

# INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH

2022, Vol. 3, No. 12, 2761 – 2769

<http://dx.doi.org/10.11594/ijmaber.03.12.26>

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## Research Article

### Students' And Teachers' Perspectives on ICT Integration in Learning Process During Pandemic

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#### Article history:

Submission December 2022

Revised December 2022

Accepted December 2022

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#### ABSTRACT

Information and Communication Technology (ICT) integration allows educators to update traditional coaching to meet the global demand for fully technology-based coaching and mastering equipment and learning tools.

This study wants to identify students and teachers' perceptions on how effective ICT integration is in supporting the teaching and learning process in the classroom.

The researcher used quantitative methodology, developed survey questionnaire and administered to target respondents in the three campuses of Ifugao State University. Respondents were composed of 66 Education students and 35 faculty members. The data for this quantitative study was examined using descriptive and inferential statistics.

It was found out that most teachers and students agreed on the effectiveness of ICT integration in the teaching and learning process. The findings showed that ICT integration is beneficial for teachers teaching quality, improve learning materials and motivate students to be more creative and imaginative. Thus, learning and teaching become effective with ICT integration.

Based on the results, it is recommended that for teachers, a digital literacy assessment may be administered to the teachers, after which a series of hands on activities will be conducted. For students, in order to derive the maximum effect regarding the use of ICT in learning, an action research may be conducted first among students to identify and solve issues on the use and challenges of ICT in teaching and learning.

**Keywords:** *Digital Literacy, ICT Effectiveness, ICT Integration, Perceptions*

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#### How to cite:

Tayaban, A. D. (2022). Students' and Teachers' Perspectives on ICT Integration in Learning Process During Pandemic. *International Journal of Multidisciplinary: Applied Business and Education Research*. 3 (12), 2761 – 2769. doi: 10.11594/ijmaber.03.12.26

## **Introduction**

Teaching and Learning using ICT Integration brings changes inside the classroom.

The Covid-19 pandemic added new issues and limits to traditional educational methods. Reich et al. (2020) As practiced nowadays, one of the most benefit strategy is the use of ICT integration in the classroom.

Most students find it challenging to accept the technology skills required due to varying levels of digital competence. (Oyedemi & Choung, 2020). Students and teachers were influenced by the usage of emergency remote teaching, and participation was limited, resulting in low instruction quality. Admittedly, teaching and learning with ICT integration is a luxury anymore, given how quickly education has evolved during the pandemic. (Dlamini & Ndzinisa, 2020, Gokdas & Torun, 2017). 'When ICT integration is used to enhance learning, students and teachers embrace obstacles and difficulties throughout in the teaching learning process. (Gokdas and Torun, 2017).

During the pandemic, there was a sudden shift on how lessons were delivered. Teachers were forced to adapt to a new manner of teaching that included ICT activities if technologically adept or not. Birisci and Kul of (2019, p. 76) says the technology integration process is not adequately understood or digested, successful digital technology integration results "will not be accomplished." Therefore, teachers and students needs to embrace the challenges and must be equipped with technology skills that enhance and contribute more knowledge in the learning process. Studies show that the technological pedagogical education competency level of the educator plays an important role in the pedagogical integration of ICT in education (Dlamini & Mbatha, 2018; Ifinedo et al., 2019).

Classroom level (micro-level) numerous research studies from 2010 on teacher's ICT competencies, usage, experience, perception, and challenges (Adebi-Caesar, 2012; Ayebi, Arthur, Afutor, 2020; Amenyedidzi et al., 2011; Amenyedzi et al., 2011; Sipila 2011; Singh & Muniandi, 2012; Sey, 2013; Yalley, 2017; Soh, 2020) have established teachers' adaptation and

integration of ICT in the filed of teaching and learning.

This is predicated on the rapidly changing environmental dynamics, globalization, demand for ICT and life-long learning as well as competition among private and public institutions (Collis & van Der Wende 2002; James 2008). Despite the fact that ICT use is on the rise, most organizations lack comprehensive ICT visions and plans (Cross and Adam, 2007). However, teachers and students are not well equipped with the effective use of ICT Integration, lack of ICT knowledge that hinder them to apply in their own classroom.

In order to overcome the barriers that prevent instructors and students from ICT Integration, we must first understand their perceptions of what they know about ICT integration and its effectiveness. Whereas ICT integration helps learners engage in an active learning (Ellis et al., 2008), engage in collaborative learning, and improve their social connection (Dodge et al., 2003). One more thing ICT Integration in classroom, gives students skills in digital literacy, creative thinking, higher-order thinking, high productivity, and effective communication. (Tinio, 2002). Teachers' and students' perceptions of the usefulness of ICT integration as a foundation for analyzing and investigating the requirements and skills that need to be developed in order to promote effective learning. On the other hand, teachers' perception and readiness are aspects that need to be given attention in providing teachers the competencies to plan, manage and diversify practical-based teaching activities (Ismail et al., 2019).

Teaching and learning the use of ICT assimilation brings changes in the classroom, which requires careful planning and policymaking. Moreover, Wang and Woo (2007) reviewed that ICT Integration has great potential to increase learners' motivation, link learners to various information sources, support collaborative learning, and allow teachers more time for facilitation in classrooms. As a result, incorporating ICT into teaching and learning has become a major issue for teachers. Since teachers are the key players in using ICT integration in their daily classrooms either onsite or online teaching, they need proper skills, knowledge,

and technical assistance to have high confident level in using it in their teaching. Therefore, the researcher conducted the study to determine the perceptions of teachers and students on ICT integration in the classroom setting and suggest ways to improve the delivery of instruction if ICT is integrated in the teaching and learning process in order to prepare teachers and students of a University for effective and proper ICT integration in the classroom. If used correctly, such as with proper sources, training methodologies, and assistance, ICT can have a good impact on teaching and learning (Hue and Ab Jalil, 2013).

Therefore, the purpose of this study is to determine how effective ICT integration is in supporting the teaching and learning process in the classroom, as perceived by students and teachers. It is important to know students and teachers perceptions on ICT Integration to become more effective in using ICT as instruction in the classroom and to fully understand how teachers perceive ICT in the teaching and learning process in the classroom to improve methods of teaching for effective quality and technical learning environment.

### ***Objectives of the Study***

Generally, this study aimed to identify students and teachers' perceptions on how effective ICT integration is in supporting the teaching and learning process. Specifically, this study sought to determine the students and teachers perceptions on ICT Integration in the classroom.

### ***Scope and Delimitation of the Study***

This study is limited to the 35 Education teachers and 66 Education students of Ifugao State University located in the Northern Luzon, Philippines. Due to the epidemic, there were few students enrolled in school, and because of lockdowns, most students stayed at home and were unable to report in school. There was also no public transportation so they were unable to report in school, and there was poor internet connectivity or no internet in their individual areas yet majority of education students stayed in barrios. Furthermore, google form were not also used to all students in answering the survey questionnaire for the reason that

they are not knowledgeable enough on how to do it. However, education teachers who were reporting in school were able to complete the questionnaire on-site, while others who were work from home and with internet access.

This study was conducted to determine the students and teachers' perceptions on ICT Integration in the teaching -learning process during pandemic.

### ***Related Literature***

According to research, given the advantages, higher education institutions have been slow to leverage on ICT potential, specifically to facilitate learning and teaching. Cross and Adam (2007) states that despite the fact that ICT usage has increased, most institutions lack comprehensive ICT visions and plans.

Currently, in the promotion of new instructional approaches for teaching and learning, such as self-paced learning (Roberts, 2003), network learning (González, 2009), and online discussion (González, 2010), information and communication technology (ICT) is critical. In relation to this, if teachers' attitudes are positive to learn, it is likely that they understand the importance of teaching 21<sup>st</sup> century skills, are aware of the instructional practices involved, as well as are more motivated and committed in teaching the skills like technological skills (Lau & Sim, 2008; Nurzarina & Roslinda, 2017; Sukiman, Noor, & Mohd, 2013; Tajularipin, Vickneswary, Diwiyah, Raidah, & Suzieleez, 2017).

Moreover, effective ICT use can help students engage in active learning (Ellis et al., 2008), engage in collaborative learning, and improve their social connection (Dodge et al., 2003).

To educate students with the knowledge and skills they need in the 21st century, educational systems around the world are increasingly under pressure to incorporate new ICT technologies into their curriculum (Hue and Ab Jalil, 2013). Students' motivation, active learning, efficient resources, and greater access to knowledge are all good effects of using ICT for educational purposes, according to Sahin-Kizil (2011).

The incorporation of information and communication technologies into the teaching and

learning process is a developing field. According to different literatures, integration of ICT is necessitated to contribute to the learning process of students (Cartwright and Hammond, 2003; Herzig, 2004; Lim and Chin, 2004; Lim et al., 2003). It is not a new thought to include ICT into teaching and learning. It may be as old as other technologies such as radios or televisions (Wang and Woo, 2007).

ICT integration, on the other hand, is not a straightforward process (Bhasin, 2012). As a result, there are numerous obstacles to incorporating it into the teaching-learning process. According to the findings of Bingimlas (2009), instructors expressed a great desire to incorporate ICT into their classrooms, but there were numerous obstacles to overcome. Lack of confidence, lack of skill, and a lack of resources were the main impediments.

Lack of confidence, competency, and accessibility have all been identified as essential components of technology integration in the classroom. Most educators believe that if applied properly, ICT has the potential to improve student learning outcomes and effectiveness (Wang, 2001). If used correctly, such as with proper sources, training methodologies, and assistance, ICT can have a good impact on teaching and learning (Hue and Ab Jalil, 2013).

As a result, integrating ICT in the classroom is now a two-way process for students and instructors in assuring an effective and quality technical teaching learning environment.

Teachers are the essential keys in ensuring quality education and encouraging lifetime learning possibilities for everyone.

### Conceptual Framework

The study's major objective is revealed by the conceptual framework (figure 1), which illustrates how ICT integration is used by teachers and students in the teaching learning process.

The conceptual framework shows in figure 1 guided the researcher in conducting this research which aims to examine students' and teachers' perspectives of ICT integration in the classroom for effective quality and teaching learning environment and improve teaching methods and approaches for quality education.

Yet, the elements in the conceptual framework have been carefully linked and interconnected to aid in determining teachers' and students' perceptions or feedbacks of ICT integration from students and teachers, which informs their intentions to utilize. (Bandura, 2001) Individual viewpoints and confidence in one's ability to devise an effective strategy are important aspects in one's ability to visualize a possible circumstance. In line with the Technology Acceptance Model (TAM) by Davis (2003) theory components explain how ICT integration, such as viewpoints on ICT utility and perspectives on user agreement, can be used to improve job performance and boost job satisfaction in real-world situations.

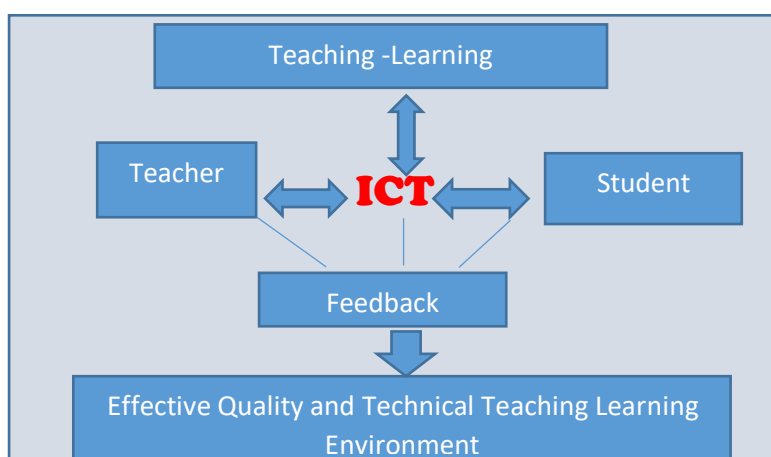


Figure 1.

## Methods

The paper made use of quantitative study specifically survey design and data were analyzed using descriptive statistics. Students and educators' perceptions of the effectiveness of ICT integration in the teaching and learning process were determined using the weighted mean and standard deviation.

The questionnaire was sent at random to teachers with a teaching background regardless of gender, color, teaching experience, or the highest level of teaching expertise and no preferences exist set by the researchers as long as the respondents have a teaching background from IFSU, Philippines under the College of Education and students of education.

## Population and Sampling

This study was located in Northern Luzon, Philippines. The total number of respondents in this survey was 35 Education teachers and 66 Education students from Ifugao State University, Philippines. The three campuses of the University were chosen as respondents because they offered Bachelor of Education Programs. Furthermore, due to the epidemic, there were few students enrolled in school, and because of lockdowns, most students stayed at home and were unable to report in school. There was also no public transportation so they were unable to report in school, and there was poor internet connectivity or no internet in their individual areas yet majority of education students stayed in barrios. Furthermore, google form were not also used to all students in answering the survey questionnaire for the reason that they are not knowledgeable enough on how to do it. However, education teachers who were reporting in school were able to complete the questionnaire on-site, while others who were work from home and with internet access completed the questionnaire using google form.

## Instrumentation

The survey questionnaire was adopted from the study of Ghavifekr, S. & Rosdy, W.A.W.

(2015) to determine perceptions of students and teachers on ICT Integration in the teaching and learning process. Teachers were given 15 questions and students were given 10, for a total of 25 items. The questionnaire is based on a 4-Likert scale ranged from 1= Strongly Disagree, 2= Disagree, 3= Agree and 4= Strongly Agree

## Data analysis

After a two-months period, 50 questionnaires were completely answered on site and 16 questionnaires were answered through google form that out of 100 questionnaires used 66 were gathered from students. There were also 35 answered and gathered questionnaires from teachers out of 50 questionnaires and 15 questionnaires were not retrieved for the reason that some teachers work from home during the pandemic and no internet connectivity. The data was analyzed using descriptive statistic in determining the mean and standard deviation. The response rate for students was 66% and 70% for teachers.

## Results and Discussion

The purpose of this study was to find out how students and teachers felt about using ICT in the teaching-learning process during the epidemic. Only 35 survey questionnaires for teachers were recovered, and 15 questionnaires were not evaluated because 8 teachers were unable to complete the surveys completely, and 7 teachers were working from home throughout the study period. There were 100 survey questionnaires distributed to students, but only 66 were returned. With a total of 36 survey questionnaires missing, 20 questionnaires were not evaluated due to missing details and 16 questionnaires were not returned by students due to lockdowns during the study period.

Table 1 Shows teachers perceptions on ICT integration in the teaching-learning process with 35(70%) respondents out of 50, resulting in a grand mean of 3.35 and a standard deviation of 0.37.

Table 1: Perceptions of Teachers on ICT Integration (Weighted Mean, SD, and Interpretation)

No.	Indicators	Mean	SD	Interpretation
1.	I am confident in learning new computer skills	3.73	.44	Strongly Agree
2.	I find it easier to teach by using ICT in teaching inside the classroom	3.31	.77	Strongly Agree
3.	I am aware of the great opportunities that ICT offers for effective teaching	3.72	.45	Strongly Agree
4.	I think that ICT supported teaching makes learning effective	3.67	.63	Strongly Agree
5.	The use of ICT helps teachers to improve teaching with updated materials	3.78	.42	Strongly Agree
6.	I think the use of ICT improves the quality of teaching	3.75	.44	Strongly Agree
7.	I think the use of ICT helps to prepare teaching resources and materials	3.75	.44	Strongly Agree
8.	By using ICT, students will be able to participate more actively in the classroom	3.39	.69	Agree
9.	Using ICT in the classroom gives you more time to meet your students' needs	2.75	.69	Agree
10.	I can still have an effective teaching without the use of ICT	3.28	.61	Agree
11.	I think the use of ICT in teaching is a NOT a waste of time	3.25	.77	Agree
12.	I am sure my students will learn best with the help of ICT	3.00	.87	Agree
13.	The classroom management is in control if ICT is used in teaching	2.94	.83	Agree
14.	Students pay more attention when using ICT in the classroom	3.06	.71	Agree
15.	Students' makes effort for their lesson if ICT is used	2.89	.85	Agree
<b>Grand mean =</b>		<b>3.35</b>		
<b>Over All =</b>		<b>0.37</b>		

Result in table 1 interprets that among the indicators, indicator # 5 had the highest weighted mean value of 3.78 which means teachers strongly agree that ICT helps teachers to improve teaching with more updated materials. Indicator # 9 had the lowest weighted mean of 2.75 that teachers agree about using ICT in the classroom gives more time to meet students needs.

Table 2 shows that among the indicators, indicator 1 had the highest mean value of 3.59

that through ICT integration students become creative and imaginative. Indicator # 7 had the lowest grand mean of 2.52 that the use of ICT helps to improve students' ability specifically in reading & writing.

Table 2 shows students perceptions on ICT integration in the teaching-learning process. There were only 66 (70%) respondents who answered the survey questionnaires out of 100 with a grand mean of 3.08 and a standard deviation of 0.33.

Table 2: Perceptions of Students on ICT Integration (Weighted Mean, SD, and Interpretation)

No.	Indicators	Mean	SD	Interpretation
1.	ICT allows students' to be more creative and imaginative.	3.59	.55	Strongly Agree
2.	The use of ICT helps students to find related knowledge and information for learning	3.55	.55	Strongly Agree
3.	Students are more likely to communicate with their classmates when they use ICT.	3.06	.63	Agree

No.	Indicators	Mean	SD	Interpretation
4.	The use of ICT increases the number of students confidence to actively participate in the class	2.9	.74	Agree
5.	I think students learn more effectively with the use of ICT.	2.94	.85	Agree
6.	I think the use of ICT will help expand the knowledge paradigm of students.	3.26	.66	Agree
7.	I think the use of ICT helps to improve students' ability specifically in reading & writing	2.52	.70	Agree
8.	The students' are more behaved and under control with the use of ICT.	2.80	.75	Agree
9.	Students can better convey their ideas and views when they use ICT.	2.95	.74	Agree
10.	ICT supports dynamic and engaging lessons for the optimum learning experience for students.	3.17	.55	Agree
<b>Grand mean =</b>		<b>3.08</b>		
<b>Over All =</b>		<b>0.33</b>		

## Discussions

With the rapid shift in education, where teaching is delivered remotely and on digital platforms, whether young or elderly university instructor, one should accept and embrace the transition of education today, which requires students and teachers to have technology skills and knowledge in the teaching learning process. In this Erümit and Çetin (2020) argues that "to meet the requirements of the information age and the changing needs of the new generations. "When creating user-centered learning environments, it's critical to incorporate new technology and methodologies (Fishman & Davis, 2006).

The grand mean score and grand Standard Deviation ( $M = 3.35$ ,  $SD = 0.37$ ) in table 1 revealed that most teachers agreed with the use of ICT Integration in the teaching-learning. This section presented that majority of teachers strongly agreed that ICT helps them to improve their teaching with more updated materials (item # 5) with mean value of 3.78 but teachers also agreed that using ICT in the classroom gives them more time to meet their students' needs (item # 9) with a mean value of 2.75 this means that due to clerical duties and other tasks that must be completed in addition to teaching responsibilities and also some students' needs were not met due to lack of ICT skills and knowledge.

Based on students' perceptions on ICT integration in the teaching learning process the grand mean score and grand SD ( $M = 3.08$ ,  $SD = 0.33$ ) in table 2 implied that students agree on the advantages and benefits that can be provided by the ICT in teaching and learning process. This section showed that majority of the students strongly agreed that ICT allows them to be more creative and imaginative (item # 1) with a mean value of 3.59 and students least agree that the use of ICT helps them to improve students' ability specifically in reading, writing (item # 7) with a mean value of 2.52.

Based on the findings of this study, it suggests that teachers may undergo digital literacy assessments as a foundation for conducting seminars, workshops, and trainings to improve teachers' knowledge of how to integrate ICT effectively into the teaching-learning process and to be equipped with technological skills, knowledge, and academic software to improve teaching methods and approaches in order to promote effective learning (Ertmer, 2005). Teachers must be given time to learn and explore ICT, as well as go through the "trial-and-error" phase, before they are entirely comfortable with it and can use it for teaching and learning.

For students, in order to get the most out of the use of ICT in learning, an action research study could be done among students to identify

and resolve issues with correct ICT integration and challenges in teaching-learning.

The researcher can say that teachers and students agreed that ICT integration is effective in the teaching and learning. Therefore, it has been shown that successful ICT integration in classrooms has a significant impact on the teaching-learning process. Furthermore, I can say that the findings of this study imply that using technology to educate and learn is more effective than using traditional classroom training. This is because introducing ICT tools and technology into the classroom will make both teachers and students more engaged and productive learners (Hermans et al., 2008).

But it would be beneficial also if further research could be done on the hurdles that instructors face while employing ICT in their regular classes at schools (Ghavifekr et al., 2016; Scherer et al., 2019). Moreover, it is strongly advised that comparative studies between SUCs and private institutions in Northern Luzon be conducted with a broader scope and more respondents about ICT integration in teaching and learning. Because most SUC students come from urban areas, they are unable to provide personal devices that aid in the teaching and learning process, as private universities in rural areas can.

Finally, the first stage of ICT implementation must be successful in order for teachers and students to be able to make the most of it. As a result, the preparations for technology-based teaching and learning begin with the school's top management's proper implementation and support. If the technology integration process in schools is properly implemented from the start and ongoing maintenance is properly supplied, ICT integration in schools will be a major success with numerous benefits for both instructors and students.

## **Conclusion**

Findings of this study suggest that integrating ICT into the classroom is more effective than using traditional methods. This is because incorporating ICT into the classroom creates a more active learning environment that is more engaging and successful for both teachers and students. Though the findings are similar

to Macho's (2005) study, which showed that integrating ICT into the classroom will improve student learning. Teachers, on the other hand, agreed that using updated materials in the classroom and integrating ICT into the classroom improves the teaching learning environment. What's more, teachers must be literate and have good skills and knowledge in using ICT to improve their teaching methods and approaches in order to promote effective learning and meet the demand for 21st century teaching skills. Teachers must have time to learn and explore ICT, as well as go through the "trial and error" phase before they are completely comfortable with it and can use it for teaching and learning. For teachers are accountable to students that is why they have to improve and enhance their methods of teaching through the use of ICT Integration to provide effective and technical quality teaching learning environment.

## **Recommendations**

Based on the results, it is recommended that for teachers, a digital literacy assessment may be administered to the teachers, after which the result serves as basis for giving interventions such as series of hands on activities, seminars, and trainings to realize the objectives of the program "No Teacher Left Behind on ICT Integration" and of course to improve the methods and approaches in teaching and equipped with ICT platforms in teaching. For students, in order to derive the maximum effect regarding the effectiveness use of ICT integration in learning, an action research may be conducted first among students to identify and solve issues on the use and challenges of ICT in teaching and learning so that intervention will be given for effective implementation and integration of ICT in the teaching learning process.

Further researches may focus the level of actual and evident use of ICT in classrooms, the factors or challenges hindering teachers from incorporating ICT instructions, as well as the support given by government and other stakeholders to teachers in trying to integrate ICT in the teaching and learning process.



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