



Exploring Students' Attitudes Toward Generative Artificial Intelligence Through the Use of ChatGPT: A Qualitative Study in Higher Education

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ABSTRACT

The rapid integration of generative artificial intelligence into higher education has sparked contrasting reactions, ranging from technological enthusiasm to ethical concerns. This study aims to qualitatively and interpretatively examine higher education students' attitudes towards using ChatGPT in academic settings. Based on semi-structured interviews with a diverse sample of students and an in-depth semantic analysis of the transcripts, fourteen key variables were identified and grouped into three overarching dimensions: techno-cognitive, academic-pragmatic, and axiological-ethical. The findings reveal ambivalent attitudes shaped by the lack of institutional regulation, performance-driven logic, and individual moral frameworks. This research proposes a conceptual model that expands traditional technology acceptance frameworks by incorporating normative, emotional, and identity-based dimensions. Beyond its empirical contribution, the study underscores the urgency of implementing a critical and ethically grounded pedagogical framework for using AI in higher education.

1. Introduction

While many higher education institutions struggle to fully integrate traditional digital technologies into their pedagogical frameworks, a new, more disruptive shift has occurred almost overnight: the sudden emergence of generative artificial intelligence within students' academic practices. Far from being a mere auxiliary tool, ChatGPT has, in a matter of months, become an invisible companion in the learning journey, capable not only of producing detailed answers or rewriting existing texts but also of suggesting outlines and even simulating argumentative reasoning in unthinkable ways just a few years ago.

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Although some interpret this evolution as an opportunity to empower learners and enhance their intellectual autonomy, others raise serious concerns about the possible outsourcing of critical thinking, a flattening of philosophical diversity, and a subtle erosion of the value traditionally assigned to cognitive effort. The conversation has moved beyond the binary question of whether such technologies should be introduced into higher education; the pressing issues now revolve around how they should be used, and more importantly, under what conditions their integration can be considered pedagogically meaningful, ethically sound, and intellectually enriching.

Developed by OpenAI and based on sophisticated language models, ChatGPT represents a profound shift in how individuals engage with information, knowledge, and even the inquiry process. However, adopting such tools cannot be examined in isolation from the social and cultural environments in which they operate; it would be misleading to ignore this. Various language learning and pedagogical innovation studies have shown that learners' attitudes toward any new tool or method are shaped by a complex interplay of personal representations, motivational patterns, and deeply held beliefs.

Sometimes, novelty is not welcomed; it can even feel threatening. It may destabilize academic identity or be experienced as an alien force, particularly when educational norms are perceived as misaligned with students' lived realities. In this regard, the Moroccan context of foreign language education offers a revealing analogy: the persistent attachment to the native language has often acted as a brake on learning foreign tongues. This phenomenon is somewhat mirrored in the current reluctance, sometimes subtle, sometimes overt, towards adopting artificial intelligence in university settings.

Similarly, higher education is undergoing a series of deep and intersecting transformations—marked by growing student populations, mounting pressure to modernize pedagogical approaches, institutional demands for continuous innovation, and the rising expectations of digitally native learners who increasingly view technological adaptability as non-negotiable. While digital transformation has indeed been initiated in Moroccan universities, its translation into daily pedagogical practices remains, at best, partial and uneven. According to a recent report cited by Agence Ecofin (2024)¹, around 67 % of Moroccan university instructors claim to have experimented with artificial intelligence tools, yet only 38 % say they feel sufficiently familiar with these technologies to integrate them meaningfully and consistently into their teaching routines.

Meanwhile, students seem to embrace these tools with far greater ease. A survey conducted at Mohammed V University in Rabat revealed that nearly 90 % of students use smartphones in their academic routines, whether to access educational content, collaborate with classmates, or communicate with professors (Droui & Oudrhiri, 2023). This imbalance, where rapid technological adoption among learners meets with relative pedagogical hesitation among instructors, raises important questions about usage patterns, underlying resistances, and lingering tensions between digital innovation and long-established academic conventions.

This research thus sets out to explore, using a qualitative lens, Moroccan higher education students' attitudes toward using ChatGPT within an academic context. More precisely, the aim is to understand how students perceive this tool, what roles it plays in their day-to-day academic lives, and what kinds of doubts, limitations, or ethical dilemmas they associate with it. From an interpretive perspective, the study seeks to uncover the subjective, cultural, and institutional factors that shape the students' acceptance or reluctance toward Generative Artificial Intelligence.

¹ <https://www.agenceecofin.com/formation/2305-118907-au-maroc-67-des-enseignants-ont-deja-eu-recours-a-l-ia-etude> (last accessed April 10, 2025).

Aware of the strategic role that digital technologies can play in enhancing the quality of higher education, Morocco has made digital transformation a cross-cutting priority in all the reforms initiated within this sector. This commitment has materialized through a series of public initiatives and institutional programs designed to encourage the progressive integration of digital tools within Moroccan universities, a process both ambitious and, at times, uneven. Key milestones in this trajectory include the education reform launched under Law 01-00 in 2002–2003, the «Emergence Project» of 2005, the «Emergency Program (2009–2012)», as well as the Strategic Vision 2015–2030 and the accompanying framework law. It is not a short list. To these structural reforms, we must add emblematic projects such as the «MARWAN Network», the «Moroccan Virtual Campus (2004)», the «Génie Sup Pro-gram (2006)», the «NAFIDA initiative (2008)», and «The National Strategy Maroc Numeric 2013», all of which have contributed, unevenly, perhaps, to laying the groundwork for a digital academic ecosystem.

What sets this study apart is its ability to examine an emerging phenomenon through the eyes of the actors themselves, treating students not as passive end-users but as individuals endowed with intentions, strategies, and forms of resistance. In doing so, it offers a fresh perspective on the relationship between technological innovation, academic norms, and student imaginaries in the context of an African country. The article is structured into four main sections: following a literature review on generative AI and student perceptions, we present the research methodology, then a detailed analysis of the empirical findings, before concluding with a critical discussion and recommendations aimed at policymakers and higher education practitioners.

2. Literature Review

2.1. Definitions and Characteristics of Generative Artificial Intelligence and ChatGPT

Generative Artificial Intelligence (GAI) has become a central field in the current development of artificial intelligence. It differs significantly from traditional AI systems based only on recognition or classification. What makes it unique is its ability to generate new content, be it text, images, or sound, based on extensive training from large data corpora, incorporating recent advances in natural language processing, deep learning, and probabilistic modelling. The pioneering work of Brown et al. (2020) led to the development of transformer-based architectures. These allowed for the creation of Large Language Models (LLMs). They can produce coherent and contextually relevant utterances, which sometimes cannot be distinguished from human speech, though sometimes the structure still gives it away. ChatGPT, developed by OpenAI and publicly released in November 2022, is one of the most emblematic applications of this evolution. It was built on the GPT-3.5 and GPT-4 architectures. The system exemplifies the educational potential of LLMs through its ability to engage in conversation, generate complex, creative, and even reasoned answers across a wide range of academic tasks (Dwivedi et al., 2021; Lu et al., 2024).

In technical foundations, large language models (LLMs) such as ChatGPT rely on transformer-based architectures trained on large corpora and optimized to generate text autoregressively (Vaswani et al., 2017; Brown et al., 2020). In many modern deployments, helpfulness and instruction-following are further improved through alignment techniques such as reinforcement learning from human feedback (RLHF), which shape output style and compliance but do not guarantee factual correctness (Ouyang et al., 2022). From a system-level perspective, several technical properties are particularly relevant to

higher education. First, probabilistic generation can produce convincing outputs even when the underlying content is uncertain, and results may vary across prompts and sessions, which raises reproducibility and verification issues in academic work. Second, LLMs are known to produce hallucinations, i.e., plausible but inaccurate or fabricated statements, especially in knowledge-intensive or citation-sensitive tasks (Ji et al., 2023). Third, the opacity of model reasoning and the «fluency–accuracy gap» can create an illusion of correctness, making critical evaluation and source-checking essential.

These properties are not purely technical details; they shape students’ trust calibration, perceived control, and ethical positioning. They also raise governance concerns such as privacy risks when prompts include sensitive information, accountability in assessed work, and traceability of AI assistance. Therefore, understanding ChatGPT in education requires combining an acceptance perspective with a socio-technical and system-level lens that links model behavior (reliability, uncertainty, bias), interaction practices (prompting, revision, verification), and institutional safeguards (policies, assessment design, training).

In educational contexts, ChatGPT is not merely a technical innovation. It brings up serious pedagogical and ethical challenges. Its use raises significant concerns about how AI should be integrated into learning environments, the student’s responsibility for cognitive engagement, and the criteria used to judge academic authenticity (Kasneci et al., 2023; Zawacki-Richter et al., 2019). Because of its substantial linguistic precision and ability to rephrase, translate, structure, or even argue, it appears to be an attractive tool for students—but not without raising concerns about technological dependence, the risk of intellectual laziness, or even cheating in academic settings, which might not always be visible at first.

2.2. Pedagogical Uses of Artificial Intelligence in Higher Education

Integrating artificial intelligence into higher education forms part of a broader digital transformation of educational practices. It modifies how students access knowledge. Research shows it also reshapes pedagogical interactions and assessment methods (Baidoo-Anu & Owusu Ansah, 2023; Holmes, Persson, et al., 2022).

Through tools like ChatGPT, generative AI has enabled novel applications—from automatic content generation and writing assistance to support with comprehension and exam preparation (Mithu & Kumar, 2024; Son et al., 2024). These applications are not merely technical; they embody a new way of engaging with content and guidance, altering the traditional roles of both students and instructors in the learning process.

The benefits identified in the literature include personalized learning pathways, immediate feedback, increased cognitive autonomy, reduced anxiety during evaluation, and better intrinsic motivation (Susnjak, 2024; Tlili et al., 2023). Students who face language barriers or suffer from low confidence often find in ChatGPT an accessible and non-judgmental interlocutor. As a result, the tool may function as a remedial mechanism, a virtual tutor, or a support for developing transversal skills (Santos et al., 2019). It does not replace human presence, but it does something helpful.

However, these uses also raise pedagogical and ethical concerns. Artificial Intelligence may encourage cognitive passivity. It can lead to automated content production and reinforce technological dependency. Several authors have warned about the potential erosion of analytical thinking, increased risk of academic dishonesty, and the generation of misleading or biased content that appears convincing on the surface (Ehsan Latif et al., 2023; Mhlanga, 2023; Zhai, 2022). On an institutional level, such risks are prompting universities to rethink evaluation policies, redefine intellectual authenticity, and provide training to educators on how to integrate these tools critically and responsibly (Smutny & Schreiberová, 2020). It is not something that can be improvised.

In short, literature broadly agrees on one thing: the educational effectiveness of AI does not lie in its technical performance alone, but in the ethical, pedagogical, and institutional framework in which it is deployed. Without clear guidelines, technology may be misused in counterproductive or harmful ways. However, when integrated within a well-defined educational strategy, it becomes a powerful tool for innovation, pedagogical differentiation, and the development of reflective learning (Jun et al., 2024; Ali et al., 2024).

2.3. Students' Attitudes Towards Generative Artificial Intelligence

2.3.1. Perceived Motivations and Cognitive Benefits

Initial empirical studies suggest that cognitive, practical, and strategic motivations drive students' use of generative AI. The overall perception is primarily positive. In a demanding academic environment, ChatGPT is often regarded as a cognitive facilitator, helping to reduce mental load, structure thoughts, and improve overall productivity (Baidoo-Anu & Owusu Ansah, 2023; Son et al., 2024).

Timesaving and task simplification, such as document summarization, rewording, or planning, are also central reasons behind its appeal. These functions resonate particularly well with students who multitask or juggle various academic demands (Susnjak, 2024). The tool becomes part of their workflow. ChatGPT also acts as an autonomous learning companion. It clarifies complex notions, reformulates content, and provides tailored examples, often adapted to the learner's context. This level of personalized support, rarely available in overcrowded classroom settings, enhances student engagement and their perceived control over learning processes (Kasneci et al., 2023). It is not just about content; it is about confidence. Technological curiosity is another important driver behind early use. Many students start exploring it out of pure interest. Over time, it becomes integrated into their study habits, contributing to what some describe as progressive digital acculturation (Ehsan Latif et al., 2023; Lu et al., 2024).

Moreover, Artificial Intelligence can occasionally serve as emotional support. It helps reduce writing-related anxiety. Thanks to its accessibility, neutrality, and non-judgmental nature, ChatGPT reassures anxious users, providing an alternative, less intimidating interlocutor than the teacher or peer (Mhlanga, 2023; Zhai, 2022). It might not be human, but it is approachable.

2.3.2. Fears and Resistance Towards the Tool

Some students see Generative Artificial Intelligence as a support for learning. However, many also express fears, doubts, and resistance that are not often addressed in the optimistic discourse around technology. These critical attitudes show tension. It is a tension connected with authentic learning, the fear of becoming too dependent on digital tools, and the question of how much personal effort still counts in education today.

A significant concern is the risk of intellectual autonomy loss. Some students do not see ChatGPT as a help but rather as a threat to their ability to think independently because they are afraid that their cognitive process will be replaced by external suggestions, which will eventually make their work less valuable (Kasneci et al., 2023; Zawacki-Richter et al., 2019).

Uncertainty in content reliability is also an important reason. The answers from the AI may sound fluent and coherent. However, they are not always true: there can be mistakes, biased statements, or entirely invented information—what some researchers call «algorithmic hallucination»—and this causes a kind of epistemic insecurity, especially in disciplines that require strict methodology (Mhlanga, 2023; Susnjak, 2024).

Other concerns are ethical and academic. Because ChatGPT can help in essays or academic works, some students are not sure if they are really learning or just using it to produce without understanding, and this confusion leads some of them to reject it by ethical conviction or to avoid academic problems (Tlili et al., 2023). Also, symbolic and cultural resistances continue to exist. In many contexts, the teacher's authority, academic merit, and the value of personal writing are significant and deeply respected. In countries like Morocco, such representations still make students uncomfortable using AI tools because they think it breaks traditional norms about a legitimate way of learning (Baidoo-Anu & Owusu Ansah, 2023; Santos et al., 2019).

2.3.3. Cultural and Institutional Variables Influencing Attitudes

Students' attitudes toward generative AI, especially ChatGPT, are not shaped only by the tool. They are strongly influenced by cultural, social, and institutional frameworks around them (Holmes, Persson, et al., 2022; Tlili et al., 2023).

In educational contexts where the teacher has a central role, like in Morocco, AI can disrupt the traditional organization of authority and roles. Respect for academic hierarchy, the importance given to oral knowledge, and the value placed on personal effort are part of a learning vision that sees automated tools as something close to illegitimate or artificial (Zawacki-Richter et al., 2019).

Institutional norms also play a vital role. Students oscillate between cautious experimentation and fear of being sanctioned in universities where ChatGPT usage is not regulated. This normative ambiguity pushes some students toward self-censorship or to use the tool silently, not telling others. On the other hand, when ethical guidelines, specific training, or open discussions are organized, students tend to adopt AI more reflexively and responsibly (Smutny & Schreiberová, 2020).

The sociocultural context reflects this situation with more clarity. It is a context where technological modernization and traditional teaching values coexist but are not always harmonious. Because of the lack of clear rules, students often develop informal or hidden uses of AI, which are seen simultaneously as an opportunity and a moral risk. Finally, the perceived acceptability of AI depends a lot on how it fits, or does not, with dominant educational values. In environments where academic success is linked to visible intellectual effort and personal merit, automated and impersonal tools might appear to be breaking the proper study method (Mhlana, 2023). That explains why resistance and partial rejection are not exceptional.

2.3.4. Digital Skills and Sense of Control

Students' critical adoption of generative AI is closely linked to their digital literacy and depends on how much control they feel they have over the tool. These two aspects shape how they use Artificial Intelligence, between autonomy and dependence, or comfort and hesitation. Students with good digital skills integrate ChatGPT more naturally into academic tasks like rephrasing, planning, or idea generation. The fluency of the interaction gives them more technological confidence (Son et al., 2024).

However, students who are less confident with digital tools often feel a kind of cognitive inferiority and, when they do use the tool, may over-rely on it; this can increase anxiety and ultimately lead them to avoid using it, resulting in less use overall than their academic needs would warrant (Baidoo-Anu & Owusu Ansah, 2023). The perceived control is another key element. When a tool is seen as simple, transparent, and customizable, it becomes an extension of students' skills. However, when the tool is opaque or seems too powerful and unpredictable, it can create a sort of technological alienation, especially for those who do not understand well how LLMs work or who believe AI is something close to

artificial consciousness (Kasneci et al., 2023). Internal digital inequalities make this dynamic even more complicated in the Moroccan context. Some students have early and guided access to digital tools, but others use technology only in a fundamental and limited way. Because of this, they see ChatGPT in very different ways: for some, it is a tool of intellectual freedom; for others, it is something risky or even unreachable.

Finally, digital literacy includes ethical, informational, and critical thinking skills. Knowing when and how to use ChatGPT and where to set limits requires a kind of digital maturity that is still not very developed in many academic programs. This lack of training creates ambivalent behaviors: students are interested but also cautious and sometimes do not fully understand what they are using.

2.3.5. Effect of Discipline and Academic Background

Students do not all perceive artificial intelligence in the same way; their perceptions vary according to academic discipline and level of study (Holmes, Persson et al., 2022; Santos et al., 2019). Writing is a central component of learning in the humanities and social sciences. Constructing arguments and organizing ideas are essential skills. ChatGPT is often used in these fields to improve sentence clarity, support idea development, and enhance critical thinking. However, some students see this use as ethically problematic, believing that writing should remain a personal task, not one delegated to a machine.

In contrast, AI is more readily accepted in disciplines such as engineering or mathematics. Students in these fields already rely on various digital tools, and ChatGPT is often seen as just another instrument, generating little resistance (Son et al., 2024). Academic level also plays a significant role. Undergraduate students often approach AI with curiosity but do not always fully grasp the associated risks. Graduate and doctoral students, on the other hand, tend to be more critical. They are concerned with ethical issues, methodological integrity, and the epistemological value of knowledge. They are more capable of distinguishing between legitimate assistance and academic dishonesty (Mhlanga, 2023). The evaluation system also influences attitudes. When academic programs enforce strict rules and clear pedagogical objectives, students avoid AI due to the fear of penalties. However, in more creative or flexible programs, AI is often welcomed as a form of pedagogical innovation (Smutny & Schreiberová, 2020).

In Morocco, the situation is more complex. A wide range of academic disciplines coexist, including sciences, literature, economics, and technology, each with its own academic culture, which shapes how AI is perceived and used across fields. Some students use AI more because of their field, others less. Also, not all of them have the same access to digital tools. This should be considered when making national AI policy in education.

2.3.6. Linking Students' Attitudes to Technology Acceptance and Ethical AI Frameworks

While students' adoption of ChatGPT can be partly interpreted through established technology acceptance models, our qualitative framework extends them to better fit academic and ethical realities. In the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use are central drivers of acceptance. These elements are reflected in our techno-cognitive dimension through students' perceived cognitive benefits and perceived controllability/ease of interaction (Davis, 1989).

Similarly, the Unified Theory of Acceptance and Use of Technology (UTAUT) emphasizes performance expectancy and effort expectancy, as well as social influence and facilitating conditions. In our findings, performance-related motivations align with academic-pragmatic drivers, whereas effort-related perceptions are shaped by students' digital literacy and sense of control. Social influence and facilitating conditions are captured through institutional ambiguity, teacher positioning, and

the presence, or absence, of guidance and training regarding acceptable academic uses (Venkatesh et al., 2003).

However, TAM and UTAUT are less explicit in accounting for moral legitimacy, identity-related tensions, and integrity concerns that are structurally salient in higher education. Our model therefore treats ethical legitimacy not as a peripheral concern but as a constitutive dimension shaping acceptance logics in academic work. Our axiological-ethical dimension therefore complements acceptance models by integrating ethical reasoning (authorship, responsibility, fairness, privacy, and academic honesty) and by aligning these concerns with trustworthy AI requirements and education-oriented governance recommendations (Jobin et al., 2019).

2.4. Generative Artificial Intelligence in Moroccan Higher Education

The emergence of generative artificial intelligence, particularly through tools like ChatGPT, has sparked growing interest within Morocco's higher education landscape. While this technology holds significant promise, it also raises questions about how effectively it can be integrated into the national educational system (Razouki et al., 2025). The institutional context of Moroccan higher education is characterized by a declared ambition for digital modernization, as reflected in the launch of the «Campus Connecté» program in 2022. This initiative aims to equip Moroccan universities with advanced digital infrastructure, including deploying Wi-Fi 6 Technology across 220 academic sites, offering students and academic staff free and secure access to digital resources. However, despite these developments, the integration of generative AI into actual teaching practices remains limited and far from being systematized (AvitoMagazine, 2024)².

Some Moroccan universities have already started. Institutions like Mohammed VI Polytechnic University (UM6P) introduced ChatGPT Edu into academic and operational activities, aiming to give students more personalized learning experiences and improve administrative efficiency. However, this kind of integration is still rare and does not represent what is happening in most of the country (L'Opinion Maroc)³.

From the side of students, ChatGPT is used more and more. A report by Boston Consulting Group showed that 38 % of Moroccans use it daily, making Morocco the second in the world for ChatGPT usage. Many students rely on it for writing assignments, solving problems, or understanding complex ideas. In response to this growing reliance, Morocco has recently launched a national initiative aiming to train 22,500 graduates per year in digital technologies by 2027, including mandatory modules in artificial intelligence and digital literacy across all fields of study. This institutional engagement highlights both the opportunities and the urgent need for structured pedagogical guidance to mitigate risks such as plagiarism and excessive dependency (Le 360 Français)⁴.

Some university professors have started integrating tools like ChatGPT into their teaching to help students explore artificial intelligence's potential and limitations. They aim to foster critical thinking

² <https://magazine.avito.ma/2024/03/05/campus-connecte-vers-un-modele-innovant-de-l-universite-marocaine/> (last accessed January 12, 2025).

³ https://www.lopinion.ma/L-UM6P-devient-la-premiere-universite-africaine-a-integrer-ChatGPT-Edu_a59798.html (last accessed April 15, 2025).

⁴ https://fr.le360.ma/economie/lintelligence-artificielle-fait-son-entree-dans-toutes-les-disciplines_AZLKKFLTW5DV7JT7KRP BYF2QMY/ (last accessed March 2, 2025).

about these technologies. However, others remain cautious, arguing that AI may undermine the authenticity of academic work and blur the line between what is human-made and what is machine-generated (L'Opinion Maroc)⁵.

Considering these observations, this study seeks to address two significant gaps. First, there is a lack of qualitative research exploring how Moroccan students use artificial intelligence tools in their academic lives. Second, we do not know how culture or institutions shape students' attitudes. To understand more, existing research, which is primarily quantitative and technically oriented, tends to reduce the role of AI in education to issues of access or performance. This narrow perspective often neglects the more complex cognitive and socio-affective dimensions of students' relationships with technology, dimensions shaped by implicit norms, beliefs, internalized representations, and individual differences. As a result, ambivalent attitudes, oscillating between technological enthusiasm and moral hesitation, between a sense of empowerment and a fear of losing academic legitimacy, are often overlooked or misunderstood.

In an unregulated environment where critical guidance is lacking and institutional norms are undefined, it becomes crucial to investigate how students navigate this grey zone. This includes understanding their motives for adopting or rejecting Artificial Intelligence tools and examining the impact of such uses on their learning engagement, ethical positioning as learners, and overall academic performance.

3. Materials and Methods

This research adopts a qualitative and exploratory approach with an interpretative intention. It is grounded in an interpretivist stance, aiming to access meanings, justifications, and moral reasoning. It is coherent with the principal objective: to understand deeply the attitudes, perceptions, and logics of appropriation or resistance among Moroccan students from higher education regarding the usage of ChatGPT in an academic context. This positioning appears necessary due to the phenomenon's emergent, informal, and undertheorized nature, particularly in Morocco and several African countries, where digital practices are developing outside institutional frameworks (Miles et al., 2019). We used a purposive sampling strategy. Maximum variation was the goal (Patton, 2015). Accordingly, the study does not seek statistical generalizability; instead, it aims for analytical insight and transferability through thick description.

The sample included students from undergraduate and master's levels enrolled in different programs (humanities, business, engineering, education) and coming from both public and private institutions. The eligibility criteria required: current enrollment in a Moroccan higher-education institution, whether public or private, and demonstrable prior experience with ChatGPT for academic purposes. Recruitment took place between November 2024 and February 2025. Participants were recruited via academic and student networks, and their involvement was entirely voluntary without any consequences for declining. We proceeded until we reached theoretical saturation (Glaser & Strauss, 1967), defined as the stage when further interviews produced no new codes or themes, only confirming or refining current categories. Data was collected through 26 individual semi-structured interviews, a method selected for its ability to explore complex phenomena involving representations, dilemmas, and contradictions (Kaufmann, 2016).

⁵ https://www.lopinion.ma/ChatGPT-Une-technologie-qui-va-revolutionner-l-enseignement_a38260.html (last accessed March 30, 2025).

An interview guide was constructed around five principal axes: representations of ChatGPT, academic usages, benefits and limits, ethical issues, and the role of the teacher. It was pre-tested with two teachers and three students. The interviews (from 20 to 35 minutes) were conducted both in person and online, with audio recording after informed consent, and all of them were transcribed in their entirety to ensure data fidelity. We adhered to fundamental ethical principles, including informed consent, confidentiality, anonymity, and the right to withdraw at any time (Resnik, 2018). Real names were not recorded; each participant was assigned a code. To support transferability, the paper reports contextual descriptors and uses illustrative excerpts to allow readers to assess relevance to other educational settings.

The analysis was based on Braun and Clarke's thematic approach (2006). No theoretical model was used at the beginning. Steps included reading, coding line by line, grouping, reviewing, naming themes, and writing. Coding proceeded iteratively, with an initial open coding phase followed by more focused coding to stabilize category boundaries and consolidate the three higher-order dimensions (techno-cognitive, academic-pragmatic, axiological-ethical). Finally, the methodological rigor was guaranteed by the qualitative validity criteria of Lincoln and Guba (1985): credibility, transferability, coherence of methodological choices, and confirmability of the results. In practical terms, credibility was supported through iterative reading and systematic coding across all transcripts, while transferability was enhanced through maximum-variation sampling and thick description of the study context. Coherence and confirmability were ensured by clearly documenting the analytic steps and by grounding the interpretation in the raw interview material.

4. Results and Discussion

In line with the methodological approach outlined earlier, this section presents the findings derived from the inductive thematic analysis of interviews conducted with university students. Remaining faithful to the qualitative nature of our research, our aim is not to reach statistical generalization, but rather to shed light on the diverse logics of use, resistance, or ambivalence regarding generative artificial intelligence, particularly ChatGPT, within the higher education context.

The analysis identified three major themes, each composed of several cross-cutting subthemes. These themes reflect the complexity of students' attitudes, the richness of their lived experiences, and the multiplicity of meanings they attach to their interaction with such technologies. These results should not be viewed as rigid or isolated categories; instead, they represent evolving discursive dynamics, sometimes even contradictory, that highlight the tensions, adjustments, and negotiation strategies students deploy when facing a technology that remains loosely framed by institutional guidelines. Each theme is detailed in the subsections that follow. They are illustrated with representative verbatim excerpts and analyzed through a semantic and contextual lens, drawing connections between the emerging patterns and the variables identified in the literature and empirical fieldwork.

In addition, we interpret students' accounts through a system-level lens by linking perceived benefits and risks to technical properties of LLM-based systems and to institutional infrastructures. This allows the qualitative findings to be translated into applied AI implications without departing from the interpretive design of the study.

4.1. Cognitive and Social Factors

The qualitative analysis reveals an ambivalent relationship between students and ChatGPT at the individual and social levels. This relationship unfolds across four dominant dynamics: initial

technological enchantment, identity-based mistrust, social pressure, and the internal conflict between cognitive autonomy and algorithmic assistance. These forces shape a nonlinear appropriation process characterized by inner tensions and context-driven adjustments, oscillating between emotional attachment, critical awareness, and collective influence.

Technological fascination is often the first door through which students enter the ChatGPT experience. The tool is seen as a spectacular innovation, one that whispers promises of a new intellectual world: «When I discovered ChatGPT, I was speechless. I immediately wanted to see how far it could go—it felt like a new world to me» (E6, Master, Computer Science). Students' language conveys a sense of enchanted technological imagination: «I am fascinated by how it can answer almost anything. It makes me want to ask it a thousand questions, just to see how advanced it is» (E14, DUT, Management); «It is like having a genie in your laptop. Just talk to it, and it produces amazing texts. It is mind-blowing» (E9, Licence, Law). While this euphoric response echoes Davis's (1989) TAM model with its perceived usefulness and ease of use, it surpasses those utilitarian foundations by tapping into a deeply emotional and affective register, as noted by Selwyn (2016) and Floridi (2021).

However, emotional adhesion is not always a critical appropriation. After the first impression, some students take a distance. They say the tool is fantastic, but they do not continue to use it: «I was impressed, but finally I used it two or three times, not more» (E3, Master, Literature). Others speak about too much trust. They accept the tool too fast, without reflecting. It is what Lee (2018) calls the technological halo effect. Then, doubt appears. They begin to ask if their texts are still their own: «I look at my assignment and I ask: is it my writing or from a robot? I do not feel like it is mine» (E26, Master, Modern Literature); «The text is too smooth, too perfect. It bothers me. I write with my own words, with mistakes» (E10, DUT, Languages). Some students seek to maintain control and do not want AI to take over the entire process. «I use ChatGPT, but then I rewrite everything. It is still me» (E25, Master, Education). «It gives base. But I put the meaning» (E17, Master, Info Science). According to Ricoeur (1990), writing is an extension of the self and a core identity element. When AI takes over this process, it can create a sense of confusion and disconnection, making the work feel inauthentic.

Social pressure is present in student groups. Implicit norms influence the use or non-use of ChatGPT; it is not neutral. «Everyone in my class speaks about it. If I do not use it, I feel like I miss something, that I am not at the level» (E1, Master, Environmental Studies). Use becomes an act of integration. «At the beginning, I hesitated, but my friends showed me it saves time. I did not want to be the only one who struggles» (E11, Master, Management). In some situations, a collective routine appears. «We are many to share prompts in the group. It is like a new habit. If you do not participate, you are outside» (E17, Licence, Computer Science).

However, not everyone follows; some groups prefer effort. They do not like it when others rely too much on Artificial Intelligence. «In my circle, people who use it too much are not respected. We think they do not want to try anymore» (E13). This reflects the assumptions of the UTAUT model (Venkatesh et al., 2003) and the Theory of Planned Behavior (Ajzen, 1991). However, it further illustrates how social norms are locally constructed, continuously evolving, and actively negotiated and tested within each student group.

Also, there is a deeper conflict between thinking alone and the comfort of help; it is personal. «I want to grow on my own, but when I have urgent work, I am tempted» (E7, Master, Civil Engineering). «Sometimes I fear I rely too much on. I feel I do not think anymore» (E23, Licence, Humanities). When tired, it is easier to use it. «When I am tired, I do not feel guilty using it. But later, I ask if I really learned or just pretended» (E5, Master, Literature). This moral dilemma, which Luckin et al., (2022) call the «educational AI paradox», demands heightened ethical awareness.

It forces students to constantly recalibrate how to benefit from the tool without compromising their intellectual independence.

Some articulate these boundaries clearly: «It is not that I do not want to use it, but if I get too used to it, I will become dependent, and I do not want that» (E15, Master, Finance). Such inner tension illustrates a form of active regulation in which students craft selective usage strategies, adjusting their reliance on AI in response to emotional, social, and academic variables.

What makes this identity-relational axis so valuable is its capacity to reconcile the individual and collective dynamics of technological appropriation. Far from being merely instrumental, students use ChatGPT as a dialectical process between enchantment and scepticism, inclusion and withdrawal, autonomy and conformity. For institutions, this implies a shift in perspective: instead of policing AI, they should accompany its use reflexively, helping students to make it a conscious partner, not a silent substitute.

Importantly, these dynamics are not only individual but also context-dependent. In the Moroccan higher-education environment, where teacher authority and visible intellectual effort remain strong markers of legitimacy, institutional silence tends to amplify moral uncertainty and «hidden use» practices. This implies that universities should not rely on generic or imported AI rules, but rather articulate culturally credible guidance that reconciles innovation with locally salient norms of merit, authorship, and academic responsibility.

4.2. Functional and Identity-related Factors

A key trend emerges as generative artificial intelligence becomes embedded in university routines: ChatGPT is not simply about convenience or trend-following. Instead, it reflects a profound shift in students' relationship with intellectual labor.

Our investigation identified five key dynamics that form what may be described as a pragmatic rationalization of AI appropriation. These include acceptance of assisted effort, time management, academic efficiency, quality improvement, and academic anxiety reduction (Walter et al., 2015). Together, these elements indicate a silent but significant transformation in student performance logic, where optimization replaces endurance, and operational intelligence takes precedence over effort-based demonstration.

Many students openly embrace ChatGPT, without perceiving it as something to hide or feel guilty about. They discuss it as a wise decision, because they say the university puts pressure on them. «Honestly, if it saves my time and energy, I do not feel guilty. No one will complain if my grades are better» (E20, Licence, Economics). For them, the idea of merit is changing; it is no longer about working hard, but more about working efficiently. «I think all students want to optimize their time. It is like Google, but better» (E4, Master, Political Science). AI use is no exception now; it has become a strategy to survive the system. «Why not use it? The university pushes us, we try to survive» (E8, Master, Management).

Time is a significant concern for students, who must juggle multiple responsibilities such as exams, internships, academic projects, and part-time work. They use Artificial Intelligence to manage all. «With my exams, teamwork, and internship, I have no choice. ChatGPT is a fast help» (E8, DUT, Chemistry). They choose where to focus and let AI do the rest. «I spend more time on the main subjects. Others, I give to AI» (E6, Master, Business). Even students who do not like it much say it helps. «When the deadline is short, I take the base from AI. Then I change it» (E19, Master, IT). They justify it. «Teachers think we only study one subject. ChatGPT helps to keep the rhythm» (E3, Master, Biology).

Beyond saving time, students also turn to ChatGPT to improve their academic output. AI helps them organize their ideas better. «When I ask for a plan, my ideas become clearer. I make better paper» (E5, DUT, Economics). ChatGPT is like a corrector and an assistant for writing. «I use it to improve my introduction and transitions. My paper looks more professional» (E14, Master, International Relations). This use is close to the concept of digital scaffolding (Luckin et al., 2022), where Artificial Intelligence supports temporary academic performance, without deleting the intellectual ownership of the student.

Several students extend their use of ChatGPT beyond structural or compositional support. They use it to think better. «It gave me references I could not find alone. It opens my research» (E10, Master, History). It gives new angles, new views. «I go in one direction, it shows me another. It makes me think» (E6, Master, Philosophy). So even when they do not copy, it helps thinking. «It is like instant brainstorming. I get inspired» (E13, Licence, Communication). They use it to sort ideas. «Now I feel more confident. I compare what I think with what it suggests, then I choose» (E17, Master, Sociology). However, this deeper relationship with the tool requires a subtle balance between technical support and epistemic awareness. While AI facilitates, it also reassures and herein lies the fifth dynamic: reducing academic anxiety.

Many students describe ChatGPT as a source of emotional security in the face of academic pressure. «Without it, I would have panicked to submit on time. It calmed me down to know I had a base to start from» (E13, Master, Languages). For some, it is a non-judgmental, comforting presence that helps overcome the fear of failure: «I am naturally anxious, so I always check with ChatGPT to make sure my ideas make sense. It reassures me» (E22, Main, IT). This relief motivates and helps initiate work: «I used to dread starting essays. Now, I use AI to get going. It is like a crutch» (E3, Master, Biology).

So, the analysis of this axis shows a silent transformation of the student's relation to performance. Efficiency, pertinence, emotional regulation, and cognitive structuration change the definition of competence. ChatGPT is not killing intellectual work. It is reshaping it. However, the use must stay critical and supervised. Institutions must forbid or warn. They must teach students to use Artificial Intelligence with reflexivity and responsibility because this new form of agency, strategic, emotional, and intellectual, is the future of the academic student.

4.3. Moral Attitudes and Ethical Dilemmas

Beyond efficiency or pragmatic adaptation strategies, ChatGPT in higher education raises more profound ethical and identity-related questions. It is no longer simply the function of the tool that is being questioned, but rather the alignment between its use and the values that students associate with learning, producing, and expressing themselves.

This third interpretative axis, which we refer to as axiological and identity-based, brings together four key dynamics: perceived guilt, moral conflict, attitudes toward merit, and the perceived authenticity of academic work. Together, these elements reflect a growing demand for moral legitimacy, fidelity to the self, and symbolic recognition in a university environment disrupted by generative AI.

Despite the assistance provided by AI, students are determined to maintain ownership of their work, viewing the technology as a support mechanism rather than a replacement for their cognitive agency. «I want my work to feel like me. I use AI, but the main idea is mine» (E15, Master, International Law). «It helps me get ideas but not replace mine. It gives spark, not solution» (E18, Master, Comparative Literature). It shows that students try to balance. They do not want to depend too much on

them. Students continue to claim authorship of their work. AI provides support but maintains control and applies discernment in its use. «I like AI but do not want it to think for me» (E12). They use but also reflect, «It gives base. I finish alone».

Guilt remains significant; many students feel it. Even though AI is not banned, they still feel uneasy about relying on it. «I know it is not forbidden, but I do not feel honest» (E3, DUT, Public Law). So, they avoid using it. «I do not use it for graded assignments. I feel bad» (E17, Master, Literature)—some still doubt, even if they change everything. «Even when I rewrite, I wonder: is it still mine?» (E6, Master, Philosophy). Guilt kills pride. «I want to be proud of my work, but AI makes that hard» (E19, Master, Applied Languages).

Students attempt to rationalize their use of AI to avoid feeling guilty, often saying things like «everyone uses it» or «the university does not say anything». However, despite these justifications, a lingering sense of unease remains; they still feel that something about it is incorrect. Bandura (1991) explains that this is moral self-sanction. Even without a rule, you feel bad if your action is against your values. That happens here; students know they did not break a rule, but feel they broke something inside.

A second dynamic is the moral conflict. This is not only a question of emotion, but of value. For many students, ChatGPT is a problem because it changes the sense of what is learning. «I think we are losing the sense of intellectual effort. University is to learn to think» (E15, Master, Management). For some, the tool is a betrayal. «It is useful, but I feel like it ruins something important in writing» (E18, Master, IT). They want to construct themselves. «If I delegate all, I miss the construction of myself» (E12, Master, Political Science). «I do not want to sacrifice learning to speed and facility» (E6, Master, Public Law).

They are not opposed to technology, but to the potential loss of something essential it may entail. Nussbaum and Arendt say the university is about moral judgment, and these students agree. «Using AI is not wrong. However, it skips the hard part. The part where I grow». That is what they say, and that is the key. The conflict is not about cheating; it is about what gets lost. That explains why they use it less, or with caution. «I stop myself. Even if others get better grades, I do not care».

Then there is the problem of merit. For some, the merit is about results. They say the tool is just a tool. «The final grade. AI is just one more resource» (E20, Master, Economics). However, others want real effort. «I prefer a 12 that I did than a 16 with doubt» (E12, Master, Engineering). Some say, «AI is like a calculator. I use it, but I am the one who knows how. That is also merit» (E23, Master, Computer Science). These visions of merit are connected to academic habits. Students from programs that emphasize methodology and reflexivity tend to keep a traditional vision of merit.

Others adopt a new vision in more competitive or less structured environments. For them, AI is an everyday part of modern academic performance. This evolution questions whether academic evaluation systems are prepared to validate the reflexive competencies developed through AI use. The answer, it seems, is far from unanimous. «I use AI, but I still feel it is me» (E25). «I do not know if it is my or robot words» (E26). «AI gives base. I give meaning» (E17). «The text is too perfect. I feel strange» (E10). «Authenticity is not only ideas. It is tone. Voice. AI cannot do that» (E21).

This last variable, perceived authenticity, touches something deeply existential. Students begin to question not just whether their work is efficient, but whether it still reflects who they are. Ricoeur's (1990) theory of narrative identity reminds us that writing is part of self-construction. When algorithmic standardization invades that space, it threatens this symbolic projection, leading to disconnection and even silent crises of recognition: «It is not that I cheated. But I was not the one being assessed», says one student.

The five variables construct a layered framework: guilt highlights inner conflict, moral tension embodies ethical hesitation, merit is being renegotiated, and authenticity addresses the fundamental

issue of self-representation. The key contribution of this axis lies in its ability to reframe AI not as a simple tool to be regulated, but as a mirror for students' values and identities. Institutions must move beyond binary frameworks of tolerance or prohibition. They must accompany students through moral complexity, providing reflective spaces and an educational purpose. By bringing students' ethical awareness to the center, the university can reaffirm its foundational mission: to educate thoughtful individuals who can act with clarity in a shifting technological world.

4.4. Conclusion on the Variables

Qualitative analysis identified fourteen interdependent variables that help explain the diversity and complexity of students' attitudes toward using ChatGPT. These variables are not mutually exclusive; they frequently intertwine in the students' discourses, revealing subtle trade-offs between academic efficiency, social pressure, moral values, and self-assertion.

In this way, they reflect a plurality of rationalities and positions, ranging from enthusiastic adoption to critical resistance. The model below (Figure 1) illustrates how student behavior is shaped by three overarching dimensions: attitude, intention, and practical usage. Attitudes serve as the initial foundation, followed by the formation of intention, which ultimately leads to concrete usage practices.

Implications of contextual differences. Our findings suggest that students' interpretations of ChatGPT vary across disciplines and academic cultures. In writing-intensive fields, the tool more often triggers concerns about voice, authenticity, and identity, whereas in technical fields it is more readily framed as an instrumental support. Institutional guidance should reflect each discipline's needs, such as clearer rules for writing assignments and more focus on verification in analytical tasks. It should also address unequal digital skills by providing basic AI literacy, helping prevent further inequality.

The model is structured around three principal explicative axes, each gathering specific variables.

- The first axis, techno-cognitive (Attraction / Repulsion), includes fascination, distrust, social pressure, and the inner tension between cognitive autonomy and algorithmic assistance. It plays a key role in the initial encounter with the tool.

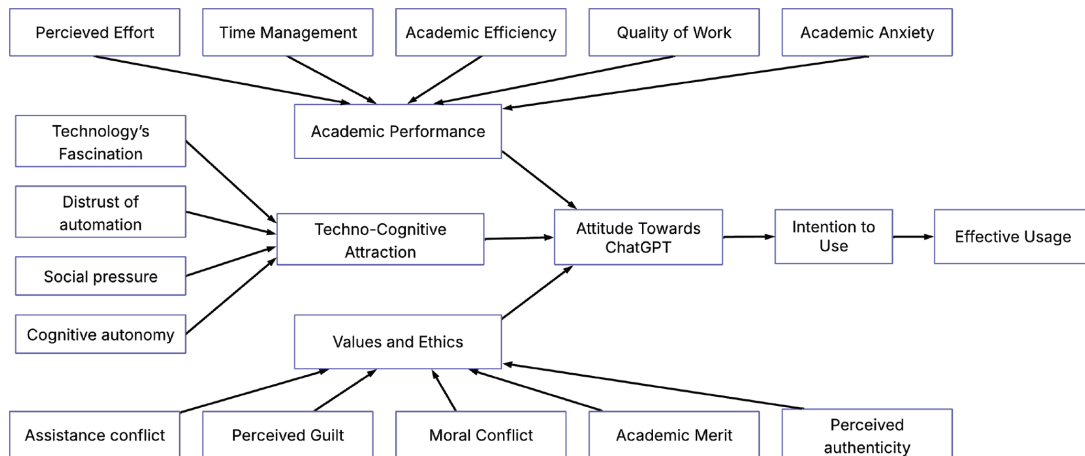


Figure 1. Conceptual Model of the Determinants of ChatGPT Usage in Higher Education

- The second axis is academic. It is more about performance and adaptation. It helps to understand how students engage with ChatGPT to handle university demands.
- The third one, values and ethics, captures normative and moral drivers of use. It includes time constraints, academic pressure, perceived output quality, stress reduction, and the search for less effort, which shape how students justify, regulate, or question their reliance on ChatGPT.

We found that students' attitudes are influenced in part by a gap between how LLM-based systems work technically and how universities govern and assess them. To reduce this gap, institutions can adopt an evaluation-oriented approach that remains technically meaningful without requiring complex engineering. At minimum, a responsible deployment protocol can include reliability calibration by promoting verification routines and requiring source-tracing for factual claims; traceability through a simple disclosure rule indicating when and how ChatGPT was used; data governance clarifying what types of personal, institutional, or confidential data must not be entered into public chatbots; assessment redesign favoring process-based evaluation when reasoning, voice, and authenticity are core learning outcomes; and AI literacy training focusing explicitly on failure modes (hallucination, bias, overconfidence), prompt discipline, and critical evaluation strategies.

From an applied AI systems viewpoint, these measures function as lightweight safeguards that improve human–AI calibration and reduce overreliance. They also support accountability and reproducibility by making AI assistance more transparent and auditable within distributed educational environments.

5. Conclusion

At a time when generative artificial intelligence, embodied by tools like ChatGPT, gained a firm foothold in higher education, institutional and media narratives often oscillated between technological enthusiasm and ethical alarmism. However, such polarized perspectives tend to obscure the nuanced trade-offs students must navigate, trade-offs that cannot be reduced to mere cheating or passive reliance on automation. Drawing on a qualitative approach centered on students' experiences, this study reveals a tripolar structure of attitudes, uncovering the coexistence of reflexive, strategic, and moral postures.

The techno-cognitive axis illustrates a tension between exploratory curiosity and intellectual self-discipline. While novelty and peer-normal experimentation initially encourage enthusiastic adoption, this is soon tempered by critical awareness. Even the most spontaneous uses remain embedded in cognitively active processes, where students continuously evaluate the tool's role in their learning. The academic-pragmatic axis reflects a rational adjustment to the educational system's structural constraints. Here, students turn to ChatGPT not as a shortcut but as a tool to manage workload, enhance productivity, and optimize assignments without disconnecting from their learning process. For many, the tool acts more as a temporary companion than a complete replacement. The more intimate and less visible axiological-ethical axis reveals a deep moral anchoring. Themes such as guilt, the value of merit, and the authenticity of intellectual work emerge frequently. Students' cognitive autonomy allows them to balance digital practices with educational values, suggesting a learning culture rooted in responsibility, self-respect, and intellectual integrity.

Theoretically, this study contributes to refining classic technology acceptance models by incorporating often overlooked practical, normative, and reflexive dimensions. It demonstrates that the appropriation of educational AI is not solely driven by perceived usefulness but also involves identity-building

processes, where meaning, legitimacy, and recognition intersect. The findings have significant implications pedagogically. The lack of clear institutional frameworks creates a moral grey zone that students are left to navigate independently. Universities and academic bodies must be more proactive by establishing responsible use charters, integrating AI literacy into curricula, and fostering critical and reflexive competences. More concretely, such measures may include: a clear disclosure rule requiring students to indicate when and how ChatGPT was used, explicit discipline-sensitive boundaries distinguishing legitimate support from prohibited substitution, then assessment redesign favoring oral defenses, in-class tasks, and process-based evaluation to value learning trajectories. Additionally, targeted training is required for instructors on AI-assisted pedagogy, feedback practices, and academic integrity enforcement.

While this study is rooted in the Moroccan context, its insights may resonate more broadly. However, extrapolation should be cautiously approached, especially in more technologically saturated environments. In addition, as with most qualitative interpretive designs, the analysis may carry a degree of researcher subjectivity. Although the study relied on systematic thematic procedures, we did not formalize an external inter-coder reliability assessment, and future work could strengthen confirmability through extended triangulation and independent coding. Factors such as gender, language, or digital capital were not isolated in this study and should be explored further in future research. Finally, as the dataset is based exclusively on student interviews, future research could triangulate these findings by incorporating educators' and administrators' perspectives on acceptable uses, assessment, and institutional governance of generative AI.

Several paths for further inquiry emerge: a large-scale quantitative study could test the robustness of the tripolar model. Cross-analyses by academic discipline, level of study, or digital profile would provide a more granular understanding. A North–South comparative approach could shed light on asymmetries in technology appropriation. Participatory research involving educators could explore the misalignments between faculty and student perceptions.

Ultimately, ChatGPT should not be reduced to a mere support tool. It reshapes how knowledge is approached, challenges the boundaries between autonomy, legitimacy, and technology, and calls for a shift beyond normative discourses. Actual progress lies in recognizing the complexity of students' voices, epistemically, ethically, and pedagogically. Only then can we envision an augmented education that remains, at its core, profoundly human.

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