# University EFL Students' Perspectives on Educators' Digital Competence at Qassim University

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## Abstract

Personal and professional success in the digital age requires digital abilities. Increased expectations that graduates be adept in digitisation while joining the job need higher education institutions to successfully incorporate digital aspects. This study evaluates university EFL students' digital integrative attitudes and instructors' digital proficiency. Digital tools are emphasised for collaborative learning. Researchers seek to address two key questions: What are EFL students' perspectives on digital learning? How do they assess teachers' IT skills? It appears through the end result not all instructos have the same digital competency and it is strictly field dependent. This variance in the digital capalities and field orientation decideis the choice of their preferredd pedagogical tools. Digital collaborative learning was used by both categories of students: engineering students and non-engineering EFL students to variable degrees. This suggests that punishing students may affect preferences and behaviours in this area. EFL students were confident in their digital tool usage, although they didn't comprehend all the features. This study's results may improve instructional techniques, institutional standards, and professional development programmes to improve educators' digital abilities. As digital technology integration evolves, global higher education consequences are enormous.

**Keywords:** university professors/teachers, higher education in Saudi Arabia, Saudi collaborative learning, digital learning platforms, digital technologies, higher education digital learning, university EFL students, research work.

## 1. Introduction

The attainment of the necessary competencies of digital technology is essential in both contemporary business and everyday life. According to the European Commission (2022), possessing a high level of expertise in digital technologies is an essential skill for both present and future citizens of the European Union. Hence, to provide relevant education, higher education programmes must adjust to the current requirements of digital competency (Ball, 2021). This encompasses not just the instruction provided on digital subjects, but also the level of competence shown by educators in using and using digital resources (Smith & Jones, 2023). On the other hand, there is no simple way to define digital competency at universities. Definitions of digital competence may differ according to research findings, which show that they can be influenced by policy, research, or a mix of the two, and that they can centre on social behaviours or technical abilities (Brown, 2020; White, 2021).

There is a need for adequate, scientifically backed up, and throughly reseached studies pertaining to university teachers’ adoptation and implementaion of digital technology in higher education. (Doe et al., 2022). While most college EFL students and instructors possess a certain level of competency with computers and the internet (Black & Lee, 2020; Green, 2019), there is a lack of consensus about the usage of technology in the classroom. Though some teachers are receptive and excited about new technologies, others are wary (Adams & Clark, 2021; Wilson, 2022). Even before the COVID-19 epidemic, there was a noticeable lack of certainty about the role of technology integration due to larger social and organisational dynamics (Miller & Davis, 2020). The spike in technology usage during the pandemic highlighted the essential need of educators improving their digital abilities (Taylor & Martin, 2021), which led Johnson (2022) to emphasise the requirement of developing digital competence. Using a digital survey to gauge instructors' abilities from the pupils' point of view, recent research by de Obesso et al (2023).

As has been addressed in a number of recent research (Johnson, 2022; Lee & Robinson, 2021) digital competence in the classroom may be broken down into numerous different aspects. Technical skills are needed to use digital resources, adapt instructional methods to a variety of learners, promote virtual collaboration, and analyse online activity data (Harris & Thompson, 2021; Kim, 2022). In addition, it is necessary to possess the capacity to successfully use digital resources. In addition to the effect that instructors have in the classroom, the amount of digital competence that teachers possess is a factor that plays a role in determining the extent to which their EFL students are prepared for a digital workforce. As new technologies have changed information transmission and processing, educators' digital skills have become more vital. According to Brown and Green (2023) and White (2024), educators must be aware of digital competencies to utilise technology, advance their careers, and improve student digital literacy. Knowing how EFL students evaluate teachers' digital abilities is vital (Johnson & Smith, 2022). This is because many schools are adopting digital resources to promote student learning.

It is found that a sizeable proportion of EFL students are worried about the potential of not having access to digital tools that would be essential for their future jobs (Marrero-Sánchez & Vergara-Romero, 2021). It is proposed that digital skills be taught more often in order to aid EFL students in making use of communication technologies in the knowledge society. This recommendation is in agreement with the results of Marrero-Sánchez and Vergara-Romero's (2021) evaluation of the digital comprehension of college EFL students. The findings of their research also imply that increasing one's digital competence may increase one's creative capacity, inventiveness, and ability to work together. In this article, we investigate the impact that digitisation has had on universities by establishing a connection between the digital competence of EFL students and the paedagogy of their instructors. Therefore, this study illuminates EFL students ' views on their professors' digital proficiency and their digital educational experience.

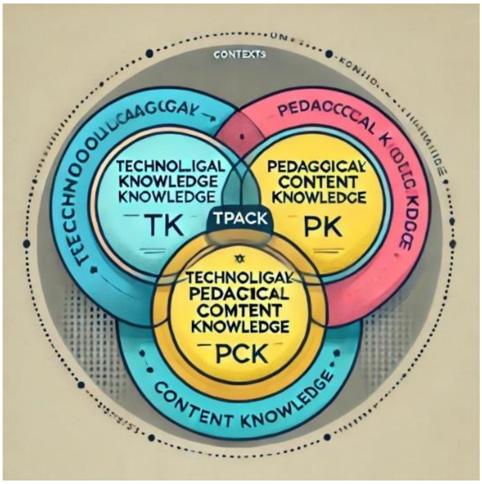


Figure 1. Technological pedagogical content knowledge framework (Castañeda & Gutiérrez, 2023)

## 2. Materials and Methods

Research design

This study used a quantitative research paradigm. A questionnaire which is widely used to measure teachers' Technical Pedagogical Content Knowledge (TPACK) was implied in this study. The study recruited EFL students at Qassim university at the academic year 1445 AH.

Participants

Responses came from 183 targeted faculty EFL students. The study included 175 complete answers after excluding eight missing data responses. The departments under study were Development engineering, construction engineering, economics, business adminstration, innovation management, environment innovation, construction engineering, business administration, and built were reserached. There were 175 responders from 21 programmes (first-year EFL students were excluded). Response rates varied between programs. Construction engineering EFL students (29%), innovation engineering bachelor's EFL students (25%), and economics students studying EFL with business administration (13%), responded most. The 2023 autumn survey was administered. Respondents were told that the survey was designed to review EFL students ' experiences with lecturers utilising digital technologies to improve university education. The project goal as well as the purpose behind the investigation was adequately explained to the research participants. Requisite steps were taken to confirm that the study was their voluntary decision and their annonimity would be maintained. It was established beforehand that their responses could not be retrieved. They also had the freedom to withdraw their consent anytime they so desired.

## Instrument

The survey received 233 replies from all four university faculties. The study employed a computerised survey with closed- and open-ended questions. These in-person activities explained the study's purpose and urged EFL students to complete the internet survey. They also allowed EFL students to ask questions. At 22 questions, the survey should take 10-15 minutes (see Table 1). Based on TPACK paradigm, the questions focused on pedagogical, technical, and technological-pedagogical knowledge. These notions are essential for answering Research Questions 1 and 2 (technological and pedagogical knowledge).

Table 1. Outline of the investigation questions and TPACK framework-realted formulations

| Question Category (The attached material containg Q1-Q22) | Number of Included Questions | Formulations that help in the study pertaining to the Questions. |
|---|---|---|
| Background information (Q1–Q6) | 6 | Respondents' general demographics |
| Teaching strategies applied (Q7-8) | 2 | TPACK framework to identify Pedagogical knowledge in the use of teaching strategies |
| Student interaction with technology (Q8–13) | 5 | Studying students execution of digital tools based ontechnological knowledge from the TPACK framework |
| Teacher engagement with digital platforms (Q13–14) | 2 | TA analysis of teachers use technology based on the TPACK framework |
| Tools/platforms supporting instruction (Q15–18) | 3 | TPACK framework to identify tools supporting learning |
| Self-reliance in adopting digital tools (Q19–21) | 4 | The level of confidence in using digital tools based on TPACK framework |
| Open question requesting opinions (Q22) | 1 | Opportunity for respondents to add any insights not captured in the survey |

The link to the survey was distributed using Google forms after the initial satge of intervening. EFL students were asked via email to complete it. The survey included four variables requesting variable information(age, academic year, field of study, and educational background). The rest of the questions were organized according to their focus, as detailed in Table 1. Most of the questions were closed-ended, using 3–5-point Likert scales (see included Supplementary Materials), with a few questions offering open-ended substitutes. Responses were recorded in the form of their ratings to the following questions:

- To what extent they perceive teachers incorporating technological tools into their teaching (3-point Likert scale);
- What technological tools and methods enhance their learning experience (4-point Likert scale);
- The frequency of their usage of digital tools and platforms in academic activities (3-point Likert scale);
- To what extent were the didgital tools adopted by teachers in their teaching (3-point Likert scale);
- Their self-assessed proficiency, training experience, and additional needs concerning the digital tools use (5-point Likert scale).

As mentioned aforehand, the Likert scales varied between 3 - 5 points:

- The 3-point Likert scale options were: frequently, occasionally, and rarely.
- The 4-point Likert scale options were: strongly agree, agree, disagree, strongly disagree.
- The 5-point Likert scale options were: always, often, occasionally, rarely, never.

To simplify the data analysis, responses from the 1st and 2nd categories were grouped as low ratings, the 3rd category as medium, and the 4th and 5th categories as high ratings. In question twelve, repondents were requested to indicate their agreement with eight statements using a 4-point Likert scale: I am comfortable with the use of digital tools in my studies; I can resolve most technical problems independently; I adapt quickly to new technologies; I actively seek out new digital tools related to my studies; I frequently experiment with new tools; I have strong knowledge of digital tools; I possess the necessary foundational skills to learn and adopt new tools quickly. These statements were adapted from a similar survey using the TPACK structure(Mishra & Koehler, 2021) (Harris et al., 2022).

2.2. Data Analysis Procedures

Exploratory data analysis influenced our methods (Rossi et al., 2023). We liked this method since this article describes the earliest steps of data analysis, which concentrate on maximising insights and understanding the data utilising descriptive statistics. Descriptive statistics simplify data analysis by summarising and describing its essential aspects (Smith & Jones, 2022). Descriptive statistics make it simpler to compare groups (e.g., engineering and EFL students that are studying non-engineering subjects in our research) to find patterns and discuss results, according to Cooksey (2024).

The investigations were initiated by extracting relevant data from the survey tool SUNET. This system enables various comparisons, for example gender-based variations. It also provided detailed statitical information (mean, median, variation coefficient and standard deviation) including numericals and graphics for each question. Each question was thoroughly analysed using The TPACK plan and its components in connection to our research questions (see Table 1), with a focus on on particular values, ratios, and distributions and finding high and low values and their significance. The analysis's formulated structure is presented as follows:

- Reseach models and data collection description
- Subject 1. Pedagogical Method of pedagogy
- Subject 2. Digital tools.
- Subject 3. Awareness of the existing digital tools and EFL students ' confidence in using them.

## 3. Findings and discussion

Nearly half of responses were male (51%), 48% female, and 1% undetermined. Male and female respondents answered similarly, assuring a representative sample. The sample consisted of 53.5% engineering EFL students and 41.5% non-engineers. 5% of answers were eliminated owing to incompleteness. Tables 2 and 3 demonstrate how this differentiation permitted a focused investigation of teaching methods across various domains.

Table 2 shows that instructors used simulations and field studies less in both groups. Engineering EFL students utilised pre-recorded lectures more (55% occasionally) than non-engineers (72% never). Flipped lectures and case studies were utilised more by non-engineers (45%). Engineering EFL students utilised labs more (53% on campus). This illustrates how each area teaches differently.

Table 2 shows that engineering instructors preferred on-campus education for smaller group seminars (75%), lab exercises (53%), and guest lectures (81%). In contrast, non-engineering EFL students attended seminars and guest lectures on campus and online (49% for online guest lectures). Non-engineering programmes blend digital and conventional teaching techniques, whereas engineering programmes prefer in-person approaches.

Table 3 shows that 53% of engineering EFL students and 66% of non-engineering EFL students absolutely agreed that on-campus lectures supported their learning. Guest lectures and field studies were valued by both groups. On campus, 55% partially agreed that lab activities, especially for engineering EFL students, were beneficial. Both groups found campus simulations and labs beneficial, emphasising the significance of hands-on, in-person learning.

Table 2.

| Pedagogical Method | Engineering EFL students | Non-Engineering EFL students |
|---|---|---|
| Pedagogical Methodsc (Non-Collaborative) | | |
| Lectures (Traditional teaching) | Often on campus (80%) | Often on campus (62%) |
| | Never online (55%) | Sometimes online (70%) |
| Lectures (Pre-recorded) | Sometimes (45%) | Never (76%) |
| Lectures (by Guest teacher) | Sometimes on campus (79%) | Often on campus (58%) |
| | Never online (77%) | Sometimes online (39%) |
| Flipped classroom | Never (64%) | Sometimes (47%) |
| Seminars (smaller groups) | Sometimes on campus (85%) | Often on campus (35%) |
| | Never online (82%) | Never online (54%) |
| Pedagogical Methods (Collaborative) | | |
| Labs | Sometimes on campus (57%) | Never (52%) |
| | Never online (90%) | Never online (76%) |
| Field studies | Never on campus (69%) | Sometimes on campus (37%) |
| | Never online (95%) | Never online (58%) |
| Supervision | Never on campus (87%) | Never on campus (66%) |
| | Never online (88%) | Never online (43%) |

| | | |
|---|---|---|
| Case studies | Never (75%) | Never (51%) |
| Simulations | Never on campus (59%) | Never on campus (29%) |
| | Never online (88%) | Sometimes online (40%) |

Table 3. Engineering students and EFL students' (in other subjects) support for Pedagogical methods

| Pedagogical Method | Engineering EFL students | Non-Engineering EFL students |
|---|---|---|
| Pedagogical Methodsc (Non-Collaborative) | | |
| Lectures (Traditional teaching) | Totally agree on campus (55%) | Totally agree on campus (60%) |
| | Partly agree online (47%) | Partly agree online (43%) |
| Lectures (Pre-recorded) | Partly agree (60%) | Partly agree (44%) |
| Lectures (by Guest teacher) | Partly agree on campus (61%) | Totally agree on campus (54%) |
| | Partly agree online (39%) | Totally agree and partly agree online (44%) |
| Flipped classroom | Partly disagree (46%) | Partly agree (35%) |
| Seminars (smaller groups) | Partly agree on campus (66%) | Totally agree on campus (49%) |
| | Disagree online (35%) | Partly agree online (33%) |
| Collaborative Pedagogical Methods | | |
| Labs | Partly agree on campus (57%) | Totally agree on campus (38%) |
| | Disagree online (52%) | Disagree online (39%) |
| Case studies | Partly agree on-campus (37%) | Agree on campus (55%) |
| | Disagree online (49) | Partly agree online (38%) |
| Simulations | Partly agree on campus (47%) | Totally agree on campus (39%) |
| | Disagree online (42%) | Disagree online (28%) |
| Field studies | Partly agree (50%) | Partly agree (50%) |
| Supervision | Partly agree on campus (39%) | Totally agree on campus (56%) |
| | Disagree online (39%) | Partly agree online (33%) |

We found some disparities between groups. Engineering EFL students used computers and cloud services more for coursework. Non-engineering EFL students used tablets more than engineering EFL students, while utilising computers and cloud services more. Presentation programmes were utilised more by non-engineers (61%) than engineers (46%). Microsoft Word was utilised by 71% of engineering EFL students and 80% of non-engineers. These discrepancies show how each group uses various academic tools.

Word processing software, spreadsheets (71% occasionally), and video creation services (50%) help engineering EFL students study. Both groups utilised Zoom or Skype, although engineering and non-engineering EFL students used them similarly at 48-47%. Engineering EFL students (82% never utilised voting methods like Mentimeter or Clickers) were significantly less likely to use them than non-engineering EFL students (59%). This suggests that engineering EFL students prefer spreadsheets and video creation, whereas non-engineers prefer presentation tools.

Presentation software, video streaming, and cloud-based collaboration tools are used more by non-engineering EFL students. Non-engineers seldom utilise video production services (41%), whereas engineers do (50%). Less than half of both groups use Facebook or Instagram for academic reasons. Cloud storage systems like Dropbox and Google Drive are utilised by both groups for file-sharing and collaboration.

Table 4 demonstrates both groups used computers, word processing, and cloud services equally. Engineers and non-engineers need these tools. Both groups use spreadsheets and video streaming, but not social networking, voting, or games for academic purposes. Non-engineers seldom use video making services (41%), whereas engineering EFL students do (50%). Digital technologies are tailored to educational needs by each discipline.

Table 4. Usage of Digital Tools/Programs/Services by EFL students in their Education

| Tools/Programs/Services | Engineering EFL students | EFL students other subjects |
|---|---|---|
| Computer | Often (92%) | Often (77%) |
| Tablets | Never (55%) | Sometimes (45%) |
| Presentation programs/ softwares (e.g., PowerPoint, Prezi) | Sometimes (66%) | Often (73%) |
| Social media (e.g., Facebook, Twitter, Instagram) | Often (77%) | Often (86%) |
| Spreadsheet programs (e.g., Excel, Google Sheets) | Often (72%) | Sometimes (55%) |
| Video production (e.g., YouTube, Adobe Premiere) | Sometimes (51%) | Sometimes (59%) |
| Votes counting systems (e.g., Poll Everywhere, Kahoot) | Rarely (39%) | Rarely (54%) |
| Video streaming services (e.g., YouTube, Netflix) | Sometimes (52%) | Never (5565) |
| Word processing software (e.g., Word, Pages) | Never (52%) | Never (39%) |
| Games (e.g., Game consoles, mobile devices) | Often (60%) | Often (67%) |
| Video conference programs (e.g., Zoom, Teams) | Sometimes (70%) | Sometimes (61%) |
| Cloud services (e.g., Dropbox, Google Drive, iCloud) | Never (72%) | Rarely (65%) |
| Other tools/programs/services | Never (62%) | Never (54%) |

Teachers and EFL students utilise computers, word processors, and presentations. Video conferencing and production are used by certain teachers but not vote-counting, social networking, cloud services, or games. Engineering professors and EFL students utilise collaborative digital tools more than non-engineers, polls show. Teaching and learning with particular digital tools demonstrates pedagogical congruence, while differences imply non-engineering courses may benefit from more advanced digital integration.

Both engineering and non-engineering EFL students felt comfortable using digital tools. Both sides claimed they can manage IT issues. It was also revealed by the results that most reponsdents can easily and promptly learn to keep up with the availavle technology and adopt any new additional technology or didgital tools in the field of education.The results also show that most respondents feel they can rapidly acquire new technologies and keep updated about educational digital tools. This shows that EFL students across disciplines are proficient in digital technologies.

Survey results indicate that both groups have modest digital tool expertise and partly believe that they can swiftly embrace new technologies. Engineering EFL students seldom try new instructional digital tools. This may be due to their happiness with their educational materials. However, non-engineering EFL students are more likely to use new digital tools and explore new possibilities, maybe wanting greater diversity or flexibility in their learning experiences (see Table 5).

Table 5. Student Perceptions of Their Behavior with Digital Tools in Engineering and Non-Engineering Programs

| Statements | Engineering EFL students | "EFL students from non-engineering disciplines" |
|---|---|---|
| "I am confident in my ability to utilize digital tools in my academic pursuits." | Totally agree 68% | Totally agree 58% |
| | Partly agree 20% | Partly agree 32% |
| | Partly disagree 5% | Partly disagree 9% |
| | Disagree 5% | Disagree 6% |
| "I am capable of resolving any technical issues that may arise with the digital tools I use." | Totally agree 40% | Totally agree 33% |
| | Partly agree 35% | Partly agree 42% |
| | Partly disagree 15% | Partly disagree 13% |
| | Disagree 10% | Disagree 8% |
| "I am adept at rapidly acquiring proficiency in new technologies." | Totally agree 45% | Totally agree 48% |
| | Partly agree 40% | Partly agree 33% |
| | Partly disagree 10% | Partly disagree 08% |
| | Disagree 5% | Disagree 7% |
| "I stay updated on emerging digital tools that are pertinent to my area of study." | Totally agree 25% | Totally agree 37% |
| | Partly agree 50% | Partly agree 43% |
| | Partly disagree 20% | Partly disagree 17% |
| | Disagree 5% | Disagree7% |
| "I frequently experiment with new digital tools." | Totally agree 20% | Totally agree 32% |
| | Partly agree 35% | Partly agree 38% |
| | Partly disagree 30% | Partly disagree 22% |
| | Disagree 15% | Disagree 8% |
| "I possess extensive knowledge of digital tools." | Totally agree 25% | Totally agree 30% |
| | Partly agree 40% | Partly agree 35% |
| | Partly disagree 25% | Partly disagree 25% |
| | Disagree 10% | Disagree 10% |
| "I possess the fundamental knowledge required to efficiently adapt to and utilize new digital tools." | Totally agree 50% | Totally agree 55% |
| | Partly agree 35% | Partly agree 30% |
| | Partly disagree 10% | Partly disagree 10% |
| | Disagree 5% | Disagree 5% |

Engineering and non-engineering EFL students trust their digital instructional skills, but their excitement for new technology differs. Digitally happy engineering EFL students use familiar tech. Non-engineering EFL students desired new gadgets.This mismatch reveals a lack of investigation into new digital technologies despite faith in them.

Male and female EFL students trusted digital technology equally. They had different opinions on their ability to learn new technology quickly. Men (55% agree) are more confident than women (40% agree). 38% of male EFL students claimed they kept informed on new educational digital tools, compared to 21% of female EFL students . Male EFL students were also more inclined to attempt new digital tools (32% absolutely agree vs. 19% of female EFL students ), know a lot about them (32% vs. 16%), and believe they have the fundamental expertise to master them fast (51% vs. 46%).

EFL students were also questioned about their training and digital tool utilisation in school. Male and female pupils differed:

• “Have you had adequate training in using educational digital tools?” 37% of women agreed, whereas 56% of men did.

• “Have you had enough opportunities to experience digital tools in education?” Male EFL students agreed 66%, female EFL students 53%.

• “Have you received sufficient explanations or motication for using digital tools in your education?” 32% of women agreed, while 47% of men did.

“Have you had sufficient chances to critically assess digital tools for your education and career?” Student males agreed 42% and females 31%.

Men may feel more confident and prepared to utilise digital tools in their schooling, whereas women may believe they have had less opportunity to investigate and critically analyse these resources, despite their equivalent confidence.

Digital education contrasts engineering with non-engineering student behaviour. For motivation, engineers prefer in-person lectures and supervision. On-campus and online learning are preferred by non-engineers.

Small group lectures for both student groups improve campus digital cooperation. Delivery environment affects digital tech. Engineering EFL students find less teacher use of collaborative digital tools despite an agreement on PCs and cloud services. Digital integration may be inadequate in engineering.

EFL students don't fully exploit digital technology. EFL students may require additional digital literacy instruction for accessible tech. More male EFL students agree on teaching and report fast technological learning. Due to their perceived training, male pupils may utilise new digital technology better.

This study also found teacher digital competence varied. Traditional educators may be less tech-savvy than flexible non-engineers.Poor usage of collaborative digital technologies suggests engineering professors require specific training.

Research suggests meeting discipline-specific requirements and providing concentrated aid to improve student and instructor digital competency. It emphasises a balanced education that combines conventional and modern approaches. Future research may use TPACK and other sophisticated statistical tools to study digital paedagogy and education.

## 4. Conclusion

The study provides substantial insights into the implementation of digital pedagogical methods within both engineering and non-engineering disciplines. Engineering EFL students exhibit a pronounced preference for conventional, on-campus learning modalities, such as small-group seminars and in-person supervision, which they perceive as more beneficial when delivered face-to-face. In contrast, non-engineering EFL students demonstrate a higher degree of adaptability to a blended learning approach that integrates both on-campus and online components, indicating a greater acceptance of digital integration. This variation in preferences underscores the pivotal role of the delivery context in evaluating the effectiveness of digital pedagogical methods.

Both student groups generally perceive digital collaborative methods as more effective when conducted on campus, underscoring the importance of the learning environment in leveraging digital tools. Despite consistent use of basic digital tools among EFL students and teachers, engineering EFL students report less frequent use of collaborative digital tools by their teachers, indicating a potential gap in digital integration within engineering education. Moreover, while EFL students are confident in using digital tools, there is a noticeable gap in their awareness of these tools' full functionalities, suggesting a need for enhanced digital literacy initiatives.

Gender differences also emerge, with male EFL students showing higher confidence in learning new technologies and perceiving better training adequacy compared to female EFL students . This difference points to the need for targeted support to address varying levels of confidence and training adequacy. The study also highlights variability in teachers' digital competence, with engineering teachers potentially needing additional support to integrate digital tools effectively.

## 5. Recommendations

Educational institutions should create engineering and non-engineering training programmes that integrate collaborative digital technologies and improve digital competence to meet the study's conclusions. Expanding digital literacy to include complex functions would increase pupils' confidence and digital tool comprehension. To accommodate varied learning styles, use a balanced strategy that combines conventional and digital approaches. Address confidence and training gaps with gender-sensitive assistance and training. Assessment and feedback will help digital paedagogy prosper and satisfy educational requirements. Research on digital paedagogy should employ sophisticated statistical tools like TPACK to understand and promote appropriate instruction.

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