Academic Review of social and human studies, Vol 18, N° 01, (2026), pp : 235 - 246

Contents lists available at ASJP (Algerian Scientific Journal Platform)

Academic Review of social and human studies

journal homepage: www.asjp.cerist.dz/en/PresentationRevue/552

Challenges of e-learning at Algerian universities: a foresighted psycho-pedagogical approach based on Vygotsky's social constructivist theory

تحديات التعليم الإلكتروني في الجامعة الجزائرية: مقاربة نفس تربوية استشرافية وفق النظرية البنائية الاجتماعية لفيجوتسكي

Otmania Abdallah [1,*]

[1] University of 20 August 1955, Skikda, Work Psychology and Organisational Management laboratory, University Constantine2, Algeria

Article info:

Article history:

Received :21-09-2025

Accepted : 22-01-2026

Key words:

Challenges
E-learning
Algerian University
Psycho-pedagogical approach
Foresight
Vygotsky's social constructivist theory.

Abstract

This research paper aims to analyse the challenges of e-learning in Algerian universities from the perspective of Vygotsky's social constructivist theory. From a foresighted vision, it highlights the psychological dimensions represented by feelings of isolation and low motivation, and the educational dimensions embodied in the difficulty of achieving constructive interaction, in addition to other obstacles. It proposes using these concepts to design participatory learning environments that promote the social construction of knowledge, where the role of the teacher becomes that of a guide and mentor, while the student becomes an active partner in the production of knowledge. It also calls for the adoption of effective assessment mechanisms that focus on group performance and collaborative processes. It also emphasises that overcoming these challenges requires the development of digital infrastructure, the training of human resources, and the production of interactive content tailored to the psychological and educational characteristics of Algerian university students, within an integrated strategy that combines technical and psycho-educational aspects to achieve effective and comprehensive e-learning. This will have a positive impact on the output of Algerian universities by developing competent human resources that contribute to the country's development in all domains.

الكلمات المفتاحية:

التحديات
التعليم الإلكتروني
الجامعة الجزائرية
المقاربة النفس تربوية
الاستشراف
النظرية البنائية الاجتماعية لفيجوتسكي.

ملخص

تهدف هذه الورقة البحثية إلى تحليل تحديات التعليم الإلكتروني في الجامعة الجزائرية من منظور النظرية البنائية الاجتماعية لفيجوتسكي. وفق رؤية استشرافية، تبرز الأبعاد النفسية المتمثلة في الشعور بالعزلة وانخفاض الدافعية، والأبعاد التربوية المتجسدة في صعوبة تحقيق تفاعل بنّاء، إضافة إلى العوائق الأخرى. وتقترح توظيف مفاهيمها لتصميم بيئات تعلم تشاركية تعزز البناء الاجتماعي للمعرفة؛ حيث يتحول دور الأستاذ إلى موجّه ومرشد، بينما يصبح الطالب شريكاً فاعلاً في إنتاج المعرفة. كما تدعو إلى اعتماد آليات تقويم فعّالة، تركّز على الأداء الجماعي والعمليات التعاونية. كما تؤكد أن تجاوز هذه التحديات يقتضي تطوير البنية التحتية الرقمية، وتأهيل الموارد البشرية، وإنتاج محتوى تفاعلي يتلاءم مع الخصوصيات النفسية والتربوية للطالب الجامعي الجزائري، ضمن إستراتيجية متكاملة تدمج بين الجوانب التقنية والنفس تربوية، لتحقيق تعلم إلكتروني فعّال وشامل، ينعكس بالإيجاب على مخرجات الجامعة الجزائرية، بتكوين موارد بشرية كُفْؤة، تُسهم في تطور البلاد في جميع المجالات.

* Corresponding author at: University of 20 August 1955 Skikda, Algeria.
Email : a.otmania@univ-skikda.dz

1. Introduction

The world is currently witnessing many changes in all fields as a result of rapid cognitive and technological development. Societies with different cultures, customs, traditions and languages now seem to be living in one village. Among the most important areas affected by this dynamic are education in general and higher education in particular, which have attempted to keep pace with the digital age.

Consequently, in the midst of these rapid transformations, education is no longer merely a process of knowledge transfer, but has become a complex, dynamic system that interacts with the developments and technologies of the age. The digital revolution has brought about a fundamental change in the structure of this system, with e-learning emerging not as a temporary alternative, but as a strategic necessity imposed on the reality of education. It offers flexibility, wide accessibility, a variety of modern teaching methods and strategies, and technology-supported media that reduce time and effort, present educational material in an exciting way that captures students' attention, and bridge the gap between students and teachers.

These shifts coincided with the exceptional circumstances the world has experienced following the spread of the COVID-19 pandemic over the past few years. The pandemic forced more than 190 countries to close schools and suddenly switch to distance learning, which was confusing for everyone. At the height of the crisis, more than 85% of students worldwide left formal schools. Governments rushed to replace traditional schooling with distance learning options, ranging from online platforms to educational programmes broadcast on television and radio, to paper packages delivered to homes or distributed to students via email. Despite these efforts, 40% of students worldwide have lost all contact with their teachers. This is especially true for those from disadvantaged backgrounds, as they rely on schools to provide them with digital equipment and teach them computer skills. **(European.Investment.Bank, 2021)**

This reveals the extent to which education systems are ready for this transformation. Algeria, like other countries, has not been immune to these changes and circumstances, which has forced those in charge of higher education in particular to turn to e-learning in order to prevent the spread of infection among students and teachers. In this context, Algerian universities found themselves at a crossroads, torn between their desire to keep up with global trends and their own reality, which presents challenges that could hinder this path. This is particularly true given the gap between the technical capabilities available and the psychological and educational requirements necessary for the successful implementation of this type of education.

In Algeria, despite all the efforts made by the Ministry of National Education, through the National Office for Distance Education and Training, which was a pioneer in this approach even before 2019, and the Ministry of Higher Education and Scientific Research, by launching official initiatives to develop digital education, such as the launch of electronic university platforms (Moodle) and the integration of distance learning programmes, e-learning faces significant challenges at many levels: regulatory and legislative, technical, financial and material, and human.

This has been confirmed by numerous studies, such as the study by **(Barhoumi, 2023)** and the study by **(Ben Sayeh Samir, 2021)**, which revealed significant obstacles related to university administration and experience in e-learning, infrastructure and technical support in lecture halls, students, and the Algerian university curriculum.

However, this multifaceted view of these influential challenges remains incomplete unless we focus on two dimensions that are no less important than the rest, namely the psychological and educational dimensions, because education is, in essence, an interactive, integrative, influential and affective between teachers and students, relying on dialogue and discussion to solve educational problems in order to build and acquire knowledge. When this process moves to the virtual space, it will truly test the nature of this relationship and how knowledge is formed in a new environment.

Therefore, there is an urgent need to adopt a

pedagogical approach that goes beyond simply observing reality, towards exploring the prospects for developing e-learning in line with national characteristics and ensuring that students and teachers adapt to global digital requirements, so that Algerian universities can catch up with leading international universities. This will have a positive impact on the outcomes of the education and research system by developing qualified human resources to lead the country to progress in various domains.

To understand this issue more deeply, Vygotsky's social constructivist theory serves as a fundamental theoretical guide. Its main idea is that knowledge is not built in a vacuum, but rather is the product of continuous social interaction, through which the student transforms from a passive recipient to an active participant in the construction of knowledge, in his social environment and in collaboration with his peers and teachers, who help him to transcend his intellectual limits towards broader horizons. It also emphasises the role of cultural tools, most importantly language, in facilitating the process of learning and constructing thought.

Hence, the central issue of this research paper crystallises in the question of how to apply Vygotsky's vision of the social nature of learning to diagnose various challenges, particularly the psychological and educational challenges of e-learning at Algerian universities, and to envision a more interactive and humanised electronic environment. We can formulate it as follows: What are the challenges facing e-learning at Algerian universities? How can we propose a psychological and educational approach based on a forward-looking vision in light of social constructivist theory to overcome these challenges?

This research paper adopts a descriptive approach, which is appropriate for such exploratory and analytical studies that seek to present a developmental vision of e-learning by focusing on its humanistic and interactive aspects, using Vygotsky's views, to transform it from a mere technical tool into an interactive and integrated learning environment.

2. E-Learning

E-learning differs from traditional education in terms of its concept, types, importance, benefits, etc. We will address some of these aspects as follows:

2.1 The concept of e-learning

The concept of e-learning emerged in the mid-1990s with the spread of the Internet. It is generally defined as any educational method delivered in electronic form, and includes synonymous terms such as: computer-assisted learning and online learning. This definition extends to include a wide range of multimedia used in the construction, transfer and evaluation of knowledge, ranging from compact discs to simple presentations and advanced virtual environments. E-learning is delivered in two main modes: asynchronous (self-paced) learning and synchronous (live interaction) learning, with the synchronous mode being more widely used in traditional educational institutions with fixed schedules. **(Peter M. Sinclair, 2016)**

It is defined as a method of delivering educational material and training content using electronic media, with the aim of enabling individuals to acquire the knowledge and skills necessary to perform their work effectively and efficiently. **(Hartley, 2001)**

It is a method of learning in which modern technologies, computers and the Internet are used to deliver educational content to learners in real time or asynchronously, enabling them to acquire knowledge and skills from anywhere and at any time, while providing opportunities for interaction between teachers and learners. One of its most important features is flexibility, as it allows learning at a time and place that suits the learner. Interactivity: provides channels of communication between teachers and learners through discussion tools and live streaming. Media diversity: uses texts, videos, interactive tests, and various exercises. Time and cost savings: reduces the need for travel or the use of paper materials. **(Clarke, 2008)**

2.2 The types of E-learning

E-learning is divided into two main types: indirect (offline), which is learning that relies on storage media such as CDs and videos and does not require a direct connection to the network. The direct type (online) is divided into: immediate learning, where

the trainer and trainees are connected at the same time via virtual training rooms or live broadcasts; and non-immediate learning, which can be accessed at any time convenient for the trainee via the internal network or the internet, without the need to be present at a specific time. **(Hartley, 2001)**

2.3 The benefits of E-learning

E-learning has many benefits, most notably: Flexibility, allowing learning anytime, anywhere. Cost savings, significantly reducing travel, accommodation and training room expenses. Speed, helping to disseminate knowledge and train large numbers of people in record time. Standardisation, ensuring that all trainees receive the same content with the same quality. Scalability, as it facilitates the process of continuously updating and improving content. Monitoring and measurement: it allows for accurate tracking of trainees' progress and measurement of their results. **(Hartley, 2001)**

2.4 Innovative Tools and Techniques in E-Learning

We will attempt to present the most important technological advances in support of education, as follows: **(Al-Halfawi, 2011)**

• Learning Management Systems (LMS) platforms: These platforms, such as Moodle and Blackboard have evolved from mere digital repositories for uploading files to integrated smart learning environments. These platforms are now integrated with student and management systems, provide personalised learning paths, generate analytical reports on student performance, and support a wide range of interactive activities.

• Project- and challenge-based learning: The need to use the electronic environment to facilitate teamwork on real, long-term projects, even if team members are geographically dispersed, using tools for project management, communication, and sharing files.

• Gamification: is the application of game design elements and mechanisms (such as earning points, badges, leaderboards, and tiered challenges) in educational environments to increase student motivation and participation, with the aim of making the learning process more exciting and engaging, and transforming routine tasks into fun challenges.

• Adaptive Learning: An advanced technology based on artificial intelligence and data analysis, the system continuously analyses the student's performance in real time and automatically redirects them to a personalised learning path. If the student encounters difficulty in understanding a concept, the system provides additional resources and supporting exercises. If the student demonstrates rapid mastery, the system advances the content to a more advanced level.

• Immersive Tech: Technologies such as virtual reality (VR) that fully simulate environments that are difficult to access or dangerous (such as practising a surgical procedure), while augmented reality (AR) adds a layer of digital information to the real world (viewing a 3D anatomical model on a textbook). These technologies make learning an unforgettable experience.

2.5 Effectiveness of E-Learning

Research conducted by educational scientists, psychologists and media analysts on the phenomenon of e-learning since the 1990s has concluded that there is sufficient evidence to prove the effectiveness of this educational method. While Paulus and Strätemeyer (2002) found no conclusive evidence proving the superiority or inferiority of e-learning compared to traditional education, Chamley-Jones et al. (2002) concluded that the results of learning through electronic media in health professions are equivalent in quality to those of traditional education, provided that the educational and instructional design meets specific quality standards. Cook et al. (2010) and Childs et al. (2005) reached similar conclusions, adding that both teachers and students view e-learning as an effective and enriching experience. Bloomfield et al. (2008) also emphasised the effectiveness of e-learning in acquiring clinical skills. Overall, e-learning can be considered an equally effective alternative to traditional classroom-based education. **(Koch, 2014)**

2.6 Leading global experiences in E-learning

There are many successful models in this field that can serve as inspiring examples, including: **(Al-Halfawi, 2011)**

• The Open University in the UK: Considered a pioneer

in distance learning worldwide, its experience focuses on the quality of educational materials designed specifically for self-directed distance learning, rather than simply transferring lectures.

• The edX platform, a collaboration between MIT and Harvard: One of the most prominent examples of massive open online courses (MOOCs) that has changed the concept of educational accessibility, this platform has provided millions of people with access to education from the world's best universities for free or at a nominal cost.

• Asian models (South Korea, Singapore): The approach of these countries is characterised by strong government support and huge investment in digital infrastructure, focusing on integrating modern technologies such as artificial intelligence and data analysis into the core of their education system, from the classroom to the calendar.

3. Vygotsky's social constructivist theory

After reviewing e-learning, especially at university level, we will attempt to review social constructivist theory, as one of the most important educational psychology theories that can be utilised in implementing this type of learning, as follows:

3.1 The concept of social constructivism theory

Before discussing the concept of this theory, it should be noted that it belongs to the constructivist theories whose constructivist concepts of learning have their roots in the works of Dewey (1929), Bruner (1961), Vygotsky (1962) and Piaget (1980). (BADA, 2015) It emphasises that learning is an active process of knowledge construction, not merely a response to stimuli. Constructivist theory is generally based on the idea that knowledge is constructed, not transmitted, with learners actively constructing their knowledge through interaction with their experiences and the surrounding environment. This theory emphasises that knowledge is personal and influenced by an individual's previous experiences and cultural and social context. Its basic principles include active learning, building on prior knowledge, social context, and cognitive challenge. Learners play the role of active seekers of knowledge and are responsible for constructing their own understanding. They also collaborate with others to enhance learning. The teacher's role is to facilitate the learning process and not merely to convey knowledge, working to create rich learning environments and providing guidance when needed. **(Nurhasnah Nurhasnah, 2024)**

Social constructivism theory goes back to Lev Vygotsky (1896-1934), a Russian psychologist who focused on the central role of culture and social interaction in developing cognitive abilities. Unlike Piaget, Vygotsky emphasised that humans possess not only actual abilities, but also latent energies that are realised through appropriate guidance from others. He shared Piaget's belief in self-development, but considered that language, cultural products and social concepts stimulate the highest levels of cognitive thinking. He believed that social interactions with teachers and more knowledgeable peers are a catalyst for learning, and that learning without interpersonal guidance limits an individual's cognitive progress and confines them to their limited self-discoveries. His educational theories continue to be widely applied in contemporary educational practices. **(Arduini-Van, 2020)**

This theory is based on the fundamental idea that cognitive development is essentially a social process, rather than merely an individual biological maturation. This view made him the father of social-cultural psychology and a key figure in modern education. He strongly criticised the psychological schools of his time, rejecting the principles of behaviourism (Watson and Pavlov), which reduced learning to the formation of conditioned reflexes, emphasising the active role of the individual in the use of media. He also rebelled against animal analogy (Köhler), while acknowledging the similarity in practical intelligence between children and monkeys, emphasising that the intersection of biological development with cultural development (through language) is what produces unique human abilities. He also criticised Piaget's idea of biological maturation, arguing that development is merely an internal organic "emergence" or "maturation" independent of cultural context. **(Vygotsky, 1978)**

Despite the importance of Piaget's cognitive theory, which is individualistic and describes how children acquire cognitive skills as they grow, Vygotsky emphasised the social context of learning and later developed social constructivist theory. His theory focuses on "the importance of sociocultural learning; how learners absorb interactions with adults, and more capable peers, and the cognitive tools to form mental structures across the zone of proximal development—the potential learning range that each learner can reach during a given period of development under ideal conditions and with the best possible support from the teacher and environment—and argues that successful cognitive and intellectual growth depends on social interaction." He places great emphasis on dialogue and other interactions between the learner and others. **(Chand, 2024)**

3.2 Principles of social constructivist theory

The most important points in his book Mind in Society: The Development of Higher Psychological Processes can be summarised in the following five points: **(Vygotsky, 1978)**

• Cultural mediation: tools of the mind

Humans do not interact with the world directly, but through 'media'. These media are what distinguish human behaviour from animal behaviour. He also identifies two types of media: tools, which are directed outward (to change the physical world). Examples: hammers, sticks, signs; and tools directed inward (to organise behaviour and the mind). Examples: language, numbers, diagrams, knots in a handkerchief as reminders. The relationship between them is dialectical; they differ in direction and function, but are complementary in practice, as the use of tools is often accompanied by language for planning and guidance.

• The social origin of thought: from the other to the self

'Every higher psychological function appears twice: first between people (socially), then within the individual (psychologically).' This is the fundamental law of development. Logical thinking, memory, attention—all begin as social practices (dialogue, instruction, group play) and are then internalised by the child to become part of their internal mental capacities.

• Language: The core of mental development

Language

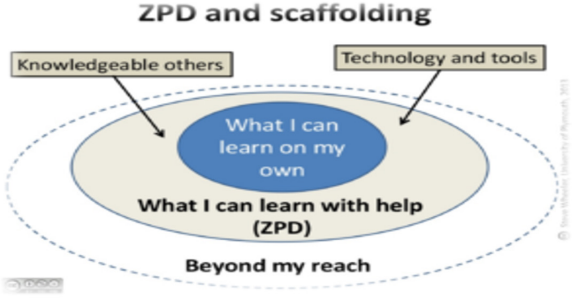
is not merely a tool for communication, but also a tool for thinking. It has three stages of development: speech directed at others for social communication. Speech directed at oneself, where children talk to themselves aloud to guide their thinking while solving problems. Internal speech, where speech is transformed into silent internal dialogue, which is the basis of abstract and complex thinking.

• Zone of Proximal Development (ZPD): where real learning happens

This is a revolutionary concept that changes the way we measure a child's abilities. We should not only look at what a child can do independently (their current development), but also at what they can achieve with the help and guidance of a more skilled adult or friend (their potential future development). Effective education targets this zone to drive development forward. Among its applications, it justifies the importance of collaborative learning, peer-assisted learning, and the role of the teacher as a guide rather than merely a conveyor of information. It also explains why traditional testing (which only measures what a child knows on their own) is insufficient for assessing a child's true abilities.

Figure 1

Model of Vygotsky's zone of proximal development



Source: (Arduini-Van, 2020)

• Internalisation or internal normalisation: the mechanism of transformation

This is the process by which external activities and social media are transformed into internal mental processes. It is not a simple copying, but rather an active reconstruction of knowledge and skills within the child's mind.

• In clearer terms, his theory is based on the following key ideas: **(Slavin, 2020)**

- Learning is a social activity. Children learn primarily through cooperation and communication with others who are more knowledgeable and experienced, such as teachers, parents, and peers.

- The zone of proximal development represents the distance between what a child can achieve on their own and what they can achieve with the help and guidance of others. Effective learning occurs within this zone.

- Temporary support is a method in which the teacher or expert partner provides temporary and decreasing assistance as the child's ability to perform the task independently increases.

- The importance of language: His theory emphasises that language is the fundamental tool of thought, beginning as a means of communicating with others and then transforming into internal dialogue that organises thought and behaviour.

- Learning precedes growth: He believes that good learning stimulates intellectual growth and creates new paths for development, rather than the other way around.

3.3 The educational applications of social constructivist theory

As we have seen previously, social constructivism is a learning theory that views knowledge as socially constructed through interaction and cooperation. This theory redefines the roles of both the teacher and the student, transforming the learning process from the transfer of information to the collaborative and active construction of meaning within a social framework. In other words, it is a participatory social process rather than an individual one. Language and culture are fundamental to understanding reality, as learning occurs through social interaction and communication with others, making them the basis of collaborative learning. Among its educational applications, we mention the following: **(Akpan, 2020)**

• Teaching methods: The theory requires a shift in teaching strategies to become learner-centred and collaborative. It relies on active methods such as project- and problem-based learning, discussions, group work, and guided discovery learning.

• Teacher: The role of the teacher shifts from being a transmitter of knowledge to being a facilitator and guide of the learning process. They design an interactive and safe classroom environment that encourages collaboration and collective knowledge building. They provide temporary educational support when needed.

• Student learning: Students move from being passive recipients to active researchers and collaborative creators of knowledge. They take responsibility for their own learning through active participation and collaboration with peers. They develop critical thinking and communication skills and learn to respect different points of view.

• Importance in the educational process: The theory is important because it: Encourages active and participatory learning rather than passive memorisation. Develops higher-order skills such as problem solving and critical thinking. Promotes long-term retention of information as meaning is constructed socially. Builds students' confidence in themselves and their ability to learn. Promotes teamwork and tolerance among students.

4. Challenges of e-learning at Algerian universities

After reviewing e-learning and social constructivist theory, we will attempt to present some of the challenges that hinder the implementation of e-learning at Algerian universities, based on various references in this research paper and various previous studies in the Algerian environment that we have come across, through the ASJP platform of the General Directorate of Scientific Research and Technological Development, Ministry of Higher Education and

Scientific Research in Algeria.

This is in addition to relying on the researcher's experience as a lecturer at the Algerian university for more than 13 years, his specialisation in psychology and educational sciences, and his experience as a trainer for newly recruited teachers in primary, middle, and secondary education, and his knowledge of school and career guidance and counselling, as a result of his previous work as a guidance counsellor from 2008 to 2012. These challenges can be divided as follows:

4.1 Technical and infrastructure challenges

The Algerian infrastructure, both in the national education sector and in higher education, suffers from numerous obstacles, including:

• Weak internet network: Many areas of Algeria, including some major cities and rural areas, suffer from unstable internet service and low or non-existent bandwidth. This prevents interactive live lectures from being conducted without interruption and makes it difficult for students to download educational materials or participate in interactive activities. A prime example of this is the MOODLE and PROGRES platforms, especially at the end of the semester or academic year, when sometimes there is not enough time to deliver a lecture in more than an hour.

• Lack of equipment and platforms: A number of universities do not have sufficient technical infrastructure in terms of powerful servers and dedicated, advanced educational platforms. Furthermore, reliance on free or public platforms may not meet the specific needs of the Algerian educational process, as it is common among a large number of professors to use these alternative platforms, and even social media sites, especially during the COVID-19 pandemic.

• Lack of access to devices: Not all students and teachers have personal computers or modern tablets. Many of them rely solely on their smartphones, which limits their ability to fully interact with electronic content and complete the required tasks. We have observed this first-hand, as a significant number of students are unable to engage with e-learning for the reasons mentioned above, or due to poor or non-existent internet coverage, especially in some villages. The lack of preferential internet subscription offers for teachers has also had an impact, especially given the living conditions and numerous financial commitments in Algeria.

4.2 Human challenges

These challenges include three levels:

• Teacher preparation: The transition to e-learning requires significant retraining for teachers, many of whom, especially those with long experience, are not accustomed to designing engaging digital content, managing a virtual classroom, or using e-assessment tools. This requires intensive and ongoing training programmes, given that compulsory training in this area is limited to newly recruited teachers or doctoral students, and is optional for the rest.

• Student readiness: This is not limited to the technical aspect of the student, but also includes self-organisation skills, time management, and internal motivation for distance learning. Many students are accustomed to the traditional face-to-face classroom environment and find it difficult to adapt to the new style, which requires more individual responsibility.

• University administration: Sometimes there is a gap between decisions made at the senior management level and their actual implementation on the ground. The implementation of e-learning requires full logistical and administrative support, including the provision of rapid technical support and the modification of internal systems to suit this educational model.

4.3 Pedagogical challenges

These are varied and have a significant impact on the failure of this modern educational model to achieve the desired results. They include:

• Lack of direct (face-to-face) interaction: According to the social constructivist approach, knowledge is primarily constructed through social interaction and dialogue with others (peers and mentors). If not well designed, e-learning can isolate students and reduce opportunities for this rich interaction, which is central

to the theory.

• Difficulty in simulating the social learning environment: How can virtual 'collaborative groups' be created where students discuss and solve problems together? How can the teacher play the role of mentor and guide (as someone who helps build scaffolding) in the absence of face-to-face interaction? These are some of the biggest educational challenges that require creative tools, techniques, and teaching methods to overcome.

• Standardised assessment: Assessing student learning electronically poses a major challenge, as it highlights the risks of cheating and the difficulty of assessing higher-order skills such as analysis, synthesis and criticism when relying on traditional online tests.

4.4 Psychological and social challenges

The most important of these can be summarised as follows:

• Exhaustion and psychological burden: Sitting for long hours in front of screens and being relatively isolated from the university social environment can lead to feelings of psychological exhaustion, boredom and loss of motivation for both students and lecturers.

• Loss of sense of belonging to the university community: University is not only a place of learning, but also a social and cultural life. E-learning may weaken social ties between students and between them and their lecturers, negatively affecting university identity and sense of belonging.

4.5 Financial and material challenges

Providing robust infrastructure, free or subsidised internet for students, equipping classrooms, and purchasing licences for paid software and platforms all require significant budgets that may not always be available.

4.6 Contextual challenge

The educational community in Algeria remains largely tied to the traditional model (teacher as lecturer, student as recipient). The transition to a model in which the student is at the centre of the educational process (active, inquiring student) and the teacher is a guide and mentor will require a long time and profound cultural change.

5. A Foresighted Vision for Improving E-Learning Based on Vygotsky's Social Constructivist Theory Approach

To overcome these challenges, an integrated approach that takes all these levels into account must be adopted. The solution cannot be purely technical; but must be fundamentally psychological and pedagogical, based on the design of interactive and collaborative e-learning environments that mimic their face-to-face counterparts, with investment in human resource training, overcoming technical and economic obstacles, and respecting the cultural and social specificity of the Algerian environment.

Social constructivist theory can be considered the ideal intellectual framework for building truly valuable e-learning experiences. This theory does not merely explain how learning occurs, but also provides practical guidelines for creating interactive and dynamic online learning environments. Foundations for applying the theory in practice in E-learning: **(Haythornthwaite, 2011)**

• Collective construction of knowledge: This theory rejects the idea that learning is an individual process of acquiring knowledge. Instead, it considers learning to be an active process of collectively constructing knowledge through dialogue, discussion and the exchange of ideas within a social context. It emphasises the need to shift the design of e-courses from a passive "content delivery" model to a "facilitating dialogue" model. The online environment should provide rich opportunities for interaction, such as professionally moderated discussion platforms, collaborative problem-solving projects, and collaborative content writing using co-working tools.

• Developing e-learning communities: The deepest levels of learning occur when learners feel they belong to a "community of practice", a community that shares interests and goals and whose members interact regularly to build knowledge and support each other. The role of the instructional designer and teacher becomes centred around creating a sense of belonging and social presence. This can be

achieved through: introductory and self-presentation activities, establishing clear standards for respectful and productive communication, and designing tasks that genuinely rely on collaboration among group members.

• Transformation of the teacher's role: Under this theory, the teacher's role shifts from being the sole source of knowledge to being a facilitator and guide of the learning process. This shift requires the e-teacher to focus on: facilitating the learning process by asking stimulating questions, managing in-depth discussions, encouraging all students to participate, and providing educational support by offering temporary assistance that enables students to master complex tasks. then gradually withdrawing this support as their competence increases; and conducting formative assessment by providing continuous and constructive feedback that focuses on developing thinking rather than just final assessment.

• Technological tools as means of social empowerment: The value of technology lies not in itself, but in its ability to enable social interaction and collaboration on a large scale, regardless of geographical barriers. The choice of tools (such as live meeting platforms, discussion forums, and co-editing tools) should be based on their ability to support the social objectives of the theory, not simply on their novelty.

• As a head teacher, it is recommended to be cautious about the superficial application of e-learning, which ignores this social dimension. The effectiveness of any e-learning experience is measured by its success in creating a safe and stimulating space for constructive dialogue and creative collaboration, and building shared knowledge. Technology is only the means, but its beating heart remains the social constructivist principle that we learn together and from each other.

• Recent studies in the field of e-learning acceptance show that the success of these technologies depends on the type of user and the type of educational system used, with flexibility, ease of use and expected benefits being equally important factors. A comprehensive analysis of previous studies has shown that integrating these tools with traditional methods improves the learning experience without necessarily replacing the human element in the educational process. **(Boštjan Šumak, 2011)**

• Some studies-despite their consistent promotion of e-learning in universities as an alternative that enhances flexibility in teaching methods—point to a lack of sufficient critical evaluation of the benefits of these technical tools in education. They present a multi-tool assessment of an e-learning innovation aimed at training nursing students in clinical skills. Due to the difficulty of teaching these skills to large numbers of students, a series of educational videos was developed, which became an integral part of the course material and was made permanently available to students online. The evaluation showed that students' performance did not improve, but they praised the flexibility of this method and the opportunity it provided for self-regulated learning. The study concluded that this tool is most effective when used to supplement lectures rather than replace them, supporting the blended learning model. **(Mary Kelly, 2009)**

In general, based on the idea that knowledge is socially constructed through interaction with others, the following mechanisms can be proposed:

5.1 Designing interactive collaborative learning environments

By transforming electronic platforms from mere repositories for lectures into spaces for interaction, through: Creating small virtual discussion groups dedicated to each educational task, to encourage dialogue and discussion among students (representing the role of more competent peers). Using collaborative writing tools (shared documents) to complete group projects, which promotes the joint construction of knowledge.

As is the case with the e-learning platform of the National Office for Distance Education and Training (Malam), it is an educational space that offers a wide variety of resources and allows learners to interact with their accompanying teachers on the one hand and with each other on the other.

5.2 Strengthening the role of the teacher as a guide and counsellor

We must move from the role of lecturer to that of facilitator of social processes of knowledge, through: supportive intervention, providing immediate feedback and guidance during student discussions and activities, rather than just criticising at the end (representing the idea of 'scaffolding'). Modelling, by providing live examples and models for problem solving during live broadcasts or through recorded videos, so that students know how experts think.

5.3 Using technology to create the Zone of Proximal Development (ZPD)

This is achieved by using technological tools to broaden the scope of interaction rather than narrowing it, by simulating real-life situations through the use of electronic simulations and educational games that place students in situations that require social problem-solving with their peers. Learning is linked to the social context by assigning students small online research projects related to real local problems and discussing the results collectively on the platform.

6. Conclusion

In conclusion, it can be said that through this research paper, we have attempted to explore the challenges of e-learning at Algerian universities, which go beyond the technical aspect to fundamentally touch on the psychological and educational dimensions. where the lack of direct interaction and the feeling of isolation contribute to weakening motivation and deep learning, which requires the adoption of an educational model based on Vygotsky's social constructivist approach as a practical model that focuses on designing interactive and collaborative learning environments that enhance the role of the teacher as a guide and mentor, and the student as an active participant, and the adoption of effective assessment strategies that focus on collective cognitive processes, contributing to meaningful learning that is compatible with the psychological and educational characteristics of Algerian university students.

Based on the above, this research paper recommends the adoption of an integrated strategy that includes: Developing technical infrastructure and providing high-speed, uninterrupted internet access, implementing intensive training programmes for teaching staff, focusing on the design of interactive activities and the management of virtual groups, transforming electronic platforms into collaborative spaces that promote the social construction of knowledge, and raising awareness among students, and the administrative and educational teams to the importance of this type of education, adopting alternative assessment mechanisms that focus on group performance and interactive participation, and supporting local research to develop innovative solutions that emerge from Algerian specificity.

Références

Akpan, V. I. (2020, 9). Social Constructivism: Implications on Teaching and Learning. British Journal of Education, 8(8), 49-56. Récupéré sur https://www.eajournals.org/wp-content/uploads/Social-Constructivism.pdf

Al-Halfawi, W. S. (2011). E-Learning: Modern Applications (Vol. 1). Cairo, Egypt: Dar Al-Fikr Al-Arabi. .

Arduini-Van, N. (2020). Social Constructivism: Vygotsky's Theory. Récupéré sur Educational Psychology : https://edpsych.pressbooks.sunycreate.cloud/chapter/social-constructivism-vygotskys-theory/

BADA, S. O. (2015, (Nov - Dec). Constructivism Learning Theory: A Paradigm for Teaching and Learning. IOSR Journal of Research & Method in Education (IOSR-JRME), 5(6 Ver. I), 66-70. doi:DOI: 10.9790/7388-05616670

Barhoumi, S. M. (2023, 10). Obstacles to e-learning in the Algerian university: A review of a set of scientific studies. Egyptian Journal of Scientific Education,, 7(29), 391–405. Récupéré sur https://ejev.journals.ekb.eg/article_320296.html

Ben Sayeh Samir, &. L. (2021, 9 16). Obstacles to applying e-learning from the professors' point of view under the COVID-19 pandemic. Al-Muhtarif, 8(4), 391-405., 8(4), 391-405. Récupéré sur https://asjp.cerist.dz/en/article/163453

Boštjan Šumak, M. H. (2011, November). A meta-analysis of e-learning technology acceptance: The role of user types and e-learning technology types. Computers in Human Behavior, 27(6), 2067-2077. doi:https://doi.org/10.1016/j.chb.2011.08.005

Chand, S. P. (2024, 2). Constructivism in Education: Exploring the Contributions of Piaget, Vygotsky, and Bruner. International Journal of Science and Research (IJSR)(12), 274-278. doi:http://dx.doi.org/10.21275/SR23630021800

Clarke, A. (2008). E-learning Skills. Palgrave Macmillan. Palgrave Macmillan.

European.Investment.Bank. (2021, 1 18). The COVID-19 pandemic is changing our education systems. Consulté le 9 3, 2025, sur Education after the pandemic: https://www.eib.org/en/essays/covid-19-digital-education

Hartley, D. E. (2001). Selling e-Learning. American Society for Training & Development.

Haythornthwaite, C. &. (2011). E-learning theory and practice. SAGE Publications Ltd. SAGE Publications Ltd.

Koch, L. F. (2014, 11). The nursing educator's role in e-learning: A literature review. Nurse Education Today, 34(11), 1382-1387. doi:https://doi.org/10.1016/j.nedt.2014.04.002

Mary Kelly, C. L. (2009, 4). A multi-method study to determine the effectiveness of, and student attitudes to, online instructional videos for teaching clinical nursing skills. Nurse Education Today, 29(3), 292-300. doi:https://doi.org/10.1016/j.nedt.2008.09.004

Nurhasnah Nurhasnah, N. S. (2024, 4). Learning Theories According to Constructivism Theory. 3(1),. Journal International Inspire Education Technology (JIIET), 3(1), 19–30. doi:https://doi.org/10.55849/jiiet.v3i1.577

Peter M. Sinclair, A. K.-J. (2016). The effectiveness of Internet-based e-learning on clinician behaviour and patient outcomes: A systematic review. The International Journal of Nursing Studies (IJNS), 57, 70-81. doi:https://doi.org/10.1016/j.ijnurstu.2016.01.011

Slavin, R. E. (2020). Educational Psychology: Theory and Practice. United States: Pearson.

Vygotsky, L. S. (1978). Mind in Society: The Development of Higher Psychological Processes. E 1978. London, England: dited by Michael

Cole et al., Harvard University Press.

How to cite this article according to the APA method

Otmania Abdallah (2026), Challenges of e-learning at Algerian universities: a foresighted psycho-pedagogical approach based on Vygotsky's social constructivist theory, Academic Review of Social and Human Studies, vol 18, number 01, Hassiba Ben Bouali University of Chlef, Algeria, pages: 235-246