MOBILE PHONE USE IN EDUCATION:
EVALUATION AMONG PUBLIC SECONDARY SCHOOL TEACHERS IN OLONGAPO CITY

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ABSTRACT

This study examined the use of mobile phones in education among 191 public secondary school teachers in District III, Division of Olongapo City, Philippines. Adopting a descriptive-quantitative design, the research focused on teachers' evaluation of mobile phone use in terms of ease of use, usefulness, and self-efficacy, as well as the challenges and barriers encountered. The findings revealed that teachers strongly agreed on the educational benefits of mobile phones in communication, collaboration, and resource access. Results showed that teachers strongly agreed on the ease of use (mean=3.82), usefulness (mean=3.71), and self-efficacy (mean=3.70) of mobile phones in teaching (overall mean=3.74). Teachers most frequently used mobile phones for communication and collaboration but less for conducting online classes. Major challenges were poor battery life, limited mobile data, and occasional misuse by students (overall challenges mean=3.70). Based on these findings, the study recommends improving digital infrastructure, drafting clear school/division policies on mobile phone use, and conducting targeted capacity-building programs for teachers to increase effective pedagogical use of mobile phones.

Keywords: Mobile learning, ICT in education, mobile phone use, Olongapo City, teacher perception

INTRODUCTION

In recent years, global education systems have faced unprecedented challenges brought about by rapid technological change, economic inequality, and the lingering effects of the COVID-19 pandemic. The digital divide—defined as the gap between those who have access to modern information and communication technologies (ICT) and those who do not—has emerged as a critical global issue affecting learning equity (OECD, 2021). While mobile technology has become a transformative tool for communication and learning, many schools, particularly in developing countries, continue to struggle with inadequate digital infrastructure, limited connectivity, and insufficient teacher training. UNESCO (2020) reported that although mobile learning provides flexible opportunities for students and teachers, disparities in access and readiness still hinder its full potential.

The integration of ICT in education has reshaped how teachers deliver instruction and how students acquire knowledge. Mobile phones, in particular, have proven valuable for their portability, affordability, and ability to facilitate communication and resource sharing (Ally & Prieto-Blázquez, 2019). However, without proper support and digital competence, teachers may encounter barriers such as technological overload, unclear institutional policies, and classroom management concerns.

In the Philippine context, the Department of Education (DepEd) acknowledges mobile technology as an essential tool for teaching and learning, as stated in DepEd Order No. 18, s. 2020. Teachers across public secondary schools increasingly rely on mobile phones to disseminate learning materials, coordinate activities, and sustain communication with learners and parents. Nevertheless, challenges such as unstable internet connectivity, limited mobile data, and a lack of structured guidelines continue to impede effective technology integration.

This study is significant as it examines how teachers in District III, Division of Olongapo City, use mobile phones for instructional purposes and identifies the barriers they encounter. The results provide insights that can help educational leaders and policymakers develop strategies to improve ICT infrastructure, strengthen teacher training, and promote responsible digital practices in schools. The study specifically aimed to determine the demographic profile of teachers, describe the extent of their mobile phone use in education, assess their perceptions in terms of ease of use, usefulness, and self-efficacy, and identify the challenges and barriers they face in integrating mobile phones into classroom instruction. Specifically, this study sought to determine the profile of public secondary school teachers in District III, Division of Olongapo City; describe the extent to which they use mobile phones in education; assess their perceptions in terms of ease of use, usefulness, and self-efficacy; and identify the challenges and barriers they face in integrating mobile phones into instruction.

METHODOLOGY

Research Design

A descriptive-quantitative research design was used to describe the extent of mobile phone use in education and identify the challenges encountered by teachers. This design was appropriate since it allowed the researcher to collect measurable data describing actual practices and perceptions without the manipulation of variables.

Respondents and Location

The study involved 191 public secondary school teachers from five public schools in District III, Division of Olongapo City. Purposive sampling was used to include all schools within the district. Respondents represented different age groups, teaching positions, and academic qualifications to ensure a balanced and comprehensive perspective.

MAP OF THE STUDY AREA Fig. 1. Map of District III, Division of Olongapo City (Study Area)
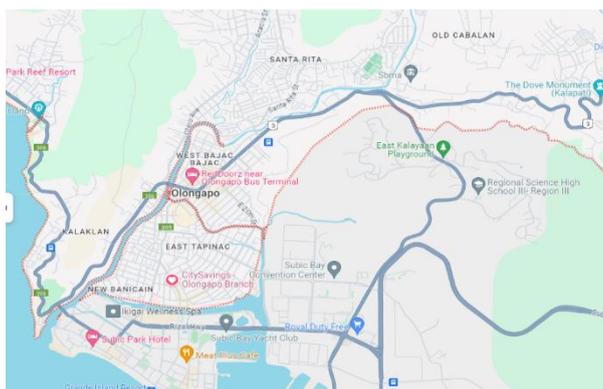
Instrument

The researcher used a structured survey questionnaire adapted from Mohammadi et al. (2020) to ensure reliability and relevance. It consisted of three parts: the first gathered respondents' demographic information, such as age, sex, position, years in teaching, and educational attainment; the second measured the use of mobile phones in education across the domains of ease of use, usefulness, and self-efficacy; and the third identified technical, behavioral, and policy-related challenges. Each item was rated on a four-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (4). The instrument was validated by three experts in educational research and ICT integration and pilot-tested with 20 teachers from another district, yielding high reliability of .96 based on Cronbach's Alpha results.

Data Collection Procedure

Before data collection, permission was obtained from the Schools Division Superintendent of Olongapo City and the respective school heads. The researcher personally distributed the questionnaires to the selected respondents and retrieved them after completion. Some teachers answered through secure online forms to accommodate their schedules. Confidentiality and voluntary participation were observed throughout the process.

Data Analysis

The data were processed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics such as frequency, percentage, weighted mean, standard deviation, and rank were used to analyze the data. ANOVA was applied to determine significant differences in teachers' perceptions across profile variables, using a 0.05 level of significance. Qualitative interpretations were based on the following mean ranges: 3.25–4.00 = Strongly Agree; 2.50–3.24 = Agree; 1.75–2.49 = Disagree; 1.00–1.74 = Strongly Disagree

RESULTS AND DISCUSSION

This section presents the findings on the use and challenges of mobile phones in education among teachers in District III, Division of Olongapo City. Results are discussed based on the study objectives and supported by related literature to provide context and interpretation.

Table 1. Profile of the Respondents

Variable	Category	f	%
Age (Mean = 39.93 years)	21–26	15	7.9
	27–32	29	15.2
	33–38	29	15.2
	39–44	33	17.3
	45 and above	85	44.5
Sex	Male	49	25.7
	Female	142	74.3
Educational Attainment	Bachelor's Degree	33	17.3
	MA/MS Units	80	41.9
	MA/MS Degree	67	35.1
	PhD/EdD Units	3	1.6
	PhD/EdD Degree	8	4.2
Years in Teaching (Mean = 13.74)	1–5	30	15.7
	6–10	44	23
	11–15	43	22.5
	16–20	16	8.4

	21 and above	58	30.4
Position	Teacher I	89	46.6
	Teacher II	44	23
	Teacher III	41	21.5
	Master Teacher I	11	5.8
	Master Teacher II	6	3.1

Table 1 shows that most respondents were aged 45 and above, with a mean age of 39.93 years, indicating that the majority were experienced teachers. This aligns with Alaba (2021), who noted that public secondary schools in the Philippines are largely composed of mid-career educators who possess strong classroom management and adaptability skills. The results suggest that their experience may enhance their confidence in using technology when given proper support.

The teaching workforce was predominantly female (74.3%), reflecting the national trend of gender imbalance in education, as highlighted by Bautista and Ocampo (2020). Studies such as Kundu and Bej (2021) have shown that female teachers generally display positive attitudes toward digital tools when provided adequate training.

Most respondents had pursued or completed graduate studies, with 41.9% holding master's units and 35.1% a master's degree, showing strong professional commitment encouraged by DepEd policies. Mohammadi et al. (2020) emphasized that teachers with higher academic qualifications are more receptive to integrating technology in instruction.

The mean teaching experience of 13.74 years, with 30.4% having more than 21 years in service, reflects a stable and skilled teaching population. However, Hwang and Tsai (2011) noted that veteran teachers may require continuous ICT support to maintain digital proficiency. The majority of respondents were in lower teaching ranks (Teacher I and II), which, according to Cusi et al. (2020), often correlates with a stronger motivation to learn innovative teaching approaches.

Overall, the profile indicates a mature, predominantly female, and professionally qualified group of teachers who are capable of adopting mobile learning when supported by appropriate training and infrastructure.

Extent of Mobile Phone Use

The findings revealed that teachers in District III frequently used mobile phones for educational purposes. As presented in Table 1, the overall mean score of 3.47 indicated that teachers "always" used mobile phones for instructional communication, collaboration, and resource sharing.

Table 2. Extent of Mobile Phone Use in Education

Indicator	M	SD	Interpretation
I use mobile phones to communicate with students and parents.	3.78	0.42	Always
I access online learning resources using my mobile phone.	3.61	0.49	Always
I use mobile phones to record attendance and monitor student progress.	3.22	0.66	Sometimes
I share learning materials through messaging applications.	3.67	0.51	Always
I use educational apps to enhance classroom instruction.	3.08	0.72	Sometimes
Overall Mean	3.47	0.56	Always

The data imply that mobile phones have become indispensable tools in facilitating modern teaching and communication. The high mean scores in communication and lesson-sharing align with Kundu and Bej (2021), who found that teachers often use mobile devices to manage instructional materials and maintain contact with students. Similarly, Baran (2020) highlighted that mobile learning enhances teacher-student interaction when combined with practical training and digital literacy programs. However, the moderate use of educational applications for instruction suggests that teachers primarily employ mobile phones for communication rather than for interactive or content-based learning activities. This supports the observation of Ally and Prieto-Blázquez (2019) that the pedagogical integration of mobile devices requires structured support and training.

Challenges Encountered

Teachers experienced several challenges while integrating mobile phones into teaching, as summarized in Table 2. The overall mean of 3.46 suggests that teachers sometimes faced barriers, with connectivity issues and limited mobile data identified as the most frequent.

Table 3. Challenges Encountered in Using Mobile Phones in Education

Indicator	M	SD	Interpretation
Poor internet connection limits my teaching activities.	3.72	0.44	Always
Limited mobile data hinders continuous communication.	3.58	0.52	Always
Lack of clear school policy on mobile phone use in class.	3.36	0.61	Sometimes
Distractions from non-academic apps affect students' focus.	3.24	0.69	Sometimes
Technical issues and lack of training affect efficiency.	3.42	0.55	Sometimes
Overall Mean	3.46	0.56	Sometimes

The results confirm that internet connectivity remains the most significant barrier to effective mobile learning. Similar findings were reported by Gikas and Grant (2013), who noted that technical limitations, particularly weak internet infrastructure, undermine the benefits of mobile-assisted instruction. Teachers also identified the absence of clear school policies and guidelines on mobile phone use, a concern echoed by Shonola et al. (2016), who emphasized that institutional rules are crucial for preventing misuse and ensuring responsible digital practices. Distractions from non-academic mobile applications further complicated classroom management, reinforcing the recommendation of Hwang and Tsai (2011) that digital tools must be accompanied by clear behavioral and instructional protocols.

Teachers' Evaluation of Mobile Phone Use

Teachers' perception of mobile phone use across three domains—ease of use, usefulness, and self-efficacy—is presented in Table 3.

Table 4. Teachers' Perception of Mobile Phone Use

Domain	Weighted Mean	Interpretation
Ease of Use	3.82	Strongly Agree
Usefulness	3.71	Strongly Agree
Self-Efficacy	3.7	Strongly Agree
Overall Mean	3.74	Strongly Agree

Teachers strongly agreed that mobile phones are easy to use, beneficial for classroom management, and boost their teaching confidence. This finding supports the study of Mohammadi et al. (2020), who found that faculty members rated mobile phones highly in ease of use and self-efficacy, signifying adaptability

and familiarity with the technology. The results also correspond with UNESCO's (2020) report emphasizing that mobile learning fosters teacher empowerment and innovation when effectively supported by training and policy. Overall, teachers demonstrated a positive attitude toward mobile phone integration, consistent with the global trend of increasing digital adoption in education (OECD, 2021).

Table 5. Analysis of Variance Results on Teachers' Perception of Mobile Phone Use When Grouped According to Profile Variables

Profile Variables	Ease of Use		Usefulness		Self-Efficacy	
	F	Sig.	F	Sig.	F	Sig.
Age (df 4,186)	0.468	0.759	0.233	0.919	1.572	0.183
Sex (df 1,189)	0.242	0.623	0.016	0.899	1.069	0.303
Highest Educational Attainment (df 4,186)	1.589	0.179	0.584	0.675	0.211	0.932
Years in Teaching (df 4,186)	2.712	0.031*	1.11	0.353	1.636	0.167
Current Position (df 4,186)	0.898	0.466	0.069	0.991	0.285	0.887

Results of the Analysis of Variance (ANOVA) revealed that there was a significant difference in teachers' perceptions of ease of use of mobile phones in education when grouped according to their years in teaching (F=2.712, p=0.031 < 0.05). This indicates that teachers' experience in teaching influences how they perceive the ease of using mobile technologies in their instruction.

On the other hand, no significant differences were found in teachers' perceptions of usefulness and self-efficacy when grouped according to years in teaching, and in all three parameters (ease of use, usefulness, and self-efficacy) when grouped according to age, sex, highest educational attainment, and current position. This suggests that these demographic factors do not substantially affect teachers' acceptance or evaluation of mobile learning.

CONCLUSION AND RECOMMENDATIONS

Teachers in District III, Division of Olongapo City, strongly agree that mobile phones are useful, easy to use, and effective in supporting communication, collaboration, and instruction. However, they continue to face persistent challenges such as poor connectivity, data limitations, and the absence of clear institutional policies. These barriers restrict their capacity to fully integrate mobile technology into classroom instruction.

The study concludes that mobile phones have significant potential to enhance teaching and learning when supported by adequate infrastructure, clear policies, and proper training. It is recommended that schools and the Department of Education improve digital infrastructure, provide data support for teachers, and develop guidelines promoting responsible and pedagogical use of mobile phones. Furthermore, sustained digital literacy programs should be institutionalized to build teachers' competence in maximizing mobile learning technologies.

Based on the findings, it is recommended that schools and the Department of Education strengthen internet infrastructure and ensure reliable network connectivity to support mobile learning. Providing mobile data assistance or subsidies for teachers can also help sustain instructional communication. Schools should develop clear policies and guidelines for the responsible and pedagogical use of mobile phones to prevent misuse among students. Regular training and professional development on digital literacy and mobile-assisted instruction are further encouraged to enhance teachers' competence and confidence in integrating technology into their lessons. Future research may explore the impact of mobile phone integration on student learning outcomes and engagement across different grade levels.

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