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INFORMATION LITERACY IN INITIAL TEACHER TRAINING: BELIEFS, MOTIVATIONS AND APTITUDES

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ABSTRACT

Introduction: A study is shared whose objective was to identify beliefs, motivations, and aptitudes in Information Competencies (IC) of Future Teachers (FT). **Methodology:** A descriptive design study was conducted using a mixed-methods approach (qualitative and quantitative), in which an information-seeking questionnaire was employed, based on a categorical operationalization grounded in discourse semiotics. Eighty-eight FT students from Initial Teacher Training (ITT) programs at a Chilean university participated in the study. **Results:** Types/levels, descriptions, and examples of competence modalities are presented, based on categorical operationalization, IC dimensions, and specific informational situations. **Discussion:** Aspects related to the importance of investigating beliefs, similarities, and differences regarding categories associated with motivations are discussed, as well as the use of informational situations as a methodological element. **Conclusions:** i) Regarding the identification of modalities: Beliefs and motivations were structured into three-part typologies defined according to the scope of IC; ii) The desires and duties that guide practices represented reasons influenced by extrinsic motivation; and iii) Skills are characterized by the presence of instrumental, relational, and self-regulatory abilities. The study's contributions are as follows: (i) it provides a basis for understanding the internal modalities of IC in FT; and (ii) it

constitutes a reference to support initiatives relating to the situated characterization of these competencies.

Keywords: information competencies; higher education; initial teacher training; historical-cultural approach to competencies; beliefs, motivations; aptitudes.

1. INTRODUCTION

Education in today's society involves constant transformations that are often driven, among other things, by the focus on learning, access to information, and the development of skills. This requires the adaptation of educational policies and ensuring the training of teachers capable of addressing these transformations (Barbosa-Chacón & Mendoza-Lira, 2026; Harfitt & Chow, 2018).

In response to this commitment, the University contributes from the dynamics of Initial Teacher Training (ITT), through the offering of programs aimed at the development of knowledge and skills and where theoretical, practical, pedagogical and disciplinary foundations are integrated, in addition to the experience in teaching practice and professional growth (Bastías-Bastías & Iturra, 2022).

The ITT emphasizes, among other things, the need to develop skills that allow responding to the challenges of the digital and knowledge society; that is, in addition to pedagogical and disciplinary skills, future teachers (FT) must be trained in the didactic use of ICT and strengthen digital, media and information skills to adapt to dynamic and globalized educational environments (Barbosa-Chacón & Mendoza-Lira, 2026; Cabello et al., 2020).

Regarding information, the FT is urged to have Information Competencies (IC), those that represent knowledge, skills and conditions for the search, processing, communication and dissemination of information and that, moreover, are considered as essential academic competencies (Barbosa-Chacón & Mendoza-Lira, 2026).

The IC occupy a key place in ITT policies, as it is linked to educational intentions such as: i) Digital citizenship, given its contribution to digital literacy, the ethical use of information and participation in society (Coklar & Tatli, 2020); ii) Critical thinking, where they complement each other for the evaluation of information, the analysis of perspectives, argumentation, decision making and the questioning attitude (Goodsett, 2020).

Other formative intentions include: iii) The appropriation and generation of disciplinary and didactic knowledge, by promoting access to sources, evaluation, synthesis and analysis of information, as well as research skills and the application of knowledge (Huaillani Chavez, 2020).

In the case of Higher Education, the understanding of information literacy is supported by the standards established by the Association of College and Research Libraries (ACRL) (ACRL, 2016), an organization whose standards generally define three dimensions: access, evaluation, and use of information. Thus, a person with these competencies is able to:

- Determine the scope of the information required.
- Access information effectively and efficiently.
- Evaluate the information critically; incorporate the information into the knowledge base.
- To use information effectively to achieve a goal and to understand the economic, legal, and social issues surrounding its use.

To refer to the background of research on IC in the ITT, it is useful to draw on Barbosa-Chacón et al. (2025), who conducted a systematic literature review from 2013 to 2023. Their objective was to analyze updated evidence from studies in order to identify trends and challenges related to what and how research is conducted in this field. The first point highlights the interest in the assessment of IC, IC training, and the relationship of IC with other competencies.

Second, the authors report the marked presence of studies with a quantitative approach, from which they challenge to contribute from qualitative research and, in particular, to do so with a historical-cultural perspective, one in which dimensions linked to the history of the subject and the contexts in which their IC take place are taken into account.

In this sense, the present article refers to a study that aimed to identify the beliefs, motivations and aptitudes present in the IC of FT, a commitment that is helpful in understanding how these competencies are configured and expressed in learning contexts.

Specifically, these three competency modalities, being historically constructed and mediated by formative experience, represent input for understanding how FTs access, evaluate, and use information. Furthermore, they provide a reference to support situated characterization of ICs in the ITT.

2. FRAMEWORK

2.1. The Historical-Cultural Perspective of Competencies

According to Marciales et al. (2015), the historical-cultural perspective of information literacy emphasizes the relationship between the development of competence and the formation of a social subject capable of understanding the diversity and complexity of cultural factors that mediate informational relationships. A key reference point for this is Greimas (1989), who argues that, from the semiotics of discourse, it is possible to grasp experiences that make meaning possible by highlighting the importance of signs within culture.

Since Greimas, the act is a structure that brings together competence and execution (Alvarado, 2009; Barbosa-Chacón et al., 2010; Marciales-Vivas et al., 2008). The author also argues that "knowing how to do anything" represents only one of the modalities that constitute a given competence; that is, there are other instances or prior conditions that enable the action and that, due to their characteristics, make it impossible to directly observe a competence (Barbosa-Chacón & Mendoza-Lira, 2026).

Consequently, execution is not competence; it is merely the realized form of the action (Alvarado, 2009). From this perspective, emphasis is placed on modes of competence related to doing and being, which are termed: potentializing, virtualizing, actualizing, and realizing, and which, in turn, represent associated modes of existence: beliefs, motivations, aptitudes, and effects.

From these modes of competence, and according to Marciales-Vivas et al. (2008) and Barbosa-Chacón et al. (2010), the acting subject who uses the sources of information is constituted as such, insofar as they act in a modalized way. If it is based on beliefs, it means that they have assumed the determinants, both of their culture and of their social reference group, to guide their action.

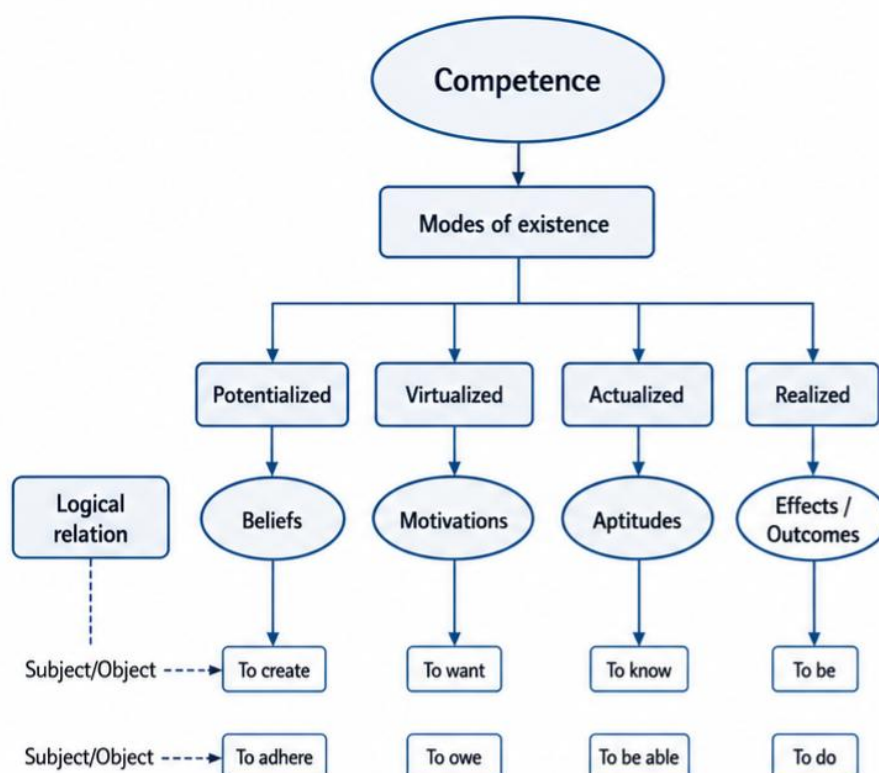
If it stems from motivation, it will be characterized by a "wanting to do," meaning the will to act; or by a "having to do," implying a prescribed obligation. If it stems from aptitudes, it will be characterized by a "knowing how to do," indicating cognitive competence; or by a "being able to do," demonstrating a capacity.

Aptitudes are comprised of two constituent factors: the knowledge required to perform a specific academic task and the resources (personal or contextual) that are available to put that knowledge into practice. These factors are a necessary but not sufficient condition to account for a person's aptitude for accessing, evaluating, and using information.

Thus, modalities, modes of existence and the respective logical relations can be seen in Figure 1.

Figure 1.

Competition and its Modes of Existence



Source: Based in Alvarado (2009).

2.2. A Concept and a Technique for Approaching the IC of the FT, From a Historical-Cultural Perspective

Based on the above, and for the specific case of IC, Barbosa-Chacón et al. (2010) and Marciales-Vivas et al. (2008) carried out research that resulted in a reconceptualization, from which IC are understood as:

The network of relationships woven between the affiliations and beliefs, motivations, and aptitudes of the epistemic subject, constructed throughout their history in situated learning contexts, both formal and informal. This network of relationships acts as a reference matrix for the ways in which information is appropriated through accessing, evaluating, and using it, and expresses the cultural contexts in which these relationships were constructed. (Marciales-Vivas et al., 2008, p. 651)

On the other hand, and specifically regarding ITT, Barbosa-Chacón and Mendoza-Lira (2026) formulated a proposal for observing IC in FT, which integrates a categorical operationalization supported by the theoretical frameworks and the reconceptualization presented earlier. This operationalization represents the formalization of IC into observable categories; that is, it serves as the reference point for what will be the object of observation regarding IC.

The categorical operationalization and its respective categories and subcategories are presented and described in Table 1, where they are contextualized for the user (the FT) and the context in question (the ITT). With this, and as part of the data collection component, Barbosa-Chacón and Mendoza-Lira (2026) designed and validated an "Information Tendency Questionnaire", a resource available to support the identification of practices that FTs perceive as habitual in the way they relate to information.

Table 1

Categorical Operationalization

Epistemological Beliefs	Nature of Knowledge	-It refers to what the FT believes knowledge to be. -It is seen as a progressive understanding that moves from the view of knowledge as absolute to a relativistic view, and then to a contextual and constructivist instance. -It is captured in two factors: Simple knowledge and certain knowledge.	Certainty of Knowledge	-Degree to which the FT views knowledge as fixed or more fluid. -At low levels, absolute truth exists with certainty; at high levels it is tentative and evolving.
			Simplicity of Knowledge	To assume knowledge as a continuous accumulation of data (discrete, concrete, knowable), or as highly interrelated concepts (relative, contingent, contextual).
	Process to Get to Know	-It refers to beliefs about the process by which the FT comes to know. -It encompasses beliefs about the source of knowledge and the justification for knowing, which includes evaluation of evidence, the role of authority, and the process of justification.	Source of Knowledge	-At low levels: Knowledge is conceived as originating outside of oneself and residing in an external authority, from which it can be transmitted. -At high levels: The FT perceives himself as a knowledgeable person with the ability to build knowledge in interaction with others.
			Justification of Knowledge	-It refers to how the FT evaluates knowledge claims, including the use of evidence, authority and expertise, and its evaluation of experts. -As the FT learns to evaluate evidence, as well as justify their beliefs, they begin to move from dualistically conceived beliefs towards a reasoned justification of them.
Motivations	Wanting	The FT's "personal" motivations, which guide the informational action.		
	Having to	The FT's "non-personal" motivations that guide the informational actions		
Skills	Knowing	Knowledge that the FT has, depending on the objective of the information action.		
	Being able to	Personal or contextual resources available to the FT to handle informational action.		

Source: Adapted from Barbosa-Chacón and Mendoza-Lira.

The questionnaire reflects one of the observational perspectives defined for the study: self-observation, which corresponds to what represents a look at "the self-

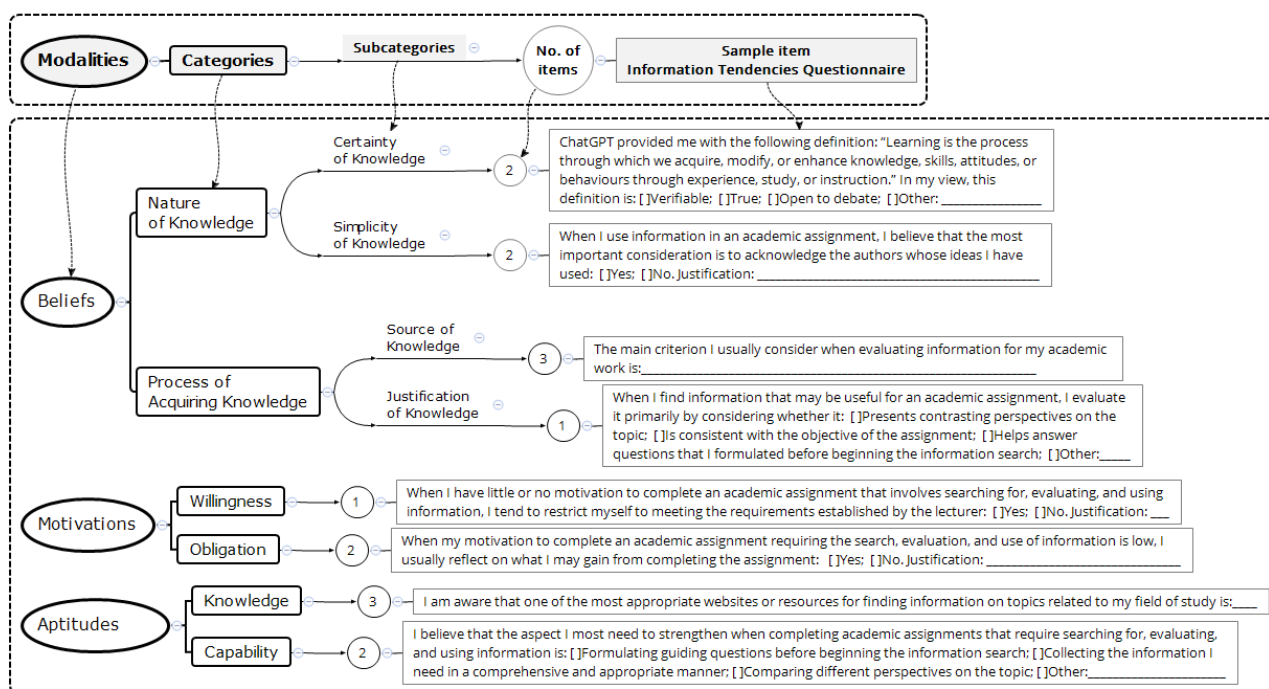
perceived competence.” In this regard, Figure 2 shows the modalities, categories, subcategories, number of items, and some examples of items from this questionnaire.

Structurally, it is a questionnaire composed of three sections. The first provides guidelines specifying that the focus is on information literacy in its dimensions of access, evaluation, and use of information. It also clarifies that academic works represent the information literacy practices defined for this focus, thus emphasizing the importance of answering based on the participant's own experience.

The second section corresponds to the registration of the participant's personal data, while the last section presents the 16 items that make up the questionnaire. This questionnaire takes into account categorical operationalization, competency dimensions, informational situations, and some conceptual considerations that were considered for the FT's retrospective review (see Table 2).

Figure 2

Categorical operationalization - Information Tendency Questionnaire



Source: Adapted from Barbosa-Chacón and Mendoza-Lira.

Table 2

Informational Modalities and Situations

Informational Situations (IS) That Refer to:	
Beliefs	➤ IS-1: The criterion by which the consulted information is certified. ➤ IS-2: The evaluation of a learning concept issued by a Chatbot. (Related to information evaluation).
	➤ IS-3: The aspect considered to be the most important in writing academic papers. ➤ IS-4: Agreement or disagreement, in response to the assertion that the most important thing in academic work is the credit that should be given to the authors' ideas. (Related to information use).
	➤ IS-5: The main criterion that is usually taken into account when evaluating information in the development of an academic work. ➤ IS-6: The evaluation of expert statements in a discussion. (Related to information evaluation).
	IS-7: The practice of copying content exactly as found, and then extracting main ideas. (Related to information use).
	IS-8: The aspect considered as primary in the exercise of evaluating information. (Related to information evaluation). Conceptual considerations: ▪ Dualistic beliefs: These refer to acceptance or rejection based on authority or conviction, that is, with little analysis (Zhang, 2023). ▪ Reasoned beliefs: These are reflective or transitional and take into account the critical evaluation of evidence, the comparison of multiple sources, and the recognition of the provisional and contextual nature of knowledge (Lammassaari et al., 2022).
Motivations	Agreement, disagreement, and justification regarding assertions related to the performance of academic work that demands information management and, in particular, assertions associated with circumstances of demotivation. These are: ➤ IS-9: The habit of simply complying with the requirements set by the teacher. ➤ IS-10: Thinking about to what an academic work can contribute. ➤ IS-12: The reasons why an academic work is usually done Remarks Regarding demotivation, the aim was to explore the limits of actions, seeking to uncover the reasons that guide them when academic work loses personal interest (Uysal, 2023).
Skills	IS-13: Identification with the access route, evaluation and use of information, for the case of research results in education. Conceptual Remarks ▪ Route one: It is exclusively pragmatic in nature; it involves knowledge of the immediate collection of information, as well as its direct selection and processing, without regard for defined evaluation and use processes. Here, knowledge is mediated from an instrumental point of view, in the relationship between the subject and the information (Matteson & Gersch, 2020). ▪ Route two: This refers to an intermediate level of knowledge, where research in academic sources takes place, and especially a critical stance towards information. In this, knowledge is functional in relation to information practice (Schofield et al., 2023). ▪ Route three: It represents advanced level knowledge, where access to specialized information sources is present; it is evaluated with defined criteria, in addition to assuming a constructive stance towards the information, that is, it showcases knowledge that contributes to an emancipatory participation of the person in their informational actions (Cuevas-Cerveró et al, 2023).

	IS-14: Knowledge about what is considered the best site or resource for finding information on topics within the field of study. (Related to access to information).
	IS-15: The criterion considered most relevant for evaluating information in an academic work on a topic within the field of teacher training. (Related to information evaluation).
	Conceptual considerations: This action includes elementary and basic criteria (Varela & Saravia, 2020), as well as criteria of a critical or reflective nature (Trixa & Kaspar, 2024).
	IS-16: "What was most" and "what was least" required to strengthen in the face of the development of academic work that required searching, evaluating and using information. Conceptual Remarks ▪ Operational capacity (instrumental approach), typical of a practical or functional condition and refers to conditions for gathering information according to requirements (Castañeda-Peña et al., 2010). ▪ Integrative capacity (relational approach), where it is recognized that knowledge is interpretive and contingent and argumentative differences are valued, that is, the contrast of information is included (Cabra-Torres et al., 2017). ▪ Transformative capacity (processual, self-regulated approach) and where information is a means to resolve one's own concerns, in addition to the academic requirement (Marciales-Vivas et al., 2016).

Source: Elaborated by the authors.

3. METHODOLOGY

A descriptive design study with a mixed approach (qualitative and quantitative) was carried out, to find an answer to the following question: How are the potentializing, actualizing and realizing modalities of IC configured, from a descriptive point of view, when FTs interact with sources of information in their learning contexts?

The objective of identifying the configuration of beliefs, motivations, and aptitudes of the FT (presumably referring to a specific learning context), historically constructed in situated learning contexts, through interaction with information sources, and as the realization of their IC (presumably referring to a specific learning context), was formulated from this question. It should be clarified that, for the purposes of this report, the configuration of the effects, that is, the realizing modality, is not included.

3.1. Participants

The research, carried out in 2025 and with a convenience sampling, had the voluntary participation of 88 of the 117 (75.3%) FT attached to the ITT programs of the Andrés Bello University of Chile: Pedagogy in English for Basic and Secondary Education, Pedagogy in Physical Education, Basic General Education, Early Childhood Education and Musical Education.

The participants were active students in their final two years of study, at which point, according to curriculum analysis, they would have already completed courses with a strong emphasis on information literacy training and experience. Participant data shows that 59.1% were women, 39.8% men, and 1.1% of another gender; they had an average of 23.8 years old, a mode of 23 years old, and a range of 21 to 26 years old, within which 94% of the ages were included.

3.2. Technique, Instrument and Procedure

The data collection technique corresponds to the survey, where the "Information Tendency Questionnaire" belonging to the data collection component proposed by Barbosa-Chacón and Mendoza-Lira (2026) was used and whose design was detailed in section 2.2.

The questionnaire, which included an informed consent section, was hosted on Google Drive and made available for completion for two months. Data processing was carried out according to the aforementioned categorical operationalization, and the analytical procedure was characterized by:

- A deductive-inductive content analysis approach, which included: i) an initial stage in which responses were organized according to the defined categorical operationalization; ii) a second stage in which recurrences, variations, and previously unconsidered elements were identified. These units of meaning were then subjected to a progressive coding process, resulting in emergent categories.
- Regarding validity, coherence between the categorical operationalization, the research objectives and the interpretations, as well as fidelity to the content expressed by the FT, avoiding unsupported inferences.
- Regarding reliability, a systematic and transparent coding process, based on explicit rules and the iterative review of categories and subcategories. Furthermore, constant comparison was made between data segments and categories, in addition to data cleaning and adjustment processes to ensure stability and consistency.

Based on the above, a descriptive, mixed-methods presentation was created to identify the modalities of IC. Relative frequencies were added to the descriptive presentation to establish the degree of presence and interpretation of the topics that emerged from the analysis, which allowed for the description of the configuration of the competency modalities.

To indicate the degree of presence, a parsimony criterion was used, which determines the dominance of a topic based on thresholds. Thus, it is dominant when its representativeness is equal to or greater than 50%, and there will be shared dominance when the individual representativeness is equal to or greater than 32.5% and the integrated sum is equal to or greater than 75%.

4. RESULTS

4.1. On beliefs - Nature of Knowledge Category

a) Certainty of Knowledge

The information provided by the FTs in the IS-1 information situation made it possible to assign Tentative Truth as the dominant conviction (68.6%), followed by Absolute Truth with 29.9% and Evolutionary Truth with 1.5%.

The previous stance changed in response to the IS-2 information situation, where, based on the opinions, a shared dominance was seen between assuming the

information as Absolute Truth, with 46.8%, or as Tentative Truth with 40.8%, while Evolutionary Truth had a record of 12.4%.

b) Simplicity of Knowledge

Based on the information situation report IS-3, it was evident that the majority of data processors accept the information as interrelated. Thus, 49.2% consider it relative and 40.8% contextual; while only 10.0% classify it as accumulated data.

On the other hand, and based on the data related to the SI-4 information situation, the proportion of FTs who expressed their agreement (84.1%) was decisive, compared to those who did not (15.9%). Additionally, and based on the analysis of the supporting justifications, three types of belief were presented, which, due to their characteristics, were named: *normative*, *functional*, and *epistemic* (see Table 3).

Additionally, it should be noted that there was no dominant belief, given that the following relative frequencies were presented in the order of the denomination: 32.9%, 38.8% and 28.2%.

Table 3

Beliefs/Subcategory-Simplicity of Knowledge

Type of belief	Descriptor: The credit attributed to the author is...	Examples of Answers and Justifications
Normative	mechanic, mandatory.	- Yes. "I can be sued if I don't do it and the university will punish me with a minimum grade for plagiarism" [CTI- 7:i 10-MAGT ¹]. - No. "While it is crucial, it is not the MOST important thing" [CTI- 48:i10 -CM].
Functional	of academic use.	- Yes. "While I agree with many authors and references, it is important to know how to cite them and thus read more about a topic from other perspectives" [CTI- 2:i 10-TENR]. - No. "The most important thing is to see if they are reliable" [CTI- 67:i 10-JCh].
Epistemic	collective, contextual and interrelated construction.	- Yes. "It is always important to give credit to the authors, since their ideas remain valid to this day and help to complement present ideas" [CTI- 6:i 10-FBCM]. - No. "I think the most important thing is how those ideas are conveyed through what each person writes. The purpose of the cited ideas is to support what we are stating" [CTI- 1:i 10-AVDA].

Source: Elaborated by the authors.

¹ The extracts used for illustrative purposes have been coded as [CTI-7: i10-MAGT], where CTI indicates the data source (Information Tendency Questionnaire); 7 indicates the participant's registration number; i10 represents the item number to which the extract corresponds; and MAGT indicates the anonymous identity of the participating FTs. Note: Quotations taken from the statements and justifications are presented verbatim.

4.1.1. Process to Get to Know

a) Source of Knowledge

The FT manifestos, in response to the IS-5 information situation, fall into three types of belief: *Dogmatic*, *Objective*, and *Constructive* (see Table 4). Furthermore, it is indicated that there was a shared dominance among the first two belief types, given the following relative frequencies in order of classification: 37.3%, 42.2%, and 20.5%.

Table 4.

Beliefs/Subcategory-Source of Knowledge

Type of Belief	Descriptor: The Evaluation Criteria	Examples of Statements
Dogmatic	It focuses on the source of information as an authority.	- Having reliable references and consulting more of them." [CTI-1:i4-AVDA]. "It's the reliability of the source—making sure it comes from recognized authors and academic institutions." [CTI-4:i4-CM].
Objective	It combines authority with objective properties of information	"Years of publication, main theorists and references, sources of information" [CTI- 2:i 4-TEDNR]. "to base myself on theoretical references" [CTI- 3:i 4-MOF].
Constructive	It focuses on the ability to build knowledge in dialogue with others and with the context.	"(...)“I am looking for what kind of thinking or prior knowledge aligns with the task—or how it can do so—and, finally, how it adapts to the knowledge being requested” [CTI-6:i4-FBCM]. • “How accurate and reliable the sources I use to support my answers are” [CTI-17:i4-CCP].Sta

Source: Elaborated by the authors.

When addressing the responses of the FT regarding the SI-6 information situation, the presence of the types of beliefs described above could be seen, with a shared domain between the third and the second (48.9% and 42.0%, respectively) versus the first (9.1%).

Furthermore, regarding the information provided by the FTs about IS-7, a majority of FTs identified with this practice (62.5%), compared to those who did not (37.5%). Additionally, based on the analysis of supporting justifications, the types of beliefs described earlier emerged (see Table 5). Furthermore, it was noted that there was a dominant belief type related to objective beliefs, with the following percentage frequencies: Dogmatic: 13.1%, Objective: 52.4%, and Constructive: 34.5%.

Table 5.

Beliefs/Subcategory-Source of Knowledge.

Type of Belief	Examples of Answers and Justifications
Dogmatic	- Yes. "In one Word document I extract all the information, then I start extracting the main ideas and writing my work in another Word document" [CTI- 32:i13-CLD]. - No. "I take the time to read and look for the main ideas and key concepts" [CTI- 62:i13-KAAM].
Objective	- Yes. "Many times these same ideas are translated into a more appropriate language where we ourselves can understand each other" [CTI- 82: i13 -BGPC]. - No. "I look for and use what is useful to me, often by paraphrasing or using part of what they say" [CTI-71: i13 -IAPM].
Constructive	- Yes. "I usually quote but then I supplement with my point of view and my own arguments based on the quote and the information I want to give" [CTI-3: i13 -MOF]. - No. "I prefer to paraphrase and write in my own words, as this helps me to better understand the information (...) [CTI- 5:i 13 -MD].

Source: Elaborated by the authors.

b) Justification of Knowledge

When asked to identify with the information situation IS-8, a greater representation of the dualistic belief (56.8%) was observed, compared to the reasoned one (43.2%).

4.2. On the Motivations

Regarding the statement corresponding to information situation IS-9, 61.4% of the FTs were identified, while 38.6% expressed their non-acceptance. Based on this, and in relation to the supporting justifications, three classifications were evident, where duty, as a motivation, is associated with *obedience to rules*, with *academic functionality*, and with *self-regulation* (see Table 6).

It is noted that all justifications framed within the last two classifications belong to the group of FTs that did not identify with the assertion. Additionally, it is specified that the justifications showed a predominance of motivations arising from duty as obedience to rules (58.2%), compared to the motivations in the second and third classifications (22.4% and 19.1%, respectively).

Table 6.
Motivations/Category-Duty

Duty, as a Motivation Associated With:	Descriptor: Duty is recognized as: ...	Examples of Responses and Justifications
Obedience to rules	an external obligation viewed as an imposition.	▪ Yes. "It is very common that sometimes we do not feel like doing a job that on another occasion we would do with total willingness, but sometimes we just limit ourselves to looking at the rubric and fulfilling it rather than seeking to stand out" [CTI-34:i1-VBC]. ▪ No. "I am looking for some music or something that will motivate me to fulfill the request" [CTI-32:i1-CLV].
Academic functionality	part of an academic commitment.	▪ No. "I usually review the work done before submitting it, making sure I am satisfied with what has been submitted." [CTI- 2:i1-TEDNR]. ▪ No. "No, because I always like to give more than what is asked of me, to make sure that my work is done well" [CTI-4:i1-IJCG].
Self-regulation	part of academic and social responsibility.	▪ No. "Even if I have little motivation to submit academic work, I always give my best. Because that way I improve as a professional and as a person" [CTI-37:i1-CLL]. ▪ No. "I tend to look for motivation within the same information that I require or need, not just by searching in a single knowledge network, but rather by asking people around me and online." [CTI-81:i1-VPAA].

Source: Elaborated by the authors.

Regarding the assertion in information situation IS-10, 58.0% of the FTs were identified, while 42.0% expressed their non-acceptance. In this regard, the justifications presented fell into three categories: *wanting as an instrumental motivation, as formative motivation, and as projective motivation* (see Table 7).

It is noted that all justifications related to the last classification were presented by the FT group who identified with the assertion. It is also shared that there was a shared domain between the first two classifications, according to the following proportions: Instrumental/immediate: 40.5%, formative/functional: 35.4%, and projective/self-realization: 24.1%.

Table 7

Motivations/Category: Wanting

Wanting as a Motivation That Is:	Descriptor: Wanting...	Examples of Answers and Justifications
Instrumental/ immediate	is limited to external and short-term benefits.	- Yes. "When motivation is low, one usually does the work for the grade" [CTI-86:i7-SNAC]. - No. "I usually don't think much about what the job can give me if it's demotivating me. I just do it." [CTI-29:i7-VTT].
Formative/ functional	connects with learning or useful skills.	- Yeah." If I consider the knowledge extracted from that work useful, I can increase my motivation" [CTI-66:i7-JJHO]. - No." Honestly, I don't think much about what it can bring me. However, I do think about the impression I can make and I try to do my best." [CTI-49:i7-FOR].
Projective/ self-realization	is linked to personal, professional, and social development.	- Yes. " Considering that most of the work I have done in my career has served as a basis for my pedagogical actions, so I tend to think about the benefits of them " [CTI-64:i7-MMPC]. - Yes. "I think about what this knowledge can offer me, I am motivated to discover and develop my ideas so that I can contribute to this world with more information" [CTI-12:i7-BC].

Source: Elaborated by the authors.

Regarding the information situation SI-12, the reasons presented fell into three types of motivation: *External*, *functional*, and *projective* (see Table 8). Additionally, it was noted that the first type of motivation was dominant, accounting for 66.2% of the reasons presented; followed by the second and third types of motivation with 27.3% and 6.5%, respectively.

Table 8

Motivations/Categories: Wanting and Having to

Type of Motivation	Descriptor: The completion of an academic work: ...	Examples of Reasons
External/ Instrumental	It is associated with a "duty to comply".	"Because I don't want to fail" [CTI-48:i9-CM]. "Grade and academic performance" [CTI- 15:i9-MLV].
Functional/ Formative	It is recognized as useful for immediate learning.	"Because something interesting or important might come up at work that I can contribute to" [CTI-57:i9-CG] "First, because I always finish what I start, and while I don't start a job, it is my own decision to study the degree I like and with it the responsibility to complete all the activities required by each subject. Second, because I consciously decide to learn from each subject, regardless of the teacher in charge." [CTI-37:i9-CLL]

Projective/ Self- actualization	It is linked to the personal, professional and social project.	▪ "Because it is my responsibility and it is something that will serve me in the future" [CTI-76:i9-AA] ▪ "I think of it not as just another grade or something I need, but as how it will help me in the future as a teacher, how doing the job will help me be better" [CTI-6:i9-FBCM].
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Source: Elaborated by the authors.

4.3. On the Skills

4.3.1. Knowing

From an integrated perspective, the second route presented in the IS-13 information situation showed the majority choice, almost dominant, corresponding to 49.2%; it is followed by route three with 26.1%, route one with 18.1%. Finally, there were instances of *multiple routes*, characterized by the FT being associated with more than one route, in which, coincidentally, the second route is the one with common occurrence.

Regarding information situation IS-14, the reported information was categorized into three levels of knowledge: *simple*, *relational*, and *complex* (see Table 9). A degree of mastery of the second level was observed, given that the relative frequencies were 3.8%, 57.7%, and 38.5%, respectively.

Table 9

Aptitudes /Knowledge Category

Level of knowledge	Descriptor:	Statements
Simple (Limited or generic)	Sources are identified... without justification or with a very basic justification.	▪ "Pages and texts of MINEDUC" [CTI- 21:i11-PVG]. ▪ "Google" [CTI-32:i11-CLV]
Relational (Functional and academic)	as academic and they are justified based on corresponding criteria.	▪ "Yes, I know for sure that one of the best places to find information on topics related to my degree is Google Scholar, because there I find reliable articles, research, and texts that are very useful to me, especially on education topics. (...)" [CTI-13:i11-ASGG] ▪ "Google Scholar, because of the variety of sources and perspectives you can find on the same topic." [CTI-16:i11-IMMAM].
Complex (contextual and integrated)	specialized and are justified based on complex and contextual criteria.	▪ "I use Google Scholar and always use the databases provided by the university, as they offer various paths I can follow in my research." [CTI-30:i11-MENN]. ▪ "I tend to use the databases of the unab library, where I mainly use Scopus, scielo and different platforms." [CTI-60:i11-NHCh].

Source: Elaborated by the authors.

The results related to the IS-15 information situation showed a predominance of critical or reflective criteria (60.1%), which includes perspective (conceptual, theoretical, or ideological support) and approach (methodological or disciplinary support). Elementary or basic criteria (including relevance and authorship) accounted for 33.0%.

4.3.2. Being Able To

Regarding the three informational capabilities defined in the IS-16 informational situation, and based on the FT reports for sufficiency or insufficiency, no dominant presence was observed, as their proportions ranged between 25% and 37.5%. This indicates an apparent balance among the three capabilities in question.

Additionally, and with a proportion of 6%, the FT showed other abilities related to information processing, where analytical reading, writing and contribution in group work were listed as deficiencies, while vocabulary was a proof of sufficiency.

5. DISCUSSION

Regarding the results, when evaluating information, the primary belief is that information is susceptible to change, refinement, and revision in light of new evidence (Valencia et al., 2023; Cobern et al., 2022). However, when evaluating concepts generated by AI, and even when more sophisticated beliefs coexist, there seems to be a tendency to perceive certain statements as definitive and unquestionable (Yıldırım & Biçer, 2023).

From the importance attributed to the information used, it follows that FTs assume information not as isolated data, but as a network of connected and coherent ideas with specific approaches (Guilfoyle et al., 2024; Vargas et al., 2021).

Regarding the importance attributed to the ideas of authorship, the influence of beliefs is understood as: i) Normative, when it is seen as "controllable" and is valued according to external norms (Goegan et al., 2023); ii) Functional, when it is seen as a strategy, a tool that legitimizes and offers support (Kulju et al., 2024) and iii) Epistemic, when it is assumed as a process of building knowledge and interactions (Lehtinen et al., 2023).

Regarding evaluation criteria, the presence of beliefs is interpreted as: i) Dogmatic, when the prestige of the source takes place as legitimation (Arias-Ferrer et al., 2024); ii) Objective, when clarity or usefulness, as well as the presence of analysis, become important (Greisel et al., 2023) and iii) Constructive, when it is crucial to contrast perspectives and evaluate relevance (Molitor et al., 2025).

In this same informational dimension, and in relation to information that is shared verbally, a tendency towards open and reflective forms of thinking is deciphered. That is, it suggests that the majority assumes an active position in the evaluation of the source and its information, recognizing the need to contrast, contextualize and substantiate judgments being made (Sharkey & Gash, 2020).

The habit of simply fulfilling teaching requirements suggests a stance consistent with dependent motivations, that is, those driven by factors external to the individual (Díaz-Chieng et al., 2025). Furthermore, "having to," as a motivation, is interpreted as being associated with: i) Obedience to rules, when these are analogous to a procedure (Spiteri, 2025); ii) Academic functionality, when its contribution to academic performance is recognized (Santos et al., 2021); and iii) Self-regulation, when it is seen as a contribution in different scenarios (Peciuliauskiene et al., 2022).

For their part, the justifications that support identifying with thinking about the contribution that an academic work may have, lead to understanding that "wanting" is a motivation: i) Instrumental, if it is guided by extrinsic incentives (Espinoza-Colón and Medina-Gual, 2021); ii) Formative, when the scope is practical and limited (Valenzuela et al., 2020) and iii) Projective, if the personal and professional implication is recognized (Nieto-Isidro et al., 2021).

The reasons that guide the completion of an academic work decipher the presence of motivations: i) External, when justifying it based on external factors of obligation or control (Espinoza-Colón & Medina Gual, 2021); ii) Functional, when it is linked to learning (Gómez-Pablos et al., 2020) and iii) Projective, because the "wanting to train" for life takes precedence (Mero-Bravo et al., 2024).

From the statements regarding preferred sources of information in the field of training, it can be deduced that there are areas of knowledge where the access criteria are: i) Simple: No distinction is made between quality and relevance (Artemova & Uribe-Ruiz, 2025); ii) Relational: Focused on currentness and reliability (Zeballos & Pumacahua, 2023) and iii) Complex: Based on relevance, contrast of sources and applicability, an aspect that reveals knowledge that favors critical analysis (Huarca, 2025).

From a comparison with other studies, investigating beliefs related to the IC of the FT, theoretically and methodologically, turns out to be a contributing process in the description of these competencies; this is because the perspective allows addressing a variety of elements, which become new objects of research.

An example of the above is the study of Goegan et al. (2023), which addresses *plagiarism* that, as an element associated with the *information use* dimension, formed part of the approach to the beliefs of faculty members regarding academic dishonesty. Despite differences in method and approach compared to that study, this work similarly draws on the use of informational situations or scenarios as a pretext for identifying trends.

When compared with quantitative studies such as those by Nieto-Isidro et al. (2021; 2022) and Turpo- Gebera et al. (2023), where the aim was to measure self-perceived IC, it can be seen that in these investigations motivation represents one of the three variables considered to evaluate the importance of IC in relation to academic progress.

In contrast to previous research, this study focuses on an approach to the *desires* and *obligations* that, as motivations, guide information literacy practices. Furthermore, two aspects are observed to be in harmony: first, the search for

recognition of knowledge related to actions in the three dimensions of information literacy; and second, the presence of the “being able to” category when participants are asked to communicate aspects that require improvement in their competence.

In the same vein as before, and when examining the studies of de los Santos Lorenzo (2021) and Nieto-Isidro et al. (2021; 2022), where the observed CI was measured, it was possible to find a topic of methodological proximity in the design of the instrument used, since it resorts to the formulation of *problem situations*, as a basis for diagnosing components of IC, an aspect that favors the relationship between what is questioned and the academic realities of the FT.

Regarding the implications of the findings, it is evident that they contribute to and challenge the historical-cultural perspective of competence, a perspective which, according to Barbosa-Chacón et al. (2025), is the least explored compared to others such as the objectivist-behavioral and cognitivist perspectives. This is a contribution because it is an experience that adds to the broader understanding of the categories and subcategories of IC modalities, by classifying them into typologies and levels that characterize them within the specific context.

It is a challenge, as it encourages us to continue redefining the ways of interpreting IC in FTs, given that these include situated cultural factors that mediate the relationships between user and information (Barbosa-Chacón & Mendoza-Lira, 2026).

Regarding the study's relevance, it is important on both theoretical and practical levels. First, and from a historical-cultural perspective, it provides an understanding of how beliefs, motivations, and aptitudes mediate the development of intellectual competence in educators, demonstrating that these competencies are not acquired and developed in isolation, but rather in accordance with the specific social and cultural situations and contexts that define them.

Second, the findings form a basis for the design of possible training strategies to strengthen informational autonomy, critical reflection and the ethical use of information in ITT programs, challenges that are in line with the demands of the information and knowledge society.

Among the limitations, the study presents certain constraints that must be considered when interpreting its results. First, there is the descriptive and contextual nature of the research, an aspect that limits the possibility of drawing inferences or generalizing the findings to other contexts. In other words, the study can serve as a reference point for developing similar research approaches, but with the understanding that contextualization is essential.

Second, the information obtained from the questionnaire may be subject to biases related to social desirability and subjective interpretation. These limitations suggest the need to broaden the perspective by drawing on on-site experiences—precisely as called for in the observational approach that forms the basis of the questionnaire used here.

6. CONCLUSIONS

- The configuration of the cognitive abilities of the learning outcomes is not a static state, but a process that moves between potential, actual, and realized levels through tripartite structures. This configuration also depends on the cognitive dimension that is activated in the learning context.
- The information practices of the FTs are guided more by external obligations than by the subject's intrinsic autonomy. Therefore, the interpretation highlights a relativistic view of knowledge and an orientation marked by extrinsic motivation.
- The knowledge of FTs progresses from basic functional levels to complex-reflective processes. This progression demonstrates that instrumental and self-regulatory capacities coexist, allowing for adaptation according to available personal or contextual resources.

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