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A Systematic Review of Digital Assessment in Education

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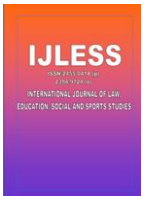

ABSTRACT

As the proliferation of technology continues to reshape the modern educational setting, understanding the role of technology usage among school children and its impact on their life skills development becomes increasingly critical. This study seeks to investigate the multifaceted relationship between technology use, specifically digital devices and the internet, and the assessment of life skills in school-aged children. The objectives are to explore the extent and patterns of technology usage among school children, as well as to assess how this usage correlates with the development of essential life skills. Findings from this study will shed light on the positive and negative impacts of technology usage on children's life skills development. It will also address potential differences in technology access, exposure, and usage among various demographic groups and how these disparities may influence life skills acquisition. The implications of this research are significant, as it will inform educators, parents, and policymakers about the optimal integration of technology into the classroom and home environments to foster holistic skill development in school children.

Keywords: assessment, education, life skills, school children, technology, usage

INTRODUCTION

Digital assessment tools and techniques have revolutionized the way educators evaluate and enhance student learning. Standards based grading, embedded in these tools, allow for a deeper understanding of student progress and personalized intervention strategies. The objectives of the study were to review the importance and benefits of Digital Assessment tools and techniques in Education.

The study is descriptive and attempts to understand the Importance and benefits of Digital Assessment tools and techniques in Education. The Importance and benefits associated with Digital Assessment tools and techniques in Education were identified based on previous studies done on similar topics.

Qualitative aspects of the research study were taken to consideration and the content analysis process was used in the study, which means the researcher organized and elicited information through various

research articles and academic publications were drawn for the purpose of data. This study is completely based on the secondary data collected through various sources.

The study revealed that Digital assessment tools can measure vary from low-order to higher-order thinking skills, depending on the form of questions the teacher provide, and can be used to improve the learning process, student motivation, collaboration, and interaction, and student-teachers ability.

The importance of assessment in the modern educational process will increase the understanding of digital assessment among those involved in education (administrators, educators and researchers), inviting them to consider possible pedagogical principles. The constant evolution of technological tools and the benefit of the introduction of new technologies in the teaching and learning process suggest the possibilities of using digital technology in the practices of the evaluation of learning inside and outside the classroom**.**

Index words: Digital Assessment, Tools, Techniques, Education, Review

Back ground of the study:

Digital assessment tools are specialized software applications designed to facilitate assessments' creation, administration, and evaluation through digital platforms. Unlike traditional paper-based assessments, digital assessment tools leverage technology to streamline the process of testing and grading. These tools can handle a variety of assessment types, including Quizzes, Exams, Interactive assignments&Surveys. They provide a more flexible and efficient way to assess students, allowing educators to design and deploy assessments online easily.

Benefits of Digital Assessments:

Immediate Feedback for Enhanced Learning: One of the primary purposes of digital assessment tools is to offer immediate feedback to learners. Traditional assessments often involve a waiting period for feedback, which can delay learning. Digital tools, on the other hand, can provide instant results and personalized feedback, enabling students to understand their strengths and areas for improvement quickly. This real-time feedback is crucial for facilitating timely adjustments in study strategies and enhancing overall learning outcomes.

Data Collection and Analysis for Informed Decision-Making: These tools often come equipped with analytics features that help educators track:Student performance, Identify trends, Make data-driven decisions. By analyzing patterns in assessment results, educators can gain insights into student learning behaviors, evaluate the effectiveness of instructional methods, and tailor their teaching approaches to meet students' needs better.

Enhancing Accessibility and Inclusivity in Education: Digital assessment tools enhance accessibility and inclusivity in education. They can be accessed from various devices with an internet connection, allowing students to complete assessments conveniently. This accessibility is particularly beneficial for students with disabilities or those who face logistical challenges in a traditional classroom setting. Digital tools can accommodate diverse learning needs and preferences often support features like:Text-to-speech, Customizable fonts, Adjustable contrast

Digital Assessment Tools and techniques:

Essay Grader: is the most accurate AI grading platform trusted by 30,000+ educators worldwide. On average, a teacher takes 10 minutes to grade a single essay. With Essay Grader, that time is cut down to 30 seconds. That's a 95% reduction in the time it takes to grade an essay, with the same results.

With Essay Grader, Teachers can:

- Replicate their grading rubrics (so AI doesn't have to do the guesswork to set the grading criteria)

- Setup fully custom rubrics, Grade essays by class, Bulk upload of essays, Use our AI detector to catch essays written by AI
- Summarize essays with our Essay summarizer

Kahoot: is a game-based learning platform that turns quizzes and assessments into interactive and engaging experiences. Users create multiple-choice quizzes, surveys, and polls that can be played live or asynchronously. The platform features real-time feedback, customizable templates, and a vibrant community of users who share and access various quiz content.

Quizizz: is an online platform for creating and administering quizzes, assignments, and assessments. It offers features such as:Instant grading, Detailed reports, Integration with various Learning Management Systems (LMS). The platform supports student-paced learning, allowing students to complete quizzes at their own speed.

Socrative: is a real-time assessment tool for interactive quizzes, polls, and exit tickets. It allows educators to create and deploy assessments that provide immediate feedback and analytics. Key features include:Various question types, Real-time response collection, detailed reporting.

Microsoft Forms:is an online tool for creating surveys, quizzes, and feedback forms, integrated within the Microsoft 365 ecosystem. It offers customizable templates, automatic data collection, and integration with other Microsoft applications like Excel and Teams.

Edpuzzle:is a digital tool that allows educators to create interactive video lessons by embedding questions and quizzes into video content. It provides features such as tracking student engagement and progress and integrating with various LMS platforms.

Flipgrid:is a video discussion platform that allows students to create and share video responses to prompts and assignments. It supports video discussions, peer feedback, and student presentations, fostering a collaborative learning environment.

Formative: is an assessment tool designed for real-time formative assessments, interactive lessons, and assignments. It provides features such as :Instant feedback, Data-driven insights, Integration with various LMS platforms

Nearpod: is an interactive platform that offers multimedia content, quizzes, and virtual field trips. It allows educators to create engaging lessons with interactive elements and real-time student responses.

Classkick: is an interactive platform for creating and managing assignments, providing student feedback, and facilitating peer review. It offers real-time collaboration and instant feedback features, making it suitable for various educational activities.

Objectives of the study:

This study aims to:

1. Examine the importance of digital assessment tools in contemporary education.
2. Identify the benefits of digital assessment tools and techniques in enhancing teaching and learning practices.
3. Highlight the challenges associated with implementing digital assessment systems.

Literature Review:

Maria Eden C. Zarate (2024)conducted a study on effectiveness of Digital Assessment Tools on the English Language Learning Outcomes of Tertiary Students. The purpose of the study is to compare the effectiveness of using digital assessment tools of the experimental and control groups on the English

language learning outcomes among the chosen third year students at Cebu Normal University. Both quantitative and qualitative research methods were used in this study.

Pre-post tests, standardized questionnaires, and classroom observations were used to collect data. It was carried out at Cebu Normal University with two third-year sections that were chosen based on their academic similarity. In the second semester of the Academic Year (AY) 2022–2023, the study was carried out. Thirty-five (35) students majoring in English Language from the Bachelor of Secondary Education (BSEd) program made up the first group, known as the control group, while thirty (30) students from the Bachelor of Arts (BA) in English Language program made up the experimental group.

The performance of the respondents in the experimental and control groups was then evaluated using a pre-post test. The result demonstrates how using digital assessment tools improve learners' overall performance and helps them acquire new languages.

By offering convenient and productive learning environments, Kahoot, Quizlet, EDpuzzle, Padlet, Moodle, Nearpod, Quizizz and other digital assessment tools have been found to be useful resources for promoting English language acquisition and enhance English language learning outcomes to tertiary students. Furthermore, the findings revealed from the experimental group shown that language learning aided by digital assessment tools is just as successful as learning from human teachers, suggesting that technology has the ability to provide individualized and customized learning experiences. This study promotes evidence-based language instruction and could be a helpful resource for researchers and educators interested in using digital evaluation tools into language classes.

The findings support the notion that using digital assessment tools in language training has the potential to fundamentally alter language learning in addition to highlighting the positive benefits of educational technology in the field of language education. In order for teachers to become proficient with technology and use educational technologies like digital assessment tools with confidence, educational institutions should provide them with thorough training programs and enough time.

The significance of technology in improving language learning outcomes is highlighted by these findings, which also highlight the necessity of continuous assistance and professional development for educators who wish to incorporate technology into language instruction.

Riza Andriani,Mellyzar, Isna Rezkia Lukman, Muttakin, Ali Imron Pasaribu, Mhd. Ridwan Fadli (2024)conducted a review of Digital Assessment in Education:

Tools, Feature, and Effectiveness. This research aims to provide a critical analysis of what each digital assessment tool in the field of education available on the internet can and cannot do based on the ease of application and completeness of its features.

The method used is a systematic literature review of educational websites, Google Scholar and Scopus, which mentions digital assessment tools from 2019-2022 with research stages:

1) research question;

2) searching literature;

3) carry out literature criticism using the PRISMA method; and

4) Article structuring. Analysis was carried out on the popularity, ease of access, types and forms of tests provided, scoring methods, and effectively to assess student ability. From the results, it was found that both teachers and researchers often use 11 digital assessment tools in the education sector. The types of tests often used are closed-ended questions; the tester immediately knows the score obtained. Some tools can be monitored during implementation, while others cannot. Digital assessment tools can measure vary from low-order to higher-order thinking skills, depending on the form of questions the

teacher provide, and can use to improve learning process, student motivation, collaboration, and interaction, and student-teachers ability. Further research is recommended to look directly at teacher and student responses to the effectiveness of digital assessment tools widely used to assess various student ability in the education sector.

Olga Viberg, Chantal Mutimukwe, Stefan Hrastinski, Teresa Cerratto-Pargman, Joakim Lillieskold (2024)conducted a study on exploring teachers' (future) digital assessment practices in higher education: Instrument and model development, This explorative work first develops and validates a survey instrument to examine teachers' digital assessment practices. Secondly, we build a model to investigate to what extent teachers' pedagogical digital assessment knowledge is a foundation for the future of digital assessment (i.e., authentic, accessible, automated, continuous and responsible). A total of 219 university teachers at a large European university participated in the survey study. Factor exploratory analysis and structural equation modelling were used to validate the reliability and validity of items and internal causal relations of factors. The results show the survey is a valid and reliable instrument for assessing teachers' digital assessment practice in higher education. Teachers' pedagogical knowledge and pedagogical content knowledge of digital assessment is critical, while teachers' technological pedagogical knowledge seems to have a more limited impact on the future of digital assessment.

Anzela Jurane, Bremane (2023) Reviewed digital Assessment in Technology-Enriched Education.The purpose of this thematic review is to summarize key features in studies over a specified period of time (2018–2021); consequently, it does not offer completely new knowledge, but captures essential knowledge of the last few years before the pandemic to avoid losing a significant aspect of digital assessment due to temporary pandemic solutions. The review results in a description of digital assessment that includes its conditions, opportunities and challenges, as well as other characteristics. The findings confirm the importance of digital assessment in the modern educational process and will increase the understanding of digital assessment among those involved in education (administrators, educators and researchers), inviting them to consider possible pedagogical principles. Furthermore, these findings are now comparable to and should be supplemented with post-pandemic insights and knowledge.

Mohammed Rehhali, Abderrazzak Mazouak, Said Belaaouad (2022)conducted a study on the Digital Assessment of Learning: Current Situation and Perspectives: Case of Teachers of Life and Earth Sciences.The recommended methodology of which is based on a multidimensional survey, in which we first questioned the teachers around the use of new technologies in the evaluation process, and secondly, to identify the degree of motivation and commitment of learners in instrumented and innovative assessment situations. Our research context is represented by 34 schools, 22 from qualifying secondary education and 12 from college education from the provincial delegation of Taza, with a varied population of 431 students of all levels and sectors, as well as than a number of 132 teachers of life and earth sciences. Finally, confirming that despite the satisfaction of the majority of teachers and students with respect to the functional qualities and the contribution of technological tools in evaluation practices, some disparities were noted whether at the technical, spatiotemporal level or even organizational.

Research Methodology:

This study adopts a **descriptive research design** to explore the significance and benefits of digital assessment tools in education. The approach is qualitative, utilizing **content analysis** to review existing literature on the topic. Key aspects of the methodology include:

Data Collection: Secondary data were sourced from peer-reviewed journal articles, academic publications, and reputable online databases.Studies published between 2018 and 2024 were prioritized to ensure relevance and recency.

Analysis Process: A content analysis framework was employed to identify recurring themes, insights, and trends in the reviewed literature.The data were categorized into thematic areas such as tools, benefits, challenges, and pedagogical implications.

Scope of the Study: The research focuses on digital assessment tools used in diverse educational contexts, including higher education and secondary education.Both qualitative and quantitative aspects of previous studies were examined to provide a holistic understanding.

Limitations: As the study relies on secondary data, findings are interpretative and dependent on the quality of reviewed literature.The absence of primary data collection limits the scope for contextual insights.

Results/ findings of the study: ***From the Literature Review it can be analyzed that***

- Digital assessment tools can measure vary from low-order to higher-order thinking skills, depending on the form of questions the teacher provide, and can use to improve learning process, student motivation, collaboration, and interaction, and student-teachers ability.
- Digital technologies are increasingly used in assessment. On the one hand, this use offers opportunities for teachers to practice assessment more effectively, and on the other hand, it brings challenges to the design of pedagogically sound and responsible digital assessment.
- Teachers' pedagogical and content knowledge of digital assessment is critical, while teachers' technological knowledge seems to have a more limited impact on the future of digital assessment.
- Digitalization has been a widely discussed topic in recent years, and it has entered various areas, including education. Assessment is one of the most important aspects in managing education environments.
- The importance of assessment in the modern educational process will increase the understanding of digital assessment among those involved in education (administrators, educators and researchers), inviting them to consider possible pedagogical principles.
- The constant evolution of technological tools and the benefit of the introduction of new technologies in the teaching and learning process suggest the possibilities of using digital technology in the practices of the evaluation of learning inside and outside the classroom**.**

Conclusion & Suggestions*:*

digital assessment tools have proven to be highly beneficial in enhancing the educational process by offering flexibility, immediate feedback, and increased accessibility. These tools enable educators to assess a wide range of cognitive skills, from basic recall to higher-order critical thinking. They also facilitate a more interactive and engaging learning experience for students, especially through gamified platforms that motivate learners and encourage collaboration. The use of digital assessments has the potential to revolutionize the way evaluations are conducted, making them more personalized and timelier.

However, the implementation of digital assessment tools is not without its challenges. While these tools offer numerous advantages, issues such as limited access to technology, technical difficulties, and resistance from educators or institutions remain significant barriers to their widespread adoption.

Additionally, the design of pedagogically sound assessments that align with learning objectives and ensure fairness for all students is a complex task. Overcoming these challenges requires concerted efforts from educational institutions, technology providers, and policymakers.

To fully leverage the benefits of digital assessment tools, it is essential to provide educators with adequate training and professional development, focusing on the pedagogical use of these technologies. Institutions should also ensure equitable access to the necessary technology for all students, particularly those from marginalized groups, to avoid further widening the digital divide.

Future research should explore the evolving role of these tools in educational settings and provide insights into how they can be continuously refined to meet the diverse needs of both students and educators.

Furthermore, as technology continues to advance, there is an opportunity to design more adaptive, inclusive, and personalized assessment methods. Digital assessments can become even more effective by integrating new innovations in artificial intelligence and machine learning, which could further enhance the learning experience. Educational institutions should embrace these innovations while remaining mindful of the ethical implications and the need for responsible, transparent assessment practices.

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