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AI-Supported Preparation, Confidence, and Motivation in Moroccan Students' Collaborative Learning

Ouafae Benzizoune[1], Ilham Kanina[2] & Fatima-Zahra Derouach[3]
[1]*English Department, Language and Société Laboratory, Faculty of Letters, Languages, and Arts, Ibn Tofail University, Kenitra, Morocco*
[2]*English Department, Literature, Arts and Pedagogical Engineering Research Laboratory, Faculty of Language, Letters, and Arts, Ibn Tofail University, Kenitra, Morocco*
[3]*English Department, Language and Société Laboratory, Faculty of Letters, Languages, and Arts, Ibn Tofail University, Kenitra, Morocco*
Corresponding Author Email: ouafae.benzizoune@uit.ac.ma

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Abstract

This exploratory descriptive study examines how university students report using generative artificial intelligence (AI) to prepare their contributions before sharing them with peers, and how they perceive its role in their confidence and motivation during team-based coursework. A 26-item online questionnaire was completed by 42 students at Ibn Tofail University, Morocco. Data was analyzed descriptively, and three multi-item scales showed good internal consistency (α = .80 to .86). All findings reflect students' self-reported perceptions; no collaborative task was observed. Most students reported using AI often or always for academic work (69%) and in team projects (57.1%). Two-thirds (66.7%) reported at least one form of AI-supported preparation: rehearsing arguments, checking language, or checking whether an idea is sound. About half attributed greater confidence to AI, and between 50% and 64.3% reported motivational benefits. Only 21.4% felt less confident when peers used AI more effectively, whereas 66.7% said that teammates' AI use motivated them, and 45.2% reported lower motivation when AI does too much of the work. The study identifies a preparatory stage of AI use that deserves attention from researchers and teachers.

1. Introduction

Since the public release of large language models, a substantial body of research has examined their use in academic settings. In much of this work, students interact with a chatbot and researchers measure the changes that follow. Studies have examined how conversations with AI affect willingness to communicate, speaking anxiety and self-perceived communicative competence (Wang et al., 2024), speaking skills (Fathi et al., 2024), and writing (Yan, 2023), and meta-analyses now synthesize dozens of such comparisons (Deng et al., 2025; Lyu et al., 2025; Wang et al., 2025). Across this literature, AI is treated as an interlocutor: a tool that takes the position of a conversational partner.

Such a view explains much; however, it overlooks the actual way in which students use AI. Students tend to consult AI as a means of preparing for exchanges with other people, rather than engaging in dialogue with it for its own sake (Akiba, 2025; Gultom, 2026): before a seminar contribution, before a group meeting, or before an idea is proposed to teammates (Chen et al., 2023; Sallihudin et al., 2025). In such cases, AI is not the audience. It functions as a

private preparatory space where a contribution is tested before peers hear it, and what matters to the student is the exchange or judgement that follows.

This preparatory use has only recently begun to receive attention, and existing studies remain limited in scope. Akiba (2025) examined it qualitatively with four students, while Gultom (2026) focused on speaking proficiency rather than teamwork. To our knowledge, few studies have described how students who prepare with AI perceive their own confidence, motivation, and standing among peers in collaborative academic work. Two things are involved here that makes it worthwhile to describe them. One is that in collaborative activities, contributions are evaluated not only by teachers but by fellow students, too. Second, if students prepare their contributions with AI before entering that setting, little is known about how they experience the setting itself.

The present study, therefore, has a descriptive aim. It discusses pre-interactional rehearsal as a conceptual label for this practice and describes, on the basis of questionnaire data from 42 university students, how common AI-supported preparation is and how students report its relation to their confidence, motivation, and comparison with peers. Three features of the study should be stated at the outset. First, the study is small and exploratory; it aims to describe and to generate questions, not to test hypotheses or to generalize to a wider population. Second, all data are self-reported perceptions; no collaborative task was observed or administered. Third, the questionnaire items were written for this study and do not isolate the pre-interactional interval. Therefore, the preparation items measure AI-supported preparation in general.

The study contributes in three way. First, the study highlights an important stage in AI use that existing literature tends to ignore. Most literature looks into what occurs during interactions between AI and learners, but this practice deals with what students take away from their interactions with AI into their interactions with peers. Second, it points to a stage of AI use that usually goes unnoticed, since debates about academic integrity focus on the final product students submit, not on how they prepare before contributing. Third, since most studies on AI in higher education originate from Asia, Europe and North America (Baek et al., 2024), a study coming from a Moroccan university offers another perspective.

2. Literature Review

2.1 AI as a Conversational Partner

A large share of the literature places the learner in dialogue with an AI system and measures the effects on language skills or affect. Fathi et al. (2024) examined AI-mediated interactions with English as a foreign language (EFL) learners and reported improvements in speaking skills and willingness to communicate. Zhang et al. (2024) compared a conversational AI chatbot with an intelligent tutoring system in terms of their effects on EFL learners' willingness to communicate and speaking anxiety, and Wang et al. (2024) compared two chatbot designs on the same outcomes and on self-perceived communicative competence. This line of work builds on earlier research with purpose-built chatbots and intelligent personal assistants, such as Dizon's (2020) evaluation of intelligent personal assistants for second-language (L2) listening and speaking and Yang et al.'s (2022) use of a chatbot as an English conversation partner in EFL speaking classes. Yan (2023) extended the question to writing by examining ChatGPT in an L2 writing practicum. Subsequent meta-analyses have been carried out on comparative studies of chatbot-enhanced language learning (Lyu et al., 2025; Wang et al., 2025) and experimental studies on ChatGPT (Deng et al., 2025). Such research provides solid grounds for the knowledge of what happens during the interaction between the machine and the user. Their shared limitation, for the present purpose, is that the AI is always the interlocutor, so they say little about what happens when students later address their peers.

2.2 AI as a Preparatory Space Before Human Interaction

A smaller and more recent group of studies examines AI use that precedes interaction with people. Chen et al. (2023) developed and tested an AI-assisted platform that gave students

additional presentation practice without faculty involvement; students received it well, although AI and human ratings of the same presentations differed noticeably. Akiba (2025) followed four university students who experienced situational anxiety about class participation and used chatbots as virtual peer partners. The students were generally satisfied, but the author reported that chatbot consultation was too slow for live discussion, that chatbot praise did not match the responses of peers and the instructor, and that some students became dependent on the tools. Gultom (2026) found that private speaking rehearsal with ChatGPT mainly increased learners' confidence and readiness to join class discussions rather than producing rapid gains in accuracy, and that students still regarded peer conversation as essential for spontaneous interaction. Sallihudin et al. (2025) surveyed 77 first-year undergraduates in a Malaysian English for Academic Purposes course about using ChatGPT and Magic School AI to prepare for group discussions. Students rated the tools as useful and relevant but raised concerns about over-reliance, accuracy, ethics, and limited depth of content.

These studies suggest that students already use AI as a private rehearsal space, but their scope is limited. The evidence comes from very small qualitative samples (Akiba, 2025), a focus on speaking proficiency (Gultom, 2026), or perceptions of usefulness (Sallihudin et al., 2025). None describes how students who prepare with AI feel among their teammates. Survey research on generative AI more broadly has begun to examine academic confidence and anxiety (Gámez-Guadix & Mateos-Pérez, 2026), but not in relation to preparation for collaborative work.

2.3 Preparation Before Speaking: What Is, and Is Not, New

Preparation before a communicative act is not a new object of study, and the contribution of this paper does not depend on its being one. Foreign language learning research has examined strategic and pre-task planning for three decades: giving learners time to plan before a task affects the fluency and complexity of what they later produce (Ellis, 2005; Foster & Skehan, 1996; Skehan, 1998). In a different tradition, work on self-presentation describes the backstage in which a performance is assembled before it is given to an audience (Goffman, 1959). A claim that students prepare before speaking would therefore add nothing to these literatures.

What may be new is where the preparation takes place and what it draws upon. In the planning literature, preparation is an internal and largely unobservable cognitive process, bounded by the learner's current competence and by the time a task allows. When preparation is conducted with a generative AI system, three things may change. It becomes externalized into an exchange with a responsive tool and is therefore, in principle, observable. It becomes resource-dependent: what a student can assemble depends on access to a tool and skill in using it, not only on what the student already knows. And, because such tools are widely but unevenly used within a peer group while the preparation itself remains invisible to that group, the preparatory phase may acquire a comparative dimension that silent planning did not have. So, pre-interactional rehearsal, as the term is used here, names this externalized form of a long-studied practice; it does not claim to have discovered the practice. In the present study the term serves as a sensitizing concept that guided the choice of questionnaire items, not as a construct the items were shown to measure.

2.4 Defining AI-Supported Preparation and Its Components

Pre-interactional rehearsal must be distinguished from neighboring practices such as AI-assisted writing, proofreading, brainstorming, information verification, and general AI-supported study. Its proposed defining feature is temporal and functional: the AI is used in the interval before a contribution is delivered to human collaborators, and in the service of that delivery. Within that interval, the behaviors sampled by the questionnaire are themselves heterogeneous. Three components can be distinguished: (a) content rehearsal, rehearsing arguments with an AI before presenting them; (b) linguistic preparation, checking the grammar and vocabulary of ideas intended for sharing; and (c) epistemic verification, asking an AI

whether an idea is sound before proposing it. The first concerns the substance of a contribution, the second its form, and the third the delegation of evaluative judgement. Because these components differ in kind, the present study reports each of them separately as well as in a combined scale.

2.5 Theoretical Framework and Research Questions

Four lines of theory informed which perceptions the questionnaire asked about. In self-efficacy theory (Bandura, 1977), people's judgments of their ability determine their willingness to take up the activity; preparatory work leading to more knowledge could thus have an impact on their readiness to participate. Studies about foreign language anxiety (Horwitz et al., 1986) and willingness-to-communicate model (MacIntyre et al., 1998) have been used as the framework to examine the impact of AI technology on oral communication confidence (Fathi et al., 2024; Zhang et al., 2024); these frameworks direct attention to anxiety and readiness to speak. Social comparison theory (Festinger, 1954) holds that people evaluate their abilities by comparing themselves with others, especially under uncertainty; when AI use is common but each person's preparation is invisible, students might compare how well they use the tool rather than only their own competence. In this study, these frameworks guide the description rather than the formulation of the hypotheses. The study does not test whether preparation increases confidence, whether confidence increases motivation, or any social comparison process.

3. Methodology

3.1 Research Design

This study adopted an exploratory, quantitative, cross-sectional descriptive survey design. It is non-experimental: no intervention was introduced, no variable was manipulated, and no collaborative task was observed or administered. Data was collected once, in November 2025, through a self-report questionnaire. A cross-sectional descriptive questionnaire was considered appropriate because the aim was to describe a practice and students' perceptions of it within one group at a single point in time, not to establish change, relationships between constructs, or causation (Creswell & Creswell, 2018).

The exploratory label reflects three features of the study. First, pre-interactional rehearsal is a little-discussed concept, and no validated instrument exists to measure it; the items were therefore written for this study. Second, the sample is small and was reached by convenience, which rules out generalization beyond the participants. Third, the study is intended to generate questions and refine measures for future research rather than to confirm a model. Accordingly, the analysis is descriptive, Cronbach's alpha is used only to assess the reliability of the multi-item scales, and no inferential tests are reported.

The questionnaire was mainly closed-ended but ended with one open-ended question about students' concerns. Answers to this question were analyzed thematically to illustrate and qualify the quantitative results. Because this strand is small and supplementary, the study is described as a quantitative survey with a complementary open-ended component, not as a mixed-methods design.

This study is guided by four descriptive research questions:

RQ1. How frequently, and for which tasks, do students report using AI in team-based coursework, and how common are the three forms of AI-supported preparation?

RQ2. To what extent do students report that AI supports their confidence and motivation in team tasks?

RQ3. How do students report that their peers' AI use relates to their own confidence and motivation, and how common is concern that AI does too much of the work?

RQ4. How are these responses distributed across level of study and across frequency of AI use in team projects?

3.2 Participants and Setting

The sample included 42 undergraduate and Master's degree students studying at Ibn Tofail University, Kenitra, Morocco. Only university students who were enrolled during the time of data collection were eligible to participate. Out of the total sample, 25 participants (59.5%) were female and 17 participants (40.5%) were male. Participants were aged 18 to 54 years (M = 24.69, SD = 7.44, Median = 22). The average age for Master's level students was higher (M = 26.75, SD = 8.57) than undergraduate students (M = 21.94, SD = 4.47), which indicated the presence of adult students among Master's programs. Twenty-four participants (57.1%) were enrolled in Master's programs and 18 participants (42.9%) were undergraduate students. Twenty-nine participants (69.0%) had previous experience with team-based activities while others (31.0%) responded to teamwork questions based on general group work experience.

Three features of the sample limit interpretation. First, the questionnaire did not ask about discipline, so disciplines cannot be compared, and any difference between Master's and undergraduate students may partly reflect the programs they study in. Second, the level of study correlated with age and the frequency of using AI: 16 out of 24 Master's students (66.7%) used AI frequently or always in collaborative work, compared to 8 out of 18 undergraduates (44.4%). Third, no information was collected on the language of collaborative works, language proficiency, and the language of interaction with AI. There is no homogeneity of language in higher education in Morocco, where instruction and collaboration are carried out in either Standard Arabic, French or English, with different practices within the disciplines.

3.3 Instrument

Data were collected with a purpose-designed questionnaire administered through Google Forms. It contained 26 items in four sections: demographic and academic background (4 items); a profile of AI use (7 items on familiarity, frequency of academic and team-based use, tools used, tasks supported, perceived team efficiency, and openness about AI use with teammates); 12 statements rated from 1 (strongly disagree) to 5 (strongly agree); and three closing items (two closed questions on how AI affects collaboration and whether it should be allowed in teamwork, and one open-ended question about concerns). The tools and tasks items allowed several answers, so their counts exceed 42.

Nine of the 12 statements form three scales of three items each, scored as the mean of their items. The AI-supported preparation scale contains the three components: content rehearsal (I practice or rehearse my arguments by discussing them with an AI first), linguistic preparation (I use AI to check the grammar and vocabulary of the ideas I plan to share) and epistemic verification (I ask an AI to check if my ideas are logical or good before I suggest them to my team). The AI-related confidence scale covers feeling more knowledgeable when working with the team, feeling more comfortable sharing work that AI helped prepare, and feeling less anxious about mistakes. The AI-related motivation scale covers motivation to engage in team tasks, projects feeling less overwhelming, and feeling more motivated to complete assignments when AI support is available. The remaining three statements were analyzed as single items: perceived comparative disadvantage (I sometimes feel less confident when others use AI more effectively than I do), ownership concern (My motivation decreases when AI seems to be doing too much of the work), and peer-referenced motivation (Knowing my teammates use AI motivates me to try to perform better).

3.4 Data Collection Procedure

The link to the questionnaire was sent online in November 2025 to students' groups via the researchers' academic connections, Google Classroom and WhatsApp groups. Participation was voluntary and anonymous. It was emphasized in the form that participation is not connected to any course or examination, withdrawal will not lead to any academic penalty, and identification of the participant by the researchers is impossible. Because some groups were reached through the researchers' teaching contacts, a sense of obligation to participate cannot be ruled out entirely. Therefore, it can be classified as convenience sampling of intact groups.

Since age had been recorded as free text, one answer (21 years old) was converted to a numeric form. The item on perceived improvement in team efficiency had been configured to permit multiple selections, and five of 42 responses (11.9%) contained more than one option. Because this item was intended as a single-response rating, it is not analyzed further. Responses to frequency items were coded from 1 (never) to 5 (always). Tool names entered under "Other" were grouped (for example, "Perplexity" and "Perplexity AI"). There were no missing values on any of the 12 rated statements.

3.5 Data Analysis Procedure

The analysis was descriptive. Using SPSS, frequencies and percentages describe the sample and each item; means, standard deviations, and medians describe the rated statements and scales. For reporting, ratings of 4 or 5 were classed as agree, 3 as neutral, and 1 or 2 as disagree. Responses are broken down by level of study and by frequency of AI use in team projects (often or always versus never, rarely or sometimes) to address RQ4. These breakdowns are reported as descriptive profiles only.

Cronbach's (1951) alpha was used to assess the internal consistency (reliability) of each three-item scale, supported by the mean inter-item correlation, corrected item–total correlations, and alpha if an item is deleted. The single items cannot be assessed for internal consistency. To examine whether the three scales can be treated as distinct, the correlations between scale scores were inspected and corrected for unreliability. These correlations are reported as properties of the instrument and were not used to test relationships between constructs. Answers to the open-ended question were analyzed using a simple thematic procedure (Braun & Clarke, 2006): one researcher read all responses, assigned each to one category, and grouped categories into themes; a second researcher reviewed the coding, and disagreements were resolved through discussion.

3.6 Reliability and Validity of the Questionnaire

Table 1 shows that the three scales had good internal consistency, with alpha values of .80 for AI-supported preparation, .86 for AI-related confidence, and .86 for AI-related motivation. Every corrected item–total correlation exceeded .30 (range .55–.80). Removing an item lowered alpha in every case except one: removing the content-rehearsal item would raise alpha for the preparation scale slightly, from .80 to .82. This item is the one closest to the concept of pre-interactional rehearsal, so the preparation scale is held together mainly by linguistic preparation and epistemic verification. The item was retained because it is conceptually central, but this result supports reporting the three preparation components separately (Table 4). Given the small sample, all reliability values are estimates and could differ in another group of students.

Table 1. ***Reliability of the three scales (N = 42)***

Scale	Items	α	Mean inter-item *r*	Item–total *r*	α if item deleted
AI-supported preparation	3	.80	.58	.55–.75	.63–.82
AI-related confidence	3	.86	.67	.69–.80	.73–.84
AI-related motivation	3	.86	.67	.69–.76	.78–.83

The items were written from concepts in the literature and use plain wording, which supports their face validity. However, they were not reviewed by experts, were not piloted, and were not compared with an established instrument, so content validity has not been formally established.

Construct validity is limited in two further respects. First, the preparation items do not specify that preparation takes place before a contribution to peers. The scale therefore does not measure pre-interactional rehearsal as defined in Section 2.4, and the findings are reported as findings about AI-supported preparation.

Second, the three scales cannot be assumed to be distinct (Table 2). The observed correlations between scale scores were high (r = .65 to .66), and once corrected for the

unreliability of each scale they rose to between .77 and .80. Correlations of this size indicate that the scales share most of their reliable variance. This is not evidence that the scales are valid measures of related constructs; it is equally consistent with a single favorable attitude toward AI running through all nine items, a possibility made more likely because that every item names AI or AI support, is worded positively, and was answered in the same block and format. For this reason the scales are reported side by side, and the study makes no claim about how preparation, confidence and motivation relate to one another.

Table 2. ***Correlations between scale scores, observed and corrected for unreliability (N = 42)***

Pair of scales	Observed *r*	Corrected *r*
Preparation – Confidence	.66	.80
Preparation – Motivation	.65	.78
Confidence – Motivation	.66	.77

Note. Values are reported to describe overlap between the scales and were not used to test relationships between constructs.

The single items showed differing degrees of overlap with the scales. Peer-referenced motivation correlated .66 with the motivation scale, suggesting that it partly reflects the same general attitude. Comparative disadvantage correlated about .35 to .49 with the three scales, and ownership concern only .16 to .23, suggesting that the latter captures a separate concern rather than a general attitude toward AI. Finally, all responses are self-reports and may be influenced by social desirability. For these reasons the questionnaire should be regarded as a reliable first measure whose validity remains to be established.

3.7 Ethical Considerations

The first section of the questionnaire informed participants of the purpose of the study, the anonymity of their responses, the voluntary nature of participation, and their right to withdraw at any point before submission. Submitting the questionnaire was taken as consent. No personally identifying information was collected, and the survey platform was configured not to record email addresses.

4. Results and Discussion

The results are presented in the order of the research questions, beginning with the most important finding, the prevalence of AI-supported preparation. Each subsection reports the findings and then discusses them in relation to previous literature.

4.1 AI Use in Teamwork and AI-Supported Preparation (RQ1)

Most students were familiar with AI (Table 3): 27 (64.3%) described themselves as very familiar and using AI regularly. Twenty-nine (69.0%) used AI often or always for academic purposes and 24 (57.1%) did so in team projects, while only five (11.9%) used it rarely or never in teamwork. ChatGPT was the most commonly used tool (37 students), followed by Google Gemini (25), Copilot (11), Grammarly (7) and Claude (5); a few students named Perplexity, NotebookLM or DeepSeek. In teamwork, students used AI mainly for research support (29), brainstorming (26), and clarifying concepts (26), and less for generating presentations (14), editing and proofreading (14), and drafting content (12). Twenty-five students (59.5%) often or always shared their AI use with teammates. Attitudes were favorable: 36 (85.7%) thought AI affects team collaboration positively, and 38 (90.5%) thought it should be allowed in teamwork.

Table 3. ***Participant characteristics and AI use (N = 42)***

Characteristic	*n*	%
Female	25	59.5
Male	17	40.5

Characteristic	*n*	%
Master's	24	57.1
Undergraduate	18	42.9
Has done team-based coursework	29	69.0
Very familiar with AI tools	27	64.3
Uses AI often or always for academic work	29	69.0
Uses AI often or always in team projects	24	57.1
Often or always shares AI use with teammates	25	59.5
Thinks AI affects team collaboration positively	36	85.7
Thinks AI should be allowed in teamwork	38	90.5

Two-thirds of the students (28; 66.7%) agreed with at least one of the three preparation statements, and 13 (31.0%) agreed with all three (Table 4). Linguistic preparation was the most common form (54.8% agreed), followed by content rehearsal (47.6%). Epistemic verification showed the most divided response: 18 students (42.9%) agreed and 20 (47.6%) disagreed, with only four neutral and the largest standard deviation of any item (1.55).

Table 4. ***Responses on AI-supported preparation (N = 42)***

Statement	*M* (*SD*)	*Mdn*	Agree	Neutral	Disagree
Content rehearsal: I rehearse my arguments with an AI first	3.45 (1.19)	3	20 (47.6%)	14 (33.3%)	8 (19.0%)
Linguistic preparation: I check grammar and vocabulary of ideas I plan to share	3.64 (1.19)	4	23 (54.8%)	12 (28.6%)	7 (16.7%)
Epistemic verification: I ask an AI if my ideas are logical or good before suggesting them	2.95 (1.55)	3	18 (42.9%)	4 (9.5%)	20 (47.6%)
Preparation scale (mean of three items)	3.35 (1.12)	3.33			

AI use in teamwork was therefore common, and two-thirds of students reported at least one form of AI-supported preparation. This level of use is higher than that reported among Moroccan physical-science students at the École Normale Supérieure of Fez, most of whom had not yet used ChatGPT (Tafhi et al., 2025), a difference that may reflect discipline and the timing of data collection. The favorable attitudes observed here are broadly consistent with large surveys of student ChatGPT use in the United States (Baek et al., 2024) and with Moroccan respondents who regarded ChatGPT as valuable while acknowledging that it can also harm students (Al-Zubaidi et al., 2024). The three forms were not equally common. Checking language was the most widespread, which is consistent with AI being treated as an advanced proofreading and revision tool (Barrett & Pack, 2023; Yan, 2023) and with the multilingual setting in which these students study. Studies of Moroccan university students likewise report that AI-assisted writing is valued chiefly for gains in grammatical accuracy, vocabulary, and organization (Baddane, 2026; Moussa & Belhiah, 2024). Asking AI whether an idea is good divided students almost evenly, with very few neutral answers. Delegating the evaluation of one's ideas appears to be a practice students either adopt or reject. This practice deserves closer study because because it is the one most linked to a common worry, namely that relying on AI makes students think less for themselves; students raised this worry in their open comments (Section 4.6), as did earlier research (Akiba, 2025; Zhai et al., 2024).

4.2 AI-Related Confidence and Motivation (RQ2)

Table 5 shows that about half of the students attributed greater confidence to AI. Twenty-one (50.0%) agreed that AI helps them feel more knowledgeable when working with their team, and 23 (54.8%) agreed both that they feel more comfortable sharing work that AI helped them prepare and that AI reduces their anxiety about making mistakes. Between 19.0% and 21.4% disagreed with each statement, and about a quarter were neutral. The mean confidence score was 3.52 (*SD* = 1.06) on the five-point scale.

Table 5. ***Responses on AI-related confidence (N = 42)***

Statement	*M* (*SD*)	*Mdn*	Agree	Neutral	Disagree
AI helps me feel more knowledgeable with my team	3.45 (1.21)	3.5	21 (50.0%)	12 (28.6%)	9 (21.4%)
I feel more comfortable sharing work AI helped me prepare	3.57 (1.17)	4	23 (54.8%)	11 (26.2%)	8 (19.0%)
AI reduces my anxiety about mistakes in team projects	3.55 (1.21)	4	23 (54.8%)	11 (26.2%)	8 (19.0%)
Confidence scale (mean of three items)	3.52 (1.06)	3.67			

Students were somewhat more positive about motivation as shown in Table 6. Twenty-seven (64.3%) said they feel more motivated to complete team assignments when they can use AI for support, 24 (57.1%) said AI makes team projects feel less overwhelming, and 21 (50.0%) said AI increases their motivation to engage in team tasks. Disagreement was low (9.5% to 16.7%). The mean motivation score was 3.67 (*SD* = 0.93).

Table 6. ***Responses on AI-related motivation (N = 42)***

Statement	*M* (*SD*)	*Mdn*	Agree	Neutral	Disagree
AI increases my motivation to engage in team tasks	3.50 (1.11)	3.5	21 (50.0%)	14 (33.3%)	7 (16.7%)
AI makes team projects feel less overwhelming	3.71 (1.02)	4	24 (57.1%)	14 (33.3%)	4 (9.5%)
I feel more motivated to complete team assignments when I can use AI	3.81 (1.04)	4	27 (64.3%)	9 (21.4%)	6 (14.3%)
Motivation scale (mean of three items)	3.67 (0.93)	3.67			

These perceptions resemble those reported in studies where students practiced with AI before speaking (Fathi et al., 2024; Gultom, 2026; Zhang et al., 2024), although those studies examined individual practice and the present one asks about teamwork. They also echo research linking students' academic use of generative AI to academic confidence and anxiety (Gámez-Guadix & Mateos-Pérez, 2026) and a meta-analysis reporting that ChatGPT improves students' affective-motivational states (Deng et al., 2025). Closer to the present context, Moroccan postgraduate students who used ChatGPT reported higher academic-writing self-efficacy than non-users (Bouzar et al., 2024), and Moroccan EFL students who used AI tools under guidance reported greater confidence in their writing (Baddane, 2026). The evidence is not uniformly positive, however: in one study, university students reported more anxiety during a writing task completed with GPT than during a conventional one (Oyarzún Yáñez & Rodríguez Rodríguez, 2024), so the reduced anxiety reported by about half of the present sample should not be assumed to hold across tasks and settings. In terms of self-efficacy theory (Bandura, 1977), feeling more knowledgeable and less anxious about mistakes are the kinds of belief that would be expected to support participation, but this study did not measure participation and cannot say whether these beliefs translate into behavior. Two cautions apply. First, because the confidence and motivation items name AI, they record what students attribute to AI rather than their confidence or motivation as such. Second, motivation statement with the highest agreement concerned motivation when AI support is available. Thus, it is unclear whether this motivation would persist without AI; evidence from other settings suggests that gains which depend on the availability of AI may not carry over once it is removed (Bastani et al., 2025). The finding that AI makes team projects feel less overwhelming also calls for caution, since students facing heavy workload and time pressure have been found to rely more on ChatGPT, and greater reliance was in turn associated with procrastination and weaker academic performance (Abbas et al., 2024).

4.3 Peers' AI Use and Ownership Concern (RQ3)

Feeling less confident when others use AI more effectively (Table 7) was the least common experience in the questionnaire: nine students (21.4%) agreed and 23 (54.8%) disagreed. By

contrast, 28 students (66.7%) agreed that knowing their teammates use AI motivates them to perform better, and only four (9.5%) disagreed. As a result, peers' AI use was described far more often as a stimulus than as a threat. At the same time, 19 students (45.2%) agreed that their motivation decreases when AI seems to be doing too much of the work, and only eight (19.0%) disagreed.

Table 7. ***Responses on peers' AI use and ownership concern (N = 42)***

Statement	*M* (*SD*)	*Mdn*	Agree	Neutral	Disagree
Comparative disadvantage: I feel less confident when others use AI more effectively	2.57 (1.21)	2	9 (21.4%)	10 (23.8%)	23 (54.8%)
Peer-referenced motivation: teammates' AI use motivates me to perform better	3.81 (0.99)	4	28 (66.7%)	10 (23.8%)	4 (9.5%)
Ownership concern: my motivation decreases when AI does "too much"	3.38 (1.21)	3	19 (45.2%)	15 (35.7%)	8 (19.0%)

Within the limits of a single item, this does not suggest that AI use created strong comparative pressure in these teams. The comparative dimension proposed in Section 2.3 is not supported by these data, although it is not ruled out either: the item assumes that others use AI better, which some students may simply have rejected, and social comparison (Festinger, 1954) may operate in ways that students do not readily report. The low level of comparative disadvantage also contrasts with a survey of U.S. college students in which competitive conformity, the fear of falling behind peers, strongly predicted dependence on AI (Kim et al., 2026); peer comparison may therefore surface less as reduced confidence than as pressure to keep using AI, which would be consistent with the 66.7% who said that teammates' AI use pushed them to perform better. Ownership concern was considerably more common. Hence, students described AI as helpful and at the same time worried about it, a combination also found in earlier surveys (Sallihudin et al., 2025) and in research on reduced critical thinking among AI users (Lee et al., 2025). Experimental work on AI-assisted writing suggests one explanation: people feel less ownership of a text the less they themselves contributed to it (Draxler et al., 2024), which fits the concern that motivation falls when AI does too much of the work.

4.4 Responses by Level of Study and Frequency of Use (RQ4)

Table 8 profiles the responses of four subgroups. The subgroups were defined by variables that are not part of the scales they are compared on: level of study, and the separate item on frequency of AI use in team projects. The figures are descriptive only; no tests were conducted, the subgroups are small, and the two groupings overlap, because Master's students used AI more often in team projects.

Students who used AI often or always in team projects agreed more often with each form of preparation than students who used it less (between 58.3% and 66.7%, against 22.2% to 38.9%) and had higher mean scores on AI-related confidence (3.74 against 3.24) and motivation (4.04 against 3.19). This pattern is unsurprising, since frequent users have more occasions to prepare with AI and to form views about it, and it is consistent with evidence that habit is among the strongest predictors of students' intention to use ChatGPT (Strzelecki, 2024). Agreement with comparative disadvantage was almost identical in the two frequency groups (20.8% and 22.2%), so feeling outperformed by peers' AI use did not appear to vary with how much students used AI themselves.

Master's students agreed more often than undergraduates with each form of preparation (54.2% to 62.5%, against 27.8% to 44.4%) and had slightly higher mean confidence and motivation scores. The largest subgroup contrast concerned ownership: 14 of 24 Master's students (58.3%) agreed that their motivation falls when AI does too much of the work, compared with 5 of 18 undergraduates (27.8%).

Table 8. ***Descriptive profile of responses by level of study and frequency of AI use in team projects***

	Master's	Undergrad.	Often/always	Less often
n	24	18	24	18
Content rehearsal, % agree	58.3	33.3	66.7	22.2
Linguistic preparation, % agree	62.5	44.4	66.7	38.9
Epistemic verification, % agree	54.2	27.8	58.3	22.2
AI-related confidence, *M* (*SD*)	3.64 (1.02)	3.37 (1.12)	3.74 (1.15)	3.24 (0.88)
AI-related motivation, *M* (*SD*)	3.78 (0.90)	3.54 (0.98)	4.04 (0.78)	3.19 (0.91)
Comparative disadvantage, % agree	16.7	27.8	20.8	22.2
Peer-referenced motivation, % agree	66.7	66.7	79.2	50.0
Ownership concern, % agree	58.3	27.8	50.0	38.9

Note. "Less often" = never, rarely or sometimes. Groupings overlap: 16 of 24 Master's students and 8 of 18 undergraduates used AI often or always in team projects.

The first explanation regarding the cause for the difference in ownership is that those students who have advanced far in their education will be required to create their work, and also be invested in creating it. This interpretation is consistent with findings that younger users rely more on AI tools and that higher educational attainment is associated with stronger critical thinking regardless of AI use (Gerlich, 2025). Nevertheless, the level of education overlapped with age, frequency of use and possibly with the discipline as well. Therefore, the results should be considered as observations for further research, and not as facts regarding Master's and undergraduate students.

4.5 Students With and Without Team-Based Coursework

Because 13 students reported no prior team-based coursework, the main results were re-examined for the 29 who had such experience. The picture was very similar: mean scores were 3.34 for preparation, 3.45 for confidence, and 3.67 for motivation (against 3.35, 3.52 and 3.67 for the full sample), and agreement with individual statements differed from the full-sample figures by no more than about ten percentage points. Comparative disadvantage (17.2%) and ownership concern (34.5%) were somewhat less common in this subgroup. The results reported above are therefore not driven by students without team experience, although these 13 students' answers necessarily refer to group work in a broader sense.

4.6 Students' Concerns

Seventeen students (40.5%) answered the open question. Seven of these comments warned about over-reliance, laziness, or a loss of critical thinking and creativity. One student wrote: "Team members may depend too much on AI tools, reducing their own critical thinking and problem-solving." Another wrote that creativity "might decrease, since most ideas are now coming from AI rather than our own minds." Two students described how AI should be used: one said that ideas "should be spontanious at first then devloped them with ai" [sic], and another called for courses that teach students to use AI "for our benefit, not make it do the entire work for us." Three comments were positive, for example that AI "can strengthen teamwork by boosting efficiency, improving communication, and helping teams make better decisions together." The remaining five comments were very short or general. These comments echo the ownership concern reported in Section 4.3, the over-reliance documented in earlier work (Akiba, 2025; Gerlich, 2025; Zhai et al., 2024), and studies of Moroccan university students, who are reported to use ChatGPT with little guidance and to worry about relying on it too heavily (Al-Zubaidi et al., 2024; Tafhi et al., 2025).

4.7 Revisiting the Three Proposed Dimensions

Section 2.3 proposed that AI-supported preparation differs from traditional pre-task planning (Ellis, 2005; Foster & Skehan, 1996; Skehan, 1998) in being externalized, resource-

dependent, and comparative. The data bear on these dimensions only indirectly. The prevalence of preparation is consistent with preparation now being externalized into exchanges with tools, as in AI-assisted presentation practice (Chen et al., 2023), but the items did not establish that this preparation precedes interaction with peers. The concentration of preparation among frequent users is consistent with resource dependence, but access and skill were not measured. As discussed in Section 4.3, the comparative dimension found little support in these data, although competitive pressure around AI use has been documented elsewhere (Kim et al., 2026). The concept of pre-interactional rehearsal therefore remains a proposal that this study has helped to specify rather than one it has confirmed.

5. Conclusion

In this group of 42 Moroccan university students, AI use in teamwork was common, and two-thirds of students reported using AI to prepare their contributions, most often by checking language. About half attributed greater confidence to AI and a somewhat larger share attributed greater motivation to it. Peers' AI use was described mainly as a motivation rather than a threat, while almost half of the students worried that AI might do too much of the work.

These conclusions are subject to clear limitations. The sample size is limited, drawn from only one university, and selected using the convenience method, so the results describe only to these 42 students and cannot be generalized; the percentages carry margins of error ranging up to about ±15 percentage points, and subgroup figures are less precise still. The data was self-reported and collected at one point in time, which means that it cannot be proven that using AI increases confidence and motivation or has any kind of relationship with the variables under consideration. The questions were developed specifically for this research and have not been evaluated by experts or tested; although the reliability of the scales has been established, they are highly interrelated and may just indicate an overall positive attitude towards AI. The preparation items do not specify that preparation precedes interaction with peers, and the confidence and motivation items name AI in their wording. Discipline, language of collaboration, and language proficiency were not recorded, 13 students had no prior team-based coursework, and the open-ended analysis rests on 17 short comments.

Lastly, the findings suggest that permitting AI in group assignments is not enough; its use should be accompanied by explicit guidance. Students' own comments point to two forms this guidance could take: asking students to generate their ideas independently before using AI to develop them, and teaching students to use AI to support rather than replace their thinking. Teachers could also ask students to state briefly how they used AI to prepare their contributions, which would make this preparatory stage visible and open to discussion.

Future research should first measure pre-interactional rehearsal directly, with items that specify the interval and the audience (for example, "Before I present an idea to my team, I first try it out with an AI tool"). It should also measure confidence and motivation with established scales that do not name AI and that include reverse-worded items. Larger and more varied samples are needed to test the instrument's factor structure. Finally, interviews, observation of real team tasks, or analysis of students' exchanges with AI would show what this practice looks like.

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Author Bio

Ouafae Benzizoune is currently a doctoral student at Ibn Tofail University. She has taught English for six years at all school levels, combining eclectic instruction with creative methods to strengthen students' language skills and cognitive abilities. She is a researcher who shows interest in different fields; she works on academic writing, narrative, intercultural rhetoric, AI in education, and gamification. She is bridging theory and practice to help students become curious, independent, lifelong learners.

Ilham Kanina is a doctoral candidate in Linguistics, Didactics, Language and Society at Ibn Tofail University, Kenitra, Morocco. She holds a Master's degree in TEFL and a Bachelor's degree in English Linguistics. She has taught English at the high school level since 2020. Her research interests include literature-based instruction, developing EFL learners' speaking skills through short stories, and integrating AI into EFL teaching and learning.

Fatima-Zahra Derouach is a doctor in Linguistics from Ibn Tofail University, Kenitra, Morocco. She holds a Master's degree in TEFL and a Bachelor's degree in English Literature from the same university. She currently teaches English at Lycée Français International André Malraux in Rabat. Her research interests focus on teaching non-linguistic subjects in English, the education system in Morocco, and AI integration in language learning. She has authored and presented different works.