can be learned in school. Schools that have ICT resources are much better at teaching students' things that can change their lives and help them get a better education and way of life. Hodgson and Khumalo (2016) said that learners learn better when computers are available. Hilton (2018) also analyzed the importance of computers in the classroom. In corroboration with Pohjolainen, Nykänen, Venho, and Kangas (2018), he concluded that ICT in the school positively affects learners' learning. Computers assist learners' research assignments and school projects and can potentially change the way they see and learn critical subjects like mathematics (Hegedus & Moreno-Armella, 2020).

However, not all educational institutions are blessed with these kinds of opportunities. Most schools in rural

or remote areas are, to this day, waiting to be given and placed on the list of computerization programs of the government and other partner agencies. The schools with no access to computers and other technological tools, internet connectivity, and the like perform poorly and lag behind the other students who have access to ICT resources. Thus, it is now time to investigate the status of the educational technology capabilities of school leaders, teachers, and learners in Bataraza II District, Division of Palawan, to ascertain whether or not they are performing well in the use of educational technology to aid learning, given the fact that some barangays and communities in Bataraza II District are still not accessible by electricity and internet connectivity.

This study determined the demographic profiles of the respondents; their educational technology practices in terms of synchronous or asynchronous learning, linear learning, flipped classrooms, collaborative learning, blended learning, distance education, and hybrid learning; and the issues and challenges they encountered relevant to the use of educational technology.

## Methodology

This descriptive study evaluated the profile, the educational technology capability practices and the issues and challenges encountered by the school heads, teachers and learners in Bataraza II District, Schools Division of Palawan. In this study, 12 school heads, 63 teachers, and 55 learners from public elementary schools in Bataraza II District, Schools Division of Palawan, participated in the conduct of the study for the school year 2022-2023. Random sampling was used in determining the respondents of the study. The data were gathered through the use of survey questionnaires. The researcher designed a three-part set of questionnaires intended separately for school heads, teachers and learners to collect the essential data. Questionnaires for school heads and teachers include position, highest educational attainment, training related to educational technology, educational technology practices, and the issues and challenges encountered in using educational technology. Learners' questionnaires, on the other hand, include educational technology tools available and used at home,



educational technology practices, and issues and challenges encountered when using educational technology. Several statistical tools were used to examine and analyze the data, including frequency, percentages, weighted mean and rank.

## Results

This section presents the analysis and interpretation of the data gathered to answer the problems raised in the study.

### Educational Technological Practices of Public Elementary School Heads

Table 1 summarizes the educational technology practices of public elementary school heads in Bataraza II District. It can be seen from the table that the school heads have a high level (3.54) of hybrid learning practices; followed by collaborative learning (3.09, or fair), flipped classroom (3.03, or fair), blended learning (3.01, or fair), and distance learning (2.95, or fair). On the other hand, school heads have a low level of practice in linear learning (2.55), synchronous and asynchronous learning (2.38). The computed total grand mean of 2.94 (fair) implies that the respondents sometimes extended support and other technical assistance to teachers in the delivery of different learning modalities to continue learning despite the pandemic and enhance learning performance, specifically in the use of educational technology. The findings also imply that school administrators have a limited intervention toward assisting teachers in the use of educational technology in the delivery of various learning modalities due to limited access to, insufficient training, knowledge, and opportunities on the use of educational technology to support and enhance learning.

Table 1. Summary of Educational Technological Practices of Public Elementary School Heads

<i>Educational Technological Practices</i>	<i>Mean</i>	<i>Descriptive Rating</i>
Synchronous and Asynchronous	2.38	Low
Linear Learning	2.55	Low
Collaborative Learning	3.09	Fair
Flipped Classroom	3.03	Fair
Blended Learning	3.01	Fair
Distance Learning	2.95	Fair
Hybrid Learning	3.54	High
Total Grand Mean	2.94	Fair

### Educational Technological Practices of Public

### Elementary School Teachers

Table 2 summarizes the educational technology practices of public elementary school teachers in Bataraza II District. It can be seen from the table that the school teachers have a fair level of practice in hybrid learning (3.08); and blended learning (2.77). This implies that most teachers sometimes use educational technology tools as an aid in the implementation of hybrid and blended learning. However, most teachers have a low level of practice in flipped classroom (2.54); collaborative classroom (2.38); distance learning (2.33); linear learning (2.01); and synchronous and asynchronous learning (1.99). The results imply that most teachers hardly ever used educational technology tools in implementing activities that support the effective implementation of flipped classroom, collaborative classroom, distance learning, linear learning, and synchronous and asynchronous learning. The computed total grand mean of 2.44 (low) implies that most teachers rarely use educational technology tools to effectively implement synchronous and asynchronous learning, linear learning, flipped classrooms, collaborative classrooms, blended learning, distance learning, and hybrid learning. The findings also imply that most teachers need more access to different educational technology tools. This may be attributed to the schools' need for more computer units and rooms, a better power supply, and stable internet connectivity.

Table 2. Summary of Educational Technological Practices of Public Elementary School Teachers

<i>Educational Technological Practices</i>	<i>Mean</i>	<i>Descriptive Rating</i>
Synchronous and Asynchronous	1.99	Low
Linear Learning	2.01	Low
Collaborative Classroom	2.38	Low
Flipped Classroom	2.54	Low
Blended Learning	2.77	Fair
Distance Learning	2.33	Low
Hybrid Learning	3.08	Fair
Total Grand Mean	2.44	Low

### Educational Technological Practices of Grade 6 Learners

Table 3 summarizes the educational technology practices of the grade six learner enrolled in public schools in Bataraza District II for the school year 2022-2023. It can be seen from the table that the learners have a very high (4.73) mean rating in hybrid learning. This implies that the learners frequently employ educational technology in the implementation



of hybrid learning. Moreover, the learners have a Fair (3.20) mean rating in blended learning and distance learning (3.00). This means that the learners were sometimes using educational technology in activities that involve blended learning and distance learning. However, the learners have a low level of educational technology in flipped classroom (2.60) and collaborative classroom (2.47). These results imply that the learners almost never used educational technology tools and devices in both flipped and collaborative classroom. Furthermore, the learners have a very low level of educational practice in synchronous and asynchronous (1.53) and linear learning (1.50). These results imply that the learners never engaged themselves in the use of educational technology intended for both synchronous and asynchronous learning and linear learning. The computed total grand mean of 2.72 (fair) implies that the learners sometimes used educational technology tools and devices to improve performance in learning using synchronous and asynchronous learning, linear learning, flipped classroom, collaborative classroom, blended learning, distance learning, and hybrid learning.

Table 3. Summary of Educational Technological Practices of Grade 6 Learners

Educational Technological Practices	Mean	Descriptive Rating
Synchronous and Asynchronous	1.53	Very Low
Linear Learning	1.50	Very Low
Collaborative Learning	2.47	Low
Flipped Classroom	2.60	Low
Blended Learning	3.20	Fair
Distance Learning	3.00	Fair
Hybrid Learning	4.73	Very High
Total Grand Mean	2.72	Fair

## Discussion

After a thorough analysis of the data gathered, the researcher came out with the following findings:

On the demographic profile, a significant percentage (4, or 33.33%) of the school heads are Head Teachers I; 100% of the school heads have earned master’s units, and most of them attended training at the school level (2 or 16.67%). Moreover, a great percentage (49, or 77.78%) of public elementary school teachers hold a position of Teacher I; most of them (34, or 53.97%) are graduates with bachelor’s degrees, and they have attended training related to educational technology at the school level (12.70 %). Furthermore, most pupil-respondents, or 37 (67.27%), have and use keypad cell

phones at home.

On educational technology practices to support learning, most school heads have a low level of practice (2.38) in synchronous and asynchronous learning; a low level of practice (2.55) in linear learning; fair level (3.09) in collaborative learning; fair level (3.03) in flipped classroom; fair level (3.01) in blended learning; fair level (2.95) in distance learning; and high level (3.54) in hybrid learning. In sum, school heads have a fair level (2.94) of educational technology practice. Moreover, most public elementary school teachers have a low level (1.99) in synchronous or asynchronous learning, a low level (2.01) in linear learning; a low level (2.38) in collaborative learning; a low level (2.54) in flipped classrooms, a fair level (2.77) in blended learning; low level (2.33) in distance learning; and a fair level (3.08) in hybrid learning. In sum, school teachers have a low level (2.44) of educational technology practice. Furthermore, grade six learners have a very low level (1.53) of educational technology practice in synchronous and asynchronous mode of learning; a very low level (1.5) in linear learning; a low level (2.47) in collaborative learning; a low level (2.60) in the flipped classroom; a fair level (3.2) in blended learning; a fair level (3.0) in distance learning; and very high (4.73) in hybrid learning. In sum, grade six learners have a fair level (2.72) of educational technology practice.

On the issues and challenges, most school heads, 11 (91.67%), need help with the budget for maintenance of ICT tools and equipment and the basic knowledge of learners in its use. On the other hand, most teachers (55 or 87.30%) have problems with the learners’ basic understanding of the use of ICT tools and equipment. In contrast, grade six learners have issues and challenges concerning the teaching hours and hands-on experience to develop their skills in using computers and other necessary applications to improve learning, educational gadgets, and the high rates of internet connectivity.

## Conclusion

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

Most of the school heads in Bataraza II District are full-fledged head teachers, striving to better themselves educationally, and have not had any higher educational technology training. Moreover, most teachers have never been promoted since they entered

the Department of Education, have not taken any units in master's degrees, and have not had any higher level of training related to educational technology. Furthermore, most pupils have keypad cellphones at home to communicate with their family members, friends, and relatives.

Most school heads sometimes extend teachers' support and other technical assistance to deliver different learning modalities. The data revealed that most of them have a limited intervention toward assisting teachers in the use of educational technology in the delivery of various learning modalities due to limited access to, insufficient training, knowledge, and opportunities on the use of educational technology to support and enhance learning. On the other hand, most teachers seldom use educational technology tools to implement synchronous and asynchronous learning, linear learning, flipped classrooms, collaborative classrooms, blended learning, distance learning, and hybrid learning. The data revealed that most teachers have limited access to different educational technology tools, which may be attributed to the school's lack of computer units, power supplies, and stable internet connectivity. Furthermore, most learners sometimes use educational tools and other devices to improve learning performance in synchronous and asynchronous learning, linear learning, flipped classrooms, collaborative classrooms, blended learning, distance learning, and hybrid learning. The data revealed that learners have limited access to educational technology tools and other devices, as well, due to the absence of computer rooms, learning applications, and other computer learning opportunities in schools.

Most school heads have issues and challenges with the sustainability of ICT services due to insufficient school funds and the learners' limited knowledge of ICT resources due to limited access and exposure to their use and application to the learning process. On the other hand, most teachers also have issues and challenges regarding the learners' basic knowledge of ICT tools and equipment due to the lack of ICT resources and opportunities to use them. Moreover, most learners have issues with the teaching hours spent and hands-on opportunities in using computers and other applications, gadgets, and costly internet connectivity to improve learning.

Based on the conclusions drawn, the following recommendations are forwarded:

It is recommended that the Philippine government, through the Department of Education, provide

subsidies to students who pay for internet access in order to make online learning and other online educational services more accessible. The Department of Education should heighten its computerization program and prioritize "last mile" schools in the distribution of computer sets to enable learners in remote areas to develop ICT skills and globally fare with the standards of education and society; appropriate enough funds for the maintenance of school ICT resources to sustain learners' needs for ICT skills and development; and provide the learners with gadgets and internet connectivity that they can use in their classes that require ICT integration to heighten their learning.

The Department of Information and Communications Technology should enhance telecommunication services by securing that remote areas also have internet access.

The Schools Division of Palawan should offer training and seminars on educational technology or ask other reputable organizations to do so. This would help school leaders and teachers learn how to use ICT to help run schools, teach and make learners learn. The public schools district supervisors should highly encourage school heads to pass the national qualifying examination for school heads to make them full-fledged school principals; the school administrators should highly encourage teachers to pursue master's degrees to increase their positions and eventually have higher compensation for their services as public school teachers; empower themselves on the use of ICT resources so they can effectively and efficiently extend support to the teachers on its use most of the time; and provide a program that can help boost the awareness and ICT skills of the learners to enhance and improve learning; and elementary school teachers, as often as possible, should integrate ICT resources in the teaching and learning processes to make learning more exciting, engaging, and captivating to get better results.

## References

- Clark, C.(2022). What is Lifelong Learning and Why is it important? <https://blog.insidegovernment.co.uk/higher-education/what-is-lifelong-learning#:~:text=Lifelong%20learning%20is%20the%20concept,skills%20or%20support%20professional%20development>.
- Hegedus, S., & Moreno-Armella, L. (2020). Information and communication technology (ICT) affordances in Mathematics education. *Encyclopedia of Mathematics Education*, 380-384. [https://doi.org/10.1007/978-3-030-15789-0\\_78](https://doi.org/10.1007/978-3-030-15789-0_78)
- Hilton, A. (2018). Engaging primary school students in



Mathematics: Can iPads make a difference? *International Journal of Science and Mathematics Education*, 16(1), 145-165. <https://doi.org/10.1007/s10763-016-9771-5>

Hodgson, T. F., & Khumalo, S. (2016, August 14). Too many children left behind: Exclusion in the South African inclusive education system. With a focus on the Umkhanyakude district, KwaZulu-Natal (A SECTION27 Report). Retrieved from <http://section27.org.za/wp-content/uploads/2016/08/Umkhanyakude-Report-Final-08082016-1.pdf>

Lathan, Joseph. (n.d.). What is Educational Technology? [Definition, Examples & Impact]. <https://onlinedegrees.sandiego.edu/what-is-educational-technology-definition-examples-impact/>

Loyola University Maryland School of Education. (2022). What is Educational Technology and Why is it Important?

Padayachee, K. (2017). A snapshot survey of ICT integration in South African schools. *South African Computer Journal*, 29(2),

36-65. <http://dx.doi.org/10.18489/sacj.v29i2.463>

Pohjolainen, S., Nykänen, O., Venho, J., & Kangas, J. (2018). Analysing and improving students' mathematics skills using ICT-tools. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(4), 1221-1227. <https://doi.org/10.29333/ejmste/81869>

Rockbridge. (n.d). Top 10 Views on Technology. <https://rockresearch.com/top-10-views-on-technology/>

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