Pre-Service Teachers' Perception Of ICTs On Teaching And Learning At E. P. College Of Education, Bimbilla, Ghana

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Abstract: The purpose of the study was to identify and establish pre-service teachers' perception of ICTs on Teaching and Learning at E. P. College of Education, Bimbilla located in the capital of the Nanumba North Municipality in the Northern region of Ghana. The study employed simple random sampling technique in choosing a sample size of 45 level 200 pre-service teachers of the Mathematics/ICT Major class. Structured and semi-structured questionnaire were used for instrumentation for the study in collecting data from the respondents. The data collected was analyzed using Excel. The study went on to identify the computer, mobile phones, tablets, projectors, modems and printers as the available ICT tools for their use in the teaching and learning process at E. P. College of Education, Bimbilla. The study also looked at challenges inherent in the use of ICTs for teaching and learning. The study reviewed literature on Concepts of ICTs, Ghana's ICT Policy for Accelerated development and the influence ICT has on pre-service teachers. Some of the factors that were identified as being stumbling blocks to the smooth learning of ICT included but not limited to; lesser time duration for the subject, teachers' inability to make time for the individual needs of pre-service teachers during class hours. The study found out that, pre-service teachers who used ICTs in learning, perceived it to be more interesting, interactive and motivational. In conclusion, the study recommended that, teachers should always incorporate TLMs in their lessons and organizing ICT career seminars for they all play key role in arousing pre-service teachers' interest in the teaching and learning of ICT, most especially this era and day, where ICT is the driving force in all economies that believe in growth and development, from aspects of research, health, AI, transport and education.

Keywords: ICTs, Perception, Pre-Service Teachers, Teaching and Learning, Ghana.

I. INTRODUCTION

Information and Communications Technology (ICT) is a diverse set of technological tools and resources used for creating, storing, managing and communicating information, and to support teaching, learning and research activities (Vajargah, Jahani & Azadmanesh, 2010). The world is moving at an unimaginable speed in the area of information use and dissemination. According to Olaniyi (2006) the use of information technology, knowledge and information can be transferred and cross-fertilized in real time. Hence, the need to pay attention to the way information technology has changed the educational sector in Ghana. The government has acknowledged the need for ICT training and education in the schools, colleges and universities and the improvement of the

education system as a whole. The deployment of ICT into Education will result in the creation of new possibilities for learners and teachers to engage in new ways of information acquisition and analysis. ICT will enhance access to education and improve the quality of education delivery on equitable basis according to the Ministry of Education (MoE) (ICT in Education Policy November 2008). ICT including computers, is generally believed to foster cooperative learning, provide more information through simulation, and makes complex learning experiences easier to understand. Therefore, the use of ICT cannot be ignored either by teachers or by pre-service teachers.

Despite ICT is perceived and proven to offering benefits, its use in schools for teaching and learning purposes has still not been the best. These factors that influence Perceptions

about ICT of some pre-service teachers are still a problem regardless. It is therefore clear to note that the potential use of ICT in addressing teaching and learning needs is difficult.

Computer skills have become a necessary prerequisite for functioning in a modern and computerized society. Not only have computers become a ubiquitous tool in academia and the workplace, but computer use is also an important part of the portfolio of skills that the future workforce should possess in technology-rich environments (OECD, 2013). Individuals who fail to develop these skills may face significant disadvantages such as an inability to effectively access and use computer technology in today's increasingly interconnected world.

As educators, we wish to prepare our pre-service teachers for the next level of their educational development and provide them with the tools they need to succeed in their ongoing educational and career aspirations, such as an ability to do computer-based work.

STATEMENT OF THE PROBLEM

There are some studies in order jurisdictions of the world that looked at students' perceptions of ICTs in the teaching and learning process, notably among them are; Gebremedhim, 2015, Ghavifekr, 2016, Gokhan et al, 2016, Gomez et al, 2020 and Akram et al, 2022,

A few research works have been done in Ghana (Buabeng-Andoh, 2012, Kassim, 2015, Mensah, 2022 and Boni, 2018) to investigate the Pre-service teachers' perception on the use of ICTs in the teaching and learning process, despite global evidence that ICT usage in teaching and learning is proven to be efficient and productive in education and all spheres of life. In furtherance, ICT is used as a tool for studies for staff and pre-service teachers alike from basic schools, through pre-tertiary to tertiary levels worldwide and the pre-service teachers at E. P. College of Education, Bimbilla are no exception to this fact. Preliminary studies were conducted during the researcher's teaching practice and pre-service teachers barely had any idea what ICTs really were and its impact on teaching and learning, most especially in the College. Pre-service teachers knew of some ICT tools but had little or no idea how those tools could be utilized to facilitate their learning process for efficiency.

From the above analysis, the gaps are that, there is no single study on pre-service teachers' perceptions of ICTs on teaching and learning at the Colleges of Education in the Northern Region of Ghana. Also, there are a few such as Buabeng-Andoh, 2012 that looked at Perceptions and Practices of ICT in Teaching and Learning in the Ghanaian Second-Cycle Schools, thus pre-tertiary institutions. Furthermore, all the numerous studies captured above both abroad and Ghana did not involve Northern Region Colleges of Education pre-service teachers. To fill these gaps, the present study will use pre-service teachers from the E. P. College of Education, Bimbilla in the Nanumba North Municipality of the Northern Region to conduct this study which is investigates Pre-Service Teachers' Perception of ICTs on Teaching and Learning at E. P. College of Education, Bimbilla.

PURPOSE OF THE STUDY

The purpose of the study was to examine pre-service teachers' Perception of ICTs on teaching and learning at E. P. College of Education, in the Nanumba North Municipality. In pursuance of this purpose, these research questions below were formulated to guide the study.

RESEARCH QUESTIONS

✓ What ICT facilities are available to Pre-Service teachers at E. P. College of Education, Bimbilla for teaching and learning?
✓ What are the perceived influences of ICTs on teaching and learning of Pre-Service teachers at E. P. College of Education, Bimbilla?

SIGNIFICANCE OF THE STUDY

The findings of the study will encourage other researchers to investigate pre-service teachers' perception of ICTs on teaching and learning. Also, the study will help to arouse the desire and interest of pre-service teachers in the teaching and learning of ICT which will enable pre-service teachers in particular to function in the emerging information society and knowledge economy. Furthermore, study will guide policy makers to formulate policies towards solving such problems related to ICT teaching and learning in our second-cycle institutions in Ghana.

Finally the research will be of great importance to educational planners especially Ministry of Education (MoE), Ghana Education Service (GES), Ministry of Science and Technology and other beneficiaries of education as well as organizations that do have roles to play in the promotion and development of ICT education in Ghana.

II. LITERATURE REVIEW

THE CONCEPT OF ICT

ICT is an acronym that stands for Information and Communications Technology. ICT is the integration of information processing, computing and communication technologies. ICT is changing the way we learn, work and live in society and are often spoken of in a particular context, such as in education, health care, or libraries. A good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organizations to use information. ICT covers any product that stores, retrieves, manipulates, transmits or receives information electronically. Importantly, it is also concerned with the way these different devices can work with each other. For example, personal computers, digital television, email, robots.

Information and Communications Technology (ICT) has gone through innovations and transformed our society that has totally changed the way people think, work and live (Grabe, 2007). As part of this, schools and other educational institutions which are supposed to prepare pre-service teachers to live in "a knowledge society" need to consider ICTs such as

incorporating and integrating Instructional Technologies in their curriculum (Ghavifekr, Afshari & Amla Salleh, 2012). In conjunction with preparing pre-service teachers for the current digital era, teachers are seen as the key players in using ICT in their daily classrooms. This is due to the capability of ICT in providing dynamic and proactive teaching-learning environment (Arnseth & Hatlevik, 2012).

There is no doubt that technology in this contemporary society is used more and more widely, especially for the purpose of teaching and learning. This is because modern technology offers many tools that can be used in classrooms to improve teaching and learning quality (Bruniges, 2003; Lefebvre, Deaudelin, & Loiselle, 2006; Bingimlas, 2009; Hamidi et'al., 2011; Hussain et al., 2011). Through learning ICT skills, pre-service teachers are ready to face future challenges based on proper understanding (Grimus, 2000). Bransford, Brown, and Cocking (2000) believe that, ICT use can help pre-service teachers to develop the competencies needed for the current globalization. This is because ICT can help pre-service teachers to develop their skills, boost up their motivation and widen their horizon of knowledge and information (Grabe & Grabe, 2007; Hussain et'al. 2011).

People have generally agreed that ICT has a capacity to allow access to information in faster, more efficient, and effective ways. The wealth of resources available which are accessible through different gadgets of ICT increases the learners' opportunities to discover the world. Besides, research indicates that human perceptions about technologies determine their attitudes towards them (Aviram &Tami, 2004). Discovery and problem solving which characterize the act of good learning are very compatible with the above nature of ICT. Learning process, therefore, may well be optimized should it be properly directed by people competent of using ICT. It might be used to direct future teachers toward finding lesson plans and answers (Brush, Glazewski and Hew, 2008). Pre-service teachers are now generally more viable to access the quality data critically and to use relevant information for use in learning selectively, which means that given a conducive learning environment, pre-service teachers must be able to perform much more quickly. This is according to a previous study (Castro Sánchez and Alemán 2011).

The plentiful and rich resources for learning coming with the ICT gadgets offer almost limitless options for learning. Teachers of these days are the parties indulged with rich resources readily exploitable for teaching provided that they invested time and effort to search and to apply them into use. At the same time, each individual learner surely has to be the side who should jointly contribute to determining the success of learning. To succeed in exploiting the ICT gadgets for learning, teachers play their directing, guiding and orchestrating roles, while pre-service teachers should be persons of discipline with positive choice and a sense of achievement. By being so, the activities using ICT gadgets will be of a meaningful engagement, as a responsible use of ICT may add up to a sense of creativity in searching for relevant, meaningful, and positive data or information for teaching and learning.

ICT is also described as the application of telecommunications and computer systems to the processing of information. Finally, ICT comprises a spectrum of applications, communications and technologies which assist information retrieval and research communication and management. These consist of: fax machines, telephones, online databases, library services, and e-mail. In the 1980s, the phenomena was embraced as a necessity for educational systems to equip future teachers with the skills they would need to adapt to and survive in this new, technologically advanced society.

PERCEPTION

RICHARD GREGORY PERCEPTION THEORY (1970)

Gregory (1970) argued that perception is a constructive process which relies on top-down processing? Perception involves making inferences about what we see and trying to make a best guess. Prior knowledge and past experience, he argued, are crucial in perception.

When one looks at something, one develops a perceptual hypothesis, which is based on prior knowledge. The hypotheses developed are nearly always correct. However, on rare occasions, perceptual hypotheses can be disconfirmed by the data perceived.

Perception can be defined as our recognition and interpretation of sensory information. Perception also includes how people respond to information. We can think of perception as a process where people take in sensory information from our environment and use that information in order to interact with the environment. Perception allows people to take the sensory information and make it into something meaningful.

Teachers and pre-service teachers believe that technology bring to them advantages, but they lack the basic skills of computer usage, and they also feel that their skills are lacking for other technologies which could also be used as an aid in the classroom, pre-service teachers are not given enough time to practice their lessons, and the number of computers provided leave much to be desired in our schools.

In trying to address the issues why perceptions among staff and pre-service teachers towards effective teaching and learning with ICT, a research was conducted in Queensland by Klawe (2003 and 2004) which identified the following as some of the strategies which could be used to give staff and pre-service teachers enough motivation to learn ICT or take up a career in ICT related course. These include;

- ✓ A demonstration and motivational conference should be organized for pre-service teachers.
- ✓ Using established I.C.T career personnel as role models for pre-service teachers.
- ✓ Organize career programmed and ICT expos or seminars for pre-service teachers in schools.
- ✓ Pre-service teachers should be given enough time to use ICT tools in schools as research has proven that, pre-service teachers rely on school more in learning ICT.
- ✓ I.C.T teachers should be given regular vacation schools to train them on how to organize and handle pre-service teachers in ICT lessons. Here, university lecturers could be invited to facilitate such schools.
- ✓ More instructional or teaching and learning materials of ICT such as computers, projectors, software and charts

should be used to promote effective teaching and learning of ICT in our schools.

CAUSES OF PERCEPTIONS TOWARDS ICT LESSONS

The researcher found out that in schools, pre-service teachers do not practice what they are taught. This makes the lessons boring, therefore reducing the interest of pre-service teachers in the lesson.

The researcher also found out that though ICT was introduced in the curriculum some years ago, it still remains a non-examinable subject though a few schools in Ghana are offering it as an examinable elective, mostly the Southern second cycle institutions. This development had reduced the morale of some pre-service teachers who offer the subject as a non-examinable or non-scoring subject.

In a study conducted by Ginsberg and McCormick (1998), it was found out that teachers in less effective schools also reported concerns about computers being too limited. Jegede, Philip, Owolabi and Josiah, (2005) found out that ICT teachers were reluctant to use computers in their teaching, because of the theoretical nature of the ICT lessons pre-service teachers feel reluctant to attend ICT lessons. Yildir and Tsong (2001) identified lack of knowledge and experience in the computing area as one of the most common reason for learners and teachers perceptions toward ICT education.

EFFECTS OF TEACHERS AND LEARNERS' PERCEPTIONS AND CHALLENGES ASSOCIATED WITH ICT USE IN TEACHING AND LEARNING

Several researchers have argued that the role teacher's play about teaching and how pre-service teachers acquire knowledge is critical including technology usage. However, the perceptions on how technology is used to support teaching and learning is a factor to be considered. Teachers often view the technology integration as an additional imposition on their already demanding time schedule when they simply want to get on with the business of teaching. In addition, they do not believe that they have the technical competence to effectively use technology in the classroom should they fail to see its utility or relevance for the subject.

Research has shown that teachers perceived usefulness of an innovation play a pivotal role in determining the extent to which that innovation can be adopted for use in the classroom (Hall & Hord, 2001).

Becker (2000) nationwide survey of teachers in the United States revealed that while ICT use enabled a minority of teachers to put into practice pedagogy that is more constructivists and more in tune with their teaching philosophy; it has not transformed the teaching practices of a majority of teachers, particularly teachers of secondary academic subjects. However, the teachers did acknowledge that under the right conditions computers are becoming a valuable instructional tool and is having an impact not only on pre-service teachers' performance in the classroom but on their academic efforts outside the classroom as well.

The study conducted by Balanskat et'al., (2006) in Europe on the impact of ICT on education revealed that ICT enabled teachers to save time and to increase productivity in such activities as preparing and updating daily lessons and maintaining records. In addition, ICT use has fostered greater collaboration between teachers with increased sharing of resources and ideas. However, with respect to pedagogical practice teachers continue to use a more traditional approach to teaching that is simply viewing ICT as a tool to support their didactic approach. The researcher concluded that teachers do not yet exploit the creative potential of ICT and engage pre-service teachers more actively in the production of knowledge.

Also, Deaney et'al. (2005) found that ICT usage led to subtle changes in classroom dynamics and pedagogic practices with teachers adopting a far less didactic approach and pupils attention being redistributed away from a central position.(Becker, 2000; Ertmer & Ottenbreit-Leftwich, 2009). However, Liu (2010) found that while teachers held learner-centered beliefs they did not integrate constructivist teaching with technology use thus revealed clear inconsistencies between teacher pedagogical beliefs and teaching activities. He found that most teachers, regardless of pedagogical beliefs, were inclined to utilize lecture-based teaching activities when integrating technology into instruction.

Balanskat et al. (2006) conducted a review of seventeen such impact studies carried out in Europe between 2002 and 2006 and aimed at determining the benefits and impact of ICT integration in schools in two major areas: Learning outcomes and learners and teaching methodologies and teachers, ICTs have great potential for knowledge dissemination, effective learning, and the development of more efficient educational services. Moreover, the adoption of ICT by education has been seen as a powerful way to contribute to educational change, better prepare pre-service teachers for the information age, improve learning outcomes and competencies of learners, and equip pre-service teachers with survival skills for the information society. Therefore, teachers are expected to integrate ICT into their teaching and learning processes.

To successfully initiate and implement educational technology in the school program depends strongly on the teachers' support and attitudes. It is believed that if teachers perceived technology programs as neither fulfilling their own needs nor their pre-service teachers' needs, it is likely that they will not integrate technology into teaching and learning. Evidence suggests that teachers' attitudes and beliefs influence successful integration of ICT into teaching (Hew & Brush, 2007; Keengwe & Onchwari, 2008). If teachers' attitudes are positive towards the use of educational technology, then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes.

THE INFLUENCE OF ICT ON PRE-SERVICE TEACHERS

In recent years, a number of impact studies have been conducted with the expressed aim of assessing the return on investment of ICT in education. (Balanskat, Blamire and Kefala, 2006) conducted a review of seventeen such impact studies carried out in Europe between 2002 and 2006 and aimed at determining the benefits and impact of ICT integration in schools in two major areas: learning outcomes and learners and teaching methodologies and teachers. Six of the studies reviewed were quantitative in nature while the

others followed a qualitative orientation. The quantitative studies attempted to establish causal links between ICT use and learning outcomes. Though the studies revealed some evidence that

ICT impacts on learner performance, the general conclusion was that it was difficult to establish a causal relation between computers and educational outcomes (Balanskat, Blamire and Kefala, 2006). The findings of these studies led to the conclusion that ICT impacts on educational standards most when there is fertile ground in schools for making efficient use of it. The qualitative studies revealed that teachers, pre-service teachers and, significantly, parents believe that ICT use has a positive impact on pre-service teachers'' learning and that pre-service teachers'' subject-related performance improves with ICT use. The findings also indicate that teachers believe that the educational achievements of pre-service teachers improve through ICT use and that both strong and weak pre-service teachers benefit from ICT use. Teachers observed that when ICT is used in the classroom pupils work more in cohesion with their own learning styles resulting in a more favorable impact on both academically strong and weak pre-service teachers. In addition, pre-service teachers assume greater responsibility for their own learning, working more independently and effectively when using ICT. All the studies concluded that the integration of ICT has the greatest impact in the affective domain. The studies revealed that 86% of teachers in Europe reported that pre-service teachers are more motivated, engaged and attentive when computers and the Internet are used in the classroom and that ICT use has positive effects on behavior, communication and process skills.

These conclusions are corroborated by the findings of a three-year study of New Zealand's e-learning initiative conducted by Lai and Pratt (2007) between 2001 and 2004. The study aimed at investigating teachers' perceptions of the teaching and learning effects of ICT use in 26 secondary schools. For the purpose of the study both quantitative and qualitative data were collected. The study concluded that the integration of ICT in educational practice had a number of positive social and motivational effects on the learners including increased interest and engagement and that the social and motivational effects were more frequently observed than cognitive and learning effects. Teachers reported an improvement in the presentation of work, an increased sharing of resources, greater collaboration between pre-service teachers and an increased motivation for learning as student engagement was greater. However, the study also revealed a number of negative consequences such as increased plagiarism and a higher level of distraction. Sutherland, Armstrong, Brawn, Mathewman and Barnes (2004) reported on the findings of the Interactive Education Project conducted in the United Kingdom in which teachers and researchers worked together to develop and evaluate initiatives focused on using ICT to enhance learning in curriculum areas that pre-service teachers would normally find difficult. The study was conducted over a two year period and involved 54 teachers from both primary and secondary schools. The project was predicated on the view that ICT in itself does not enhance learning but rather how it is incorporated into learning activities is what makes the difference. The integration of

ICTs in several subject areas including Modern Studies, Languages, Science and the Arts were examined. The data collected revealed that different subject cultures impact differently on how ICT is used in the classroom with History and Geography teachers appearing to be the most technophobic.

Teachers reported improvements in the writing skills of lower ability pre-service teachers, increased levels of interaction among pre-service teachers, greater student enthusiasm and engagement and an increase in confidence for both the teacher and the pre-service teachers (Sutherland et'al).

III. METHODOLOGY

RESEARCH DESIGN

This investigation used a non-experimental design. The design of the survey was descriptive and cross-sectional in nature.

POPULATION, SAMPLE SIZE AND SAMPLING TECHNIQUE

The target population for this study was students of E. P. College of Education. The survey employed simple random sampling technique in selecting the sample size for the study. A total sample size of 45 pre-service teachers were selected from the target population for the study. Out of this number, 28 constituted male and the remaining 17 were female pre-service teachers.

INSTRUMENTATION

The study used multiple data collection instruments for gathering information pertinent to the research. The instruments included questionnaire, interviews and observation. These techniques were appropriate because the study sought an in-depth information on students' opinions, experiences and acquisitions regarding the perceived influence of ICTs on teaching and learning.

VALIDITY AND RELIABILITY

Two experienced ICT tutors of the researcher's department subjected the ICT Perceptions to both face and content validity. The tutors concluded that it met the pre-service teachers' standard and hence okayed it for administering having compared it to the Colleges of Education Introduction to ICT course outline. When thirty-five (35) pre-service teachers helped to write the pilot test, the reliability of the test items was evaluated. The 35 participants in the pilot study did not make up the sample for the main investigation. The dependability coefficient of the instruments was calculated using Kuder-Richardson formula 20 techniques. The pilot investigation revealed a reliability coefficient of 0.72, which points to the instrument's high level of dependability.

DATA COLLECTION PROCEDURE

There was a combination of data collection tools was employed to collect qualitative and quantitative data on students of E. P. College of Education, Bimbilla for the survey. These include the administration of structured and semi-structured questionnaire to respondents to collect primary data. The questionnaire was divided into four parts: socio-demographic characteristics of the students, ICT facilities available to pre-service teachers for teaching and learning, the perceived influence of ICTs on students for learning and the challenges associated with the use of these ICTs by students for learning.

PRE-INTERVENTION

During the first week in the classroom, the researchers observed students on the use of ICTs in order to get much information about its influence on them. It was very much amazing that, pupils' level of ICTs usage on learning was low. Again, students were made to identify and give simple uses of some ICTs in the school. It was observed that, pre-service teachers at E. P. College of Education, Bimbilla could identify computer as the only ICT tool used for learning. Moreover, the teaching of ICT was teacher-centred and this approach limited them from realizing the full benefits of ICTs on learning as shown in Table 1.

INTERVENTION

After an interaction with the students and the ICT teacher, a lesson was organized with Teaching and Learning Materials (TLMs) on ICTs to brief students focusing on computers, smart phones and the Internet as was part of the curriculum.
Typically, the lesson included:
✓ Fundamentals: basic terms, concepts and operations of Computers
✓ Use of the keyboard and mouse
✓ Use of productivity tools such as word processing, spreadsheets, data base and graphics programs
✓ Use of research and collaboration tools such as search engines and email
✓ Developing an awareness of the social impact of technological change
✓ Messaging
✓ Teleconferencing
An exercise was given to the pre-service teachers after the lesson to mention some common ICTs used daily in learning during lectures. Majority of students were able to mention computers, smart phones, internet as well as televisions and radio sets. The researchers saw a remarkable improvement on students' knowledge of ICTs.

ICTs Usage in Learning	Frequency	Percentage (%)
Pre-Service teachers who use ICT to learn fairly	0	0
Pre-service teachers who could learn when supported	5	11
Pre-Service teachers who could not use ICT learn	40	89
Total	**45**	**100**

Source: Field Survey, 2021

Table 1.0: Pre-Intervention Results of Respondents

ICTs Usage in Learning	Frequency	Percentage (%)
Pre-Service teachers who use ICT to learn fairly	38	84
Pre-service teachers who could learn when supported	7	16
Pre-Service teachers who could not use ICT learn	0	0
Total	**45**	**100**

Source: Field Survey, 2021

*Table 2.0: Post-Intervention Results of Respondents*

POST INTERVENTION

The use of ICT tools by students was extremely low, as was already mentioned. As a result, future instructors were unable to use ICTs to enhance learning across all subject areas. However, using interactive ICT tools to walk students through the lecture piqued their attention. Students were now more interested in the tools and willing to put in extra effort for sessions in individual ICT classes. In conclusion, it can be shown from Table 2.0 above that the intervention was helpful and successful when comparing the impact of ICTs on the pre-service teachers' learning before and after the intervention.

ANALYSIS OF DATA

Excel was used as software for data input and analysis. Each objective of the study was analyzed by using appropriate statistics measures. Descriptive statistical measure was employed in the analysis of the research objectives. This method and approach of data analysis agrees with Lamatinulu et'al 2018 and Korstjens & Moser, *2018)*

IV. RESULTS AND DISCUSSION

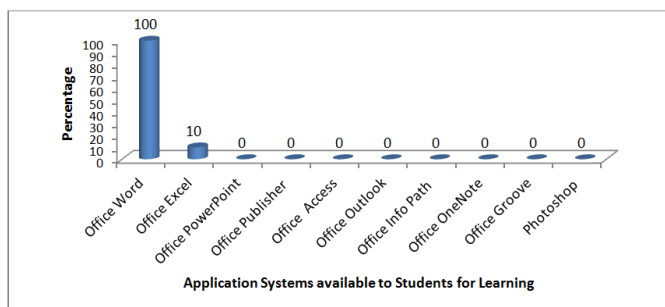ICTS AVAILABLE TO PRE-SERVICE TEACHERS FOR LEARNING
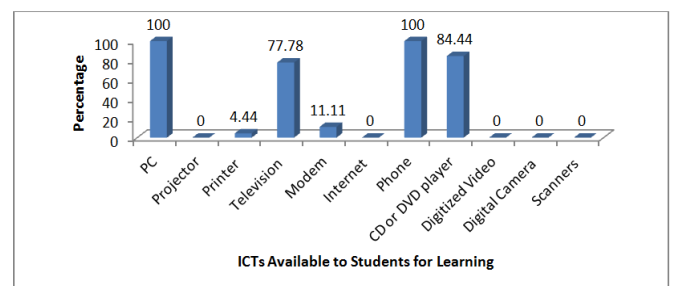
Source: Field survey, 2021

Figure 1: ICTs available for learning

The distribution of ICTs available to students at E. P. College of Education, Bimbilla is depicted in Fig. 1. There are personal computers and phones for teaching and learning, according to all pre-service teachers (100%) The majority of students also indicated that television and CD/DVD players are used for teaching and learning, respectively (84.44% and

77.78%). Finally, less than half of students (11.11% and 4.44%) mentioned that students can use the modem and printer.

## APPLICATION SYSTEMS AVAILABLE FOR LEARNING

Source: Field survey, 2021

Figure 2: Application Systems available for learning

Fig. 2 shows the distribution of Application Systems that are available to students for learning. All students (100%) indicated that Microsoft Office Word is available for teaching and learning. However, students did not know that MS Office suite contains all the other application software for their use and this could be attributed to the teachers' lack of knowledge on the application package.

PRE-SERVICE TEACHERS' PERCEPTION OF THE USE OF ICTS IN TEACHING AND LEARNING

The distribution of the perceived impact of ICT use in teaching and learning is depicted in Fig. 3. The majority of students, or 65%, said that the use of ICTs had a very interactive impact on their learning. This supports the claim that students believe using ICT in teaching and learning is fascinating, simple, and enjoyable for them. Less than half (50%) thought that the use of ICTs had made learning more enjoyable, while 5% said that the use of ICTs had made learning more motivating.
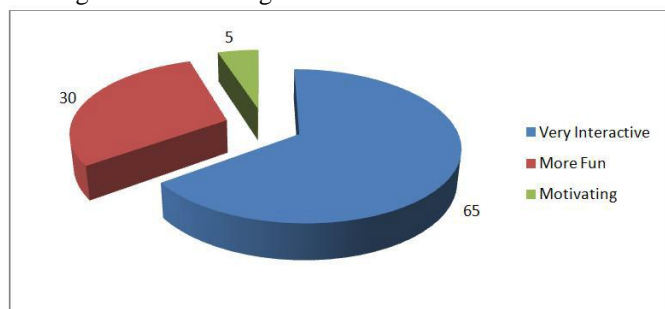
Source: Field survey, 2021

Figure 3: Perceived influence of the use of ICT in teaching and learning

CHALLENGES INHERENT IN THE USE OF ICTS IN TEACHING AND LEARNING

The difficulty of teachers having to meet each student's particular learning needs during class, according to the pre-service teachers, is another factor working against the use of ICT in education. Some teachers believe that the use of ICT in the classroom skews the lesson to focus solely on computing, preventing students from paying attention to the subject matter, and that using the technology was time-consuming. According to the report, such an encounter shows that teachers lack pedagogical expertise in dealing with problems relating to the use of ICT in the classroom. In essence, it comes down to getting pupils' attention. As indicated in Table 3.0 below, less than half of the students (11.12%) stated that it was challenging for them to catch up since the ICT classes were delivered in a way that was always faster than their knowledge.

Challenges	Frequency	Percentage (%)
Limited time slots for ICT lessons	20	44.44
Teachers' inability to cater for individual learning needs in class	20	44.44
Mode of delivery of ICT lessons	5	11.12
Total	**45**	**100**

Source: Field survey, 2021

Table 3.0: Challenges Inherent in the Use of ICTs in Teaching and Learning

V. CONCLUSION

Firstly, findings from the study suggest that students and teachers at the E. P. College of Education, Bimbilla have positive perceptions regarding their ICT skills and related computer applications. As a result of these positive perceptions, students also perceive the use of ICT as enhancing ICT skills that possibly encourage them to engage in deeper forms of learning ICT. Secondly, students and teachers have positive perceptions about using ICT in their learning and it seems that teachers more readily use ICT application for information and research purposes which appear to be of educational value and might enhance deeper forms of learning. The findings of the study also revealed that some ICTs facilities are available for learning by students. However, very little use is made of these ICTs by students of the school, hence lowering the return of investment on scarce national resources. The study also established factors that militated against the use of ICTs by students to include limited duration of ICT lessons as well as teachers' inability to cater for individual learning needs during classes. Also, the mode of delivery of ICT lessons is always faster than their understanding making it difficult for them to catch up.

VI. RECOMMENDATIONS

Based on the findings of this study, it is recommended that;

Teachers should incorporate into their lessons more TLMs for pre-service teachers to have a more interactive experience and exposure during lesson delivery

Extension of ICT time allocation and periods on the time table as this will enable them catch up.

Request for more computers from College management and right authorities involved

The school administration should organize seminars to educate students on the importance of ICT.

Lastly, career guidance should be carried out from time to time to enable students get an insight about the prospects of ICTs and its usefulness and potentials in teaching and learning.

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