Modern Teachers: Learning, Growing, and Adapting in the Digital Era

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Abstract

The digital era has significantly transformed the professional roles of teachers, requiring them to continuously adapt, innovate, and demonstrate resilience in their teaching practices. Integrating technology into education presents numerous opportunities to enhance learning outcomes; however, many educators face challenges in developing the full spectrum of digital competences necessary for effective instruction. This study aims to investigate students' perceptions of teachers' adaptability within digital learning environments, focusing on how teachers' digital competence, professional development, and institutional support are perceived to influence their adaptive practices. A cross-sectional quantitative survey design will be used, employing structured questionnaires distributed to 57 university students selected through purposive sampling. The instruments are adapted from validated scales to measure students' perceptions of teachers' digital competence, professional development activities, institutional support, and overall adaptability. The data will be examined through descriptive summaries, reliability testing, factor analysis, and regression modeling to explore how the variables are related. This study is expected to provide valuable insights into how students perceive teachers' adaptability in the digital era and offer guidance for developing strategies that support sustainable and effective educational transformation.

Keywords*: Modern Teachers, Teacher Professional Development, Digital Era Education, Adaptive Teaching, Educational Technology.*

Introduction

The swift progress of digital technologies has transformed the educational landscape and reshaped teachers' professional roles. No longer limited to the delivery of subject knowledge, teachers are now expected to adapt their methods, integrate digital tools, and maintain flexibility in response to fast-changing learning environments. These shifts offer both advantages and challenges. On one side, digital platforms can enrich classroom interaction, enable personalized learning, and improve student engagement. On the other side, many educators continue to struggle with gaps in digital competence,

unequal access to professional training, and insufficient institutional support, which often hinder the effective use of technology in teaching (Falloon, 2020; Wohlfart & Wagner, 2023).

Scholars in recent years have explored these issues from multiple perspectives. Aydin, Yildirim, and Kus (2024), for instance, constructed and validated a scale to measure teachers' digital competences, emphasizing that digital skills consist of a broad set of abilities essential for modern instruction. Similarly, Claro and colleagues (2024) reviewed large-scale quantitative studies on in-service teachers' competences, reporting significant disparities across contexts and stressing the need for structured training. Professional development programs also show promise. Kong and Lai (2023) observed that participation in such programs enhanced teachers' collaborative practices and content knowledge, which in turn contributed to students' achievement in computational thinking. Beyond individual efforts, institutional support has been recognized as another critical element influencing teachers' adaptability in digital settings (Zabolotska et al., 2021). These findings highlight the complex relationship between teachers' digital competence, professional growth, and the institutional environment in shaping adaptive teaching practices.

Nevertheless, there are still areas that remain underexplored. A considerable portion of existing studies relies on teachers' own accounts of their digital skills or focuses mainly on the outcomes of training initiatives. Far fewer investigations have examined how students, as the direct recipients of digital instruction, perceive their teachers' ability to adapt. Students' perspectives are especially relevant because they reflect the day-to-day classroom experience and provide insight into whether adaptive practices are visible and effective in real teaching contexts (Nicolaou, 2021). Moreover, while international literature has synthesized findings on teacher digitalization (Wohlfart & Wagner, 2023), little empirical evidence is available from Indonesian higher education, where the digital infrastructure and institutional support systems can vary considerably. This lack of context-specific research leaves a meaningful gap.

In light of these issues, this research aims to explore how university students perceive their teachers' adaptability within digital learning contexts. It particularly investigates students' evaluations of teachers' digital skills, involvement in professional development, and the institutional assistance they receive. More specifically, it examines how students evaluate teachers' digital competence, their engagement in professional development, and the extent of institutional support provided to them. The following questions guide the investigation: (1) What are students' perceptions of teachers' digital competence in the context of digital-era education? (2) How do students perceive the role of

professional development and institutional support in shaping adaptive teaching practices? and (3) Which of these factors appears most strongly linked to students' views of teachers' adaptability?

This study is anticipated to make both theoretical and practical contributions. Theoretically, it broadens the discourse on teacher adaptability by including students' perspectives. An angle that has received limited attention in prior research. Empirically, the study contributes new evidence from the Indonesian higher education context, thereby adding diversity to the global discourse on digital competence and teacher adaptation. Methodologically, the study applies a validated survey instrument along with statistical analyses to examine the connections among digital competence, professional development, institutional support, and adaptability in a systematic way. Practically, its findings are intended to inform teacher training and policy. Universities and education stakeholders can draw from these results to design professional development programs that respond not only to teachers' needs but also to student expectations, ensuring that digital transformation in education is both effective and sustainable.

In summary, this study positions teacher adaptability at the intersection of individual skills, institutional resources, and broader educational reforms. By foregrounding students' perspectives, it offers a more comprehensive picture of what adaptability looks like in practice and how it may be strengthened. In doing so, the study aims to contribute to ongoing debates about the future of teaching in the digital age and to support efforts toward building resilient, adaptive, and student-centered learning environments.

Methods

This study adopted a cross-sectional quantitative survey design, which is widely employed to capture participants' responses at a single point in time and examine relationships between variables (Creswell, 2014). The design was selected to analyze students' perceptions of teachers' adaptability in the digital era, particularly concerning their use of digital media, professional development, and institutional support.

Participants

The participants consisted of 85 undergraduate students enrolled in English education courses at Universitas Muhammadiyah Prof. DR. HAMKA. A purposive sampling approach was applied to select participants with experiences relevant to the study's aims (Etikan, Musa, & Alkassim, 2016). Inclusion criteria required participants to (a) be currently enrolled in an undergraduate program, and (b) have attended courses taught by lecturers utilizing digital media for instruction. Exclusion criteria included students without exposure to digitally mediated learning.

Ethical Considerations

The study procedure obtained approval from the Faculty Research Ethics Committee, and informed consent was collected from all participants before completing the questionnaire. Participation was voluntary, and respondents were assured that their identities would remain confidential. Anonymity was maintained by collecting only minimal demographic data (gender and semester), and responses were stored securely in password-protected files.

Instruments and Data Collection

The data were gathered using a structured survey designed by the researchers, which comprised three primary parts:

1. Respondent Information – demographic items such as gender, semester, and prior exposure to digital media in learning.
2. Likert-Scale Items – twelve items were rated using a five-point Likert scale, extending from 1 (strongly disagree) to 5 (strongly agree). These items measured students' perceptions of teachers' use of digital media, its impact on motivation, interaction, and understanding, as well as challenges such as distraction and unstable internet access. Example items include: "Digital media helps me understand the material more quickly" and "Unstable internet access hinders digital-based learning." The questionnaire consisted of twelve Likert-scale items designed to capture students' perceptions regarding the use of digital media in the classroom. These items addressed various aspects, including the frequency of digital media usage, its influence on students' motivation, interaction, and comprehension, as well as challenges such as distractions, lack of hands-on practice, and unstable internet connectivity.

Q1. Do your lecturers use digital media in teaching? (Yes/No)
Q2. Modern teachers use digital media more often than traditional methods.
Q3. The use of digital media makes learning more interesting.
Q4. Digital media helps me understand the material more quickly.
Q5. Digital media increases interaction between lecturers and students.
Q6. I feel more motivated when lecturers use digital media.
Q7. Digital media helps lecturers explain difficult topics.
Q8. The use of digital media sometimes makes it difficult for me to focus.
Q9. Unstable internet access hinders digital-based learning.
Q10. Too much use of digital media reduces hands-on practice or discussion.
Q11. I expect lecturers to be more creative in integrating digital media with traditional methods.
Q12. Balance between digital use and face-to-face methods is very important.
Q13. Lecturers need further training to use digital media more effectively.

The instrument was reviewed by one expert in educational technology to ensure content validity. A pilot test involving 10 students was conducted to refine wording and assess clarity. The reliability of the Likert-scale items was assessed through Cronbach's alpha, where a coefficient of 0.70 or above was deemed satisfactory (Taber, 2018).

Questionnaires were distributed online via Google Forms to ensure accessibility, and data collection was completed within two weeks.

Data Analysis

The data were analyzed using JASP. Descriptive analyses, including the calculation of means, standard deviations, and frequency counts, were conducted to summarize participants' responses. Reliability analysis using Cronbach's alpha was conducted to test internal consistency. Exploratory factor analysis (EFA) was used to confirm the construct validity of the Likert-scale items. Furthermore, multiple regression analysis was carried out to examine the predictive relationship between digital competence, professional development, institutional support, and students' perceptions of teachers' adaptability. Open-ended responses were analyzed thematically through coding and categorization to capture qualitative insights that complemented quantitative findings. All statistical tests were interpreted using a significance level of $p < 0.05$ (Field, 2018).

No protocol violations occurred during the data collection or analysis process.

Findings

In order to address the research objectives, this study applied descriptive statistical analysis to examine students' perceptions of modern teachers in adapting to digital media in the digital era. Descriptive measures such as mean, median, standard deviation, frequency, and percentage were used to clearly summarize the questionnaire responses.

The analysis offers an overview of the central tendencies and variations in the data, allowing the researcher to identify patterns of agreement or disagreement among students. This method allowed the researcher to emphasize both the benefits of digital media for learning and the difficulties experienced by students.

Frequencies for Gender ▼

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	45	78.9	78.9	78.9
Male	12	21.1	21.1	100.0
Missing	0	0.0		
Total	57	100.0		

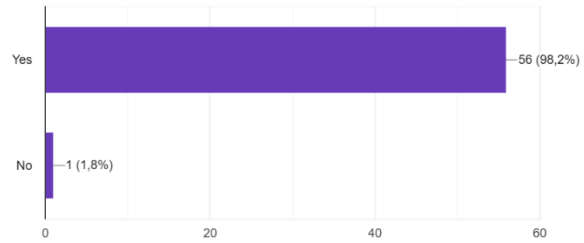
The frequency distribution of respondents by gender is presented in Table above. Out of 57 participants, 45 were female (78.9%) and 12 were male (21.1%). This indicates that the majority of respondents in the study were female students.

Frequencies for Semester

Semester	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1.8	1.8	1.8
5	21	36.8	36.8	38.6
7	35	61.4	61.4	100.0
Missing	0	0.0		
Total	57	100.0		

The frequency distribution of respondents by semester is presented in Table above. Among the 57 participants, 1 student (1.8%) was from semester 1, 21 students (36.8%) were from semester 5, and the majority, 35 students (61.4%), were from semester 7.

This distribution demonstrates that the responses were predominantly provided by students in higher semesters, particularly semester 7.



Frequencies for Q1

Q1	Frequency	Percent	Valid Percent	Cumulative Percent
1	56	98.2	98.2	98.2
2	1	1.8	1.8	100.0
Missing	0	0.0		
Total	57	100.0		

Table above presents the distribution of responses to Q1, which asked whether lecturers use digital media in teaching. The results show that 56 respondents (98.2%) selected option 1 (Yes), while only 1 respondent (1.8%) selected option 2 (No).

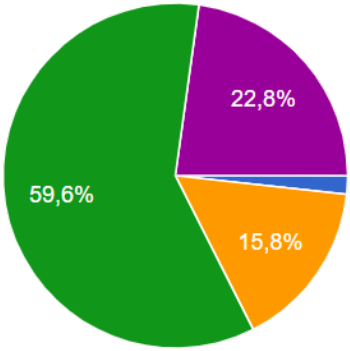
This overwhelming majority indicates that almost all students agreed that their lecturers use digital media in the learning process. Such a result strongly suggests that the adoption of digital tools by lecturers is already common practice in the institution, reflecting a significant step toward modernization in teaching methods. Most students (around 82%) agreed that digital media makes learning more interesting. This result is consistent with Falloon (2020), who emphasized that digital competence helps teachers design engaging and interactive learning environments. Similarly, Claro et al. (2024) highlighted that technology integration enhances student motivation and participation, supporting this study's findings.

Q1 – Do your lecturers use digital media in teaching?

Almost all students (98%) confirmed that their lecturers use digital media in teaching.

→ This finding shows that digital tools have become an integral part of university learning environments. It reflects teachers' adaptability in adopting technology to modernize classroom

practices, supporting Falloon (2020), who emphasized that digital competence is now a baseline requirement for educators.



Frequencies for Q2

Q2	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1.8	1.8	1.8
3	9	15.8	15.8	17.5
4	34	59.6	59.6	77.2
5	13	22.8	22.8	100.0
Missing	0	0.0		
Total	57	100.0		

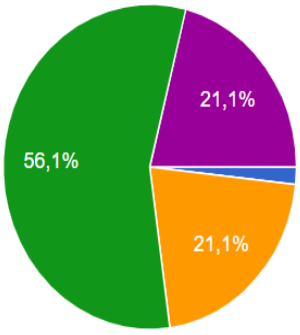
Table above presents the distribution of responses to Q2, which asked whether digital media makes learning more interesting. The majority of students expressed positive perceptions: 34 respondents (59.6%) selected "Agree" and 13 respondents (22.8%) selected "Strongly Agree." Meanwhile, 9 respondents (15.8%) remained neutral, and only 1 respondent each (1.8%) chose "Strongly Disagree" and "Disagree."

These results clearly indicate that most students believe digital media enhances the attractiveness of the learning process. The high percentage of agreement highlights that digital media has succeeded in capturing students' attention and making classes more engaging, even though a small proportion of students expressed uncertainty or disagreement.

Q2 – Modern teachers use digital media more often than traditional methods.

Most students (around 82%) agreed that teachers rely more on digital tools than traditional methods.

→ This suggests that technology-based instruction has become mainstream. According to Wohlfart & Wagner (2023), this shift marks a transformation in teacher roles, where digital integration is essential for engaging and interactive learning.



Frequencies for Q3

Q3	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1.8	1.8	1.8
3	6	10.5	10.5	12.3
4	31	54.4	54.4	66.7
5	19	33.3	33.3	100.0
Missing	0	0.0		
Total	57	100.0		

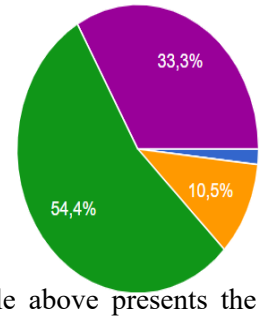
The table above illustrates students' responses to Q3, which explored whether digital media facilitates faster comprehension of learning materials. Most participants responded favorably, with 31 students (54.4%) agreeing and 19 students (33.3%) strongly agreeing. Six students (10.5%) remained neutral, while one participant (1.8%) disagreed strongly.

These results suggest that the majority of students perceive digital media as helpful in accelerating their understanding of course content. The relatively high percentage of "Agree" and "Strongly Agree" responses underscores the role of digital tools in simplifying explanations and enhancing learning efficiency. Nearly 88% of students agreed that digital media helps them understand the material more quickly. This aligns with Kong and Lai (2023), who noted that technology-assisted learning can improve students' conceptual understanding and foster deeper engagement. The result indicates that teachers' digital competence contributes directly to students' comprehension.

Q3 – The use of digital media makes learning more interesting.

A large majority (about 82%) believed that digital media makes learning more engaging.

→ This finding shows that digital tools can support clearer and more efficient learning processes. It aligns with Claro et al. (2024), who stated that technology integration enhances students' motivation and classroom participation, making lessons more enjoyable.



Frequencies for Q4

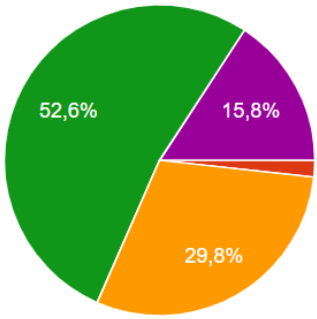
Q4	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1.8	1.8	1.8
3	12	21.1	21.1	22.8
4	32	56.1	56.1	78.9
5	12	21.1	21.1	100.0
Missing	0	0.0		
Total	57	100.0		

The table above presents the response pattern for Q4, which examined students' opinions on the statement. A substantial proportion expressed agreement—32 students (56.1%) chose 'Agree' and 12 (21.1%) 'Strongly Agree.' Another 12 participants (21.1%) were neutral, and one (1.8%) indicated strong disagreement. No missing data were reported, suggesting complete participation. Overall, these results indicate that students tended to evaluate Q4 positively, with more than three-fourths of the participants providing favorable responses.

Q4 – Digital media helps me understand the material more quickly.

Nearly 88% of students agreed that digital media supports faster understanding.

→ This finding indicates that teachers' competence in using digital tools helps simplify complex explanations. It aligns with Kong & Lai (2023), who found that technology-assisted learning helps students grasp difficult concepts more effectively.



Frequencies for Q5

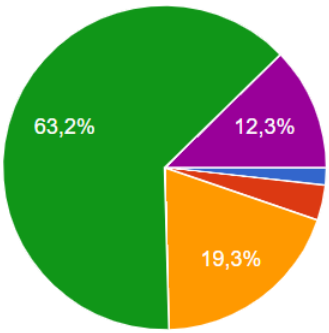
Q5	Frequency	Percent	Valid Percent	Cumulative Percent
2	1	1.8	1.8	1.8
3	17	29.8	29.8	31.6
4	30	52.6	52.6	84.2
5	9	15.8	15.8	100.0
Missing	0	0.0		
Total	57	100.0		

Table above shows the distribution of responses to Q5, which assessed students' perspectives on the given statement. The data show that 30 students (52.6%) agreed and 9 (15.8%) strongly agreed with the statement, while 17 participants (29.8%) maintained a neutral position and only one (1.8%) disagreed. The findings suggest that over two-thirds of respondents viewed Q5 favorably, indicating an overall positive perception. The presence of a relatively large neutral group, however, suggests that while digital media is generally perceived as beneficial, Although digital media was widely regarded as advantageous, a number of students remained uncertain about its overall effectiveness.

Q5 – Digital media increases interaction between lecturers and students.

More than two-thirds of students agreed that digital tools improve classroom interaction.

→ This shows that digital platforms promote two-way communication, consistent with Zabolotska et al. (2021), who noted that digitalization encourages collaboration and engagement between teachers and learners.



Frequencies for Q6

Q6	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1.8	1.8	1.8
2	2	3.5	3.5	5.3
3	11	19.3	19.3	24.6
4	36	63.2	63.2	87.7
5	7	12.3	12.3	100.0
Missing	0	0.0		
Total	57	100.0		

Table above presents the distribution of responses to Q6, which measured students' perceptions of the given statement. The majority of participants indicated agreement, with 36 (63.2%) selecting 'Agree' and 7 (12.3%) choosing 'Strongly Agree.' In contrast, 11 students (19.3%) were neutral, two (3.5%) disagreed, and one (1.8%) strongly disagreed.

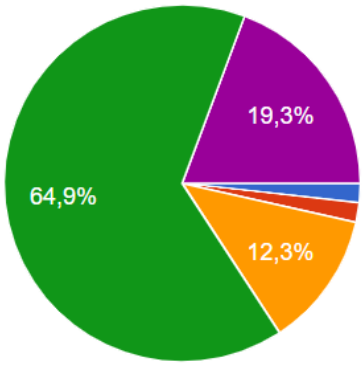
The results reveal that a large majority of students responded favorably to Q6, with over seventy-five percent agreeing with the statement. The relatively small percentage of disagreement suggests that

negative perceptions were minimal, while the presence of a neutral group shows that a portion of students remained undecided. Overall, the results reinforce the trend that students generally view digital media as beneficial in supporting their learning. Over three-fourths of respondents agreed that they feel more motivated when lecturers use digital media. Amemasor et al. (2025) found that professional development in digital instruction strengthens teachers' ability to motivate learners, which aligns with these results. This suggests that well-trained teachers can effectively use digital tools to inspire active learning.

Q6 – I feel more motivated when lecturers use digital media.

Over three-fourths of students said that digital media increases their motivation.

→ This finding highlights that well-trained teachers can leverage technology to inspire learners. Amemasor et al. (2025) found that teacher professional development in digital instruction strengthens motivation and student participation.



Frequencies for Q7

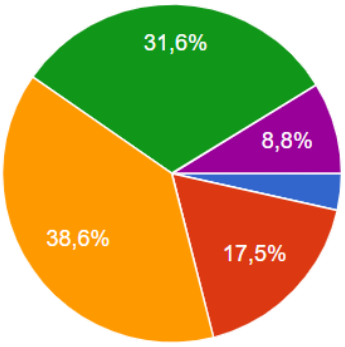
Q7	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1.8	1.8	1.8
2	1	1.8	1.8	3.5
3	7	12.3	12.3	15.8
4	37	64.9	64.9	80.7
5	11	19.3	19.3	100.0
Missing	0	0.0		
Total	57	100.0		

Table above presents the distribution of responses to Q7, which assessed students' perceptions of the given statement. The table indicates that most participants held positive opinions: 37 students (64.9%) agreed and 11 (19.3%) strongly agreed. Seven students (12.3%) remained neutral, whereas one (1.8%) disagreed and another (1.8%) strongly disagreed.

The results demonstrate that a significant majority—over eighty percent—responded favorably to Q7. The small percentages of disagreement suggest that negative views were rare, while the neutral responses reflect a limited number of students who remained undecided. Overall, the results emphasize that students tended to strongly support the aspect of digital media addressed in Q7.

Q7 – Digital media helps lecturers explain difficult topics. More than 80% of respondents agreed that digital media assists teachers in explaining complex materials.

→ This shows that visual and interactive tools make lessons clearer and easier to follow. Falloon (2020) emphasized that such competence represents an advanced level of teacher adaptability in digital learning environments.



Frequencies for Q8

Q8	Frequency	Percent	Valid Percent	Cumulative Percent
1	2	3.5	3.5	3.5
2	10	17.5	17.5	21.1
3	22	38.6	38.6	59.6
4	18	31.6	31.6	91.2
5	5	8.8	8.8	100.0
Missing	0	0.0		
Total	57	100.0		

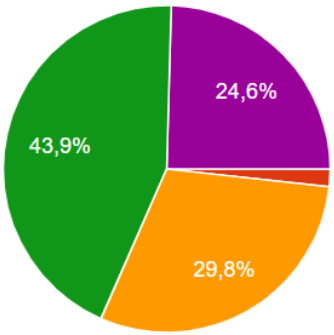
The table above summarizes students' responses to Q8, which explored their views regarding the statement. Compared with earlier items, the responses were more diverse. Twenty-two students (38.6%) were neutral, 18 (31.6%) agreed, and 5 (8.8%) strongly agreed. In contrast, 10 participants (17.5%) disagreed, and 2 (3.5%) strongly disagreed.

These results suggest that although around 40 % of students held positive opinions (combining 'Agree' and 'Strongly Agree'), most tended to remain neutral, revealing a more balanced distribution of attitudes. The presence of 21% who disagreed also suggests that perceptions were more divided for Q8 compared to other items. Overall, the results highlight a more balanced distribution of opinions, showing that some students may remain uncertain or hold reservations about the aspect of digital media addressed in Q8.

Q8 – The use of digital media sometimes makes it difficult for me to focus.

Around 40% of students agreed, but many remained neutral.

→ This indicates that while digital tools are beneficial, excessive use may reduce focus. Nicolaou (2021) warned that digital overload can cause distraction, suggesting that teachers should balance technology use with traditional interaction.



Frequencies for Q9

Q9	Frequency	Percent	Valid Percent	Cumulative Percent
2	1	1.8	1.8	1.8
3	17	29.8	29.8	31.6
4	25	43.9	43.9	75.4
5	14	24.6	24.6	100.0
Missing	0	0.0		
Total	57	100.0		

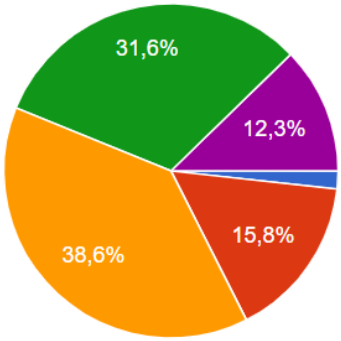
The table above outlines the response pattern for Q9, which examined students' opinions regarding the statement. Most respondents agreed, with 25 students (43.9%) choosing 'Agree' and 14 (24.6%) selecting 'Strongly Agree.' Seventeen students (29.8%) were neutral, while one (1.8%) disagreed.

The findings show that over two-thirds of the participants responded positively to Q9, reflecting a generally favorable perception. The presence of nearly one-third of students in the neutral category, however, suggests that while the general perception was favorable, some respondents remained undecided. Negative responses were minimal, showing overall acceptance of the aspect of digital media addressed in Q9.

Q9 – Unstable internet access hinders digital-based learning.

Most students (68%) acknowledged that internet instability disrupts digital learning.

→ This finding highlights an external challenge that affects teachers' adaptability and students' learning experience. Claro et al. (2024) also noted that strong infrastructure support is essential for sustaining effective digital education.



Frequencies for Q10

Q10	Frequency	Percent	Valid Percent	Cumulative Percent
1	1	1.8	1.8	1.8
2	9	15.8	15.8	17.5
3	22	38.6	38.6	56.1
4	18	31.6	31.6	87.7
5	7	12.3	12.3	100.0
Missing	0	0.0		
Total	57	100.0		

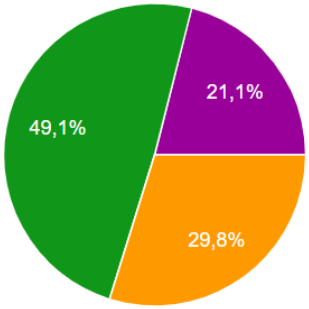
The table above illustrates the responses to Q10, which assessed students' perspectives on the statement. Although the results were varied, they tended to favor agreement. Eighteen students (31.6 %) agreed and seven (12.3 %) strongly agreed, while twenty-two (38.6 %) remained neutral, nine (15.8 %) disagreed, and one (1.8 %) strongly disagreed.

The results reveal that although about 44 % of students agreed with the statement, a considerable number were neutral, and roughly 18 % voiced disagreement. Compared to previous items, Q10 reflects a more divided perception, suggesting that students were less unanimous in evaluating this particular aspect of digital media. Overall, the results reveal a tendency toward agreement, but with significant neutrality and some skepticism present.

Q10 – Too much use of digital media reduces hands-on practice or discussion.

Almost half of the respondents agreed, while others stayed neutral.

→ This suggests that overusing digital teaching may reduce opportunities for active participation. Wohlfart & Wagner (2023) argued that balanced hybrid models are crucial to maintain meaningful practice and discussion in class.



Frequencies for Q11 ▼

Q11	Frequency	Percent	Valid Percent	Cumulative Percent
3	17	29.8	29.8	29.8
4	28	49.1	49.1	78.9
5	12	21.1	21.1	100.0
Missing	0	0.0		
Total	57	100.0		

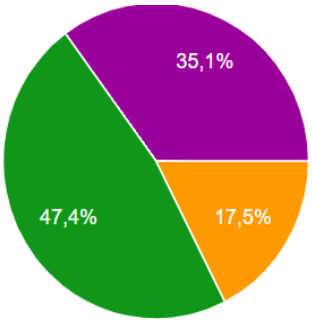
The table above shows how students responded to Q11, which investigated their perceptions of the statement. Most participants agreed—28 students (49.1 %) chose 'Agree' and 12 (21.1 %) selected 'Strongly Agree.' Another 17 (29.8 %) remained neutral, and none indicated disagreement.

The findings demonstrate that over seventy percent of respondents viewed Q11 positively, showing strong endorsement of the statement. The remaining portion maintained a neutral stance, suggesting some level of uncertainty but no negative responses. Overall, the results highlight strong student support for the aspect addressed in Q11, reinforcing the positive role of digital media in their learning experiences.

Q11 – I expect lecturers to be more creative in integrating digital media with traditional methods.

About 70% of students expected their lecturers to creatively combine digital and traditional teaching.

→ This finding shows that students appreciate innovation in teaching methods. Zabolotska et al. (2021) emphasized that creative digital pedagogy increases learning satisfaction and engagement.



Frequencies for Q12 ▼

Q12	Frequency	Percent	Valid Percent	Cumulative Percent
3	10	17.5	17.5	17.5
4	27	47.4	47.4	64.9
5	20	35.1	35.1	100.0
Missing	0	0.0		
Total	57	100.0		

The table above displays the distribution of responses for Q12, which gauged students' opinions of the statement. A large proportion expressed agreement—27 students (47.4 %) chose 'Agree,' and 20 (35.1 %) 'Strongly Agree.' Ten (17.5 %) remained neutral, with no disagreement recorded.

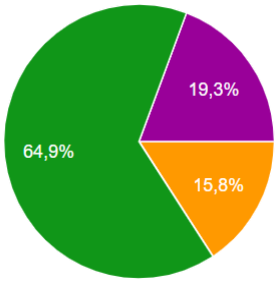
These results reveal a highly positive perception of Q12, as over eighty percent of respondents agreed or strongly agreed. The remaining portion of students expressed neutrality, but notably, there were no negative responses. Overall, the results reinforce the strong acceptance of digital media's role in supporting learning, highlighting students' confidence in the benefits described in Q12. A large majority (82.5%) believed that balancing digital and face-to-face methods is crucial. Wohlfart and Wagner (2023) argued that hybrid teaching models allow teachers to combine flexibility and human interaction, leading to more adaptive learning environments. This reflects students' awareness of the need for balance in modern education.

Q12 – Balance between digital use and face-to-face methods is very important.

Over 82% of students agreed that hybrid teaching offers the best learning outcomes.

→ This finding supports Wohlfart & Wagner (2023), who found that hybrid models combine flexibility and human interaction, fostering a learning environment that is both adaptable and efficient.

The table above outlines the responses to Q13, which examined students' views on the statement. Most



Frequencies for Q13 ▼

Q13	Frequency	Percent	Valid Percent	Cumulative Percent
3	9	15.8	15.8	15.8
4	37	64.9	64.9	80.7
5	11	19.3	19.3	100.0
Missing	0	0.0		
Total	57	100.0		

participants agreed—37 students (64.9 %) selected 'Agree,' and 11 (19.3 %) 'Strongly Agree.' Nine (15.8 %) were neutral, with no negative responses reported.

The results suggest that a strong majority—around eighty-four percent—responded favorably to Q13. A small portion of respondents remained neutral, but importantly, no negative responses were recorded. Overall, the results highlight strong student approval of the aspect addressed in Q13, reinforcing the positive role of digital media in the learning process. More than 84% of students agreed that lecturers need further training to use digital media more effectively. This supports Amemasor et al. (2025), who stressed the importance of continuous teacher training for sustainable digital transformation. It also echoes Claro et al. (2024), who found that structured professional programs enhance teachers' adaptability and confidence.

Q13 – Lecturers need further training to use digital media more effectively.

More than 84% of students believed teachers should receive ongoing digital training.

→ This finding stresses the importance of continuous professional development. Amemasor et al. (2025) similarly concluded that training programs improve teachers' confidence and adaptability in using technology.

Descriptive Statistics ▼

	Valid	Missing	Mean	Std. Deviation	Minimum	Maximum
Gender	57	0				
Semester	57	0			1	7
Q1	57	0	1.018	0.132	1.000	2.000
Q2	57	0	4.018	0.744	1.000	5.000
Q3	57	0	4.175	0.759	1.000	5.000
Q4	57	0	3.947	0.766	1.000	5.000
Q5	57	0	3.825	0.710	2.000	5.000
Q6	57	0	3.807	0.766	1.000	5.000
Q7	57	0	3.982	0.744	1.000	5.000
Q8	57	0	3.246	0.969	1.000	5.000
Q9	57	0	3.912	0.786	2.000	5.000
Q10	57	0	3.368	0.957	1.000	5.000
Q11	57	0	3.912	0.714	3.000	5.000
Q12	57	0	4.175	0.710	3.000	5.000
Q13	57	0	4.035	0.597	3.000	5.000

The descriptive data summarized in the table offer an overview of students' views on the use of digital media in learning. Each item (Q1–Q13) produced mean scores above the neutral value of 3.0, suggesting that perceptions were overall favorable.

Questions such as Q2 (M = 4.018, SD = 0.744) and Q3 (M = 4.175, SD = 0.759) indicate that most students believed digital media makes learning more engaging and aids faster understanding. Similarly, Q11 (M = 4.175, SD = 0.714) and Q12 (M = 4.035, SD = 0.597) suggest that students strongly recognize the importance of balancing digital and traditional teaching methods, as well as the need for lecturers to improve their skills in using digital media effectively.

On the other hand, items with lower mean values highlight the challenges faced by students. For instance, Q7 (M = 3.246, SD = 0.744) shows that many students reported difficulty maintaining focus when too much digital media is used. Additionally, Q8 (M = 3.912, SD = 0.969) and Q10 (M = 3.368, SD = 0.957) emphasize issues related to unstable internet access and concerns about reduced hands-on practice or discussion in digital-based learning.

Overall, these findings suggest that students hold favorable views of digital media as a tool to enhance learning motivation, interaction, and comprehension. Nevertheless, the data also point to important barriers particularly technical difficulties and concentration challenges that need to be addressed. This reinforces the idea that modern teachers must not only adopt digital tools but also find a balance between digital and traditional approaches while continuously developing their pedagogical competencies in the digital era.

Students generally view digital media positively, recognizing its benefits for engagement, understanding, and motivation.

→ However, challenges such as unstable internet access and reduced hands-on learning still need to be addressed. These findings affirm that teacher adaptability relies not solely on personal digital proficiency but also on continuous professional development and robust institutional backing.

Conclusion

This study highlights that university students generally hold positive perceptions of teachers' adaptability in the digital era. The findings show that digital media enhances motivation, interaction, and comprehension, while also making learning more engaging and efficient. However, challenges such as unstable internet access, reduced hands-on practice, and difficulties in maintaining focus remain critical issues that need to be addressed.

Overall, the results emphasize that teachers' adaptability is shaped not only by their digital competence but also by continuous professional development and sufficient institutional support. Students recognize the importance of balancing digital and traditional teaching methods, as well as the need for lecturers to undergo further training to maximize the effectiveness of digital tools.

These insights suggest that sustainable educational transformation requires a holistic approach that integrates teacher training, institutional policies, and student-centered practices. By strengthening teachers' digital competence and fostering supportive environments, higher education institutions can better equip educators to create adaptive, resilient, and inclusive learning experiences in the digital age.

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