



INNOVATION, TECHNOLOGIES,
EDUCATION & COMMUNICATION

INNOVATION, TECHNOLOGIES, EDUCATION ET COMMUNICATION

N° 11

COMPETENCES TRANSVERSALES ET AVENIR DE L'ENSEIGNEMENT SUPERIEUR : VERS DE NOUVEAUX PARADIGMES DE FORMATION

Coordinatrice : Pr. ABERKANE Chaymae

Co-coordonateur : Pr. MIMOUN ELKHEIR Abdessamad



COMMUNICATION, EDUCATION, DIGITAL USAGE
AND CREATIVITY LABORATORY

URL CNRS 19

ISSN Numérique : 2737-8195

JUILLET 2026

From Challenge to Proficiency: Developing Problem-Solving Skills through English Language Instruction: A Multidisciplinary Case Study at the Faculty of Letters, Oujda

Imane Moulay Rachid, Hanae Zahout

Applied Communication in Context Laboratory, Faculty of Letters and Human Sciences,
Mohammed First University, Oujda, Morocco

RÉSUMÉ

Cette étude examine l'intégration de la résolution de problèmes dans l'enseignement de l'anglais langue étrangère à la Faculté des Lettres et des Sciences Humaines de l'Université Mohammed Premier d'Oujda. Fondée sur la théorie de l'apprentissage expérientiel, elle analyse l'effet de tâches par projet, d'analyses de cas, de la collaboration entre pairs et de l'évaluation réflexive sur le développement linguistique et analytique d'étudiants de semestre 5 en Géographie, Histoire et Études françaises. Une approche mixte a été menée durant le semestre d'automne 2025-2026 auprès de 50 étudiants, au moyen d'un questionnaire et d'observations de classe bimensuelles. Avant l'intervention, 65 % des participants déclaraient éprouver des difficultés à commencer une tâche sans guidage direct. Après l'intervention, environ 70 % manifestaient davantage d'autonomie, de persistance et de confiance face à des problèmes mal structurés. Les résultats soulignent l'intérêt d'un apprentissage actif et étayé pour renforcer les compétences transversales et l'employabilité des étudiants en sciences humaines.

ABSTRACT

This study examines the integration of problem-solving into English as a Foreign Language instruction at the Faculty of Letters and Human Sciences, Mohammed First University, Oujda. Grounded in Experiential Learning Theory, it investigates how project-based tasks, case analysis, peer collaboration, and reflective evaluation influence the linguistic and analytical development of Semester 5 students in Geography, History, and French Studies. A mixed-methods approach was conducted during the fall semester of 2025-2026 with 50 students using a questionnaire and bi-weekly classroom observations. Before the intervention, 65% of participants reported difficulty initiating tasks without direct instructor guidance. Following the intervention, approximately 70% demonstrated greater autonomy, persistence, and confidence when addressing ill-structured problems. The findings indicate that scaffolded active learning can reduce cognitive hesitation while strengthening original reasoning and collaborative engagement. The study supports curriculum designs that integrate language learning with problem-solving and other transferable skills relevant to humanities graduates' academic development and employability.

KEYWORDS: problem solving, experiential learning, active learning, soft skills, student employability, higher education

MOTS-CLÉS : résolution de problèmes, apprentissage expérientiel, apprentissage actif, compétences transversales, employabilité, innovation pédagogique

1. Introduction

In the context of 21st-century higher education, problem-solving is widely regarded as a central competence for both academic success and employability. Across disciplines, graduates are increasingly expected not only to possess theoretical knowledge, but also to apply that knowledge in ambiguous, evolving, and context-dependent situations. This expectation has intensified under conditions of globalization, digitalization, and labor-market

transformation, where routine knowledge alone is no longer sufficient for professional adaptability (UNESCO, 2023; European Training Foundation, 2022).

Despite this shift, many university classrooms continue to rely on transmissive models of teaching that privilege memorization, content coverage, and procedural reproduction over inquiry, judgment, and independent reasoning. As a result, students may perform adequately in conventional assessments while still encountering difficulty when asked to engage with open-ended or ill-structured problems. Within the Moroccan context, this tension is particularly important, as the discourse of higher education reform increasingly emphasizes soft skills and employability, while actual classroom practice may remain knowledge-centered and teacher-led (Alami & El Otmani, 2025; Belghiti, 2024).

This issue is especially relevant at Mohammed First University, where students often demonstrate disciplinary knowledge yet hesitate when asked to initiate, justify, or sustain responses to non-routine tasks. Such hesitation suggests that the challenge is not simply a lack of content knowledge, but also a gap in intellectual autonomy and problem-solving readiness. In this respect, ill-structured problem solving provides a useful analytical lens, since such tasks involve uncertainty, multiple pathways, and the need for judgment rather than procedural recall (Jonassen, 1997).

This study addresses that problem by examining how a constructively aligned and scaffolded active-learning design can support the development of problem-solving skills among students at Mohammed First University. More specifically, it investigates the extent to which project-based learning, case analysis, peer collaboration, and reflective evaluation can reduce cognitive hesitation and promote greater analytical autonomy in a multidisciplinary higher education context (Biggs, 2014; Wood et al., 1976; van de Pol et al., 2010).

2. Literature Review

2.1. Problem-Solving in Higher Education

Problem-solving has long been recognized as a foundational component of intellectual development. While earlier educational models often treated problem-solving as a sequence of steps leading toward a correct answer, more recent scholarship emphasizes that many academic and professional challenges are ill-structured rather than linear. Ill-structured problems involve multiple possible solutions, uncertain parameters, competing interpretations, and the need for contextual judgment, which makes them especially relevant to contemporary higher education and workplace preparation (Jonassen, 1997).

Within university settings, problem-solving therefore extends beyond technical accuracy. It involves the ability to interpret situations, weigh alternatives, justify decisions, and reflect on one's own reasoning process. In the Moroccan undergraduate context, this issue is closely connected to the persistent gap between technical mastery and intellectual autonomy, where students may know content but still struggle to mobilize it independently in unfamiliar situations (Belghiti, 2024). Recent local observations also suggest that some students experience forms of cognitive hesitation when confronted with uncertainty, especially in environments that have historically rewarded correctness more than exploratory reasoning (Ziani, 2025).

2.2. The Employability Gap and the Limits of Traditional Pedagogy

The growing emphasis on problem-solving is closely linked to concerns about graduate employability. International and regional educational frameworks increasingly identify analytical reasoning, adaptability, teamwork, and reflective judgment as necessary capacities for the contemporary workplace. In this context, universities are under pressure to

move beyond knowledge transmission and to prepare learners for dynamic and unpredictable professional environments (UNESCO, 2023; European Training Foundation, 2022).

One explanation for the employability gap lies in the continued dominance of traditional pedagogy. When teaching is largely lecture-driven and assessment centers on reproducing correct answers, students may adopt surface approaches to learning. Such environments reward compliance and recall more than initiative, reasoning, and justified decision-making. This concern has also been raised in the Moroccan context, where higher education reform increasingly speaks the language of soft skills, yet students are still often socialized into dependent forms of learning (Alami & El Otmani, 2025; Belghiti, 2024).

The concept of constructive alignment is especially useful in explaining this tension. Biggs (2014) argues that intended learning outcomes, teaching activities, and assessment tasks should be coherently aligned so that students practice the very forms of thinking they are expected to demonstrate. If problem-solving is an intended outcome, then students must be engaged in pedagogical tasks that require analysis, judgment, collaboration, and reflection rather than memorization alone (Biggs, 2014).

2.3. Experiential and Collaborative Approaches to Problem-Solving

Experiential Learning Theory provides a strong basis for rethinking problem-solving pedagogy. Kolb (1984) conceptualizes learning as a cyclical process involving concrete experience, reflective observation, abstract conceptualization, and active experimentation. This model is especially relevant to problem-solving because it treats knowledge development as an iterative process shaped by action, reflection, and revision rather than by passive reception alone (Kolb, 1984).

Similarly, research on active learning has consistently shown that students achieve stronger conceptual understanding and improved performance when they participate actively in the learning process. Prince's review found broad support for active learning approaches that engage students in discussion, collaboration, and problem-centered tasks, while Freeman et al.'s meta-analysis reported higher examination performance and lower failure rates under active-learning conditions than under traditional lecturing (Prince, 2004; Freeman et al., 2014).

Collaborative learning extends this logic by allowing students to co-construct responses through dialogue, negotiation, and peer support. In the Moroccan university setting, local work has also highlighted the pedagogical value of active-learning interventions, particularly in relation to student engagement and performance in applied classroom contexts (Bouali, 2023). Taken together, these perspectives suggest that problem-solving competence is more likely to emerge when students are treated as participants in knowledge construction rather than as passive recipients of information.

2.4. The Scaffolding Framework for Problem-Solving

Problem-solving development in higher education typically requires structured pedagogical support that is gradually reduced as learners gain competence. This study adopts a scaffolding perspective to explain how students move from uncertainty to more autonomous performance. Scaffolding was originally conceptualized as temporary support that enables learners to perform tasks beyond their unassisted capacity (Wood et al., 1976). Later research refined this idea by emphasizing three defining characteristics of effective scaffolding: contingency, fading, and transfer of responsibility (van de Pol et al., 2010).

This framework is particularly relevant to problem-solving because many students do not struggle only with what to answer, but also with how to begin thinking, how to tolerate

uncertainty, and how to sustain reasoning when no single correct answer is given. In this respect, scaffolding offers a structured response to the kind of hesitation observed in learners who have been accustomed to step-by-step instruction or externally guided performance (Belghiti, 2024; Ziani, 2025).

The scaffolding framework in the present study was embedded within a constructively aligned course design. Students were first introduced to guided tasks supported by prompts, modeled reasoning, structured collaboration, and reflective checkpoints. These supports were progressively reduced to encourage greater independence, confidence, and ownership of the problem-solving process. In this sense, scaffolding functioned not as permanent assistance, but as a pathway from hesitation to proficiency, consistent with the logic of constructive alignment and active-learning pedagogy (Biggs, 2014; Prince, 2004; van de Pol et al., 2010)

3. Methodology

3.1. Research Design

This study adopted a mixed-methods case study to investigate the impact of active learning on problem-solving development within a linguistic framework. The research was conducted at the Faculty of Letters and Human Sciences, Mohammed First University, Oujda, Morocco. The study took place during the fall semester (Semester 5) of the 2025–2026 academic year, spanning from September 2025 to December 2025, with final assessments completed in January 2026. In the first phase, quantitative data were collected to identify patterns in students' confidence, collaboration, and engagement with problem-solving tasks. In the second phase, those patterns were explored qualitatively through classroom observation, field notes, and reflective documentation of the instructional process. This design was selected because explanatory sequential mixed-methods research is especially suitable when initial numerical patterns require later qualitative interpretation and integration (Creswell & Plano Clark, 2018; Fetters et al., 2013). Fetters et al. also identify explanatory sequential design as one of the core mixed-methods structures through which integration can occur at the design level.

The study also incorporated action-research features, insofar as pedagogical interventions were implemented, observed, and reflexively adjusted during the semester. However, the broader research logic remains that of a mixed-methods case study, since the aim was not only to improve local teaching practice, but also to analyze the development of problem-solving skills within a specific institutional setting.

3.2. Research Context and Participants

The research involved a purposeful sample of 50 undergraduate students (N=50). While the study sought to address problem-solving at a university level, this cohort was specifically selected to represent the multidisciplinary challenges within the humanities. Participants were third-year students enrolled in a mandatory English for Academic Purposes (EAP) course.

The demographic distribution across academic fields was as follows:

- • Geography Department: 18 students (36%)
- • History Department: 16 students (32%)
- • French Studies Department: 16 students (32%)

The sample consisted of 28 female students (56%) and 22 male students (44%), with ages ranging from 20 to 23 years (Mean Age = 21.4). All participants were non-native English speakers whose primary languages of academic instruction are Arabic and French. This

specific demographic allowed this study to observe how students from diverse disciplinary backgrounds navigate problems while communicating in a second language.

3.3. Data Collection Instruments

The primary quantitative tool was a structured questionnaire designed to assess student shifts in confidence and analytical approach. To ensure technical rigor, the instrument was divided into four specific sections:

- • Section 1: Demographics. Collected data on age, gender, and academic department (Geography, History, or French).
- • Section 2: Cognitive Confidence (5 items). Measured the students' self-efficacy when initiating "ill-structured" tasks in English. These items tracked whether students felt a "cognitive freeze" or if they felt equipped to start a task without immediate teacher intervention.
- • Section 3: Collaborative Efficacy (5 items). Evaluated how students perceived the value of peer-to-peer knowledge sharing and collective problem-solving within the EFL (English as a Foreign Language) context.
- • Section 4: Strategic Autonomy (5 items). Assessed the transition from rote memorization to original reasoning, focusing on the students' ability to use linguistic scaffolding techniques independently.

The questionnaire utilized a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). It was piloted prior to the study to ensure that the English terminology was accessible to the target student population.

3.3.2. Participant Observation and Fieldwork

Qualitative data was gathered through participant observation, as the lead researcher also served as the classroom teacher. This dual role allowed for a deep, immersive analysis of student behavior that an outside observer might miss.

A structured fieldwork protocol was used to document:

- • Behavioral Shifts: Real-time reactions to problem-based learning tasks and the reduction in scaffolding requests over the semester.
- • Linguistic Application: How students utilized English to negotiate meanings during group work.
- • Classroom Dynamics: The evolution of peer collaboration and the level of engagement during "non-routine" challenges.

Observations were recorded bi-weekly, providing a longitudinal view of the students' development from September 2025 to December 2025.

During the project-based learning sessions (Weeks 4–12), I spent 15 minutes of each session as a silent observer, moving between the Geography, History, and French student groups. Detailed notes were finalized immediately following each class to ensure accuracy. These notes were later coded to identify recurring themes in student autonomy and collaborative growth. The observations focused on three specific behavioral indicators:

1. • Instructional Scaffolding Needs: Tracking the frequency and type of student questions. It was noted whether questions were "dependent" (asking for the answer) or "strategic" (asking for a process or tool).
2. • Cognitive Persistence: Observing how long groups worked on a problem before requesting the teacher's intervention. This served as a proxy for measuring analytical resilience.

3. • Linguistic Negotiation of Meaning: Observing how students utilized their English vocabulary to debate solutions during the peer collaboration phase.

3.4. Pedagogical Interventions

Four pedagogical interventions structured the study. Project-based learning involves sustained engagement with authentic or discipline-relevant challenges requiring students to formulate responses over time rather than through one-off answers. Case analysis exposed students to situations involving ambiguity, incomplete information, and competing alternatives, thereby encouraging judgment-based reasoning rather than procedural repetition, which is particularly important in work with ill-structured problems (Jonassen, 1997).

Peer collaboration was designed as interdependent rather than merely cooperative work. Students were required to exchange perspectives, negotiate options, and jointly defend their solutions. Reflective evaluation required students to document their reasoning process through diaries, oral explanations, and reflective tasks that captured obstacles, revisions, and decision paths rather than only final answers. Together, these interventions were intended to create an experiential and active-learning environment in which support was present initially but progressively reduced to foster independence (Kolb, 1984; Prince, 2004; Freeman et al., 2014; van de Pol et al., 2010).

3.5. Data Analysis and Integration

Quantitative data were analyzed descriptively to identify shifts in student self-perception and engagement across the intervention period. Frequencies and percentages were used to summarize response trends related to confidence, collaboration, and reflective learning.

Qualitative data were analyzed thematically, with recurring patterns identified in students' classroom behavior, forms of participation, hesitation, peer interaction, and reflective explanations. The integration of the two strands occurred during interpretation, in line with explanatory sequential mixed-methods logic, whereby qualitative findings are used to explain and contextualize quantitative trends rather than stand independently from them (Fetters et al., 2013; Creswell & Plano Clark, 2018).

4. Results

4.1. Quantifying the Shift: From Cognitive Hesitation to Analytical Confidence

The first phase of the findings revealed a substantial level of hesitation among students when confronted with ill-structured tasks. Before the interventions, 65% of participants reported difficulty initiating a response without step-by-step teacher guidance. This pattern suggests that many students were accustomed to instructional settings in which the path toward a correct answer was predetermined and externally directed.

The results, summarized in Table 1, reveal a significant degree of "Cognitive Hesitation" prevalent in the traditional academic environment.

Confidence Level	Percentage of Students (%)
Very Little	65%
Somewhat	25%

Not at All	10%
Total	100%

Table 1: Student confidence in approaching complex problems without instructor guidance (pre-intervention).

4.2. Qualitative Fieldwork: Observing the "Cognitive Thaw" and Engagement Levels

The quantitative findings were supported by qualitative evidence gathered through participant observation. As the semester progressed, the fieldwork documented what is described here as a "Cognitive Thaw": a gradual reduction in student hesitation when faced with non-routine linguistic and analytical tasks.

4.2.1. Evidence of Collaborative Engagement

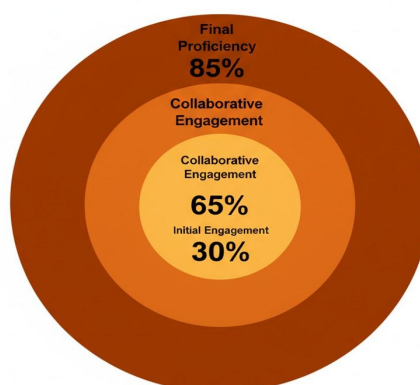
Classroom observations indicated a marked increase in collaborative engagement that aligned with the questionnaire results. Specifically, approximately 65% of students demonstrated a significant shift in their approach to uncertainty. In the early weeks of the semester, these students typically exhibited "passive waiting" behaviors, relying on the instructor to validate every step of a task. However, by the mid-point of the intervention, the observation logs captured a transition toward peer-based reasoning.

Rather than seeking immediate teacher verification, students across the Geography, History, and French cohorts began to use one another as interlocutors. They started testing ideas collectively and treating peer discussion as a primary resource for navigating the "ill-structured" problems presented in the English curriculum.

4.2.2. The Impact of Scaffolding on Student Autonomy

My role as a participant-observer allowed me to track the nature of student-teacher interactions. I observed that as students' collaborative efficacy grew, the frequency of "answer-seeking" questions decreased, replaced by "process-oriented" inquiries. This shift suggests that the active-learning strategies (project-based tasks and case analyses) fostered an environment where students felt cognitively safe to experiment with original reasoning rather than waiting for externally provided answers.

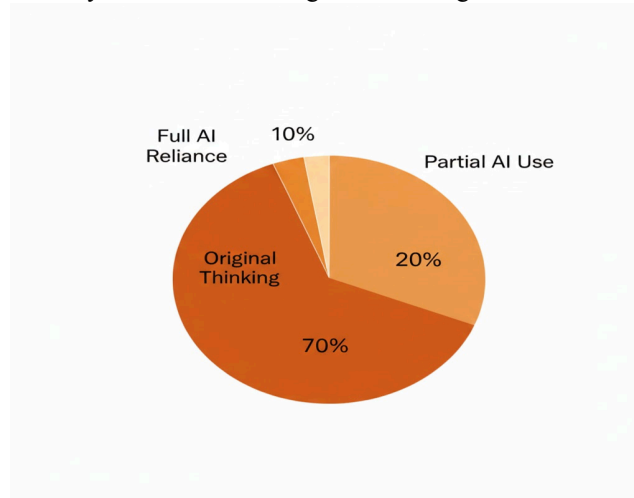
Figure 2: Evolution of student engagement levels through the intervention phases.



4.3. Metacognitive Growth and the Challenge of AI-Dependency

By the later stages of the intervention, students showed greater persistence and responsiveness when working through complex tasks. The final phase suggested a substantial

increase in analytical confidence and decision-making readiness, particularly in contexts where students had repeated exposure to authentic, discussion-based, and reflective activities. Figure 3: Student intellectual autonomy and reliance on original reasoning vs. AI tools.



4.4. Reflective Evaluation and Original Thinking

The use of process diaries and oral justification tasks revealed a notable shift in student thinking. Around 70% of students demonstrated greater willingness to articulate their own reasoning rather than relying mechanically on externally produced content. This was particularly important in cases where written work initially appeared polished but could not be adequately defended through oral explanation. Reflective evaluation appeared to strengthen students' awareness of how they reached decisions and where their reasoning required further development.

5. Discussion

The findings of this study suggest that students' initial difficulty with problem-solving should not be interpreted simply as an individual deficit. Rather, the result that 65% of participants initially struggled to begin a task without teacher guidance points to a broader pedagogical issue. Many students appear to have developed their academic habits in environments where correctness, clarity, and teacher-led sequencing were prioritized over exploratory reasoning and independent judgment. From this perspective, cognitive hesitation is less a sign of inability than a reflection of how prior instructional cultures shape learner expectations (Belghiti, 2024; Alami & El Otmani, 2025).

Interpreted through the scaffolding framework, this hesitation represents a transitional stage in which students have not yet fully internalized the reasoning routines required for autonomous engagement with ill-structured problems. The role of scaffolding in this study was therefore not merely to simplify tasks, but to structure a pathway through which students could gradually assume responsibility for their own analytical process. This interpretation is consistent with the view that effective scaffolding depends on contingency, fading, and transfer of responsibility rather than permanent support (Wood et al., 1976; van de Pol et al., 2010).

This pattern is conceptualized in the present study as Safety Net Syndrome, a term used here as an analytical label to describe excessive dependence on teacher guidance at the point where students are expected to exercise cognitive initiative. In this sense, the problem is not support itself, but the absence of a transition from support to autonomy. If instructional protection remains constant, students may become hesitant to act without external confirmation. The present findings therefore resonate with local observations of cognitive

freeze and dependency in higher education settings, while also reinforcing the broader pedagogical argument that support must be strategically faded to achieve independence (Ziani, 2025; van de Pol et al., 2010).

The increase in collaborative engagement also has important theoretical significance. It suggests that problem-solving is not solely an individual cognitive act, but also a socially mediated learning process. Through peer collaboration, students were able to test interpretations, negotiate uncertainty, and refine responses collectively. This aligns with research showing that active-learning environments improve student performance by increasing participation, higher-order thinking, and engagement with the learning process (Prince, 2004; Freeman et al., 2014). It also corresponds with local evidence suggesting that active-learning interventions can positively affect student engagement in Moroccan university contexts (Bouali, 2023).

The findings related to reflective evaluation are equally significant. The movement toward greater original thinking, especially through process diaries and oral defense tasks, indicates that reflection may serve as a key mechanism in the development of problem-solving proficiency. When students were required to explain not only what they concluded but how they arrived there, they became more aware of the logic, uncertainty, and revision involved in their own reasoning. This interpretation is compatible with experiential learning, which treats reflection as a central stage in the transformation of experience into knowledge (Kolb, 1984). It also becomes especially relevant in contexts shaped by generative AI, where polished written products may obscure whether learners understand and own the reasoning they present (Hassan, 2024).

These findings also speak directly to constructive alignment. If problem-solving is an intended learning outcome, then students must encounter teaching activities and assessment practices that require problem-solving in meaningful ways. The results imply that traditional settings may contain a mismatch between the rhetoric of soft skills and the actual structure of learning tasks. In contrast, the pedagogical design implemented in this study aligned learning outcomes with inquiry-oriented activities, collaborative reasoning, and reflective assessment. This alignment appears to have contributed to students' gradual transition from hesitation toward greater analytical autonomy (Biggs, 2014).

6. Conclusion

This study has explored how we can bridge the gap between student hesitation and academic proficiency by integrating problem-solving into the English language classroom. By observing Semester 5 students at Mohammed First University, it became clear that when we move away from traditional "rote" teaching and toward active, scaffolded learning, students do more than just improve their English; they develop the intellectual stamina to tackle complex, "ill-structured" problems. The transition from what the researcher observed as a "Cognitive Thaw" to genuine autonomy shows that problem-solving is not a gift some students are born with, but a skill that can be carefully cultivated through thoughtful curriculum design (Wood et al., 1976; Biggs, 2014).

Looking forward, these findings suggest that higher education must prioritize the *process* of learning as much as the content. By promoting multidisciplinary collaboration and providing faculty with training in active-learning strategies, we can better prepare students for a job market that increasingly demands adaptability and critical thinking. Even as generative AI becomes a permanent part of the academic landscape, focusing on human reasoning and justification ensures that students remain the primary architects of their own education. While

this study is limited by its specific focus on a small cohort of 50 students, it serves as a meaningful starting point. Expanding this approach to larger, more diverse groups across different faculties will be essential to fully understanding how we can empower the next generation of Moroccan graduates to face a rapidly changing world.

References

- Alami, M., & El Otmani, S. (2025). The soft skills crisis in Moroccan higher education: A case study of Mohammed First University. *Journal of Academic Innovation and Employability*.
- Belghiti, K. (2024). *Bridging the gap: Technical mastery vs. intellectual autonomy in the Moroccan undergraduate curriculum*. University Press.
- Biggs, J. (2014). Constructive alignment in university teaching. *HERDSA Review of Higher Education*, 1, 5–22.
- Bouali, A. (2023). Active learning interventions and the digital paradox: Evaluating student performance at ENCG and Faculty of Science. *Moroccan Educational Review*, 12(2), 45–60.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
- European Training Foundation. (2022). *Skills for the future: Morocco's transition to an automated economy*. Publications Office of the European Union.
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs—Principles and practices. *Health Services Research*, 48(6 Pt 2), 2134–2156.
- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410–8415.
- Hassan, F. (2024). The impact of generative AI on critical thinking: Observations from the Faculty of Letters. *International Journal of Pedagogy and Technology*, 8(4), 112–128.
- Jonassen, D. H. (1997). Instructional design models for well-structured and ill-structured problem-solving learning outcomes. *Educational Technology Research and Development*, 45(1), 65–94.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.
- Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93(3), 223–231.
- UNESCO. (2023). *Rethinking higher education in the Arab world: Soft skills as a catalyst for sustainable development*. UNESCO Publishing.
- van de Pol, J., Volman, M., & Beishuizen, J. (2010). Scaffolding in teacher-student interaction: A decade of research. *Educational Psychology Review*, 22(3), 271–296.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17(2), 89–100.
- Ziani, R. (2025). Cognitive freeze and the safety net syndrome: Behavioral observations in STEM and humanities students. *Journal of Higher Education Research in North Africa*.