

The Extent of Using Modern Technology in Teaching Methods

Wadiyan Hassan Ali

¹Department of Education of Al-Ishaqi, Salah al Din, Iraq



DOI : <https://doi.org/10.61796/ijss.v3i2.132>

Sections Info

Article history:

Submitted: March 07, 2026
Final Revised: April 26, 2026
Accepted: May 04, 2026
Published: June 19, 2026

Keywords:

Teaching Methods
Modern Technology
Artificial Intelligence
Interactive Learning
Quality of Education
Flipped Classroom

ABSTRACT

Objective: This research highlights the impact of integrating modern technology, specifically Artificial Intelligence (AI) and interactive learning tools, into teaching methods, and their direct role in elevating the quality of higher education. The research problem stems from the continued reliance on classical methods and theoretical indoctrination, which creates a comprehension gap and diminishes student motivation, in addition to addressing the challenges of teaching staff shortages. The research aims to emphasize the inevitability of transitioning towards interactive learning environments based on the "competency-based approach." **Method:** It reviews advanced technological applications, including smart classrooms, neural networks for analyzing classroom data, interactive screens, e-books, and the utilization of interactive videos within the "flipped classroom" model. **Results:** The research reached several key conclusions, most notably that employing these technologies does not eliminate the professor's role but rather reshapes it into that of a guide and mentor. It radically contributes to enhancing critical thinking and increasing the learner's independence and self-regulation. **Novelty:** The research recommends the necessity of building a smart, centralized network system within universities, mainstreaming the use of interactive screens, and training academic staff on the strategic design of digital content to ensure an active partnership between the professor and the student in managing and developing the educational process.

INTRODUCTION

Our contemporary world is witnessing a veritable revolution in the field of communications and digital technologies, which has cast its shadow and exerted a profound influence on all aspects of life, foremost among them the education sector. Amidst this rapid development, it is no longer acceptable or feasible to rely on traditional teaching methods to achieve the objectives of academic institutions, and the modern trend, specifically the competence-based approach in higher education, compels us as researchers and academics to reconsider the pedagogical support for curricula and to infuse them with teaching methods capable of building genuine professional competencies. The learning process is, at its core, a complex psychological and cognitive process that requires tools capable of simulating the mental development of the modern learner. Advanced technologies such as artificial intelligence and interactive distance learning have steadily begun to find their way into our classrooms, promising to create more flexible and interactive learning environments. Whilst we acknowledge the importance of traditional methods such as lectures and rote learning in the early stages of knowledge acquisition, their shortcomings in meeting the complex demands of the modern age have become apparent; this necessitates redirecting the compass of modern education towards stimulating independent student activity, and creating spaces for self-

directed and experiential learning that unleashes their latent potential, shifting their focus from merely passively receiving information to actively processing it.

The Research Problem

Through continuous observation of our educational landscape, a fundamental problem emerges: the persistence of the educational system in Iraq—at all levels, particularly at university level—in adhering to traditional, classical methods. This reliance on the past has led to a clear gap in the delivery of academic content, which negatively affects students' ability to grasp the subject matter in depth, and at the same time indicates a decline in the efficiency of conveying information and linking it to the learner's lived reality, creating a state of 'epistemological alienation' between what the student studies and the developments they witness outside the university walls.

Furthermore, we observe a predominance of abstract theory at the expense of practical application; the process of feeding students vast amounts of information in a purely theoretical manner instils in them a sense of boredom and extinguishes their motivation to learn, negatively affecting their psychological state and their desire to engage effectively with the lecturer. Added to all this is the practical challenge posed by the shortage of teaching staff resulting from certain circumstances facing our institutions. All these factors and daily observations make it necessary and urgent to bring about a bold and qualitative shift towards the adoption of interactive teaching systems that take into account the individual differences and psychological needs of learners.

Research Objectives

Through this research, we aim to achieve a set of interrelated objectives that we hope will serve our educational institutions and society:

1. To provide serious scientific solutions to the problem of a shortage of teaching staff and to move beyond total reliance on outdated methods in Iraqi universities and schools, by employing modern technological tools such as artificial intelligence and distance learning using interactive video systems.
2. To create an inclusive learning environment that caters to the diverse learning styles of our students, ensuring their psychological well-being and sense of belonging within the classroom, whilst placing a strong emphasis on linking theoretical concepts to real-life, tangible applications.
3. Contributing to the development of the infrastructure of our country's education system by advocating for the integration of interactive screens and smart platforms across all school and university levels to foster sustainable educational interaction.
4. Elevating the level of Iraqi students' thinking and encouraging them to think outside the box; in the belief that this interactive approach is the way to produce creative minds capable of generating serious ideas that serve our society and facilitate and improve the quality of life within it.

RESEARCH METHOD

Chapter Two

Technological Transformations and the Use of Interactive Learning Methods and Artificial Intelligence

Anyone observing the contemporary educational landscape can clearly see that the adoption of modern technologies is no longer an optional extra, but an absolute necessity dictated by the spirit of the times and the nature of today's generations, who have grown up in entirely digital environments. Traditional teaching methods have become ineffective; education achieves its true effectiveness when it responds more swiftly to the changing needs of the learner, moving beyond the mechanism by which the teacher organises activities towards deeper means that reflect the success of the academic process as a whole [1]. Furthermore, rapid developments in the telecommunications sector have propelled artificial intelligence and interactive learning technologies to the forefront, heralding unprecedented interactive possibilities that break down the walls of traditional classrooms in favour of more dynamic and vibrant environments [2].

First: The technical and psychological nature of artificial intelligence in education

Artificial intelligence has brought about a radical revolution in computer science, moving beyond the concept of the rigid machine towards the construction of systems capable of simulating human cognition. This multidisciplinary field seeks to model and enhance the capabilities of the mind, which has a positive impact on tailoring learning pathways to suit each student's cognitive abilities and preferences, and providing a learning environment that ensures universal access for all, regardless of their initial knowledge gaps [3].

At its core, this technological revolution is based on overlapping conceptual levels:

1. Machine Learning: This relies on algorithms fed with historical data to predict future outcomes without the need to programme them specifically for each task. It is divided into a 'supervised' mode, which relies on pre-labelled data, and an 'unsupervised' mode that deals with unlabelled datasets with unknown outputs, enabling educational systems to understand students' hidden behavioural patterns [3].

2. Deep Learning: This represents an advanced form of machine learning, where inputs are processed through a neural network architecture biologically inspired by the structure of the human brain. Data passes through 'hidden layers' that allow the machine to delve deeper into learning, make connections, and weigh inputs with high precision, mimicking the process of neural synapses in humans [4].

3. Neural Networks: These consist of interconnected neurons or nodes that attempt to solve complex problems with greater accuracy, and help computers make intelligent decisions with limited human assistance. This stems from their superior ability to learn and model the non-linear and complex relationships between input and output data, which is useful in areas such as recording knowledge points and accurately analysing levels of comprehension [4].

Secondly: Smart Classrooms and the Transformation of the Educational Role

When these technologies are applied to our classrooms, 'smart classrooms' emerge, utilising natural language processing and expert systems to assess students' levels of understanding; Expert systems are considered among the best knowledge-based computer systems; they consist of a knowledge base, an inference engine and a user interface, and work to filter the best scientific explanations and present them to the student based on their immediate needs [2].

The extensive use of artificial intelligence frees university lecturers from the routine administrative constraints that have long drained their energy. Intelligent assignment marking, which uses big data technology to solve semantic recognition problems (and which, in some advanced applications, has achieved an accuracy of over 95% compared to human marking), gives the teacher valuable energy and time to focus on innovative instructional design [2]. As a result, the teacher's role is gradually shifting to that of a 'life coach' who guides students towards independent learning and fosters their emotional intelligence and team spirit, utilising big data analysis that tracks students' facial expressions and voice data to assess the academic process and identify moments of distraction or high concentration [3].

Third: Interactive video and 'flipped classroom' applications

To address the shortcomings and feelings of isolation that may mar interaction in distance learning environments, 'interactive video' offers an advanced educational and psychological solution. Video is no longer a passive presentation tool that reinforces rote learning, but rather an interactive environment that incorporates an additional layer of metadata, or what is known as annotations, which are divided into:

1. Semantic (educational) annotations: These are linked to temporal (video frame) and spatial anchors, and are used to support 'active reading' and accurately describe content, thereby helping to reduce cognitive load by breaking down information [5].
2. Activity and assessment comments: These challenge the student to provide input and interact (such as clicks, drags, drops and multiple-choice questions), and rely primarily on the temporal anchor to stimulate synchronous tasks and periodically re-engage attention [6].

This shift moves students towards active reading and deep processing of information, and is fully in line with the educational philosophy of the 'flipped classroom'. In this model, students absorb interactive visual content at home and in a suitable psychological environment, so that they are prepared to use the actual lecture time for in-depth exploration, problem-solving and critical discussion with their teacher and peers [7], [8]. The interactive video also includes visual cues to guide attention, inferential questions to link prior knowledge with new information, and rhetorical questions that encourage students to anticipate events and independently correct their own misconceptions [9].

Fourth: The competency-based approach and interactive learning strategies

In higher education, the traditional model faces real challenges from the 'competency-based approach', as professional competence is no longer merely 'knowledge' stored in the memory or an abstract 'skill' performed mechanically, but rather an integrated formation and a personal trait that determines a student's productivity and their ability to utilise their potential across a broad professional spectrum and manage emotions in times of crisis; Hence the importance of 'interactive education', which focuses on organising self-directed and experiential learning environments, allowing students to take the initiative within flexible training programmes tailored to their individual pace [10].

This approach relies on in-depth applied strategies that address the behavioural aspects of the learner, including:

1. The case study method: This presents the student with real-life professional scenarios supported by data and statistics, prompting them to analyse causes and consequences, devise appropriate solutions and defend them publicly, thereby building their self-confidence and persuasion skills [11].
2. Behavioural modelling: This focuses on teaching professional interaction skills through realistic simulations of workplace situations (such as interviews and conflict resolution), provided that the model is engaging and psychologically motivates students to follow it [11].
3. Play-based projects and practical learning: Organising students into competing groups to solve professional or psychological problems within an interactive activity, which develops problem-solving skills and makes them more flexible and adaptable in their future tasks [10].

Fifth: The technological infrastructure for academic interaction

The interactive education system is based on key pillars, including student interaction with the lecturer, interaction with peers to exchange ideas (which enhances social learning), interaction with multimedia-rich academic material, and engagement with internet technologies in general as an inexhaustible source of knowledge (Al-Hassan, 2015). and these pillars cannot function without advanced technical tools on campus:

1. Interactive screens (smart flat panels): These are considered an advanced alternative to the traditional blackboard; they are devices that support touch technology with infrared, contain multiple ports and built-in software, and operate on various operating systems. These screens contribute to promoting 'active learning' and developing 'critical thinking'; centralising the display via an interactive digital device increases student engagement and their visual and mental focus, and gives the teacher greater ability to manage class time and direct attention [12].
2. Interactive e-books: rich digital texts created using professional software (such as Adobe InDesign) to incorporate multimedia, links and videos. These books provide an interactive, browsable reading experience on tablets, facilitating the

delivery of knowledge to a broad student base in an engaging, environmentally sustainable and cognitively effective manner [13].

This interactive technological integration does not eliminate or diminish the teacher's role; but rather reshapes their identity, allowing them to gradually move away from being the sole source of information and become a facilitator of the educational process and a psychological and cognitive guide who skilfully balances granting students independence with providing sound academic support when they encounter difficulties [14].

Chapter Three

Tools and Technologies for Interactive Teaching Systems

If modern educational and psychological theories represent the spirit that animates the educational process, then technological tools and techniques are the body through which these theories are embodied and transformed into lived reality, The shift towards interactive environments within classrooms, whether face-to-face or virtual, cannot be merely an ad hoc process or an abstract theoretical desire; rather, it is a comprehensive academic project requiring a system of technologies and tools designed with care and precision. These tools form the secure bridge through which the teacher conveys their educational objectives in an engaging and effective manner; they are also what enable students to engage deeply and sustainably in their learning journey without feeling technologically alienated [15].

First: Interactive screens (smartboards) as a comprehensive technological alternative

At the forefront of these tools are 'interactive screens', a modern and advanced alternative to the traditional whiteboard. These screens are no longer merely silent display surfaces, but have become integrated smart platforms connected to open internet networks, incorporating built-in software solutions that facilitate easy navigation and browsing of live digital content, These screens are not merely high-quality flat panels that completely replace old projectors requiring darkened rooms; they offer superb visual clarity with lighting that automatically adjusts to daylight, thereby reducing eye strain.

Technically speaking, these screens offer exceptional flexibility; they are capable of playing high-definition educational videos smoothly without glitches or lag thanks to their high refresh rates, and they support advanced touch technology, allowing teachers and students to interact with them using either their fingers or special styluses. It is not limited to mere display; users can record everything written by hand and explain it visually to save it as a reference, install supporting educational applications, and control the screen remotely via mobile devices, in addition to its support for multiple ports and full compatibility with various global operating systems [12].

Secondly: The educational and psychological dimensions of using interactive screens

The true and deeper value of these devices lies not in their advanced technical specifications, but in the direct educational and psychological impact they have within the classroom. From a procedural perspective, these screens save valuable time that was previously wasted on lengthy handwriting and note-taking by students, and from a behavioural perspective, the integration of movement, sound and colour breaks the

routine of dry rote learning and encourages students to explore technology in a positive way that serves their academic goals [12].

Touchscreens are particularly valuable for their exceptional ability to promote 'active learning'; they encourage teachers to actively engage students in retrieving content, analysing texts and images, and making live comments in front of their peers. This direct and public engagement fosters 'critical thinking skills' and builds self-confidence. Focusing attention on a single central screen encourages students to ask deeper questions rather than being preoccupied with their own devices, and develops their social and emotional learning skills, such as respecting others' opinions and accepting criticism [16], which has a direct and immediate impact on 'classroom management', as rates of distraction and disruption decrease significantly due to the mind being constantly engaged with the material on display [16].

Third: Interactive e-books as an incubator for knowledge

In parallel with the astonishing development of display screens, academic textual content has undergone a similar revolution in the form of the proliferation of 'interactive e-books', and the university textbook is no longer merely a static, dense text printed on paper, but has become a 'rich' text carefully designed to be read seamlessly on computers and mobile devices of various sizes. Through specialised design software, ordinary texts are transformed into fully integrated interactive environments that include explanatory videos, audio files for terminology, and hyperlinks that direct students with a single click to broader external knowledge sources to satisfy their scientific curiosity [13].

These books are ideal platforms for digital interaction, enabling the academic author to convey and continuously update scientific material for a much wider audience, thereby keeping the content alive and fresh in students' minds, Professional software (such as Adobe InDesign) plays a crucial role in the design and creation of these books; it enables full compatibility with tablets and offers high-level academic features such as accessibility enhancements for those with special needs and flexible HTML export capabilities. To ensure a secure and authentic reading experience, Adobe Acrobat Reader is used, which gives students easy access to content, the ability to highlight text and edit digital marginal notes for reference during revision [13].

Fourth: The protocol architecture of interactive video and distance learning platforms

The success and stability of interactive remote systems require a robust network infrastructure capable of handling the massive flow of real-time data. Distance learning systems rely primarily on network communication protocols; the university's broadcast computer compresses audio, video and data signals, which are then received by servers, decompressed and displayed in real time to thousands of students. These technologies rely on vital protocols to ensure precise synchronisation (such as the Real-Time Transport Protocol (RTP) and the RTCP protocol for advanced transmission quality control), and these engineering standards ensure bandwidth control and intelligently adapt to students' varying and fluctuating internet speeds to guarantee uninterrupted streaming [7]. However, the success of these technological platforms does not rest solely on the devices themselves, but requires high network efficiency, advanced technical awareness,

and strong self-motivation on the part of students to manage their time and engage in the educational process without a physical authority imposing this upon them [8].

Fifth: Tablets and self-directed learning pathways

The perception of tablets and smartphones within the classroom has evolved significantly; whereas they were once treated as limited cognitive tools for quick searches, they have now become a central pillar of the 'self-directed learning' system. In this approach, students are required to follow their own educational path semi-independently, learning how to research, compare and filter information, whilst the teacher acts as a mentor, guide and evaluator of the results of this research [17]. To implement this concept effectively, students in laboratories or lecture halls can be divided into pairs sharing a single tablet equipped with two headphones, thereby promoting direct interaction and collaborative dialogue between them rather than technological isolation. Specialised digital platforms are utilised, enabling the teacher to design integrated 'learning pathways' that incorporate interactive videos and formative assessments providing immediate feedback. This balanced combination of tablets and smart platforms enhances students' sense of personal responsibility and accountability for their own learning, and improves the quality and effectiveness of value-added communication with their teacher [17].

RESULT AND DISCUSSION

Interactive Teaching Strategies and Methods in Higher Education

The bold transition of the university education system from the classical rote-learning phase to a space of interaction and innovation is not merely an academic luxury to keep up with the times, but rather an inevitable and sometimes harsh response to the requirements of developing professional competencies capable of engaging in a highly complex and competitive labour market. Professional competence, as viewed by contemporary educators and psychologists, is no longer limited to the acquisition of 'knowledge' or 'skill' in their abstract, isolated forms, but rather an integrated personal construct that determines the productivity of professional tasks, and is shaped through lived experiences, value orientations, and the ability to work within demanding and broad contexts [10]. From this fundamental perspective, it has become imperative for higher education institutions to adopt and train their staff in teaching methods that focus primarily on the student's independent activity, and to organise fertile environments for self-directed learning and practical training [12].

First: Key strategies for interactive learning

Interactive learning methods are characterised by flexibility and are virtually limitless, constrained only by the level of pedagogical creativity and the volume of available resources. We can trace the progression of these strategies within modern classrooms as follows:

1. Reimagining the 'lecture': The traditional lecture itself can be transformed into a highly impactful interactive experience when a skilled lecturer deliberately links abstract academic material to students' personal experiences and

everyday reality, This is achieved by stimulating their curiosity through the use of 'narrative structures' that create a state of positive cognitive tension requiring resolution, whilst allowing for deliberate and thoughtful pauses to encourage them to pose profound questions, thereby transforming them from listeners into partners in constructing the flow of the lecture.

2. Exercises and ongoing formative assessment: such as 'Minute Papers', which help students review the material immediately after a lesson and reflect on it critically. These exercises range from encouraging students to recount previous elements to refresh their memory, to rephrasing concepts in their own words to ensure depth of understanding, to applying the information provided to address and devise entirely new practical scenarios.
3. Participation and open discussion: A strategy that begins by presenting a specific and somewhat complex problem, allowing students time for silence, individual reflection and writing down their answers, then discussing them with close peers, and finally sharing them with the whole class within a safe environment that encourages respectful criticism supported by logical evidence.
4. Guided academic debate: Characterised by a friendly competitive nature that encourages students to critique the ideas presented, its greatness lies in forcing students to research and understand viewpoints with which they may personally or ideologically disagree. This requires a crucial role from the teacher in managing the dialogue and defusing personal conflict to reveal the subtle differences in knowledge regarding complex, controversial issues.
5. Problem-Based Learning (PBL): This is an advanced strategy that turns the educational hierarchy on its head, starting with a complex 'open-ended problem' taken from the real world rather than beginning with theory. Students (working in teams) are asked to explore the problem, identify what they need to know to solve it, formulate hypotheses, collect data, and report their findings, thereby placing knowledge in a highly realistic practical context.

Second: Interactive, applied teaching methods for building professional competencies

To put the above strategies into practice within the university setting, the methodological literature has developed a set of applied methods of a professional nature:

1. Structured sequential training: This aims to develop practical and motor skills through the performance of specific tasks. It goes through psychological stages, beginning with an 'introduction' to break the ice, followed by 'discovery' to facilitate peer interaction, then 'diagnostic assessment' to tailor the training material, then 'discussion' to boost motivation, leading to 'direct interaction' which combines guidance with practice, and concludes with documenting the 'outcome' to ensure continued learning.
2. Case Study Method: This relies on collective, detailed analysis of challenging situations from the real professional world. The written 'case' consists of a

precise description of the surrounding circumstances, the provision of information and data that is sometimes contradictory to simulate reality, and a methodological section for the teacher. Students analyse the crux of the problem, propose solutions and alternatives, then publicly defend their decisions and take responsibility for them.

3. Behavioural modelling and professional storytelling: The first focuses on teaching direct interaction skills and professional verbal and non-verbal behaviour by the teacher presenting an ideal model, then asking students to replicate this behaviour or role-play it to receive feedback and correct mistakes (Shahin, 2011). The second method uses professional stories and legends from pioneers in the field to introduce students to the culture and spirit of their future profession and prepare them for potential challenges (Shaheen, 2011).
4. Play-based and collaborative practical learning projects: These transform dry research dilemmas into enjoyable competitive scenarios between groups of students, forcing them to devise innovative solutions under time pressure and competition. This is complemented by genuine 'learning by doing' in laboratories and in the field, where students tackle real-world problems to enhance their ability to take responsibility and organise joint activities as a team [11].

Thirdly: The fundamental shift in the role of the university lecturer and the obstacles involved

The full adoption of this interactive system does not in any way imply that the lecturer should withdraw from the classroom or that their value is diminished; rather, it requires exceptional skill in repositioning their leadership role, for we are talking about a shift from the role of the 'sage on the stage', who monopolises the one-way transmission of knowledge, to that of the 'guide at the side', who coordinates the educational process and monitors the cognitive growth of their students. However, it is crucial to guard against oversimplifying this new role; Interactive learning, particularly that which relies on higher-order thinking such as synthesis and evaluation, is in dire need of clear and credible 'academic authority' to underpin it; Therefore, the lecturer must intervene with precision by delivering 'mini-lectures' or focused explanations whenever students encounter difficulties or misunderstandings, striking a careful balance between providing cognitive support and allowing sufficient space for the development of student independence and self-reliance [11], [14].

Fourth: Criteria for assessing the quality of interactive teaching methods

To ensure that academic objectives are not compromised, the teaching methods adopted must be subject to continuous and rigorous evaluation. We can summarise the governing criteria in terms of the extent to which the chosen teaching method is able to achieve the following [17]:

1. The method's suitability for the academic time allocated in the curriculum without compromising the required amount of content.

2. Providing genuine, sufficient and meaningful space for learners to participate in shaping and directing the lesson.
3. Creating a safe psychological environment that allows for the flexible exchange of ideas and experiences among students, without fear of making mistakes or being ridiculed.
4. A high capacity to link complex theoretical aspects and apply them to real-life situations.
5. Making a tangible contribution to the development of the student's character and the building of their academic and professional self-confidence.
6. Instilling the values of constructive cooperation, teamwork and acceptance of learners' differences.
7. Providing students with practical tools for ongoing self-assessment of their knowledge level, enabling them to monitor their own learning.
8. Stimulating learners' enthusiasm and increasing their engagement and intrinsic motivation for continuous learning.
9. Establishing logical, sequential and cumulative links between different subjects and modules to form a solid knowledge framework.
10. Efficient organisation of group work and the flexible, positive resolution of personal or intellectual differences.
11. The extent to which modern educational technology, such as online teaching systems and artificial intelligence, is effectively utilised and intelligently applied without overdoing it to the point of distracting from the educational objective.

CONCLUSION

Fundamental Finding: Through a review of the scientific literature and an analysis of the field studies examined in the chapters of this research, we have been able to formulate a set of key findings that summarise the current situation: The traditional teaching model, which focuses excessively on cramming students' minds with information solely for the purpose of regurgitating it verbatim on an exam paper, is no longer capable of meeting the demands of the information age. This model has proven incapable of meeting the challenges of producing graduates who are thoughtful and aware of societal trends and the labour market. Interactive video platforms supported by artificial intelligence applications have proven exceptionally effective; the expected learning outcomes and their educational value have reached very high record levels (reaching 90% in some studies). This confirms their significant ability to create positive classroom dynamics that enhance student concentration, increase their independence, and raise the level of self-regulation in their learning process. Follow-up studies have shown that the production and design of annotated and interactive videos represent a fundamental stimulus that engages students' creativity and stimulates their scientific curiosity. Furthermore, tablets in classrooms and laboratories have proven their exceptional ability to enhance personalised learning and boost motivation. When

designed wisely as an integrated system that engages the mind and stimulates the imagination, interactive education excels in producing a generation that is mentally flexible, qualified for leadership, and capable of facing real-world problems with courage, free from stagnation or hesitation in the face of rapidly evolving technological and professional challenges. **Implication:** Based on the scientific findings outlined above, and driven by a deep commitment to advancing our academic institutions and keeping pace with developments, we present the following practical recommendations to educational decision-makers: We propose the rapid establishment of a centralised network system to which smart display devices, equipped with high-speed internet, are connected in every classroom. This will allow a skilled lecturer to deliver an interactive lecture to several classes simultaneously using streaming technology and artificial intelligence, which represents a radical and practical solution to the problem of a shortage of specialist teaching staff. We strongly recommend the integration and use of advanced interactive educational screens as an indispensable infrastructure within the higher education system in our country, Iraq, alongside the development of phased funding and strategic plans to roll out this successful initiative across all colleges and universities nationwide. Teaching staff must adopt and be trained in a modern scientific methodology when designing visual content. This design must include the use of ‘visual cues’ to direct learners’ attention, the posing of ‘inductive questions’ to link prior knowledge with subsequent learning, and the inclusion of ‘rhetorical and interactive questions’ that challenge students to correct their own misconceptions whilst watching. **Limitation:** This approach has revealed a strategic shortcoming that necessitates a rapid shift towards innovative, interactive education that respects the learner’s intellect. Although the digital transition requires double the effort and time from the teacher initially, the educational return in the form of deep understanding far outweighs these costs. **Future Research:** We call on academic institutions to adopt and develop a model for continuous questioning and analysis in the classroom based on deep learning applications and typical classification methods, such as CNN and LSTM algorithms. This will enable us to conduct intelligent and immediate analyses of the effectiveness of teachers’ questions and the levels of student engagement and comprehension, moving away from manual or impressionistic assessment methods. We strongly recommend working diligently to transform the administrative educational philosophy into an integrated and participatory system “managed jointly by the lecturer and the student”, so that the university’s overarching goal is to open up unlimited horizons for practical applications and unleash students’ creative energies in all fields, thereby transforming them from consumers of knowledge into producers of it.

REFERENCES

- [1] D. Laurillard, *Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology*. Culver City, CA: Commissioned by Cisco, 2012.
- [2] C. L. Lai and G. J. Hwang, “A self-regulated flipped classroom approach to improving students’ learning performance in a mathematics course,” *Comput. Educ.*, 2016.

- [3] Y. Yang and W. Chen, "The integration of artificial intelligence in education: A systematic review," *Journal of Educational Technology Development & Exchange*, vol. 3, 2020.
- [4] M. A. Ashour, "Artificial Neural Networks," 2020, Cairo, Egypt.
- [5] A. Kleftodimos and G. Evangelidis, "An interactive video-based learning environment supporting learning analytics: Insights obtained from analyzing learner activity data," in *State-of-the-Art and Future Directions of Smart Learning*, Springer Singapore, 2016.
- [6] J. Kim, E. L. Glassman, A. Monroy-Hernández, and M. R. Morris, "RIMES: Embedding Interactive Multimedia Exercises in Lecture Videos," in *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*, New York, NY, USA, 2015.
- [7] Y. T. Chen, "A study of learning effects on e-learning with interactive thematic video," *Journal of Educational Computing Research*, 2012.
- [8] E. Delen, J. Liew, and V. Willson, "Effects of interactivity and instructional scaffolding on learning: Self-regulation in online video-based environments," *Comput. Educ.*, 2014.
- [9] K. Schoeffmann, M. A. Hudelist, and J. Huber, "Video interaction tools: A survey of recent work," *ACM Comput. Surv.*, 2015.
- [10] S. V Elovskaja and T. N. Cherniaeva, "Interactive learning in higher education," *Izvestiya of Saratov University, Educational Acmeology, Developmental Psychology*, 2019.
- [11] A. H. H. A. H. Shahin, "Advanced teaching strategies, learning strategies and learning styles," *Journal of Development, Faculty of Education, Alexandria University*, vol. 7, no. 2, 2011.
- [12] A. Sharon, "The Influence of Interactive Whiteboards on Fifth-Grade Student Perceptions and Learning Experiences," Valdosta State University, GA, United States, 2017.
- [13] I. Korotaeva and O. Chuksina, "Perspectives on the improving quality of language education: The case of Moscow Aviation Institute," *Universal Journal of Educational Research*, 2020.
- [14] A. K. O. Youssef, "The effectiveness of a web-based educational programme in developing lesson design competencies and productive thinking skills among student teachers," 2018.
- [15] V. N. Kruglikov, "Interactive learning in higher education: problems and prospects," *Scientific and Technical Bulletin of St. Petersburg State Pedagogical University, Humanities and Social Sciences*, 2013.
- [16] M. A. M. Mohammed, "The effectiveness of the instructional scaffolding strategy in developing achievement and environmental problem-solving skills in social studies," Faculty of Education, Al-Azhar University, Egypt, 2018.
- [17] G. Falloon, "What's the difference? Learning collaboratively using iPads in conventional classrooms," *Comput. Educ.*, 2015.

* **Wadiyan Hassan Ali (Corresponding Author)**

Department of Education of Al-Ishaqi, Salah al Din, Iraq

Email: wadiyan96@gmail.com
