

Responsible use of technology in TLE instruction: Strategies to combat mobile phone over reliance

Diana O. Pancipane *

University of Saint Anthony Iriga City, Camarines Sur, Philippines.

International Journal of Science and Research Archive, 2026, 19(03), 1086-1093

Publication history: Received on 20 May 2026; revised on 27 June 2026; accepted on 29 June 2026

Article DOI: <https://doi.org/10.30574/ijrsra.2026.19.3.1403>

Abstract

This study examined responsible use of technology in TLE instruction to address mobile phone overreliance among learners in Ocampo District, Division of Camarines Sur. It aimed to determine the extent of mobile phone usage, its effects on classroom engagement, attention span, and practical skills development, the challenges encountered by teachers, and strategies for intervention. A descriptive-correlational design was employed with 23 TLE teachers as respondents. Data were analyzed using weighted means.

Findings revealed that mobile phone usage is at a Moderate Extent (WM = 3.32), most evident in collaboration and laboratory engagement, while academic use such as research remains limited. The effects of mobile phone overreliance showed mixed outcomes, with Often Observed classroom engagement (WM = 3.42) and attention span (WM = 3.43), but Sometimes Observed practical skills development (WM = 2.91). Teachers experienced a Very High Level of Challenge (WM = 4.35), particularly in enforcing rules and sustaining responsible use awareness. Results further indicated the need for an intervention program to address inconsistent academic integration and classroom management difficulties.

It is concluded that mobile phones enhance collaboration but have limited academic and practical impact. Therefore, structured strategies, clear guidelines, teacher training, and parental involvement are recommended to promote responsible and effective integration of mobile technology in TLE instruction.

Keywords: Mobile Phone Overreliance; Technology; Responsible Use; Descriptive-Correlational Design

1. Introduction

In TLE classes, teachers can help reduce mobile phone overreliance by setting clear rules on gadget use, encouraging hands-on and collaborative activities, promoting digital citizenship, and involving parents in monitoring students' technology use. Through these strategies, learners can develop self-discipline, critical thinking, and responsible digital behavior while still benefiting from technology in education.

The real experiences of teachers in this study may revolve around the challenges they encounter in managing students' excessive use of mobile phones inside and outside the classroom. Teachers often observe that learners become distracted during discussions, lose focus on classroom activities, and show reduced participation in hands-on TLE tasks because of constant mobile phone use. Some teachers may also have trouble maintaining classroom discipline, encouraging meaningful interaction among students, and ensuring that technology is used for educational purposes rather than entertainment or social media. In TLE classes, where practical activities and collaboration are important, mobile phone overreliance may lessen students' engagement, critical thinking, and productivity.

* Corresponding author: Diana O. Pancipane

These experiences reveal the felt need of study, which is the need for effective strategies and interventions that will guide learners toward responsible and balanced use of technology. Teachers recognize the importance of integrating technology in education, but they also see the need to address unhealthy gadget dependence that affects learning behavior and academic performance. The study therefore seeks to identify practical ways to help students develop self-control, discipline, and responsible digital habits.

As a desired output, the study aims to develop an intervention program or strategy to combat students' mobile phone overreliance. The intervention may include classroom policies on gadget use, digital citizenship activities, structured technology-based learning tasks, parent involvement, and student awareness programs. Through this intervention, the study hopes to promote responsible technology use, improve learner engagement, and create a more focused and productive learning environment in TLE classes.

1.1. Statement of the Problem

This study to determine the extent of mobile phone usage of TLE students and examine the observable effects of overreliance.

Specifically, it seeks to answer the following questions:

- What is the current extent of mobile phone usage among TLE students during classroom and laboratory activities?
- What are the observable effects of mobile phone overreliance on students:
 - classroom engagement,
 - attention span, and
 - practical skills development?
- What challenges do TLE teachers encounter in addressing students' mobile phone overreliance?
- What strategies or intervention program can be developed to promote responsible and proper use of technology in TLE instruction?

1.2. Scope and Delimitation

This study aims to assess the level of mobile phone use and its influence on students in Technology and Livelihood Education (TLE) classes at Ocampo National High School, Malate Olos High School, Hanawan National High School during the school year 2025-2026. The participants consist of selected TLE students and teachers who are respondents using an appropriate sampling technique, such as purposive sample to ensure suitable representation.

The study was focus on the use of mobile phones during classroom discussions and laboratory activities, with particular attention to student's dependence on these devices and how this may affect their academic performance, classroom participation, and overall learning behavior in TLE subjects.

The purpose of this study is to better understand the effects of mobile phone usage in the learning environment and to propose strategies that encourage responsible and controlled use. Data will be gathered through surveys, questionnaires, and possibly interviews administered to the identified respondents, and the collected information will be analyzed to determine trends, impacts, and practical recommendations. This study is limited to TLE classes only and does not include other subject areas or other technological devices such as laptops, tablets, or desktop computers.

2. Materials and Methods

2.1. Research Design

This study assessed responsible use of technology in TLE instructions strategies to combat mobile phone overreliance within Ocampo District, Division of Camarines Sur. It will use of descriptive method. The descriptive method is a non-experimental research design used to accurately and systematically describe the characteristics of a population, phenomenon, perception or situation (Broto, 2012).

Specifically, the descriptive research design was utilized to determine the current extent of mobile phone usage among TLE students during classroom and laboratory activities by collecting data on the frequency, duration, and purposes of mobile phone use. It will also describe the observable effects of mobile phone overreliance on students' classroom engagement, attention span, and practical skills development through the perceptions and observations of teachers and

students. Furthermore, the study will identify and describe the challenges encountered by TLE teachers in addressing students' excessive mobile phone use within instructional settings. The data gathered will provide a clear picture of the existing situation and the factors associated with mobile phone overreliance.

The findings generated through the descriptive research design will serve as the basis for developing appropriate strategies and an intervention program aimed at promoting the responsible and proper use of technology in TLE instruction. By accurately describing the current practices, effects, and challenges related to mobile phone usage, the study can offer evidence-based recommendations to enhance student learning and classroom management while maximizing the educational benefits of technology.

2.2. Respondents of the Study

A total of twenty-three (23) Technology and Livelihood Education (TLE) teachers from selected public secondary schools in the Ocampo District participated as respondents in this study. These respondents were chosen to provide relevant information regarding the variables being investigated. Among the participants, ten (10) teachers were from Ocampo National High School, four (4) teachers were from Malate-Olos High School, and nine (9) teachers were from Hanawan National High School. The inclusion of teachers from these schools ensured a diverse representation of TLE educators within the district, thereby providing comprehensive and reliable data for the study.

2.3. Research Instrument

2.3.1. Data Gathering Tools

The researcher administered a survey questionnaire as the primary tool for gathering the necessary data in the study. The structured questionnaire will be used to collect quantitative data concerning the respondents' profile, as well as the level of content knowledge and pedagogical competency of MAPEH teachers.

2.3.2. Survey Questionnaire

The survey questionnaire was formulated by the researcher to assess responsible use of technology in TLE instructions strategies to combat mobile phone overreliance. The questionnaire is divided into 3 parts. part 1 pertains to the extent of mobile phone use the observable overreliance of students in the use of mobile phones during classroom engagement, attention span, practical skills development, its effects, and challenges encountered on the students of phone usage.

3. Results and Discussion

Table 1 Extent of Mobile Phone Usage Among TLE Students During Classroom and Laboratory Activities

Indicators	WM	VI	Rank
1. Students often bring out their mobile phones to support class discussions	3.39	Moderate	4
2. Students commonly use mobile phones for academic tasks such as research or documentation	2.78	Moderate	7
3. Students often utilize mobile phones as an engagement during laboratory activities	3.52	High	2
4. Students use mobile phones to enrich lessons with additional information	3.09	Moderate	6
5. Students' respond positively when clear guidelines on phone use are provided	3.39	Moderate	4
6. Students rely on mobile phones to reinforce safety reminders in laboratory work	3.43	High	3
7. Students frequently engage in non-academic activities on their phones during lessons	3.35	Moderate	5
8. Phones encourage teamwork and collaborative learning among students	3.61	High	1
Average Weighted Mean	3.32	Moderate	

Legend: Very High (4:21-5:00), High (3:41-4:20), Moderately (2:61-3:40), Low (1:81-2:60), Very Low (1:00-1:80)

Table 1 implies that mobile phone use in TLE instruction is more effective in supporting social learning and classroom engagement than in enhancing academic productivity. Teachers may need to strengthen guided and structured integration strategies to maximize mobile phones for research, documentation, and other formal academic tasks. Clear

instructional design and task-based digital activities may help bridge the gap between collaborative use and academic utilization of mobile technology.

The finding that phones encourage teamwork and collaborative learning among students (Rank 1) is supported by Bentil et al. (2024)¹, who found that mobile phones promote collaboration among classmates, assist with assignments, and improve academic performance. Similarly, Smith (2020)² reported that digital technologies increase student engagement and participation through collaborative and interactive learning activities. Likewise, Akuratiya (2024) and Wang (2022)³ found that smartphones enhance communication, collaboration, and access to learning resources, contributing positively to academic outcomes.

Table 2 The Observable Effects of Mobile Phone Overreliance on Students Classroom Engagement

Indicators	WM	VI	Rank
1. Mobile phone use enhances student participation during class discussions.	3.48	Often Observed	5
2. Mobile phones increase students' interest and enthusiasm in learning activities.	3.04	Sometimes Observed	7
3. Mobile phones facilitate better interaction and communication among students.	3.65	Often Observed	1.5
4. Mobile phones help students express their ideas and opinions more confidently	3.65	Often Observed	1.5
5. Mobile phones make learning activities more dynamic and interesting.	3.39	Sometimes Observed	4
6. Mobile phones encourage students to ask questions and seek clarification.	3.57	Often Observed	3
7. Mobile phones support active involvement in group work and projects	3.48	Often Observed	4
8. Mobile phones help maintain students focus on lesson objectives.	3.13	Sometimes Observed	6
Average Weighted Mean	3.42	Often Observed	

Legend: Always Observed (4:21-5:00), Often Observed (3:41-4:20), Sometimes Observed (2.61-3.40), Rarely Observed (1.81-2.60), Never Observed (1:00-1.80)

The findings implies that while mobile phones can effectively support collaborative and communicative aspects of learning, educators may need to implement more structured and engaging instructional strategies to sustain students' interest and enthusiasm. Guided use of mobile technology, integrated with well-designed learning activities, may help maximize its motivational benefits while maintaining focus on learning objectives.

The highest-rated indicators, namely facilitating better interaction and communication among students and helping students express their ideas and opinions more confidently, are supported by Akuratiya (2024), who found that communication skills and smartphone self-efficacy improve academic performance through enhanced communication, collaboration, and access to educational resources. Similarly, studies on interaction competency and smartphone self-efficacy revealed that smartphones support collaboration and study management, leading to better academic outcomes. The finding that mobile phones encourage students to ask questions and seek clarification is consistent with Smith (2020), who reported that digital technologies create more interactive and engaging classrooms that promote active participation and deeper understanding, as well as Wang (2022)⁴, who found that positive smartphone behavior enhances learning effectiveness and engagement. Likewise, the findings that mobile phones enhance participation during class discussions and support group work and projects align with Bentil et al. (2024) and Attah et al. (2025)⁵, who concluded that mobile devices encourage collaboration, increase participation, and improve access to learning resources. Furthermore, the perception that mobile phones make learning activities more dynamic and interesting is corroborated by Smith (2020) and Santos (2023), who emphasized that technology integration increases student engagement, motivation, and interest in learning.

Table 3 The Observable Effects of Mobile Phone Overreliance on Students Attention Span

Indicators	WM	VI	Rank
1. Mobile phones help students sustain attention during long lessons.	3.74	Often Observed	1
2. Mobile phones provide visual and auditory stimulation that aids concentration.	3.13	Sometimes Observed	8
3. Mobile phones use helps students stay focused on tasks for longer periods.	3.52	Often Observed	3
4. Mobile phones serve as useful tools to break monotony and refresh attention.	3.39	Often Observed	6
5. Mobile phones allow students to access information quickly reducing distraction.	3.17	Sometimes Observed	7
6. Mobile phones help students organize their thoughts and stay on track.	3.43	Often Observed	4.5
7. Mobile phones enable students multitask effectively during activities.	3.61	Often Observed	2
8. Mobile phones enhance students' ability to process and retain information.	3.43	Often Observed	4.5
Average Weighted Mean	3.43	Often Observed	

This finding corroborates the studies of Smith (2020) and Wang (2022), which emphasized that mobile technologies promote interactive learning, increase student engagement, and support academic performance when used appropriately. It is likewise supported by Aggor (2020)⁶, who found that mobile phones improve access to educational resources and enhance teaching and learning experiences.

Similarly, Akuratiya (2024) reported that smartphone self-efficacy and effective smartphone use positively influence academic performance by improving communication, collaboration, and access to learning materials. The result is also consistent with Bentil et al. (2024), who found that students perceive mobile phones as beneficial for assignments, learning resources, exam preparation, and collaborative learning activities. Furthermore, Attah et al. (2025) concluded that mobile devices can improve access to information, encourage collaboration, and increase participation in learning activities, while Suárez-Guerrero (2022) noted that mobile phones positively contribute to knowledge retention and learning when used appropriately.

Table 4 The Observable Effects of Mobile Phone Overreliance on Students Practical Skills Development

Indicators	WM	VI	Rank
1. Mobile phone use enhances student performance in TLE tasks	3.09	Sometimes Observed	1
2. Mobile phone helps students generate unique ideas or problem-solving approaches through social media using	2.91	Sometimes Observed	2
3. Mobile phones increase active participation in hands-on activities of students	2.83	Sometimes Observed	3
4. Mobile phones can be used to boost motivation in the class during discussions and activities	2.78	Sometimes Observed	4
5. Mobile phones help improve the pace and efficiency of laboratory work	3.09	Sometimes Observed	1
6. Mobile phone use helps connect classroom learning to real-world applications	2.57	Rarely Observed	5
7. Mobile phones inspire innovation in student projects	3.09	Sometimes Observed	1
8. Mobile phones provide opportunities for differential instruction	2.91	Sometimes Observed	2
Average Weighted Mean	2.91	Often Observed	

This implies that although mobile phones can support certain aspects of learning in TLE, their current use does not fully translate into meaningful academic or real-life application. There is a need for more structured, guided, and purpose

driven integration of mobile technology to strengthen its role in enhancing performance, promoting innovation, and bridging theoretical learning with practical, real-world contexts.

This finding corroborates the studies of Smith (2020) and Santos (2023), who found that mobile technologies enhance student engagement, motivation, participation, and access to diverse learning resources that support creative and self-directed learning. Similarly, Bentil et al. (2024) reported that mobile phones assist students in completing assignments, preparing for examinations, and collaborating with peers, thereby improving academic performance. The findings are further supported by Aggor (2020), who emphasized that mobile phones provide access to current educational resources that enrich teaching and learning experiences.

Table 5 Challenges in Managing Mobile Phone Use

Indicators	WM	VI	Rank
1. Reminding students to manage mobile phone use responsibly requires consistent guidance.	4.37	Very High	6
2. Collaborating with parents to manage students' mobile phone habits requires time and commitment.	4.38	Very High	5
3. Providing alternative resources to reduce reliance on mobile phones can be difficult when access is limited.	4.04	High	8
4. Developing structured programs to promote responsible mobile phone use requires careful planning.	4.26	Very High	7
5. Reinforcing school rules on mobile phone use requires constant supervision.	4.48	Very High	2
6. Implementing firm mobile phone policies while addressing diverse student needs requires flexibility.	4.39	Very High	4
7. Balancing the use of mobile phones as instructional tools while maintaining classroom order requires effective classroom management.	4.40	Very High	3
8. Sustaining student interest in awareness campaigns on responsible phone use	4.49	Very High	1

Legend Very High (4:20-5:00), High (3:40-4:19), Moderate (2.6-3.9), Low (1.80-2.59), Very Low (1:00-1.79)

This implies that the main difficulty in managing mobile phone use lies not in resource availability but in student discipline, compliance, and sustained behavioral change. Schools may need to strengthen monitoring systems, reinforce policy implementation, and design more engaging awareness programs to effectively address mobile phone overreliance in the classroom.

This finding corroborates the studies of Mohammadi et al. (2020)⁷, Ramos (2020), and Calderon-Garrido et al. (2020), which emphasized that although mobile phones offer educational benefits, their effective integration requires clear policies, strong supervision, and institutional support to prevent misuse and distractions. Similarly, Santos (2023) found that teachers often struggle to manage classrooms when students prioritize entertainment over academic activities, highlighting the need for stricter enforcement of rules. Aggor (2020) likewise stressed the importance of proper monitoring and guidance to ensure that mobile phones contribute positively to teaching and learning while minimizing exposure to non-academic content.

3.1. Strategic Intervention Program to Promote Responsible and Proper Use of Technology in TLE Instruction

The findings, analysis, and interpretation of the study reveal the need for the development of an action plan or intervention program to promote the responsible and proper use of technology in TLE instruction. The results show that while mobile phones are widely used and can support collaboration, engagement, and access to information, there is also evidence of inconsistent academic utilization and a very high level of challenge among teachers in managing their use. Teachers experience significant difficulties in enforcing rules, maintaining student focus, and sustaining awareness of responsible mobile phone practices, indicating that existing classroom strategies are not sufficient to fully regulate and optimize technology use.

In this context, an intervention program becomes essential as a systematic response to bridge the gap between the educational benefits and challenges of mobile phone integration. Such an action plan may include the development of

clear classroom guidelines, structured digital learning activities, and strengthened monitoring strategies to ensure appropriate use of mobile devices during instruction. It may also incorporate teacher training on classroom management in technology-enhanced environments, student orientation on digital responsibility, and collaboration with parents to reinforce proper mobile phone habits at home.

Moreover, the program can serve as a mechanism to shift mobile phone use from distraction-oriented behavior to purposeful academic engagement, particularly in TLE where hands-on and skill-based learning is critical. By institutionalizing responsible technology use, the intervention can enhance instructional effectiveness, improve student discipline, and promote a balanced integration of mobile devices in both theoretical and practical learning activities

4. Conclusion

Based on the findings of this study the following conclusions are drawn:

- The extent of mobile phone usage among TLE students is moderate (WM = 3.32), indicating that mobile phones are used in learning activities but not fully maximized. They are most effective in promoting collaboration and laboratory engagement, particularly in encouraging teamwork (3.61, High Extent of Use) and supporting laboratory activities and safety awareness (3.52–3.43, High Extent of Use). However, their use for academic tasks such as research and documentation remains limited (2.78, Moderate Extent of Use), showing inconsistent integration in structured learning processes.
- The mobile phone overreliance produces mixed effects on student learning outcomes. It is often observed to enhance classroom engagement (3.42) and attention span (3.43), indicating positive contributions to interaction and focus. However, its effect on practical skills development is only sometimes observed (2.91), suggesting that mobile phones have limited impact on hands-on performance and real-world application of skills in TLE.
- Teachers experience a very high level of challenge (WM = 4.35) in managing students' mobile phone use. The most critical challenges involve constant supervision in enforcing rules and sustaining student awareness campaigns (both 4.48, Very High Level of Challenge). Although providing alternative resources is also challenging (4.04, High Level of Challenge), the main difficulty lies in behavioral control, discipline enforcement, and sustaining responsible use practices, rather than resource limitations.
- The study concludes that there is a clear need for an action plan or intervention program to address mobile phone overuse in TLE instruction. Despite its benefits in collaboration and information access, the inconsistent academic use and very high level of classroom management challenges highlight the necessity for structured strategies. These include clear guidelines, organized learning activities, improved monitoring, teacher training, and parent involvement, aimed at promoting responsible, purposeful, and effective integration of mobile technology in teaching and learning

Compliance with ethical standards

Acknowledgments

The researcher would like to express her sincere gratitude to all the individuals who contributed to the successful completion of this thesis.

Above all, she offers her deepest thanks to Almighty God, the source of all wisdom, strength, and grace, for His boundless love, divine providence, and for endowing her with resilience, clarity of mind, and perseverance to overcome every challenge throughout this academic journey.

The researcher extends her heartfelt appreciation to Dr. Jose B. Ballesteros, OIC Dean of the Graduate School, for his exemplary leadership, unwavering commitment to academic excellence, and genuine encouragement. His steadfast support and valuable guidance paved the way for the successful completion of this study.

With profound gratitude, the researcher acknowledges Dr. Ma. Erika Z. Nimo, Thesis Adviser and Editor, for her expert guidance, meticulous editing, and invaluable mentorship. Her wisdom, patience, and constructive feedback significantly refined this work and enriched the researcher's growth as a scholar and educator.

The researcher likewise expresses her sincere appreciation to Dr. Marilou D. Tino, Chairman of the Thesis Committee, for her scholarly wisdom, expert guidance, and careful evaluation of this study. Her insightful suggestions, constructive comments, and high academic standards greatly enhanced the quality and rigor of this research.

Special thanks are also extended to all the professors of the Graduate School for generously sharing their knowledge, expertise, and experiences, which contributed significantly to the researcher's professional and academic development.

The researcher is likewise grateful to Dr. Nerwin R. Ibarrientos and Dr. Claudia Marilou S. Marpuri for their guidance, encouragement, and meaningful insights that helped improve and strengthen this study.

Deepest appreciation is extended to Benigno C. Roque, the researcher's beloved partner and constant source of strength, for his unwavering love, patience,

understanding, and support throughout this academic journey. His encouragement, sacrifices, and steadfast belief in her abilities provided the motivation and inspiration needed to persevere, making every challenge easier to overcome and every achievement more meaningful.

The researcher also expresses her immeasurable love and gratitude to Brent Alexander Roque, her beloved son, greatest pride, and precious gift from above. His pure love, innocent understanding, and constant source of joy served as her inspiration and motivation, especially during the most demanding and challenging moments of this endeavor.

Lastly, to all the individuals who, in one way or another, became part of this undertaking and contributed to its success, the researcher extends her heartfelt appreciation and profound gratitude.

Disclosure of conflict of interest

I declare that I have no conflicts of interest related to this research. I have no personal or financial relationships that could influence my work.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study

References

- [1] Benti, J. A., Boye, J. O., and Tawiah, D. K. (2024). Influence of Mobile Phones Usage on Academic Performance of Junior High School Students in Ghana. *International Journal of Research in Interdisciplinary Studies*, 2(8), 1-7. <https://journal.ijris.com/index.php/ijris/article/view/75>
- [2] Smith, J. (2020). Digital technologies and interactive classroom instruction. *Journal of Modern Education*, 15 (2), 101-115. Retrived from: <https://impactfactor.org/PDF/IJDDT/16/IJDDT,Vol16,Issue23s,Article37.pdf>
- [3] Akuratiya, D. A. (2024). Impact of Smartphone Usage on Academic Performance: A Study on Higher Education Students. doi: <https://dx.doi.org/10.47772/IJRISS.2024.803004S>
- [4] Jen Chun Wang, C.-Y. H.-H. (2022). The impact of smartphone uses on learning effectiveness: A case study of primary school students. *Education and Information Technologies* (2023) 28:6287-6320. doi: <https://doi.org/10.1007/s10639-022-11430-913>
- [5] Attah, E. Y., Lamidi, K. F., and Edino, T. S. (2025). Mobile Devices in Student Learning: Enhancing Engagement or Contributing to Distractions. *Journal of Education Method and Learnin Strateg.* doi: <https://doi.org/10.59653/jemls.v3i02.1730>
- [6] Christiana Selorm Aggor, E. T. (2020). Mobile Phone Usage Among Senior High and Technical School Students in Ghana and Its Impact on Academic Outcomes – A Case Study. *Advances in Intelligent Systems and Computing.* doi:10.1007/978-3-030-11932-4_83
- [7] Mohammadi, M., et al. (2020). Faculty acceptance of mobile learning in Iran. *International Journal of Instructional Technology*, 17(2), 45-60. Retrieved from: <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2020.00016/full>