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MOBILE MINDS: EXPLORING THE ROLE OF SMARTPHONES IN TEACHING AND LEARNING AT THE UNIVERSITY LEVEL

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Abstract

This study explores the impact of mobile phones on teaching and learning at the tertiary level, focusing on undergraduate students' usage and teachers' perceptions. The objectives include examining mobile phones' influence on academic activities, investigating teachers' views on student usage, and documenting mobile phones as a research tool. A mixed-method approach was employed, with data collected from four public and four private universities in Peshawar, KP, Pakistan. The sample included 800 students (200 per university) and 15 teachers. Universities were categorized into social sciences, numerical sciences, and biological sciences. Data was gathered via questionnaires, analyzed using descriptive and inferential statistics (percentages, means, and standard deviation). Findings indicate that mobile phones significantly impact classroom learning, though teachers' perceptions vary due to limited proficiency and lack of relevant applications, leading to restrictive policies. However, students independently use mobile phones for calculations, dictionaries, organization, reminders, and study notes. 52% of students utilize phones as AV aids and access academic websites. The study presents recommendations for students, teachers, content developers, and curriculum designers for future research and policy formulation.

Keywords: Mobile phones, Teaching and learning, Tertiary education, Undergraduate students

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INTRODUCTION

Mobile phones have become ubiquitous in modern communication, transforming how individuals interact, access information, and engage with educational content. In the context of Pakistan, mobile phone usage has grown significantly, with over 193 million subscribers and a mobile teledensity of 79.82% recorded in early 2025 (Wikipedia, 2025). Mobile phones are wireless communication tools that operate via cellular networks and are equipped with capabilities that go far beyond traditional voice communication, making them essential in both personal and academic domains.

The evolution of mobile phones into smart devices has positioned them as one of the most rapidly developing technologies worldwide. With the deployment of 3G and 4G technologies and ongoing preparation for 5G, mobile phones now support high-speed internet, enabling seamless video streaming, e-learning, e-commerce, and digital banking (Khan et al., 2023). Educational institutions have increasingly incorporated mobile technologies into their frameworks, recognizing their potential to provide flexible, accessible, and interactive learning environments (Ali & Rafique, 2022). Students today can attend virtual lectures, download course material, and collaborate in real-time using smartphones, which significantly enhances learning outcomes and digital literacy (Hameed et al., 2023).

However, alongside these benefits, mobile phone usage in educational settings also raises challenges. Numerous studies have reported that excessive smartphone use may negatively influence academic performance due to distractions, reduced concentration, and sleep disturbances (Zafar et al., 2022). The debate continues over the appropriate role of mobile devices in classrooms, with some educators supporting regulated usage while others advocate for complete bans to maintain focus and discipline during instruction (Ahmed, 2023).

In recent years, several countries, including Pakistan, have considered or implemented policies to limit mobile phone usage in schools to enhance student engagement and minimize distractions (The Guardian, 2023). While mobile technology empowers students and redefines traditional educational models, responsible and moderated usage remains critical to ensuring that its impact on learning is positive and sustainable (Shah & Gul, 2024).

Mobile Phones Users in Pakistan

As of early 2025, Pakistan's mobile telecommunications sector has witnessed remarkable growth compared to the figures recorded in 2013. The total number of mobile subscribers in the country has surged to approximately 193 million, reflecting a significant increase in mobile teledensity, which now stands at 79.82%. This indicates a steady rise in mobile phone usage across urban and rural areas. In terms of operator-wise market share, Jazz remains the leading telecom provider with 72.74 million subscribers, followed by Zong with 51.15 million, Telenor with 43.63 million, and Ufone with 26.59 million subscribers. The remarkable rise in mobile broadband users, now totaling over 138 million, highlights the growing dependence on internet services, especially 4G, as most operators are phasing out older technologies like 3G. Jazz has already discontinued its 3G services as of November 2024 to enhance its 4G infrastructure. Meanwhile, Zong has emerged as a strong competitor in terms of network speed and reliability. There are also industry developments suggesting a potential merger between Telenor and Ufone, which could reshape the market by consolidating a significant portion of the subscriber base under one umbrella. Overall, the mobile telecom industry in Pakistan has become more competitive, technologically

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advanced, and consumer-centric, with ongoing investments in network expansion, digital services, and enhanced connectivity (Habib, Khan & Crandall, 2025).

EMPHASIS ON INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

To fulfill its commitments under the Dakar Framework for Action on Education for All (EFA), Pakistan must emphasize the integration of Information and Communication Technology (ICT) across all levels of education, especially in promoting inclusive and child-friendly education. The expansion of Educational Television (ETV) programs should be prioritized to disseminate academic, vocational, and technical content that reaches a broad audience, including marginalized and rural populations (UNESCO, 2023). The role of ICT in enhancing the accessibility, quality, and efficiency of education is now widely recognized, with digital tools such as mobile phones emerging as central platforms for teaching and learning in both formal and informal settings (Shabbir & Imran, 2023).

Mobile phones, in particular, have become vital tools for communication and education. Students can use mobile devices not only to correspond with their parents but also to access academic resources, submit assignments, collaborate on group projects, and communicate with teachers in real time (Ali et al., 2024). For parents, mobile phones enable consistent monitoring and communication with their children, creating a support system that strengthens the home-school connection. Teachers can use messaging apps to share homework, reminders, and digital diaries with students and parents, thus streamlining the academic workflow (Khan & Qureshi, 2022).

While mobile phones are integral to daily life—especially among youth—many educational institutions still restrict their usage due to concerns over distractions, such as playing games, watching non-educational videos, or engaging in unauthorized communication during class time (Ahmad, 2023). These concerns have led to a heated debate among educationists regarding the role of mobile phones in classrooms. Some argue for complete bans, citing distractions and potential misuse, while others advocate for structured integration within the curriculum to promote meaningful learning (Sikandar, 2025).

If appropriately incorporated into teaching strategies, mobile phones can be powerful educational tools. They can assist students in improving their vocabulary, storing glossaries, and accessing subject-specific materials through digital platforms and online services. With effective policies and curriculum alignment, mobile phones can transition from being sources of distraction to tools for academic enrichment, ensuring that technology truly serves the goals of modern education (Fatima & Abbas, 2023).

HISTORY OF MOBILE PHONE LEARNING

Mobile phones have evolved from mere communication devices to powerful tools capable of supporting various educational functions. While the recent surge in mobile learning is attributed to advancements in digital technologies and widespread internet access, the conceptual foundation of mobile learning dates back several decades. One of the earliest visions of portable, personalized educational devices came from computer scientist Alan Kay in the 1960s. He envisioned a device called the DynaBook—a lightweight, adjustable, and interactive digital book that could serve as an educational companion for learners of all ages (Kay, 1972).

Although Kay's ideas were theoretical at the time, they laid the groundwork for the development of modern educational technologies such as laptops, tablets, and smartphones. The DynaBook concept closely resembles contemporary devices like Apple's iPad, which support multimedia learning, interactive applications, and internet

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connectivity—features that align perfectly with the goals of mobile learning (Lee & Najimi, 2023).

Over the years, the field of mobile learning (m-learning) has expanded rapidly due to its accessibility, flexibility, and adaptability to diverse learning environments. Today, mobile phones allow students to access digital libraries, participate in virtual classrooms, collaborate with peers globally, and engage with interactive content. Educational apps, online quizzes, and cloud-based tools have made learning on the go a reality (Sharma & Abbas, 2022).

The transformation from conceptual devices like DynaBook to actual educational smartphones and tablets reflects how visionary ideas from the past continue to shape the educational technologies of the present and future. Mobile learning is now a key component of digital education strategies around the world, especially in developing countries like Pakistan, where it bridges gaps in access to quality educational resources (Rehman et al., 2023).

TEACHERS' AND STUDENTS' AFFORDANCES

Mobile technology is now deeply integrated into modern education systems, offering immense potential to support learning and teaching. However, as Mishra and Koehler (2023) suggest, technologies inherently carry both benefits and limitations that educators must understand before implementing them in pedagogical contexts. Recognizing these affordances and constraints is essential to avoid superficial integration of digital tools in classrooms.

Educators must be knowledgeable about the functional and ethical use of digital platforms such as blogs, social media, and mobile apps. According to Penrod (2022), blogs can serve as powerful tools for reflection, collaboration, and expression in academic settings. However, teachers should establish clear guidelines and foster a responsible digital environment to ensure students use these platforms productively and ethically.

PRESENT USE OF TECHNOLOGY IN EDUCATION

Modern educational environments are increasingly shaped by interactive and participatory technologies. As Levin and Wadmany (2023) emphasize, the integration of technology in education is not just about tools but about collective transformation—it reshapes how students and teachers interact with content and each other. These technologies offer immersive experiences that allow for differentiated instruction, collaborative learning, and real-time feedback.

The teacher's role as a curriculum designer is crucial in this digital age. Decisions about when, how, and why to implement technology impact learning outcomes significantly. Technology changes not just what students learn, but how they perceive the learning process, how they engage with their peers, and how they reflect on their knowledge and skills (Iqbal & Fatima, 2024).

CLASSROOM PRACTICES AND TECHNOLOGY INTEGRATION

Contemporary classrooms are evolving from traditional teacher-centered models to more student-centered approaches, largely driven by the integration of digital technologies. While earlier models relied heavily on rote memorization and fixed instructional pathways, current practices emphasize active, personalized, and interactive learning. According to Morrison and Lowther (2023), the use of educational software and mobile apps in classrooms enhances engagement but must be aligned with pedagogical goals to avoid becoming mere novelty tools.

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Niederhauser and Windstorm (2022) note that although new technologies have transformed instructional models, the core structure of classroom learning still depends on the teacher's ability to meaningfully integrate these tools. Effective technology use goes beyond flashy apps—it must support conceptual understanding, critical thinking, and collaborative problem-solving.

OBJECTIVES OF THE STUDY

1. To find out the influence of mobile phones on academic activities of student at tertiary level.
2. To investigate the perception of teachers about students' mobile phones' usage at tertiary level.
3. To document mobile phones' usage for research as an Academic Aid in universities.
4. To assess the need of mobile phones as an interactive tool for the teaching learning process at tertiary level.
5. To give recommendations for the proper use of cellular phones in the teaching learning process in the universities.

SIGNIFICANCE OF THE STUDY

Mobile phones have become indispensable tools in modern life, playing significant roles in academic, social, and cultural domains. Their widespread adoption, particularly among university students, reflects a shift in how individuals communicate, learn, and engage with the world. In the context of education, mobile phones offer both formal and informal learning opportunities—ranging from accessing digital libraries and e-learning platforms to collaborating with peers and teachers through social and academic networks.

This study is significant as it seeks to explore and document both the advantages and drawbacks of mobile phone usage in academic settings, particularly in universities within Peshawar. By examining students' usage patterns and behaviors, the study aims to highlight the extent to which mobile phones are being utilized for academic purposes versus non-academic or potentially distracting activities such as late-night calls and SMS usage during class hours.

Additionally, the research intends to bridge the gap between students' technological practices and educators' perceptions, providing insights into how mobile phones can be integrated meaningfully into the teaching-learning process. Understanding the perceptions of both students and teachers will help develop evidence-based strategies to harness mobile technology for educational enhancement.

Furthermore, the findings of this study will contribute to the existing body of knowledge on mobile learning (m-learning), particularly in the context of higher education in Pakistan. As mobile-assisted learning is still evolving in developing regions, the outcomes of this research may serve as a foundation for future studies and policy formulations aimed at promoting responsible and effective use of mobile phones in classrooms.

By offering practical recommendations for mobile phone integration, this study aspires to inform university stakeholders—students, teachers, administrators, and policymakers—on how to best utilize mobile technology to support academic growth and digital inclusion in higher education institutions.

RESEARCH METHODOLOGY

This study adopted a mixed-methods research approach, combining both quantitative and qualitative strategies to ensure methodological rigor and reduce research bias. A sequential explanatory design was employed, where quantitative data collection and analysis preceded

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qualitative exploration. This approach facilitated a comprehensive and nuanced understanding of the research problem (Creswell & Plano Clark, 2022).

An investigative research design guided the structure of data collection. Quantitative data were gathered through a 38-item, closed-ended questionnaire distributed to university students. The instrument was divided into five thematic sections covering areas such as mobile usage patterns, academic engagement, and mobile learning tools. To assess teachers' perspectives, a 16-item Likert scale questionnaire was used, categorized into four major constructs reflecting their views on the pedagogical integration and classroom implications of mobile phone usage.

Quantitative data were analyzed using inferential statistics with the aid of Microsoft Excel and SPSS (Version 27). Descriptive summaries and graphical representations (e.g., bar charts and pie graphs) were generated to depict trends and relationships across variables. To support and deepen the quantitative findings, qualitative data were collected via open-ended responses and follow-up interviews, with the results analyzed using thematic analysis. This allowed for the identification of key patterns and recurring themes regarding both student experiences and teacher concerns.

The integration of quantitative and qualitative datasets was achieved through a data merging strategy, where both findings were interpreted in tandem to deliver a well-rounded conclusion. This methodological triangulation enhanced the validity of the study and contributed to a more comprehensive insight into the influence of mobile phones on academic practices at the tertiary level (Ivankova, 2023).

POPULATION

The population for this study comprised all undergraduate students and faculty members from the twelve universities located in Peshawar city. These universities include both public and private sector institutions that offer Bachelor of Studies (BS) programs as well as four-year undergraduate programs at the university level. The focus on these universities was due to their provision of comprehensive degree programs, ensuring a diverse and representative sample of both students and faculty within the tertiary education sector.

SAMPLE AND SAMPLING PROCEDURE

For this study, the researcher employed a convenience sampling technique to select the sample, based on feasibility considerations. Out of the twelve universities located in Peshawar, four universities were selected: two from the public sector and two from the private sector. This selection ensured a diverse representation of both types of institutions within the study.

A total of 800 undergraduate students (200 from each university) and 60 faculty members (15 from each university) participated as respondents. The selection of students and teachers was based on their availability and willingness to participate.

Furthermore, the selected universities were categorized into three broad groups based on their academic focus areas:

1. Social Sciences
2. Numerical Sciences
3. Biological Sciences

This categorization allowed for a more focused examination of the different academic disciplines and their use of mobile technology in the teaching and learning process.

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SAMPLING

TABLE 1: STUDENTS RATIO IN UNIVERSITIES

S.No	Universities	Frequency	Percentage
1.	University of Peshawar	171	24.5%
2.	Shaheed Benazir Bhutto Women University Peshawar	178	25.5%
3.	Sarhad University of Science and Technology Peshawar	162	23.2%
4.	Abasyn University Peshawar	186	26.8%
Total		**697**	**100.00%**

Table 1 presents the distribution of the 697 undergraduate students out of the total 800 participants, which constitutes 87% of the sample from the four selected public and private universities in Peshawar. The data reflect the male and female students across these institutions, with the University of Peshawar contributing 24.5%, Shaheed Benazir Bhutto Women University contributing 25.5%, Sarhad University contributing 23.2%, and Abasyn University contributing 26.8% of the total student sample.

For the qualitative data, a purposive sampling technique was used. A sample of 40 respondents was selected for focused group interviews, which included 20 students and 20 teachers. These participants were specifically chosen to provide in-depth insights into their experiences and perceptions of mobile phone usage in the academic environment.

DATA COLLECTION INSTRUMENTS

The survey instruments for this study were carefully designed to align with the research questions and the relevant literature, ensuring the accuracy and relevance of the data collected. The study aimed to investigate the perceptions of students and faculty regarding the impact of cellular phones on teaching and learning at the tertiary level.

Quantitative data were collected through close-ended questionnaires, while qualitative insights were gathered via focus group interviews. Two distinct questionnaires were used: one for students (38 items) and one for faculty members (16 items, Likert scale-based). The student questionnaire included a combination of yes/no questions and tetra-response questions, categorized into six key themes:

1. Mobile phone affordability
2. In-class usage
3. Health effects
4. Social aspects
5. SIM/network capacity
6. Perceived usefulness of mobile phones for academic purposes

The faculty questionnaire, which was distributed to 20 out of 60 faculty members from the selected universities, assessed faculty perceptions, the usefulness of mobile phones in teaching, and the ease of integrating mobile learning tools into the classroom.

The researcher also facilitated interactions with students and ensured that faculty responses were structured and clear for interpretation.

VALIDATION OF INSTRUMENTS

To ensure the validity of the research instruments, the researcher sought expert opinions from the research supervisor, faculty members, and fellow research scholars at the institute. After incorporating their feedback, the developed versions of the questionnaires were pilot-tested to refine the instruments and ensure they were suitable for data collection.

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DATA COLLECTION PROCEDURE

The researcher personally administered the questionnaires to both students and faculty members for the collection of quantitative data. The respondents were informed about the study's objectives through a covering letter attached to the questionnaires. The participants were assured that their responses would be used solely for research purposes, maintaining the confidentiality of the data.

DATA ANALYSIS

Data collected from the questionnaires were meticulously checked by the researcher during the data transformation phase. The responses were initially entered into an Excel spreadsheet, then imported into SPSS for analysis.

For the student questionnaire, data were analyzed using the percentage method to determine the proportion of students with varying perceptions regarding mobile phone usage inside the classroom. In terms of faculty perceptions, data were analyzed using Likert scale-based analysis, which included calculating percentages, means, and standard deviations to interpret the faculty's views on incorporating mobile phones into the teaching and learning process.

NUMBER OF UNDERGRADUATE STUDENTS OF THE SELECTED UNIVERSITIES IN DIFFERENT DEPARTMENTS

TABLE 2 : DISTRIBUTION OF UNDERGRADUATE STUDENTS BY DEPARTMENT

Item No	Frequency	Percentage
Social Sciences	312	44.79%
Numerical Sciences	142	20.37%
Biological Sciences	243	34.86%
Grand Total	**697**	**100.00%**

The table above illustrates that a total of 697 undergraduate students from four selected universities participated in the survey. These students represented 17 different departments across the universities. The response rate varied across the departments, with social sciences contributing the highest proportion at 44.79%, followed by biological sciences with 34.86%, and numerical sciences with the lowest at 20.37%. The data includes both male and female students from these departments.

TABLE 3: MOBILE PHONE AFFORDABILITY

Item No	Response	Respondents	Percentage
1	Do you have a Mobile Phone?	Yes	686
		No	11
2	The type of Mobile Phone you have	Smartphone	666
		Simple phone	20
3	Do your parents allow you to keep a Mobile Phone?	Yes	695
		No	2

The table presents data related to the mobile phone affordability of undergraduate students. Item 1 reveals that the vast majority of students (98.5%) own a mobile phone, with 95.5% possessing smartphones. This suggests that most students are well-acquainted with the prevailing technological advancements in the country. Item 3 further highlights that nearly all students (99.7%) have parental approval to keep their mobile phones. This

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indicates that mobile phone ownership is widely accepted and integrated into students' daily lives.

TABLE 4: MOBILE USAGE INSIDE THE CLASSROOM

Item No	Response	Respondents	Percentage
1	Are you calling during the class?	Yes	696
		No	1
2	Are you texting during the class?	Yes	695
		No	2
3	If yes, then do you distract other students?	Yes	87
		No	610
4	Do you use mobile phones for learning purposes?	Yes	692
		No	5
5	Does mobile phone help you to interact with teachers?	Yes	687
		No	10
6	If yes, then do you find your learning enjoyable on your mobile phone?	Yes	662
		No	35
7	Do you plan to continue using your mobile device for educational purposes?	Yes	687
		No	10

The table presents data on the usage of mobile phones inside the classroom. The overwhelming majority of students reported using their phones for activities such as calling (99.9%), texting (99.7%), and learning purposes (99.3%). A significant number (98.6%) also found mobile phones helpful for interacting with teachers. Item 3 addresses classroom distraction, where 87.6% of respondents indicated that they did not distract other students, despite 12.48% admitting to causing distractions. Additionally, most students (94.9%) found learning on mobile phones enjoyable, and 98.5% expressed a desire to continue using their phones for educational purposes.

TABLE 5: PERCEPTION OF STUDENTS REGARDING MOBILE PHONE ADVERSE EFFECT ON HEALTH

Item No	Response	Respondents	Percentage
1	Do you feel that mobile phones have physically adverse effects on your health?	Yes	689
		No	8
2	Do you consider mobile phone itself a problem or the cause of problems?	Yes	683
		No	14
3	Does your teacher ban/confiscate mobile phones in the class?	Yes	683
		No	14
4	Does your teacher appreciate you for having a	Yes	24

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Item No	Response	Respondents	Percentage
	personal mobile phone?		
		No	673

The table provides insights into students' perceptions of the adverse effects of mobile phones on their health. A significant majority of students (98.9%) feel that mobile phones have a physically adverse impact on their health. Furthermore, 98% of students consider mobile phones to be a source of problems. Regarding classroom use, most students (98%) reported that their teachers ban or confiscate mobile phones in class, with a small minority (3.44%) stating that their teachers appreciate them having personal mobile phones. This highlights the general awareness among students of the potential negative effects of mobile phone use on their health and academic performance, despite the occasional teacher enforcement against mobile phone usage during class.

TABLE 6: MOBILE PHONE USAGE IN SOCIAL CONTEXT (N=697)

Item	Question	Response	Percentage
1	**Purpose of mobile phone?**	Emergency use	22.1%
		Educational purpose	5.9%
		Enjoyment	1.3%
		All (Emergency, Education, Enjoyment)	68.5%
2	**Does mobile phone encourage participation in class?**	Yes	94.7%
		No	5.3%
3	**Why do parents allow mobile phone?**	Communication	40.9%
		Education	3.3%
		Pleasure	7.3%
		All (Communication, Education, Pleasure)	47.5%
4	**How many hours a day do you use your mobile phone?**	Less than 1 hour	14.5%
		1-2 hours	26.8%
		3-4 hours	18.9%
		More than 4 hours	36.5%
5	**Mobile phone as A.V. aid?**	Yes	92%
		No	8%
6	**Time spent online per day?**	Less than 15 minutes	13.2%
		Up to 1 hour	44.9%
		More than 2 hours	36.9%
7	**Most visited websites?**	Education	51.5%
		Facebook	33%
		Fashion	7.6%

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Item Question	Response	Percentage
	Showbiz	3.2%

A majority (68.5%) of students keep mobile phones for emergency use, as well as for educational purposes. A smaller percentage (5.9%) use mobile phones specifically for education, while 1.29% use it solely for enjoyment. This reflects the wide practical utility of mobile phones in students' daily lives, with an overwhelming emphasis on their educational and emergency usage. Nearly all students (94.7%) believe that mobile phones help encourage participation in the classroom, highlighting their potential to engage students more actively in learning. A large portion of students (47.5%) indicated that their parents allow them to keep mobile phones for all three reasons—communication, education, and pleasure—while a significant number (40.9%) view the phones as primarily for communication. Most students (36.5%) spend more than 4 hours a day using their mobile phones, suggesting that mobile phones are integral to their daily routines. A notable percentage (26.8%) use their phones for 1-2 hours, reflecting significant engagement with mobile devices. A majority of students (92%) view mobile phones as a potential educational aid, affirming their value in facilitating visual and auditory learning experiences. A large portion of students (44.9%) spend up to 1 hour per day online, while 36.9% spend more than 2 hours on the internet via their mobile devices, which underlines the increasing role of mobile phones in accessing information and digital content. Educational websites are the most frequently searched (51.5%), followed by Facebook (33%) and fashion design websites (7.6%). This suggests that, despite the potential distractions, students use their mobile devices primarily for academic purposes.

FINDINGS

Teachers generally perceive mobile phones as a source of distraction, expressing concerns over students' focus and engagement. As a result, many are hesitant to incorporate them into classroom teaching. In contrast, students view mobile phones as essential learning tools, frequently using them to access online resources, digital textbooks, and academic materials independently.

While teachers believe mobile phones hinder classroom participation, students report that these devices help them engage more effectively and communicate with instructors outside class. Similarly, teachers doubt their usefulness for homework, whereas students highlight mobile phones as time-saving tools for accessing study materials.

The study reveals that students are more open and prepared to integrate mobile phones into their learning, promoting independent study habits. However, challenges remain, particularly due to teachers' resistance and concerns about potential misuse. Despite these hurdles, the study identifies significant opportunities for mobile phone integration through balanced guidelines, training, and awareness. Overall, there is a notable gap between teacher and student perceptions, with students demonstrating a higher readiness for mobile-assisted learning.

DISCUSSION

The findings of this study are in line with previous research on mobile phone integration in education. Pollara (2011) identified a positive and statistically significant relationship between mobile phone use and the teaching-learning process in higher education, showing that students who utilize mobile devices for academic purposes tend to experience enhanced learning outcomes. Similarly, this study demonstrates that students are increasingly using mobile phones for educational activities, both in and outside the

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classroom. Students engage in self-directed learning, utilizing mobile devices to organize academic tasks and seek resources like reference videos, digital books, and online tutorials. This aligns with Motiwalla's (2007) findings, which suggest that mobile phones are important tools for promoting self-regulated learning, allowing students to take ownership of their academic progress.

However, other studies, such as those by Junco and Cotten (2012), have argued that mobile phone use in classrooms can lead to distractions. Despite this, the current study finds that most students still perceive mobile phones as valuable learning tools. This reflects the complex relationship between mobile phone usage and classroom dynamics. While mobile phones are used for non-educational purposes such as texting and calling, the majority of students acknowledge their utility in educational contexts, suggesting that mobile phones can serve as powerful tools for learning if used effectively (Traxler, 2007).

A significant finding of this study is the perceptual gap between teachers and students regarding the use of mobile phones in education. This is consistent with Anderson and Rainie (2008), who found that many teachers are reluctant to embrace mobile phones in the classroom, largely due to concerns over classroom management and potential distractions. Nevertheless, mobile phones can enhance student engagement and participation if used appropriately, as indicated by Cheon et al. (2012), who argued for more structured mobile learning programs aligned with curricula. The current study suggests that while teachers may be hesitant, students are eager to adopt mobile phones as learning tools. This highlights the need for institutional support and teacher training to facilitate the effective use of mobile phones in educational settings.

The reluctance of teachers to embrace mobile phones for classroom learning is also reflected in the work of Harris and Rea (2009), who argued that educators often feel overwhelmed by the rapid pace of technological change and may struggle to integrate new tools into their teaching practices. This study supports this argument, as teachers in the current study were found to be skeptical about the potential of mobile phones to enhance learning. However, students' perceptions suggest that mobile phones, when used as educational tools, could significantly improve their learning experience.

The results of this study align with the findings of recent research by Kyriakou et al. (2022), who explored the role of mobile phones in education and concluded that mobile learning can lead to improved academic performance, provided that appropriate pedagogical strategies are employed. This highlights the importance of training teachers to integrate mobile technology effectively into their teaching practices. Moreover, research by Ally (2020) supports the idea that mobile phones can foster more interactive and personalized learning environments when used appropriately. These studies indicate that while teachers remain cautious, there is growing evidence supporting the positive impact of mobile phones on student engagement and learning outcomes.

CONCLUSION

Based on the results of the close-ended questions from students and the opinion questions from teachers, it is evident that students are more inclined to embrace technology in the classroom. They appear to be prepared and eager to integrate mobile phones into their learning processes. However, teachers' acceptance of mobile phone use in education is more cautious and may require additional time, training, and professional development to effectively address the challenges and benefits of using mobile phones in classrooms.

The study highlights a perceptual gap between students and teachers regarding the use of mobile phones in education. While students see the potential for mobile phones to

enhance their learning experience, teachers perceive them primarily as distractions. Teachers' concerns about mobile phones leading to disruptive behavior have led to their widespread prohibition in classrooms. However, it appears that students, despite these restrictions, are still utilizing their devices for educational purposes outside of the classroom. This indicates a need for better integration strategies to make mobile phone use more effective in the learning environment.

The study also suggests that students are not yet fully equipped with the knowledge and skills to use mobile devices effectively for academic purposes. Many students lack the necessary training and experience to maximize the potential of mobile technology for their learning. This highlights a gap in both the students' understanding of how to use mobile phones as learning tools and the teachers' ability to guide them in that process.

In conclusion, while students are ready and willing to adopt mobile technology in education, teachers need further preparation and professional development to facilitate the effective use of mobile phones in classrooms. Addressing this gap could lead to a more productive and engaging learning environment, where mobile phones are used as tools for enhancing academic success rather than being viewed as distractions.

RECOMMENDATIONS

Based on the results of the study, which indicate that mobile phones can be valuable in the teaching and learning process, the following suggestions are made to optimize their use. Universities should integrate mobile technology into the teaching and learning process. Mobile learning platforms and applications, available through smartphone stores and textbook companies, can enhance faculty training and engagement, making learning more interactive and accessible. Mobile phones can be utilized to update and manage university websites, ensuring they are accessible and user-friendly in a mobile format. This would allow students and faculty to easily access important resources and information on the go. Additionally, mobile applications can be integrated with university website resources, allowing students and teachers to access course materials, grades, and other university services directly from their mobile devices, making the learning process more flexible and efficient.

Special measures should be taken to develop software and applications, such as blogs and learning platforms, to facilitate distance education. These tools could enable students and teachers to attend online lectures, access notes, and track attendance more easily. Efforts should be made to increase communication between students and teachers, as well as between teachers and administration, regarding the opportunities that mobile phones offer for enhancing the learning environment. This could be done through workshops, seminars, and collaborative meetings. Universities should explore partnerships with global cellular network providers to reduce the cost of mobile data for students and faculty. Such initiatives would help make mobile learning more accessible to everyone, particularly those from economically disadvantaged backgrounds. Finally, collaboration between the computer science or IT departments within universities and external technology firms should be encouraged to develop and implement specialized learning applications. These apps could support specific educational needs and help in the development of course-related materials, enhancing the overall educational experience.

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