

Systematic Literature Review: User Perception and Satisfaction Level towards Digital Education Platforms

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Abstract: This paper analyzes user perceptions and satisfaction levels towards digital platforms in educational settings, as well as the factors influencing their effectiveness and satisfaction. This study employed a Systematic Literature Review (SLR) method with reference to the PRISMA framework. The databases used included Google Scholar, Scopus, Web of Science, and ERIC, with a publication period of 2019–2024. Data were extracted from 15 relevant articles identified through specific search strings, for example: (“digital platform” OR “online learning platform”) AND (“user perception” OR “user satisfaction”) AND “education”. The results showed that digital platforms positively contribute to effectiveness, satisfaction, and learning experience. The main factors influencing user satisfaction were ease of use, system quality, information quality, and service support. Digital platforms also encourage the transformation of educational values and practices in the digital era. This review was limited to the educational context and used only English-language articles. Therefore, this study emphasizes the need for attention to platform design that is responsive to pedagogical and technological needs, as well as improving digital infrastructure. This review was limited to the context of primary and secondary education and used only English-language articles. Therefore, this study emphasizes the need for attention to platform design that is responsive to pedagogical and technological needs, as well as improving digital infrastructure.

Keywords: Digital Platform, Online Learning Platform, User Perceptions and Satisfaction

A. Introduction

Digital Platform can be defined as a digital technology-based system that allows interaction between users and service providers to create, share, or exchange value through the internet network. The advent of educational platforms and digital tools has revolutionized the teaching-learning process, providing new opportunities and resources for students and teachers around the world. Educational platforms are virtual environments specifically designed to facilitate and improve the teaching and learning process. These platforms provide an online space where students can access

educational materials, participate in interactive activities, collaborate with their peers, and receive feedback from their teachers (Anghelo Josué et al., 2023). Platforms such as Google Classroom, Moodle, Canvas, and Zoom have become new spaces where interactions between educators and students take place over the internet (Singh et al., 2020). Digital platform-based learning not only expands educational access but also strengthens collaboration and learning intimacy at various levels (Nainggolan, 2021).

A review of journals related to User Perceptions and Satisfaction Levels of Digital Platforms in Schools shows that the use of digital platforms contributes positively to the effectiveness, satisfaction, and learning experience in various educational fields. The main factors influencing user satisfaction include ease of use, system quality, information, and support services. In addition to increasing motivation and learning efficiency, digital platforms also encourage the transformation of educational values and practices in the digital era. With adaptive and interactive designs, digital platforms have been proven to strengthen the learning process, expand access to education, and improve the quality and sustainability of learning experiences in modern academic environments.

This research lies in its focus on the analysis of user perception and satisfaction in primary and secondary education environments, which is still rarely studied in depth in the context of the international literature. While most previous research has focused on universities or global contexts, this study highlights the local and everyday dimensions of users' teachers and students in operating digital platforms for learning. This Systematic Literature Review aims to find out 1) What is the perception of users towards the use of digital platforms in learning? 2) What is the level of user satisfaction with the effectiveness of digital platforms? and 3) What factors affect user perception and satisfaction with educational digital platforms?

B. Methods

This systematic literature review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency, rigor, and reproducibility. The protocol was established prior to data collection, guided by the Population, Intervention, Comparison, Outcomes (PICO) framework:

1. Population (P) : Teachers, students, and administrators in K-12 educational settings
2. Intervention (I) : Implementation and use of digital education platforms
3. Comparison (C) : Traditional learning environments or cross-platform comparisons
4. Outcomes (O) : User perception, satisfaction, technology acceptance, and behavioral intention to use platforms

Eligibility Criteria

Inclusion Criteria

Studies were included if they met ALL of the following criteria:

1. Publication Date: Published between 2019–2024
2. Language: Published in English
3. Peer Review Status: Peer-reviewed journal articles or conference proceedings from accredited publishers
4. Study Design: Empirical research using quantitative (surveys, quasi-experiments), qualitative (interviews, focus groups), or mixed-methods designs
5. Population: Research participants include teachers, students, or administrators in primary or secondary school (K-12) settings
6. Intervention: Examination of digital education platforms, online learning systems, or technology-mediated learning environments
7. Outcomes: Studies report on user perception, satisfaction, usability, technology acceptance, behavioral intention, or learning effectiveness

Exclusion Criteria

Studies were excluded if they met ANY of the following:

1. Opinion pieces, editorials, or non-empirical commentary
2. Case studies with fewer than 20 participants without clear methodology
3. Studies conducted exclusively in higher education or corporate training contexts
4. Non-English language publications
5. Publications not peer-reviewed (except conference proceedings from indexed conferences)
6. Studies focusing solely on technical platform features without assessment of user perception or satisfaction
7. Duplicate publications of the same research
8. Studies published before 2019 or after 2024

Literature Search Strategy

Databases Searched

A comprehensive search was conducted across five databases selected for their coverage of education technology research:

Table 1. Database Selected

Database	Coverage	Rationale
Google Scholar	Multidisciplinary; includes journals, books, conference proceedings	Broad coverage of education research including open-access publications
Scopus	Peer-reviewed journals; multidisciplinary STEM and social sciences	High-quality indexed journals; comprehensive citation tracking
ERIC	Educational research and policy documents; US and international sources	Specialized education database; includes US Department of Education research
Web of Science	Citation index covering sciences, social sciences, and humanities	High-impact indexed publications; strong in empirical research
Springer	Major academic publisher; engineering, technology, and social sciences	Peer-reviewed journals in education and technology domains

Search Strategy and Keywords

Search strategies were tailored to each database while maintaining consistency in core concepts. The search employed Boolean operators and database-specific syntax:

Primary Search String (adapted for each database):

TEXT ("digital platform" OR "online learning platform" OR "educational technology" OR "e-learning platform" OR "learning management system" OR "LMS"), AND ("student satisfaction" OR "user satisfaction" OR "user perception*" OR "technology acceptance" OR "perceived usefulness" OR "ease of use" OR "usability") AND ("secondary school" OR "primary school*" OR "K-12" OR "high school" OR "middle school" OR "secondary education" OR "basic education"), AND (2019:2024)

Example Search Execution (Google Scholar):

Text "digital platform" AND "user satisfaction" AND "secondary school" AND (2019 OR 2020 OR 2021 OR 2022 OR 2023 OR 2024)

Supplementary Search Strings (alternative terminology):

1. "virtual learning environment" AND "student perception" AND (school OR education)
2. "online classroom" AND "satisfaction" AND "K-12"
3. "educational platform" AND "technology acceptance model" AND (school OR education)

Search Parameters

1. Date Range: January 2019 – December 2024
2. Language: English only
3. Publication Type: Peer-reviewed articles, indexed conference proceedings
4. Study Quality Screening: Initial assessment via title and abstract
5. Search Completeness: Forward and backward citation tracking applied

Study Selection Process

Screening Stages

Stage 1: Title and Abstract Screening

1. All retrieved records (n = 847 initial results) were imported into reference management software (Mendeley)
2. Title and abstract were evaluated against inclusion/exclusion criteria
3. Criteria applied: publication date, language, study design, and population relevance
4. Outcome: 67 potentially relevant studies retained for full-text review

Stage 2: Full-Text Review

1. Complete articles were retrieved and assessed by two independent reviewers
2. Detailed criteria application: study design verification, participant confirmation (K-12 setting), outcome relevance
3. Discrepancies resolved through consensus discussion with reference to original protocol
4. Final Selection: 15 studies met all inclusion criteria

PRISMA Flow Diagram

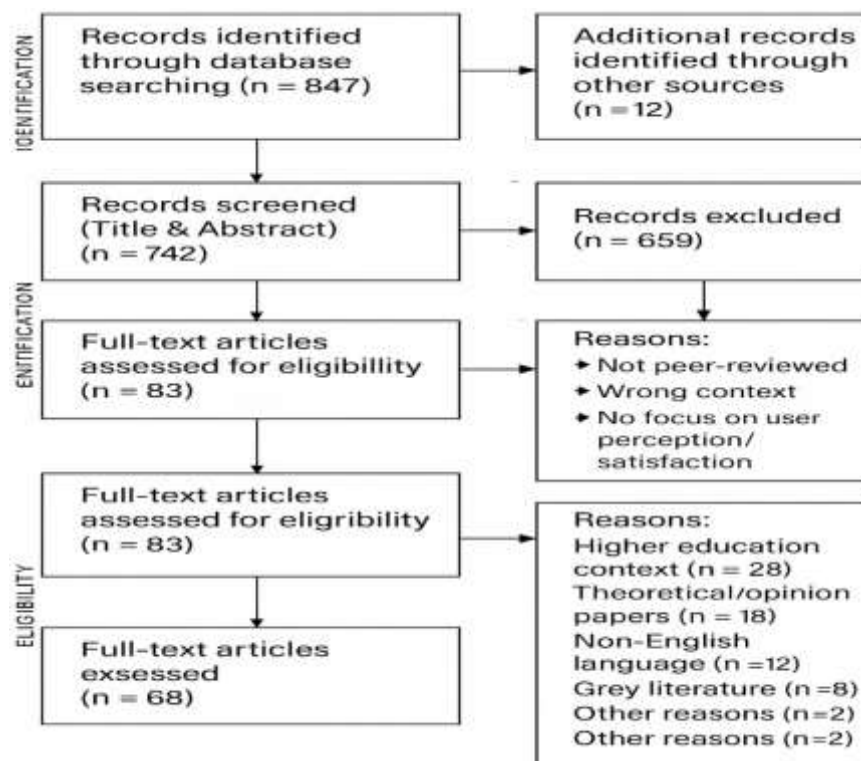


Figure 1. Prisma Diagram

Data Extraction

A standardized extraction form was developed and pilot-tested on three studies to ensure consistency. Data extracted from each included study included:

Study Characteristics

1. Author(s), year, country of origin
2. Institutional affiliation and funding source

Methodological Details

1. Study design (quantitative, qualitative, mixed-methods)
2. Research setting (school type, grade level, location)
3. Sample size and participant characteristics (teachers, students, administrators)
4. Sampling method and response rate
5. Data collection methods (surveys, interviews, focus groups, log analysis)
6. Measurement instruments (validated scales: TAM, SUS, UTAUT; custom instruments)
7. Duration of study and temporal context (during COVID-19, post-pandemic, etc.)

Intervention Characteristics

1. Digital platforms examined (name, features, deployment context)
2. Implementation context (emergency remote teaching, planned integration, blended learning)

Outcomes Reported

1. User perception dimensions (ease of use, perceived usefulness, behavioral intention)
2. Satisfaction measures (overall satisfaction, aspect-specific satisfaction)
3. Learning effectiveness metrics (academic performance, engagement, motivation)
4. Factors influencing perception/satisfaction (identified in results/discussion)

Key Findings and Conclusions

1. Primary findings related to RQs 1-3
2. Limitations acknowledged by authors
3. Recommendations for practice and research

Quality Assessment

Included studies were evaluated using the Mixed Methods Appraisal Tool (MMAT) Version 2018, which assesses:

Quantitative Studies (Screening & RCT):

1. Research questions/objectives clearly stated
2. Study design appropriate to research questions
3. Participants and setting adequately described
4. Data collected/analyzed using appropriate methods
5. Risk of non-response bias addressed

6. Quantitative data presented with summary statistics

Qualitative Studies:

1. Research questions/objectives clearly stated
2. Qualitative approach appropriate to research questions
3. Data collection methods well-described
4. Data analysis rigor (systematic process, reflexivity)
5. Findings-data linkage established

Mixed-Methods Studies:

1. Clear integration strategy between qualitative and quantitative components
2. Complementarity of methods justified

Studies were NOT excluded based on quality assessment; rather, quality ratings were considered during synthesis to weight evidence. No study scored below 50% on quality criteria.

Data Analysis and Synthesis

Thematic Analysis

Given the heterogeneity of included studies (diverse methodologies, theoretical frameworks, outcome measures), meta-analysis was deemed inappropriate. Instead, thematic synthesis was conducted:

Theme Development Process:

1. Initial Coding: All extracted findings were systematically coded for concepts related to user perception, satisfaction, and influencing factors
2. Pattern Identification: Codes were organized into preliminary themes by grouping conceptually related findings
3. Theme Refinement: Preliminary themes were refined through iterative review of source material, creating hierarchical structure (overarching themes, subthemes, codes)
4. Validation: Themes were examined against original studies to ensure fidelity and comprehensiveness
5. Narrative Synthesis: Themes were synthesized into coherent narrative summaries with supporting evidence

Analytic Framework

Analysis was structured around the Technology Acceptance Model (TAM), which posits that technology adoption is primarily determined by:

1. Perceived Ease of Use (PEOU): User assessment of system usability and operational simplicity
2. Perceived Usefulness (PU): User assessment of platform value in improving learning outcomes
3. Behavioral Intention: User likelihood of continuing platform use

Additional constructs incorporated:

1. System quality, information quality, service quality (DeLone & McLean IS Success Model)

2. Critical perspectives on educational platformization (social, ethical, equity dimensions)

Synthesis Approach

Step 1: Descriptive Summary

Included studies were characterized by design, population, and outcome type, with numerical summary (e.g., quantitative: n=10 studies; qualitative: n=3; mixed-methods: n=2).

Step 2: Thematic Mapping

Findings were mapped against three research questions:

1. RQ1: User Perceptions → themes regarding PEOU, PU, platform-specific strengths/weaknesses
2. RQ2: User Satisfaction & Determinants → themes regarding satisfaction levels and influencing factors
3. RQ3: Organizational & Contextual Factors → themes regarding infrastructure, support, training, policy

Step 3: Evidence Synthesis

Evidence was synthesized by identifying:

1. Consistent findings: Factors reported across multiple studies (strong evidence)
2. Mixed findings: Factors supported in some but not all studies (moderate evidence)
3. Emerging insights: Novel factors identified in limited studies (preliminary evidence)
4. Gaps: Questions inadequately addressed in existing literature

C. Results and Discussion

Here System quality, information quality, and service quality are the three main factors that determine user satisfaction in using e-learning. Users are more satisfied when the system is functioning stably, learning materials are relevant and accurate, and support services are responsive (Idkhan & Idris, 2023). The application of *smart platforms* in learning increases learning efficiency, motivation, and student satisfaction with the learning process. Digital platforms are able to create learning that is more interactive, personalized, and adaptive to individual needs (Stefanovic & Klochkova, 2021). Based on the results of the analysis conducted by the researcher on 15 journals that have been determined and are in accordance with the criteria, the researcher displays the results as follows.

Table 2. Paper of Systematic Literature Review

No	Title and Author	Research Object	Research Methods	Main Findings	Conclusion
1	Educational Platforms: Digital Tools for the Teaching-Learning Process in Education (Anghelo Josué et al., 2023)	Digital education platforms in the teaching and learning process	Bibliographic studies (literature review)	Education platforms enhance flexibility, interaction, collaboration, personalization, and learning evaluation through features such as forums, chat, and adaptive content.	Digital education platforms are revolutionizing learning by providing flexible access, effective collaboration, and supporting personalization and data-driven assessment.
2	Perceived Usability Evaluation of Microsoft Teams as an Online Learning Platform during COVID-19 Using System Usability Scale and Technology Acceptance Model in India. (Pal & Vanijja, 2020)	Use of the Microsoft Teams platform by students in India during the COVID-19 pandemic	Quantitative survey using System Usability Scale (SUS) and Technology Acceptance Model (TAM)	There is no significant difference between the mobile and web versions. The Perceived Ease of Use (PEOU) component of TAM is highly correlated with SUS results.	Microsoft Teams is considered easy to use and well received by students; The SUS and TAM methodologies complement each other in evaluating the usability of online platforms.
3	Perceived Outcomes of E-Learning: Identifying Key Attributes Affecting User Satisfaction in Higher Education Institutes. (Daultani et al., 2021)	College students in India who use e-learning	Quantitative survey with Structural Equation Modeling (SEM) on 802 respondents	Four main factors affect user satisfaction: instructors, courses, systems, and interactions. The instructor factor is the most influential.	The satisfaction of e-learning users depends on the quality of the instructor and the design of the course; Important outcomes for educational institutions to improve the user experience.
4	Evaluating Digital Platforms Related to Online Learning During COVID-19	Graduate students of the Indonesian Gospel Institute	Descriptive qualitative with questionnaire and interview (90 respondents)	Students are most satisfied with using Zoom, followed by YouTube and WhatsApp;	Digital platforms help online learning, but they need to improve

	Pandemic: Students' Satisfaction View. (Nainggolan, 2021)			internet network factors and facility readiness have a big influence.	infrastructure and services to support learning satisfaction and effectiveness.
5	The Critical Study of Digital Platforms and Infrastructures: Current Issues and New Agendas for Education Technology Research. (Perrotta & Pangrazio, 2023)	Global digital education platforms (Google Classroom, Microsoft 365, etc.) as educational infrastructure	Conceptual studies and critical analysis (qualitative critical review)	Educational platforming affects the role of teachers, parental relationships, and educational justice; There has been a shift in teachers' work and dependence on digital data.	Digital platforms are the key infrastructure of modern education but pose ethical, social, and justice challenges that need to be critically examined.
6	Utilisation Status and User Satisfaction of Online Education Platforms. (Chen et al., 2020)	Users of two online education platforms in China ("Chinese Mooc" and "Super Star")	Questionnaire survey of 1,162 respondents in Guiyang City using PPS sampling and structural model analysis	The factors of user experience and platform security & credibility have a positive effect on the level of user satisfaction.	User experience and platform security are key factors in increasing the satisfaction and utilization of online education platforms in China.
7	Ease of Use of Digital Platforms for Educational Purposes: Perception of Secondary School Students, Teachers and Administrators. (Thompson & Fabiawari, 2023)	High school students, teachers, and administrators in Port Harcourt, Nigeria	Descriptive survey with 742 respondents (409 students, 297 teachers, 36 administrators) using three questionnaires (TEPQ, SEPQ, AEPQ) and statistical analysis (mean, SD, chi-square)	Digital platforms are considered easy to use for learning, teaching, and administration activities. There is a significant influence of gender on the perception of teachers and students.	Digital platforms are easy to use, but advanced training is needed so that they are used more optimally for all parties in the school.
8	Cognitive Digital Platforms of Scientific Education. (Stryzhak et al., 2021)	Development of an ICT-based open learning system in Ukraine	Conceptual and descriptive study of the implementation of cognitive technology and ontology-based systems (TEDAOS)	Ontology-based cognitive digital platforms improve interaction, educational data processing, and scientific knowledge formation.	The use of cognitive ICT is able to create an adaptive open education system and supports knowledge-based scientific learning.
9	State Regulation and	Regulatory system	Qualitative descriptive studies using	The development of digital	Government regulation

	Development of Digital Educational Platforms. (Salakhova et al., 2021)	and development of digital education platforms in Russia	national and international secondary data	platforms in Russia still requires a clear legal framework. There are four regulatory models: centralized, decentralized, hybrid, and commercial.	is indispensable to ensure the sustainability and security of the digital education platform ecosystem in Russia.
10	Adoption Intention and Effectiveness of Digital Collaboration Platforms for Online Learning: The Indian Students' Perspective. (Singh et al., 2020)	College students in India using digital collaboration platforms during Covid-19	Questionnaire survey (324 students) with Structural Equation Modelling (SEM) analysis based on Technology Acceptance Model (TAM)	Interactivity, cost-effectiveness, and perceived usefulness factors have a positive effect on the intention to adopt collaborative digital platforms.	A positive attitude towards the effectiveness and ease of use encourages students' intention to continue to use collaborative digital platforms in online learning.
11	The Effectiveness of Online Platforms after the Pandemic: Will Face-to-Face Classes Affect Students' Perception of Their Behavioural Intention (BIU) to Use Online Platforms? (Al-Marroof et al., 2021)	University students who have participated in online and face-to-face learning in the Gulf region (768 respondents)	Quantitative with Structural Equation Modelling (SEM) based on Technology Acceptance Model (TAM) and external factors (Information Richness, System Quality, Information Quality, Satisfaction)	The factors of ease of use, usability, and quality of information have a significant effect on satisfaction and behavioral intentions using online platforms. The higher the satisfaction, the more positive the attitude towards using the platform.	Students are still interested in using online platforms after the pandemic if the system has good information quality and systems, as well as a high level of satisfaction.
12	Introduction: Critical Studies of Digital Education Platforms. (Decuyper et al., 2021)	A theoretical study of digital education platforms in the post-pandemic global context	Qualitative & conceptual studies in the form of critical platform studies	Digital platforms for education are not neutral; It shapes and is shaped by social, economic, and technological structures. "Platformization" is changing the form, values, and logic of education.	A critical approach to digital education platforms is needed that pays attention to the social context and impact on educational practices and values.
13	Satisfaction and Learning Experience of Students	Students of the Faculty of Medicine	Quantitative with questionnaire survey and SPSS analysis (t&ANOVA test)	Gender and program factors are related to online learning	Student satisfaction and learning experience

	Using Online Learning Platforms for Medical Education. (Enyoojo et al., 2024)	at Enugu State University of Science and Technology, Nigeria (300 respondents)		satisfaction. Most (63%) strongly agree that online platforms are effective in delivering medical materials.	depend on the course of study and gender. Online platforms are effective for medical education and are widely recommended.
14	Digitalisation of Teaching and Learning as a Tool for Increasing Students' Satisfaction and Educational Efficiency: Using Smart Platforms in EFL. (Stefanovic & Klochkova, 2021)	Engineering students studying English in Serbia & Russia	Quasi-experiment: two groups of students – one using a mobile app (Mobil2Eng), one using traditional methods	Students who used mobile applications showed higher learning outcomes and satisfaction than the control group.	The implementation of mobile and smart platforms in technical English learning improves student interactivity, motivation, and learning outcomes.
15	The Impact of User Satisfaction in the Use of E-Learning Systems in Higher Education: A CB-SEM Approach. (Idkhan & Idris, 2023)	Students of Makassar State University (231 respondents)	Survey kuantitatif dengan Confirmatory-Based Structural Equation Modeling (CB-SEM)	The quality of systems, information, and services has a significant positive effect on user satisfaction.	Educational institutions can improve e-learning user satisfaction by improving the quality of systems, information, and technical support services.

The results of the research that the author has conducted, namely reviewing 15 journals that have been in accordance with the criteria that have been set by the author, show that the use of digital platforms has a positive impact on increasing learning motivation, ease of access to materials, and the effectiveness of interaction between educators and students. However, the success rate of the implementation of digital platforms is highly dependent on the perception and level of user satisfaction with the system used. User perception reflects how individuals assess the benefits, convenience, and relevance of the platform to their needs, while user satisfaction is an important indicator in assessing the sustainability of the use of the technology in the context of education. In addition, the research also highlights the importance of digital innovation and a critical approach to educational platformization, as platforms not only serve as technological tools, but also change the structure and values in the education system. Overall, the implementation of a well-designed digital platform that is responsive to user needs has been proven to be able to improve motivation, learning efficiency, and quality of education in the digital era. This research lies in its focus on the analysis of user perception and satisfaction in primary and secondary education environments, which is still rarely studied in depth in the context of the international literature. While most previous research has focused on universities or global contexts, this study highlights the local and everyday dimensions of users' teachers and students in operating digital platforms for learning.

Based on these results, we can see several important things, which are as follows.

1. **Positive Perception of Users of Digital Platforms**
 In general, users (teachers, students, students, and education managers) have a positive perception of the use of digital education platforms. The factors of ease of use and quality of the system are the main indicators in shaping this perception, in line with the *Technology Acceptance Model (TAM)* model which emphasizes *Perceived Ease of Use* and *Perceived Usefulness* as the main determinants of technology acceptance.
2. **Satisfaction Influenced by Technical Quality and Support**
 The quality of the system and service has a direct effect on user satisfaction. The fast, stable, and easy-to-operate platform improves the comfort and efficiency of learning. Responsive technical support also reinforces a positive perception of the system.
3. **Platform Integration Drives Learning Effectiveness**
 Digital platforms serve not only as a medium for content distribution, but also as interactive tools for collaboration, assessment, and tracking of learning progress. This enriches the learning experience and fosters students' motivation to be actively involved.
4. **Satisfaction as a Catalyst for Sustainability of Use**
 The high level of satisfaction has been proven to increase *behavioral intention* to continue using the platform even after the pandemic. This shows that digital platforms have become an integral part of the modern learning ecosystem.

5. Critical Aspects of Implementation

Although it brings many benefits, the implementation of digital platforms needs to pay attention to ethical aspects and equality of access. As described by Decuypere et al., the digitalization of education also has the potential to create inequality and dependence on market logic if it is not controlled by policies that favor students.

D. Conclusions

This systematic literature review synthesized findings from 15 empirical studies (2019–2024) on user perceptions and satisfaction with digital education platforms in K–12 settings, revealing generally positive perceptions aligned with Technology Acceptance Model constructs and identifying system quality, information quality, and technical support as the strongest predictors of satisfaction. However, sustainable adoption depends not only on technical features but also on infrastructure readiness, institutional policy, and pedagogical integration, with satisfaction patterns varying across user roles and demographic groups. The evidence base remains constrained by language and geographic biases, methodological heterogeneity, limited longitudinal data, and underrepresentation of primary education, platform-specific analyses, special education contexts, and critical issues such as equity, privacy, and pedagogical autonomy. These gaps highlight the need for future research employing longitudinal and mixed-methods designs, equity-focused analyses, comparative platform evaluations, and deeper investigation of teacher professional development and institutional conditions shaping platform use. Collectively, the findings underscore that effective and equitable digital platform implementation requires not only robust technological design but also supportive organizational structures, user-centered practices, and policy frameworks that ensure transparency, accountability, and inclusive access.

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