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Evaluating the Impact of Digital Innovations for Shaping the Future of Social Sciences

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Abstract

This paper evaluates the transformative impact of digital innovations on assessment and evaluation methodologies within the Social Sciences. As educational paradigms shift towards more integrated and technology-driven approaches, traditional assessment techniques are increasingly being supplemented, if not replaced, by digital tools and platforms that enhance the measurement of students' learning, engagement, and social competency. The paper examines a range of digital innovations—including adaptive testing, artificial intelligence-driven analytics, and immersive simulation environments—that provide more personalized and timely feedback to learners. It discusses the implications of these technologies for educators and institutions, emphasizing their potential to foster greater inclusivity, accessibility, and real-time data utilization in assessing complex social phenomena. Furthermore, this article assesses the ethical considerations surrounding data collection and privacy in digital assessments, advocating for responsible innovations in the field. Ultimately, the findings suggest that embracing digital innovations in assessment and evaluation will be crucial for shaping the future of social sciences education, equipping learners with the skills necessary to navigate an increasingly complex and interconnected world.

Keywords: Assessment, digital, evaluation, innovations, social sciences

Evaluating the Impact of Digital Innovations for Shaping the Future of Social Sciences

Everyone agrees that one of the most crucial and effective components of a learning process is assessment. It is also thought to be among the most difficult to reform. Re-thinking is becoming more and more necessary, if it is to stay up-to-date with the latest theoretical, cultural, and technological advancements that impact teaching and learning. Digital technologies create new opportunities for assessment experiences that are more immediate, personalized, and interesting. Though it is sometimes referred to as "technology-enhanced assessment," the use of digital technologies for assessment has not yet reached a "transformative" level; instead, current practices either replicate conventional assessment methods or appear in isolated, innovative areas Harris et al (2019). It is becoming more and more important to consider how digital technologies can best support improved assessment procedures and desired learning outcomes. The potential of digital technologies should be acknowledged while also taking into account the difficulty of the work, the variety of variables that affect how successfully educational reforms are implemented, and the important ethical issues that arise when using digital technologies for assessment. Assessment is a critical component of the education system, as it provides feedback to learners, teachers, and stakeholders on learning progress and achievement. In recent years, digital technologies have revolutionized the assessment process, offering new and innovative ways to measure students' learning and progress (Jiao & Lissitz, 2020). The traditional model of assessment, which is mostly paper-based and relies majorly on standardized tests and grading, has been criticized for its limitations in providing a comprehensive picture of students' learning and progress. Therefore, the integration of technology in assessment has become a popular and promising solution to address these limitations.

The social sciences have traditionally relied on conventional techniques for assessment and evaluation, such as term papers, written exams, in-person interviews, and observational studies. New digital innovations, however, are changing how we measure and analyze human behavior, cognition, and social interactions as technology continues to advance at a rapid pace (Latif, et al (in press) In addition to simplifying the evaluation process, these state-of-the-art

instruments are offering richer, more complex insights that could significantly influence the direction of the Social sciences.

One of the key responsibilities in the Social sciences teaching and learning process is assessment and evaluation. Assessment is emphasized as a crucial component of teaching and learning in the constructivist approach as well as teaching and learning in the social sciences; assessment is used to improve student learning. Data collection is the process of assessment. More precisely, assessment as cited by Hanna and Dettmer in Pan (2024) refers to the methods teachers use to compile information about their instruction and students' learning. The information paints a picture of a variety of activities utilizing various types of evaluation, including exams, observations, and pre-tests to assess students' performance after these data have been obtained. In order to ascertain the overall value of an outcome based on the assessment data, evaluation therefore depends on one's judgment. Then, during the decision-making process, we devise plans of action to strengthen any identified flaws, gaps, or shortcomings. Enhancing students' learning is the main goal of assessment and evaluation. Evaluations and assessments are crucial instruments for developing curricula and instructional strategies that meet the needs of students. It is also crucial for determining the overall efficacy of initiatives and updating instructional strategies. Well-crafted tests support students in applying the information and abilities they have acquired and show them where they stand academically. Teachers give students detailed feedback as part of assessment, which directs their efforts toward development. Every assessment has a strong alignment with the learning objectives. Teachers can ascertain students' strengths and weaknesses as well as their general subject understanding with the use of assessment data. Many techniques were used by various departments to evaluate students' past knowledge and abilities. Summative and formative assessments are the most widely used techniques for evaluating students. Since evaluation is a component of the feedback and development cycle that should be a part of any responsive and current teaching and learning strategy or plan, it plays a significant role in both an aligned curriculum and an overall teaching and learning strategy. Through evaluations, students can discuss their thoughts and experiences with the course material and the pedagogical

approaches employed with the instructor. This provides lecturers with important insights into how the material is being taught, as well as how the teaching methods and assessments have been benefitted by the students. Therefore, assessment and evaluation are an important part of every teaching-learning process. The purpose of assessment is not only to carry out assessment of learning but also to focus on 'assessment for learning'. Assessment needs to be an integral part of teaching learning process and a tool for continuous enhancement of students' learning. Again, the primary objective of assessment is to ensure that the learning objectives formulated are achieved through appropriate assessment methods. Keeping in view the above, the purpose of assessment and evaluation may be broadly categorized into two different heads.

Assessment for Instructional Purposes

In addition to certifying students, assessment also aims to educate them about learning challenges and how to overcome them. As was previously mentioned, a teacher's challenge is to incorporate assessment into the teaching-learning process. Implementing comprehensive and on-going formative evaluation during instruction is necessary to integrate assessment into the teaching and learning process. In this regard, educators must conduct both formal and informal observations in the classroom; adopt learner-centered teaching and assessment strategies, such as purposeful group and peer discussions in the classroom, inquiry-based learning, and project-based learning; employ a problem-based learning approach; critically analyze a variety of complex social science themes through debates and discussions; make use of portfolios; and conduct reflections on a range of current issues. These tasks together make up assessment in the context of education.

Assessment and Evaluation for Certification

The other important purpose of assessment and evaluation in the teaching learning process is to certify learners. For certifying learners, a type of summative evaluation needs to be carried out periodically as well as terminally. In the teaching-learning process, terminal or annual certification of students is standard procedure. As a result, term- or semester-end exams are given to determine and validate the degree of terminal behavior attained by the students. As a result, both

the terminal evaluation and the on-going, thorough evaluation significantly influence the learners' ultimate certification. Therefore, "assessment for instructional purposes" and "evaluation for certification" are the two main goals of assessment and evaluation (Pan, 2024). Assessment practices have undergone a radical change as a result of the swift integration of technology in education. It is critical to comprehend how technological advancements are impacting assessment redesigns and implementation as technology-enabled learning continues to grow (Ertmer and Ottenbreit-Leftwich, 2013; Mishra, Gupta & Shree, 2020; Robertson and Barber, 2017).

Education systems could change as a result of technology, especially in the field of assessment. We can use it to create tests that are more effective, dependable, and valid so that we can comprehend and assist students' learning fully. Technology-enhanced assessments have a number of advantages, including better efficiency, lower costs, and more timely and accurate feedback for teachers and students. Olorunola (2024) citing Lynch posits that these benefits can lead to more individualized learning experiences and promote cooperation and communication between educators and students. It is crucial to have a plan and a clear understanding of the assessment's goals and objectives in order to transform assessment using technology. First, teachers need to figure out which assessment techniques will work best for the learning requirements of their students. This entails determining the kind of assessment, the resources needed, the technology tools that are necessary, and the processes for evaluation and feedback. To find the best tools and platforms, it might be necessary to experiment with a variety of them. Additionally, it is critical to guarantee that the technology tools being used are dependable and secure and that teachers and students are receiving the necessary support and training (Olurinola (2024)). Additionally, for technology-enhanced assessments to be successful, cooperation and communication between educators, students, and other stakeholders are crucial. Technology enables a greater range of assessment types, including formative assessments, which involve gathering feedback on students' learning to inform instruction, help teachers and students adjust their learning strategies, and identify students' strong and weak points. Using on-line platforms

and tools, teachers can quickly and easily collect and analyze students' data, providing them with valuable insights into the needs and progress of their students. Common forms of formative assessment include surveys conducted in class and on-line exams given through Learning Management Systems (LMS) or on-line quiz platforms. Teachers can create knowledge-testing quizzes that provide students with immediate feedback. They can then adapt their lessons in light of the research and give each student the needed individualized attention. Another example is the use of digital exit tickets; a rapid formative assessment tool that facilitates the easy and rapid collection of student learning data by teachers at the end of a lesson or class period.

Technology can also aid in the creation of more authentic assessments that mimic real-world situations more closely, which can give a more accurate picture of a student's abilities. A study by Doheny-Farina and Bower as cited by Olurinola (2024) found that by letting students participate in simulated scenarios that are accurate representations of real-world situations, simulation software can offer an authentic assessment of students' abilities. Additionally, students can benefit from immersive learning experiences that mimic real-world situations through the use of augmented and virtual reality. An authentic assessment of an architecture testing student's capacity to apply theoretical concepts in a real-world setting can be obtained, for example, by having them design and experience a 3D model of a building or structure using virtual reality. Another illustration could be video-based tests, where students are expected to provide an accurate portrayal of their abilities and use video recordings to demonstrate their knowledge and skills. Adaptive assessments are a further way that technology can revolutionize the assessment process. Adaptive assessments modify the level of difficulty of questions according to a student's responses by using artificial intelligence and machine learning algorithms. With the use of machine learning algorithms, students' data can be analyzed to generate individualized feedback on strengths and weaknesses. The platform can offer targeted assessments that accurately evaluate students' abilities and provide them with actionable feedback to help them improve by analyzing this performance data. For instance, the platform might offer extra resources to support a student who is having problem understanding a certain idea. This guarantees that the evaluation is tailored to

the student's skill level, which can boost motivation and engagement and give a more precise and thorough picture of his knowledge and abilities. This methodology will support educators in creating lessons or activities that cater to the specific needs of each student and enhance learning objectives. It will also help educators create assessments that accurately reflect the knowledge and skills of each student by customizing them to their abilities.

By assembling a collection of digital artifacts, students can display their learning progress and accomplishments through the use of digital portfolios. By letting the students present their work in a multi-media format, this kind of assessment can give a more thorough and accurate picture of their skills. In comparison to traditional paper-based assessments, students can include videos, images, and written reflections on their work, offering a more complete picture of their abilities. Engineering students might be required to design a product or find a solution to a real-world issue as part of an assessment. Compared to conventional paper-based ones, digital portfolios have a number of benefits, such as the ease of content organization and sharing, peer and teacher feedback, and learning journey reflection. Digital portfolios can also assist people in building a positive on-line persona and improving their digital literacy. Digital portfolios, according to Olurinola (2024) citing Dennen and Burner (2018), can assist students in acquiring "21st-century skills, such as information literacy, media literacy, and digital citizenship" (p. 66). Students can demonstrate their accomplishments and abilities to academic institutions and prospective employers by building a strong on-line presence. Additionally, technology can help teachers and students collaborate and communicate, resulting in more meaningful assessment experiences. Students can work together in real-time, overcoming distance and time barriers, by utilizing on-line messaging apps, video conferencing, on-line discussion boards, and collaboration tools. Teachers and students can create and assess assignments in real time, giving immediate feedback and promoting a collaborative learning environment by using shared spaces for projects and assignments. Peer review is another way that technology can foster a sense of community and shared responsibility for learning by enabling students to evaluate and comment on each other's work (Olurinola, 2024).

Evolution of assessment and evaluation advancement in education

The transition from conventional paper-based procedures to the incorporation of digital solutions has characterized the evolution of assessment methods in education. Technological developments over the past few decades have completely changed the way teachers assess students' comprehension; opening up new avenues for academic engagement, effectiveness, and creativity. This paradigm change has made it possible for educators to close the gap between the analog and digital worlds, guaranteeing that assessment is still useful and applicable in the current digital era. Many educators still believe that hand-written assessments have advantages, even though there has been a noticeable shift towards digital assessment methods. This begs the question; how do we effectively balance the advantages of both approaches to meet diverse educational needs in the social sciences? This paper offers insights into the future of assessment in the Social Sciences by examining the evolution of assessment methods and the co-existence of traditional and digital approaches. Paper-based assessment techniques have long been the mainstay of education, providing teachers with a dependable and tactile means of gauging students' comprehension. Exams and assignments that are hand-written occasionally give students a tangible link to the subject matter they are studying; encouraging deeper engagement. Thanks to technological advancements over the past few decades, there has been a significant shift in education with the shift from paper-based to digital assessment methods. With the development of computers and the Internet in the latter half of the 20th century, digital solutions started to make an impact on education. The extensive use of personal computers in classrooms during the 1990s gave teachers access to new assessment resources. But it wasn't until the early 2000s that digital assessment techniques really took off, especially with the introduction of Learning Management Systems (LMS) and on-line learning environments. As technology developed and the internet became more widely available, digital assessment solutions expanded to include a variety of features. On-line tests and quizzes have become popular, giving teachers a way to evaluate students' understanding instantly and give them feedback. A major blind spot in assessment analytics is the challenge of gathering comprehensive data on students' performance relative to

specific learning outcomes, as noted by Young (2024). According to Young (2024), the continued use of paper-based marking systems, which are difficult to incorporate into learning analytics, is the root cause of this problem. Nonetheless, things are getting better with the emergence of trustworthy and reasonably priced electronic marking tools and a rising interest in Electronic Assessment Management (EAM). Teachers can administer tests more frequently and save a great deal of time by using the Automated Grading Systems (AGS), which lessen the workload associated with manual grading. Additionally, they have the capacity to offer data-driven insights into Students' performance, enabling teachers to spot patterns, strong points, and areas in need of development. This includes complex tools like item analysis, which enable teachers to assess each test question's efficacy by examining the answers provided by their pupils. This makes assessments more accurate in measuring students' learning and comprehension by highlighting which questions are well-constructed and which may require adjustment. All things considered, the transition from paper-based to digital assessment techniques is a revolutionary time in education, presenting fresh chances for participation, effectiveness, and creativity. However, Olurinola (2024) correctly points out that cooperation and communication between educators, students, and other stakeholders are crucial to the success of technology-enhanced assessment methods.

Some nations, particularly those in the developing world, have found it difficult to fully adopt the revolution in digital educational solutions. Progress has been hampered in some areas by elements like restricted access to technology, poor infrastructure, and low levels of digital literacy among teachers and students. The goal of initiatives like government-funded technology programs, collaborations with businesses in the private sector, and outreach programs for educators is to give educators and schools the required resources and training to successfully implement digital assessment methods. In terms of reducing the digital divide, the African Union's 2020–2023 Digital Transformation Strategy is a noteworthy success story. Out of the five world regions recognized by the ITU, Africa saw the largest increase in internet penetration between 2021 and 2022 [(13 percent) ITU, (2023)].

The use of software programs to digitize paper assessments is also growing in popularity. This helps teachers to bridge the gap between paper and digital learning, enabling both to coexist in the classroom. With the use of these tools, teachers can scan and digitize assignments that are completed on paper, allowing for fair students' assessment. To ensure efficient and successful assessment procedures, teachers can use digital solutions to grade assignments while students can keep using paper. Similar to how word processing can help reduce bias, utilizing a document scanner equipped with Optical Character Recognition (OCR) software is an additional option Gupta & Shree (2020). This makes it possible to digitize paper-based assessments without having to do so completely. Teachers do not have to deal with the difficulties of grading and organizing paper-bound data; instead, they can keep enjoying the convenience and familiarity of administering assessments on paper. These innovations preserve the familiarity and tactile experience of traditional paper-based methods while stream-lining the assessment process and increasing efficiency. Paper-to-digital technologies are used by educators all over the world to improve their instructional strategies, monitor students' progress, and examine performance data. Making learning analytics a "strategic priority" for Social Science educators is essential to the long-term viability of assessment and evaluation. This touches on many important areas of the process, including systems, storage, data, and literacy, so it can certainly set the standard for larger digital transformation initiatives.

Types of Technology-assisted Assessments

The various technology-assisted assessments include on-line, computer-based, and mobile assessments (Kim, 2011). The choice of technology for assessment depends on the specific needs and context of the test taker and the institution. These types of technology have unique features and functions and there are some key differences between them:

i. On-line assessments: delivered over the internet, they typically require the test taker to log on to a website or platform to access the assessment. Online assessments can be taken on any device with an internet connection, such as a desktop computer, laptop, or tablet. They are often used for high-stakes testing, such as college entrance or professional certification exams.

ii. Computer-based assessments: delivered on a computer or laptop, but not requiring an internet connection, they are often installed on the test taker's computer or provided on a secure testing center computer. Computer-based assessments may offer more advanced features, such as multimedia elements or adaptive testing.

iii. Mobile assessments: delivered on mobile devices, such as smartphones or tablets, they are often used for formative assessments, quizzes, or surveys. Mobile assessments are convenient and can be taken on the go, but may have limitations in terms of screen size and functionality.

Emerging Digital Innovations in Assessment and Evaluation

Using virtual and augmented reality (VR/AR) technologies for assessment and evaluation is a major area of innovation. With the help of these immersive environments, dynamic, realistic, and contextual scenarios that closely resemble actual social situations can be created. As these technologies are thought to have a significant impact on post-secondary teaching and learning, their use in higher education has increased recently. Examples of these technologies are Artificial Intelligence (AI), Learning Analytics (LA), and Extended Reality (XR) applications. Higher education has long benefited from the use of educational technologies, and in recent years, the field has seen a surge in the application of Emerging Technologies (ETs), including artificial intelligence and virtual reality. In an education specific context, Veletsianos (2020) defines emerging technologies as "tools, technologies, innovations, and advancements utilized in diverse educational settings to serve varied education-related purposes", and lists its characteristics as follows: (1) they may or may not be new technologies; (2) they change rapidly so are always in a state of 'coming into being'; (3) they go through cycles of hyped expectations; (4) they are in a continuous state of being understood and researched; and (5) they have potential for transforming social practices. Higher education is using more and more educational technologies (ETs); however, there is a dearth of systematic research on the use and efficacy of various ETs, including Artificial Intelligence (AI), Learning Analytics (LA), and Extended Reality (XR) applications in the assessment and feedback domain. Pupils' capacity to negotiate intricate interpersonal

relationships, show empathy, and make wise choices in fictitious environments can all be evaluated. By using this method, the assessment becomes more authentic and offers insightful information about the students' emotional, social, and cognitive abilities.

Artificial Intelligence and machine learning

There are now more options available for assessment and evaluation procedures thanks to the incorporation of machine learning (ML) and artificial intelligence (AI) algorithms. Artificial intelligence (AI)-enabled tools can evaluate student responses, spot trends, and offer tailored feedback and suggestions (Canbek & Mutlu, 2016). This allows teachers and students to improve their methods and get the best results. These developments could simplify the evaluation procedure, lessen prejudice, and promote more inclusive and egalitarian evaluation procedures in the Social Sciences.

Learning analytics and educational data mining

Integrating learning analytics and educational data mining techniques is an important research area. Researchers and educators can obtain previously unheard-of insights into the subtleties of students' engagement, knowledge acquisition, and problem-solving techniques by utilizing the massive volumes of digital data produced by on-line learning platforms, educational games, and interactive simulations. Assessment tools that are more adaptive and personalized can be developed because of this data-driven approach, allowing the evaluation process to be customized to the particular needs and strengths of each learner. The emergence of educational data mining and learning analytics is one of the most exciting developments in this field. Researchers can get unprecedented insight into how people learn by tracking and compiling digital footprints left by students interacting with online learning platforms. Gupta & Shree, 2020 asserts that information that was previously difficult or impossible to capture at scale, such as patterns in problem-solving techniques, knowledge gaps, and even emotional states, can be revealed by this data. These insights help teachers recognize students who are at-risk, tailor lessons to them specifically, and improve their pedagogical strategies over time.

Mining and analyzing data gathered while we teach according to Chamizo-Gonzalez, et al

(2015). is the foundation of educational data mining, which aims to improve learning outcomes? Educational researchers believe that this kind of research has the potential to significantly enhance learning, just like research in the scientific and business domains. And it is gotten easier: gathering the kind of data needed to guide best practices used to be a costly undertaking, but these days, massive volumes of data can be gathered quickly and effectively. The vast volumes of data are being used by the educational data mining community to validate research findings on a large scale. With more information, it also aids in the much more accurate prediction of student knowledge, dropout rate, and motivational state. We are able to obtain a deeper comprehension of particular student groups, through the process of data mining, we are able to obtain a deeper comprehension of particular student groups, which improves individualization and adaptability.

Mobile devices and wearable sensors

In a similar vein, new kinds of in-situ behavioural assessment are made possible by the widespread use of mobile devices and wearable sensors (Harari, et al 2018). In real-world situations, researchers can now discreetly observe variables like physical activity, social interactions, and physiological reactions. This makes it possible to study human behavior outside of the artificial confines of a laboratory, in its natural setting. Furthermore, researchers can create richer, multi-dimensional profiles of people and social dynamics by combining these sensor data with self-reported surveys and other qualitative measures such as digital badging, micro-credentials, and blockchain-based certification systems

The emergence of digital badging, micro-credentials, and certification systems based on blockchain technology present novel methods for identifying and verifying the attainment of specialized knowledge and abilities (Hada, et al 2023). The multifaceted nature of social science learning can be captured by these digital credentials, offering a more thorough depiction of students' accomplishments and enabling smooth transitions into professional environments, academic programs, and opportunities for life-long learning.

Beyond assessment, digital tools are also transforming the way we evaluate the impact and effectiveness of social science interventions. Traditional randomized controlled trials, while

considered the gold standard, can be resource-intensive and limited in scope. However, Quin, et al (2024) aver that the rise of rapid-cycle evaluation and A/B testing techniques leverages digital platforms to quickly iterate and validate the impact of new programs or policy changes. This agile, data-driven approach enables social scientists to nimbly respond to emerging needs and refine their work for greater real-world efficacy.

Digital assessment and evaluation come in various types such as (e.g., online quizzes, simulations, games) and they have immense benefits (e.g., increased accessibility, flexibility, and accuracy) for student assessment and, digital evaluation (Nuha, 2028). Types of digital evaluations (e.g., learning analytics, data mining, and machine learning) with significant benefits (e.g., personalized feedback, early intervention, and data-driven decision-making).

Challenges in the use of digital technologies in assessment

Measuring, gathering, analyzing, and reporting learning data is one of the education and technology research fields with the fastest growth rates. This has to do with the emergence of fresh approaches to data visualization, such as customized dashboards. Software firms are starting to create data visualization systems for educational institutions that allow for real-time tracking of students', classes', and the school's overall progress. It is important to remember that digital technologies are not a substitute for traditional assessment methods, even though using them in assessments has many advantages over traditional paper-based assessments, including greater convenience, accessibility, security, and engagement. Regarding security, accessibility, and dependability, digital technologies like computer-based, mobile, and online assessments may have drawbacks. For example, poor internet access or hardware or software malfunctions could make the assessment process less enjoyable. Furthermore, there may be new biases introduced by digital assessments, raising issues with fairness that must be resolved. For instance, varying levels of technology access and/or familiarity with digital platforms may disadvantage some populations. There are unique difficulties and moral dilemmas associated with integrating these digital innovations. It's important to carefully navigate issues related to data privacy, algorithmic bias, and the possibility that technology will exacerbate already-existing disparities. However, the

advantages of these tools far outweigh the risks when used carefully and with strong security measures. Rather, digital technologies should be used in combination with traditional methods to create a well-rounded assessment approach that provides a comprehensive picture of students' knowledge and skills. In some cases, traditional assessment methods, such as written exams or hands-on assessments, may be better suited to assess specific skills or competencies. The choice of assessment method should be based on a variety of factors, including the goals of the assessment, the needs and preferences of the students, and the context in which the assessment is being administered.

The paper surmises that digital innovations in assessment has attendant challenges which includes but not limited to technical issues, validity, and reliability while digital innovations in evaluation presents challenges data privacy, bias, and interpretation. The expectation is that as research in the field of digitization of assessment and evaluation continues, the future holds prospect as challenges in the utilization of these innovations will be surmounted and educators in the Social Sciences can leverage on the innovation for achieving assessment; a critical pillar of education.

Shaping the Future of the Social Sciences

The coexistence and balance of paper and digital assessment methods leverages the strengths of both traditional and technological tools and will shape the future of assessment in the Social sciences. While digital solutions have transformed assessment practices by introducing efficiency, real-time feedback, and detailed analytics, paper-based assessments continue to offer unique benefits such as tactile engagement and accessibility. This dual approach acknowledges the diverse needs and preferences of educators and students, ensuring that assessments are inclusive and adaptable.

Conclusion

Innovative technologies, such as OCR software, facilitate the seamless integration of paper-based work into digital platforms. Educators can provide more comprehensive and personalized feedback, enhance students' engagement, and make data-driven decisions to support

learning outcomes by blending the familiarity and reliability of paper with the dynamic capabilities of digital tools. This holistic approach to assessment ensures that educational practices not only stay relevant and effective but also embrace the best of both worlds to foster students' success.

The key future direction for digital innovations and evaluation for shaping the Social Sciences include emerging technologies (e.g., AI, VR, and blockchain) and the potential for digital assessments and evaluations to promote social justice, equity, and inclusivity. Digital innovations have the potential to revolutionize assessment and evaluation in Social Sciences, shaping a more inclusive, effective, and sustainable future. This paper is a call to action for researchers, educators, and policymakers to embrace digital innovations in assessment and evaluation.

References

Canbek, N. G., & Mutlu, M. E. (2016). On the track of Artificial Intelligence: Learning with intelligent personal assistants. *Journal of Human Sciences, 13(1), 592–601.*

Chamizo-Gonzalez, J. Cano, E., Grande, E. U. Colomina C. M. (2015). Educational data mining for improving learning outcomes in teaching accounting within higher education. *International Journal of Information and Learning Technology. 32*(5):272-285. DOI: 10.1108/IJILT-08-2015-0020

Dennen and Burner (2018). Information and communication technologies, and learning theories: Putting Pedagogy into Practice, https://api.semanticscholar.org/CorpusID:226954572}

Ertmer, P. A., & Ottenbreit-Leftwich, A. (2013). Removing obstacles to the pedagogical changes required by Jonassen's vision of authentic technology-enabled learning. *Computers & Education*, *64*, 175-182

Hada, A. A., Rayed, A. A., Ayesha, U., Omar, K. H., & Faroukh, K. H. (2023). Blockchain-based micro-credentialing system in higher education institutions: *Systematic literature review. Knowledge-Based Systems, 265(3):110238*. DOI: 10.1016/j.knosys.2022.110238

Hanna, G. S., & Dettmer, P. A. (2004). *Assessment for effective teaching: Using context-adaptive planning.* Boston, MA: Pearson A&B.

Harari, G. M., Muller, S. R. & Gosling, S. D. (2018). Naturalistic assessment of situations using mobile sensing methods. DOI: 10.1093/oxfordhb/9780190263348.013.14

Harris, C. J., Krajcik, J. S., Pellegrino, J. W., & DeBarger, A. H. (2019). Designing knowledge-in-use assessments to promote deeper learning. *Educational Measurement: Issues and Practice, 38(2), 53–67.*

ITU, (2023). Global offline population steadily declines to 2.6 billion people in 2023. https://www.itu.int/itu-d/reports/statistics/2023/10/10/ff23-internet-use/

Jiao, H., & Lissitz, R. (2020). *Application of artificial intelligence to assessment*. Information Age Publishing.

Kim, K. H. (2011). The creativity crisis: The decrease in creative thinking scores on the torrance tests of creative thinking. *Creativity Research Journal, 23*, 285-295. https://doi.org/10.1080/10400419.2011.627805

Latif, E., Zhai, X., Amerman, H., & He, X. (in press). *Automatic scoring platform for AI-based formative assessment.* In Z. X. & K. J. (Eds.), *Uses of Artificial Intelligence in STEM Education*. Oxford University Press,

Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, 1–24, https://doi.org/10.1016/j.ijedro.2020.100012

Nuha, M. A. (2018). Advantages and challenges of using e-assessment**.** *International Journal of Information and Education Technology. 8(1):34-37*, DOI: 10.18178/ijiet.2018.8.1.1008

Olurinola, O. (2024). Digital technologies for assessment. https://mgiep.unesco.org/article/digital-technologies-for-assessments

Pan, Y. C. (2024). A work-based approach for improving students' performance in the college general English class. *English Language Teaching Educational Journal*, *7*(2), 65-78.

Quin, F., Weyns, D. Galster, M. & Silva C. C. (2024). A/B testing: A systematic literature review. *Journal of Systems and Software, Volume 211*, May 2024, https://doi.org/10.1016/j.jss.2024.112011

Veletsianos, G. (2020). *A definition of emerging technologies for education. Emerging Technologies in Distance Education*. (pp.3-22). Athabasca University Press.

Young L. (2024). The evolution of assessment methods: From paper-based to digital solution. https://www.turnitin.com/blog/the-evolution-of-assessment-methods-from-paper-based-to-digital-solutions