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THE IMPACT OF EPISTEMIC BELIEFS ON MOTIVATIONAL ORIENTATIONS AMONG ALGERIAN UNIVERSITY STUDENTS

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Abstract: This empirical study examines the impact of epistemic beliefs on motivational orientations among Algerian university students. In a shifting educational landscape, understanding how students' conceptions of knowledge influence their motivation to learn is a key concern for educational psychology and teaching practices. The study was conducted with a sample of 500 undergraduate students enrolled in social sciences and psychology programs at three Algerian universities: Tizi Ouzou (central region), Constantine 2 (eastern region), and Aflou (southern region). A descriptive comparative design was adopted to examine differences in epistemic belief dimensions based on students' dominant motivational orientation (intrinsic vs. extrinsic). Data were collected using two validated and culturally adapted instruments: the Epistemological Beliefs Scale (EBS) and the Motivational Orientation Scale (MOS). The EBS measures five dimensions related to students' views on the nature of knowledge, while the MOS assesses both intrinsic and extrinsic motivational tendencies across several subdimensions. Statistical analyses (Student's t-tests) revealed a significant impact of epistemic beliefs on two specific aspects of motivation. Students with extrinsic motivation were more likely to believe that knowledge is acquired quickly and effortlessly. In contrast, intrinsically motivated students tended to view knowledge as constructed and evolving—a more sophisticated epistemological stance. These findings suggest that fostering complex epistemic beliefs could support more autonomous and enduring forms of motivation. Within the Algerian university context, which remains strongly influenced by traditional, lecture-based instruction and rote learning, these results highlight the need for pedagogical strategies that encourage active learning, critical thinking, and metacognitive reflection. This study contributes to a deeper understanding of the psychological mechanisms involved in student engagement and provides actionable insights for enhancing motivation and academic success in higher education settings.

Keywords: Epistemic beliefs, Motivational orientations, University students, Algeria,

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1. Introduction

In a constantly evolving world, where information is omnipresent and the skills required in the job market are rapidly changing, the ability to learn effectively and autonomously has become a fundamental competency. For university students, this ability is not only a key factor in academic success but also a prerequisite for personal and professional development.

Understanding the psychological factors underlying student engagement and success is therefore a priority for researchers in education and psychology. In the same vein, recent contributions in JSLCS emphasize that current transformations in language education, driven by AI-, LSP-, and EMI-oriented initiatives, call for a deeper understanding of how students conceive knowledge and engage with learning (Idri & Bouguebs, 2025). Among these factors, two theoretical constructs stand out as particularly relevant: epistemic beliefs and motivational orientations.

Epistemic beliefs or personal epistemologies refer to the implicit theories individuals develop about the nature of knowledge and the process of knowing (Hofer & Pintrich, 1997). These often-unconscious beliefs act as a filter through which students interpret learning tasks, choose strategies, and assess their own understanding (Schommer, 1990). A student who views knowledge as a set of fixed facts transmitted by authority (a naïve belief) will not approach their studies in the same way as a student who sees knowledge as a set of complex, evolving, and constructed ideas (a sophisticated belief). Research has shown that more sophisticated epistemic beliefs are associated with deeper learning strategies, better comprehension, and greater perseverance in the face of academic challenges (Muis, 2004; Greene & Azevedo, 2007).

At the same time, motivational orientations shape the direction, intensity, and persistence of students' academic engagement (Ryan & Deci, 2000). According to Self-Determination Theory (SDT), developed by Deci and Ryan (1985), motivation can be intrinsic driven by interest and satisfaction or extrinsic, influenced by external factors such as grades, rewards, or social approval. Achievement goal theory (Dweck & Leggett, 1988; Nicholls, 1984) further refines this distinction by differentiating mastery goals (aiming to understand and master content) from performance goals (aiming to demonstrate competence relative to others). Intrinsic, mastery-oriented motivation is typically associated with higher-quality learning and better psychological well-being (Pintrich, 2000).

Although epistemic beliefs and motivational orientations have been widely studied independently, research on their interaction is more recent yet equally crucial. How do our beliefs about knowledge shape our desire to learn? Do naïve epistemic beliefs promote extrinsic, performance-driven motivation? Conversely, are sophisticated epistemic beliefs a necessary condition for the emergence of intrinsic, mastery-oriented motivation? Several studies have begun to explore these questions, suggesting a strong link between sophisticated epistemic beliefs and more adaptive forms of motivation (Chan & Elliott, 2004; Buehl & Alexander, 2001). However, these relationships may be complex and influenced by contextual and cultural factors.

It is within this framework that the present study was conducted. The Algerian university context, with its unique cultural characteristics and evolving educational system, provides a particularly rich field for investigation. This empirical research seeks to examine the influence of epistemic beliefs on motivational orientations among a sample of Algerian university students. Our objective is not merely descriptive, but rather to offer a nuanced

comparative analysis, contributing to a better understanding of the psychological levers that support student success in this specific context.

1.1. Research questions

This comparative study aims to explore the interaction between epistemic beliefs and motivational orientations among Algerian university students. More specifically, it seeks to answer the following research questions:

- Are there significant differences in the dimensions of epistemic beliefs between students with intrinsic motivation and those with extrinsic motivation?
- How are specific dimensions of epistemic beliefs namely, Speed of Knowledge Acquisition, Structure of Knowledge, Construction and Modification of Knowledge, Characteristics of Successful Students, and Belief in Objective Truth associated with intrinsic and extrinsic motivational orientations?

1.2. Research hypotheses

Based on the existing literature and preliminary observations, the following hypotheses were formulated:

- There are significant differences in the scores of epistemic belief dimensions between university students with intrinsic motivation and those with extrinsic motivation.
- More sophisticated epistemic beliefs (e.g., viewing knowledge as constructed and modifiable) will be positively associated with intrinsic motivation, while more naïve beliefs (e.g., viewing knowledge as quick and simple to acquire) will be more strongly associated with extrinsic motivation.

1.3. Research objectives

The main objectives of this study are:

1. To determine the nature and extent of differences in students' epistemic beliefs based on their motivational orientation (intrinsic vs. extrinsic).
2. To identify the specific dimensions of epistemic beliefs that are significantly associated with intrinsic and extrinsic motivational orientations.
3. To provide concrete pedagogical implications based on the research findings, in order to improve teaching practices and support the development of more adaptive forms of motivation among Algerian university students.

2. Literature Review

This literature review explores the theoretical foundations and key empirical studies related to epistemic beliefs and motivational orientations, as well as their interaction. It aims to contextualize the present research and highlight the relevance of a comparative approach, drawing on established models and recent findings.

2.1. Epistemic beliefs: A conceptual framework

Epistemic beliefs, also referred to as personal epistemology, are the implicit theories individuals develop about the nature of knowledge and the process of knowing (Hofer & Pintrich, 1997). Far from being simple opinions, these beliefs form structured systems that filter and influence cognition, learning, and academic performance (Schommer, 1990). Historically, the conceptualization of epistemic beliefs has evolved from a unidimensional view opposing naïve beliefs (knowledge as simple, certain, transmitted by authority) and

sophisticated beliefs (knowledge as complex, evolving, and constructed) toward more nuanced, multidimensional approaches (Schommer-Aikins, 2004).

One of the most influential models is Schommer's multidimensional framework, which initially identified four quasi-independent dimensions:

Simplicity of knowledge: Is knowledge perceived as a set of isolated facts or as a complex and interconnected system? Naïve beliefs see knowledge as simple and fragmented, while sophisticated beliefs view it as integrated and multifaceted.

Certainty of knowledge: Is knowledge fixed and absolute, or tentative and subject to revision? Naïve beliefs tend toward certainty, whereas sophisticated beliefs acknowledge uncertainty and change.

Source of knowledge: Is knowledge transmitted by external authorities or actively constructed by the learner?

Speed of knowledge acquisition: Is knowledge acquired quickly and effortlessly, or through gradual effort and perseverance?

Subsequent research has refined these dimensions and added others, such as justification of knowledge how individuals assess and validate what they consider to be true (Hofer & Pintrich, 2002).

Epistemic beliefs play a significant role in predicting various learning behaviors, including reading comprehension, critical thinking, problem-solving, and academic achievement (Muis, 2004; Greene & Azevedo, 2007). Students who hold more sophisticated beliefs are more likely to engage in deep learning strategies, such as elaboration, reflection, and self-regulation. In contrast, naïve beliefs are often associated with surface-level strategies like memorization (Duell, 2001).

2.2. Motivational orientations: Theoretical perspectives and models

Motivation is a foundational construct in educational psychology, referring to the processes that activate, direct, and sustain behavior toward a goal (Pintrich, 2000). Several major theories have sought to explain human motivation in learning contexts. For the purposes of this study, two theoretical models are particularly relevant: ***Self-Determination Theory (SDT)*** *and* ***Achievement Goal Theory***.

- *Self-Determination Theory (SDT)*, developed by Deci and Ryan (1985, 2000), provides a comprehensive framework for understanding motivation. It posits that motivation varies not only in quantity (how much motivation) but also in quality (what type of motivation). SDT distinguishes between:
- *Intrinsic motivation*, which stems from an inherent interest in the activity itself. The individual engages in learning for the pleasure, curiosity, or satisfaction it brings, without external rewards. This form of motivation is associated with deeper engagement, increased perseverance, and higher-quality learning outcomes (Ryan & Deci, 2000).
- *Extrinsic motivation*, which is driven by external factors. SDT outlines a continuum of extrinsic regulation, from external regulation (behavior controlled by rewards or punishments) to integrated regulation (behavior fully aligned with personal values and identity). More autonomous forms of extrinsic motivation are linked to more positive outcomes than controlled forms.

SDT also emphasizes three basic psychological needs essential for optimal motivation: autonomy (feeling in control of one's actions), competence (feeling effective in one's

activities), and relatedness (feeling connected to others). When these needs are satisfied, individuals are more likely to exhibit intrinsic motivation and well-being.

In parallel, **Achievement goal theory** (Dweck & Leggett, 1988; Nicholls, 1984) provides a complementary lens by focusing on the types of goals students pursue in academic contexts. It distinguishes two primary goal orientations:

- *Mastery goals (Learning goals):* The aim is to develop competence, improve performance, and master the subject. Students with mastery goals emphasize effort, personal improvement, and deep learning. These goals are closely aligned with intrinsic motivation and adaptive learning strategies.
- *Performance goals (Ego goals):* The aim is to demonstrate competence relative to others and gain favorable judgments, or avoid negative evaluations. Students with performance goals may focus on outcomes rather than the learning process, and may use surface strategies or avoid challenging tasks. These goals are typically associated with extrinsic motivation.

Recent extensions of goal theory distinguish between performance-approach goals (aiming to outperform others) and performance-avoidance goals (aiming not to do worse than others) (Elliot & McGregor, 2001), offering a more nuanced view of extrinsic motivation in academic settings.

2.3. The interaction between epistemic beliefs and motivational orientations

The literature suggests a complex and significant interaction between epistemic beliefs and motivational orientations. Epistemic beliefs may serve as cognitive antecedents that shape how students perceive learning tasks, assess their competence, and determine their willingness to engage in academic activities (Muis, 2004). These beliefs, in turn, influence students' motivational frameworks and their approach to learning.

For example, a student who believes that knowledge is simple and can be acquired quickly (a naïve epistemic belief) may be more inclined to adopt performance-oriented goals and extrinsic motivation. Such a student may prioritize outcomes such as grades or recognition and adopt surface-level strategies such as memorization, focusing on speed and efficiency rather than understanding.

Conversely, a student who sees knowledge as complex, evolving, and constructed (a sophisticated epistemic belief) is more likely to be motivated by the intellectual challenge of learning itself. This type of learner typically seeks to understand and master material, even when it is difficult, and is driven by intrinsic motivation and mastery goals. This belief fosters deeper cognitive engagement, critical thinking, and persistence (Chan & Elliott, 2004; Buehl & Alexander, 2001).

Empirical studies have generally shown that more sophisticated epistemic beliefs are associated with more autonomous and adaptive forms of motivation. For instance, students who view knowledge as uncertain and open to revision are more likely to explore multiple perspectives and engage in reflective and self-regulated learning (Buehl & Alexander, 2001). However, this relationship is not always linear and can be influenced by individual or cultural factors, such as classroom practices, teacher expectations, or broader educational norms (Hofer & Pintrich, 2002).

The present study builds on this body of work by examining how specific dimensions of epistemic beliefs such as the perception of knowledge as rapidly acquired versus gradually constructed impact the type of motivation students display. By exploring this interaction in

the Algerian university context, the study seeks to identify meaningful patterns and provide pedagogical insights that are sensitive to cultural and institutional specificities.

3. Methodology

3.1. Study Design

The study employed a descriptive comparative design to examine the influence of epistemic beliefs on motivational orientations. Specifically, it aimed to compare the mean scores of the epistemic belief dimensions between students with intrinsic versus extrinsic motivation. This design is appropriate for identifying statistically significant associations between naturally occurring variables, without manipulating the learning environment. It also allows for a better understanding of psychological differences across motivational profiles.

3.2. Participants

The study sample consisted of 500 undergraduate students enrolled in the second and third year of social sciences and psychology programs at three Algerian universities:

- The University of Tizi Ouzou (central region),
- The University of Constantine 2 (eastern region),
- The University Center of Aflou (southern region).

These universities were selected to ensure regional diversity and to reflect the heterogeneity of the Algerian student population. Participants were aged between 19 and 23 years. A random quota sampling method was used to maintain proportional representation based on gender and institution. The final sample is considered representative of the broader population, as it includes more than 10% of the total target group, in line with the recommendations of (Zerouati 2018).

Table 1.

Participant distribution by university and gender

University / Gender	***University of Constantine 2***	***University of Tizi Ouzou***	***University Center of Aflou***	***Total***	***Percentage (%)***
Male	40	35	38	113	22.6%
Female	130	140	117	387	77.4%
Total	170	175	155	500	100%
Percentage by university	34.0%	35.0%	31.0%	—	100%

3.3. Instruments

Two instruments were used to collect data on students' epistemic beliefs and motivational orientations. The variable of learning strategies was intentionally excluded, as it was outside the scope of this study.

3.3.1. Epistemological Beliefs Scale (EBS) – Wood & Kardach (2002)

The Epistemological Beliefs Scale (EBS), developed by Wood and Kardach (2002), was used to assess students' beliefs about the nature of knowledge and the process of knowing. This tool is an adaptation of earlier instruments designed by Schommer (1990) and Jeng et al. (2001). The version used in this study contains 30 items distributed across five key dimensions of epistemic beliefs, rated on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree):

- *Speed of knowledge acquisition* (6 items): assesses whether knowledge is perceived as acquired quickly or gradually.
- *Structure of knowledge* (7 items): measures whether knowledge is viewed as simple and discrete or complex and interconnected.
- *Construction and modification of knowledge* (7 items): reflects whether knowledge is seen as fixed or open to change and development.
- *Characteristics of successful students* (5 items): explores beliefs about the traits of academically successful learners.
- *Objective truth* (5 items): evaluates belief in the existence of one absolute and unchanging truth.

Five items (nos. 3, 9, 15, 21, and 29) were reverse-scored. The construct validity of the scale was confirmed through confirmatory factor analysis. Internal consistency reliability, as measured by Cronbach's alpha, ranged from **0.68 to 0.82** across the subscales, indicating acceptable reliability.

Table 2.

Cronbach's alpha coefficients for the epistemological beliefs scale (EBS)

EBS Dimension	***Cronbach's Alpha***
Speed of knowledge acquisition	0.71
Structure of knowledge	0.75
Construction and modification of knowledge	0.82
Characteristics of successful students	0.68
Objective truth	0.74

3.3.2. Motivational Orientation Scale (MOS) – Cain (2008), adapted by Mohamed Abou Hashem

The Motivational Orientation Scale (MOS**)**, originally developed by Cain (2008) and adapted into Arabic by Mohamed Abou Hashem (2010), was used to assess students' motivational tendencies. This scale includes 30 items, divided into two main dimensions intrinsic and extrinsic motivationrated on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree).

Intrinsic motivation (18 items), subdivided into:

- *Challenge* (6 items): assesses the motivation to engage with intellectual challenges.
- *Curiosity* (6 items): measures the desire to explore and learn for personal interest.
- *Independent mastery* (6 items): reflects the student's willingness to acquire skills autonomously.

Extrinsic motivation (12 items), subdivided into:

- *Preference for easy work* (6 items): assesses the tendency to choose less demanding tasks.
- *Dependence on the teacher* (6 items): evaluates the extent to which the student relies on the teacher for direction and support.

The factorial validity of the MOS was confirmed through factor analysis, indicating that the items align well with the theoretical dimensions. Reliability was assessed using the test–retest method, with a coefficient of **0.86** for both intrinsic and extrinsic orientations, demonstrating good temporal stability. Cronbach's alpha values were **0.84** for overall intrinsic

motivation and **0.80** for overall extrinsic motivation. Subscale alphas ranged from **0.72 to 0.81** for intrinsic dimensions, and from **0.70 to 0.76** for extrinsic dimensions, indicating satisfactory internal consistency.

Table 3.

Cronbach's Alpha coefficients for the motivational orientation scale (MOS)

MOS Dimension	***Cronbach's Alpha***
Overall Intrinsic Motivation	0.84
– Challenge	0.78
– Curiosity	0.81
– Independent Mastery	0.76
Overall Extrinsic Motivation	0.80
– Preference for Easy Work	0.72
– Dependence on the Teacher	0.70

Classification procedure for motivational orientation

In this study, the formation of the two comparison groups (intrinsic vs. extrinsic motivation) was based on the **dominance of the scores** obtained on the Motivational Orientation Scale (MOS). For each participant, a total **intrinsic motivation score** (sum of the 18 items) and a total **extrinsic motivation score** (sum of the 12 items) were computed. A **difference score** was then created as follows:

$$Difference = Intrinsic\ Motivation\ Total\ Score - Extrinsic\ Motivation\ Total\ Score$$

Participants for whom the difference score was **strictly positive** (Difference > 0) were classified as **intrinsically motivated** (n = 353). Conversely, participants whose difference score was **≤ 0** were classified as **extrinsically motivated** (n = 147).

This procedure is based on each participant's actual motivational profile and does not rely on any median split or arbitrary cutoff. Although Self-Determination Theory conceptualizes motivation as a continuum, the dominance-based approach allows for the identification of a participant's predominant motivational tendency. The implications and limitations of this categorization method are addressed in the Discussion section.

3.3.3. Translation and cultural adaptation process

In this study, only the Epistemological Beliefs Scale (EBS**)** was translated and culturally adapted by the researcher. The Motivational Orientation Scale (MOS) was already available in an Arabic version, translated and validated by Mohamed Abou Hashem, and required no further adaptation. The translation of the EBS from English to Arabic followed a rigorous, multi-step process to ensure linguistic and conceptual equivalence. The initial translation was carried out by the researcher, with a focus on preserving the theoretical meaning of each item while adapting the language to the Algerian university context. A back-translation into English was then performed by an independent bilingual expert unfamiliar with the original version.

Both versions were compared to assess accuracy and consistency. Following this step, the Arabic version was reviewed by a panel of three university professors in psychology and education. Their feedback led to minor revisions aimed at improving item clarity and cultural appropriateness.

A pilot test was then conducted with 30 undergraduate students from the University of Tizi Ouzou (not included in the final sample). The students completed the scale and provided feedback on comprehension. The results confirmed that the items were clearly understood and suitable for use with Algerian students.

This process ensured that the Arabic version of the EBS was both linguistically accurate and culturally relevant for the target population.

3.4. Data collection procedures

Data collection was conducted between February and March 2024 at the three selected universities. The researcher visited each institution in person to ensure standardized administration of the questionnaires and to guarantee the smooth implementation of the procedure.

The questionnaires were primarily distributed in university libraries and reading rooms, environments conducive to concentration and appropriate for the seriousness of the task. Participants were gathered in small groups. They were first given a clear explanation of the study's objectives and the voluntary nature of their participation. After obtaining verbal consent, the questionnaires were distributed anonymously and without any time constraints. The average completion time was approximately 25 minutes.

The researcher remained present throughout the process to answer any questions and clarify instructions when necessary. This presence helped minimize misunderstandings and ensured consistency in administration conditions across all sites. It also made it possible to confirm that participants met the inclusion criteria (undergraduate students enrolled in social sciences or psychology, aged between 19 and 23).

A total of 550 questionnaires were distributed. After screening, 500 complete and usable questionnaires were retained for statistical analysis. Incomplete or incoherent responses were excluded.

This in-person, supervised data collection method contributed to a high response rate and enhanced the reliability of the data gathered.

3.5. Data analysis procedures

The data collected were encoded, organized, and statistically processed using SPSS software (version 26). A series of analyses were conducted to test the research hypotheses and respond to the study objectives.First, descriptive statistics (means, standard deviations, frequencies, and percentages) were used to provide an overall view of the participants' responses and to describe the main characteristics of the sample.

Next, independent samples t-tests were carried out to identify significant differences in the dimensions of epistemic beliefs between students with intrinsic motivation and those with extrinsic motivation. This parametric test was chosen because it is appropriate for comparing the means of two independent groups when the data meet the assumptions of normality and homogeneity of variance.The significance level was set at $p < .05$. Where statistically significant differences were found, the results were interpreted in relation to the theoretical models and the study's hypotheses.

All analyses were conducted with methodological rigor, ensuring the validity and reliability of the results obtained.

4. Results

This section presents the results of the statistical analyses conducted to examine the effect of epistemic beliefs on motivational orientations among Algerian university students. In accordance with the objectives of this study, the variable of learning strategies was excluded from the analysis.

The main hypothesis of the study posited that scores on the dimensions of epistemic beliefs would differ depending on students' motivational orientation (intrinsic vs. extrinsic). To test this hypothesis, an independent samples t-test was applied. Motivational orientations (intrinsic and extrinsic) were treated as independent variables, while the five dimensions of epistemic beliefs, s**peed of knowledge acquisition**, **structure of knowledge**, **construction and modification of knowledge**, **characteristics of successful students**, and **belief in objective truth** were treated as dependent variables.

4.1. Descriptive statistics for Motivational Orientation

Before conducting the comparative analyses, descriptive statistics were calculated for the two motivational dimensions measured by the MOS. These values provide essential information on the distribution of intrinsic and extrinsic motivation scores within the sample and allow readers to assess the validity of the group classification procedure. The descriptive statistics (means, standard deviations, and score ranges) are presented in Table 3 bis.

Overall, intrinsic motivation scores were higher than extrinsic motivation scores in the sample, although some participants displayed relatively high scores in both dimensions. This pattern is consistent with Self-Determination Theory, which conceptualizes motivation as a continuum allowing multiple forms of regulation to coexist.

Table 4.

Descriptive statistics for intrinsic and extrinsic motivation scores (N = 500)

Dimension	*n*	*Mean (M)*	*Standard Deviation (SD)*	*Minimum*	*Maximum*
Intrinsic Motivation	500	63.41	8.72	32	88
Extrinsic Motivation	500	38.12	7.95	18	60

Interpretation:

The data show that intrinsic motivation tends to be higher and more widely distributed than extrinsic motivation in this sample. This supports the use of a dominance-based classification, as many students exhibited clearly higher intrinsic scores relative to their extrinsic scores. The detailed results of these analyses are presented in **Table 5**.

Table 5.

Differences in epistemic belief scores based on motivational orientation (Intrinsic vs. extrinsic)

Epistemic Belief Dimension	**Motivational Orientation**	**n**	**M**	**SD**	**F**	**p (F)**	**t**	**df**	**p (t)**
Speed of Knowledge Acquisition	Intrinsic	353	21.82	3.67	0.26	0.60	-3.48	498	0.001 (Significant)
	Extrinsic	147	23.03	3.56					
Structure of Knowledge	Intrinsic	353	41.07	4.30	0.44	0.50	0.22	498	0.82 (Not Significant)
	Extrinsic	147	40.97	4.19					
Construction and Modification of Knowledge	Intrinsic	353	38.67	4.33	5.30	0.02	3.03	315.58	0.003 (Significant)
	Extrinsic	147	37.50	3.72					
Characteristics of Successful Students	Intrinsic	353	16.72	2.70	0.26	0.60	1.24	498	0.21 (Not Significant)
	Extrinsic	147	16.39	2.82					
Belief in Objective Truth	Intrinsic	353	9.58	1.70	0.14	0.70	0.15	498	0.87 (Not Significant)
	Extrinsic	147	9.56	1.65					

Interpretation

The analyses revealed significant differences in two of the five dimensions of epistemic beliefs based on motivational orientation:

Speed of knowledge acquisition: A statistically significant difference was observed ($t = -3.48$, $p = 0.001$, $df = 498$). This difference favors students with **extrinsic motivation** ($M = 23.03$, $SD = 3.56$) compared to those with intrinsic motivation ($M = 21.82$, $SD = 3.67$). This suggests that students driven by external factors are more likely to believe that knowledge is acquired quickly and easily.

Construction and modification of knowledge: A second statistically significant difference was found ($t = 3.03$, $p = 0.003$, $df = 315.58$). In this case, the difference favors students with **intrinsic motivation** ($M = 38.67$, $SD = 4.33$) compared to those with extrinsic motivation ($M = 37.50$, $SD = 3.72$). This result indicates that intrinsically motivated students are more inclined to view knowledge as constructed and subject to change.

Non-significant dimensions: No statistically significant differences were found for the other three dimensions (**Structure of knowledge**, **Characteristics of successful students**, and **Belief in objective truth**) suggesting that these epistemic dimensions are not strongly influenced by motivational orientation in this sample.

In sum, the hypothesis that epistemic beliefs differ according to motivational orientations is partially supported by the data from our study. The results highlight specific links between certain dimensions of epistemic beliefs and types of motivation, offering valuable insights for discussion and pedagogical implications.

5. Discussion

The aim of this study was to examine the impact of epistemic beliefs on motivational orientations among Algerian university students. Although Self-Determination Theory (SDT) conceptualizes motivation as a continuum ranging from controlled to autonomous forms of regulation, the present study employed a categorical grouping procedure based on the dominance of intrinsic versus extrinsic motivation scores. This approach, frequently used in

comparative designs, allows for the identification of clearly distinguishable motivational profiles and facilitates statistical comparison between groups. Nevertheless, it simplifies the complexity of motivational dynamics and does not capture the full spectrum of intermediate or mixed profiles predicted by SDT.

Future research should consider complementary person centered analyses such as cluster analysis or latent profile analysis to provide a more nuanced understanding of motivational orientations among university students.

The findings partially confirmed the main hypothesis: while not all dimensions of epistemic beliefs differed significantly based on motivational orientation, two dimensions **Speed of knowledge acquisition** and **construction and modification of knowledge** showed statistically significant differences.

Students with **extrinsic motivation** were more likely to believe that knowledge is acquired quickly and easily. This result aligns with previous studies suggesting that extrinsically motivated learners often adopt surface-level strategies and may prioritize efficiency over deep understanding (Pintrich, 2000; Muis, 2004). Such beliefs can limit cognitive engagement and reflect a less developed conception of knowledge.

Conversely, students with **intrinsic motivation** were more inclined to perceive knowledge as constructed, evolving, and open to revision. This finding supports the idea that sophisticated epistemic beliefs are associated with deeper, more autonomous forms of motivation (Hofer & Pintrich, 2002; Chan & Elliott, 2004). Students who view learning as a constructive and effortful process tend to engage more actively, seek meaning, and show greater persistence in the face of academic challenges.

However, other dimensions such as **structure of knowledge**, **belief in objective truth**, and **characteristics of successful students** did not differ significantly between the two motivational groups. This suggests that not all facets of epistemic thinking are systematically tied to motivation, and that some beliefs may be more universally held or influenced by contextual factors such as educational norms or cultural expectations.

These results provide important theoretical insights. They support the notion that **epistemic beliefs are not isolated cognitive constructs**, but are closely linked to learners' motivational frameworks. In this sense, the findings reinforce the perspective of researchers who argue for an integrated model of cognition and motivation in academic settings (Greene & Azevedo, 2007).

From a pedagogical standpoint, the study suggests that fostering **more sophisticated epistemic beliefs** particularly about the complexity and malleability of knowledge may help promote **intrinsic motivation**. This can be achieved by encouraging critical thinking, collaborative learning, and reflective practices that allow students to question, analyze, and construct knowledge actively. Recent work on the use of artificial intelligence technologies in English language learning among Algerian PhD students illustrates how such innovative environments can support more autonomous, reflective, and engaged forms of learning, which are consistent with sophisticated epistemic beliefs and intrinsic motivation (Braknia, Guerfa, & Sakhri, 2025)

In the Algerian university context, where traditional teaching methods still dominate and rote memorization is common, these insights are especially relevant. Supporting a shift toward learner-centered approaches could strengthen students' engagement, improve the quality of their learning, and contribute to the development of more autonomous and motivated learners.

6. Conclusion

This study examined the impact of epistemic beliefs on motivational orientations among Algerian university students. The results highlighted significant differences between motivational profiles and students' conceptions of knowledge. Specifically, students with extrinsic motivation tended to view knowledge as easily and quickly acquired, reflecting more naïve epistemic beliefs. In contrast, intrinsically motivated students were more likely to see knowledge as constructed, evolving, and subject to revision an indication of more sophisticated epistemic thinking.

These findings confirm the existence of a strong connection between students' conceptions of knowledge and the quality of their motivation. Widely documented in international research, this connection deserves particular attention in the Algerian context, where university education still relies heavily on transmissive methods and rote memorization. Recognizing the influence of epistemic beliefs on academic motivation represents a key lever for rethinking pedagogical practices and improving learning quality in higher education.

The pedagogical implications of this study are both theoretical and practical. It is essential to promote learning environments that support the development of more sophisticated epistemic beliefs.This requires valuing critical thinking, active knowledge construction, and metacognitive awareness. Teaching methods that encourage inquiry, argumentation, collaborative projects, and self-assessment are particularly relevant. At the same time, it is crucial to train instructors to identify and respond to students' implicit conceptions of knowledge and adapt their teaching strategies accordingly.

In the Algerian university context characterized by institutional constraints, overcrowded classrooms, and deeply rooted pedagogical traditions these recommendations may appear ambitious. However, they point to the possibility of gradually shifting students' relationship to knowledge from one of passive reception to one of active construction. Such a transformation entails reimagining the teacher's role as not merely a transmitter of content, but as a facilitator, mediator, and guide in the learning process.

Ultimately, this research shows that epistemic beliefs are a central factor in shaping students' motivation. By building on these findings, it becomes possible to design more targeted, culturally responsive pedagogical interventions. This study also encourages greater integration of epistemic reflection in both initial teacher training and professional development. Fostering genuine and sustainable motivation among Algerian students depends, in large part, on how they learn to perceive, question, and construct knowledge.

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