



Article

A Qualitative and Quantitative Study on Critical Thinking in Social Education Degree Students

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Abstract: Critical thinking is present in the educational intentions in higher education with more or less programmatic development. In the training of social educators, such thinking is considered a fundamental pillar for a good performance of their functions in the social field. By means of qualitative and quantitative instruments, we set ourselves the objective of knowing the opinions of 72 Social Education degree students of the University of Huelva (Spain) about critical thinking, higher education, and their position on the subject. The results obtained showed that students have an approximate general knowledge of what critical thinking is, but a clear lack of knowledge of how it is developed. In addition, it is observed that there is a great contradiction between what they say and what they actually do, as, although they value its development in the degree and professional performance, they do not develop or commit themselves de facto to this competence. Moreover, they recognize that the university is a context that favors critical competence, but at the same time they are very critical about the teachings offered in this regard.



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Keywords: critical thinking; higher education; social education; beliefs

1. Introduction

Critical thinking has gained popularity, having been identified as one of the 21st century skills that people need to succeed in modern society. In this sense, its importance has been claimed as a basic process related with the capacity to give answers to the changing and complex reality of our current world. Moreover, it is considered a social requirement that helps people to discern correctly how to face the constant amount of information and complex social processes of our current society [1–9]. However, there is a simultaneous lack of consensus about what this is, how it is treated, or what it is about [10–13], making difficult, or at least hindering, a consensual epistemological development. Importantly, the approach to the knowledge of critical thinking has been made from different perspectives, disciplines, schools, and fields of knowledge, developing and applying each of them that they have considered relevant [12,14–16]. For instance, disciplines such as philosophy, social sciences, education, psychology, science didactics, sociology, and political science, among others, have addressed and reflected on critical thinking, seeking their specific and own purpose while maintaining this lack of epistemological and conceptual consensus of what it is.

Critical thinking has therefore been defined in a multitude of heterogeneous ways. Thus, it appears as a self-regulated judgment for a specific purpose that depends on the person himself [17,18]; an acquired capacity that allows reasoning and reflecting on what to decide and what to do [18,19]; thinking about oneself in an active and reflective way [20,21]; a strategy of thought, research and process [22]; a way of rational and intuitive reflection that allows us to understand the current world [14]; a judgment based on objective and subjective data previously interpreted and analyzed [3,12]; a way of learning to formulate and solve questions and find accurate conclusions from observation and information [23];

a reflective and intentional way of thinking alternative to the usual way in which cognitive resources are activated [24]; a barrier against excessive information that tries to convince us of anything [25]; a thinking that seeks, in a persistent way, the exploration of what appears [26]; and a type of thinking that is oriented to the understanding of problems but also to their resolution, evaluating alternatives for decision making [2,27].

In an effort to synthesize the different theoretical contributions, Vendrell and Rodríguez [28] propose a multidisciplinary definition of critical thinking that we adopt in the present research (see also for a multidisciplinary definition [29]): “Critical thinking is an active metacognitive process that through the stimulation and coalition of certain skills, dispositions and knowledge, helps us to elaborate a premeditated and introspective judgment that directs us towards action or problem solving in an effective and efficient manner” (p. 13). Skills refer to the cognitive component of critical thinking, highlighting the ability to analyze, argue, make inferences, evaluate, or make decisions among an extensive set established by different theorists and researchers. Furthermore, dispositions refer to the affective component of critical thinking, including intellectual constancy, intellectual constancy, the ability to empathize, to keep oneself informed, intellectual autonomy, intellectual humility, and the ability not to remain in prejudice or value judgment.

Previous research has shown a sustained interest from educators in teaching critical thinking, as both an important life and professional skill, especially in university educators. In the same way, university students tend to consider that the development of this type of thinking is not innate, but an important development during their academic training [15], being essential for their future professional work [30,31]. However, several studies have shown that this concept is not clear for both university teachers and students; even though they consider it important to develop [28,32,33], they show biased conceptions of what critical thinking really is. For instance, Vendrell and Rodríguez [28], pointed out that the development of thinking skills in higher education, such as critical thinking, is more useful for students’ personal, professional, and social lives, than repeating and memorizing external information. However, the concept seems to not be clear enough, highlighting the need to facilitate a clear conceptualization of this construct. In line with this result, Rodolfa et al. [30] found, in a sample of psychology university students from United States and Canada, that the lack of knowledge about this construct facilitates the students considering critical thinking as a less important competence when practicing their profession, giving more importance to scientific knowledge.

Moreover, several studies and theoretical backgrounds have linked critical thinking with other thinking skills, such as creativity or reflection, but without defining a theoretical foundation [5,21,34,35]. For instance, Ayola and Moscote [5,21] found that university students have a limited conception of what critical thinking is, considering this construct as an ability to be creative and to solve problems in a way that allows them to develop new knowledge.

In this sense, critical thinking has been mostly linked with analysis and reasoning processes; in some cases, with questioning and decision making; and in a lesser extent with commitment to social change [2]. Good intentions, some of them conveniently programmed, disagree with the warning of Tamayo et al. [36] when they state that, when approaching the knowledge of what is done, we start from what we are told, this being a major problem when analyzing what really happens. In the field that concerns us, the reality of good intentions that claim the importance of developing critical thinking skills clashes with the weight of a reproductive learning tradition and a way of understanding university education that obviates worrying elements for the students’ professional future. In this sense, students may present representative cognitive biases, understood as the estimation of how likely an event is to occur using prior beliefs while ignoring other potentially useful information about the situation or problem, if they are not trained specifically on them [37]. In turn, they may present difficulties in the analysis of divergent or contrary positions [38];

and they may continue to have deficiencies and difficulties when they try to develop critical thinking in the classroom [13].

Taking into account the general lack of knowledge about critical thinking in university students, but considering its importance in personal, social, and professional life (e.g., [4,5]) the objective of the present study was to analyze the knowledge, beliefs, and attitudes about critical competence, as well as its conceptualization and characteristics, in a sample of Social Education university students from the University of Huelva. This is especially relevant in this sample considering that, throughout their initial training, it is established that students should achieve, as basic competences, “the ability to gather and interpret relevant data to make judgments that include a reflection on relevant social, scientific, or ethical issues” and “promoting a personal and group stance of critical and emancipatory autonomy in the interpretation of messages from the media and social communication in general and facing persuasive language from these media in particular” [39]. In this sense, we try to continue deepening the research into one of the recommendations made by international statements about the importance of cultivate critical and independent thinking in high education [4,9], while analyzing this construct in social educators training, considering the lack of national and international research in this field.

2. Materials and Methods

2.1. Study Design and Ethical Approval

A descriptive-correlational design was followed to evaluate the people’s beliefs under study, in order to analyze how a phenomenon comes to be and manifests itself, and how the elements analyzed are related [40].

This study was conducted following the ethical principles of the Declaration of Helsinki and the Belmont Report. Prior to data collection, written informed consent was obtained from each participant.

2.2. Participants

The study sample is not probabilistic due to the demands of the research to know the beliefs and positioning of the research object about critical competence in the degree, at university, and in the professional future. This is a limitation, due to the impossibility of generalizing the results to the entire population. Following Hernández Sampieri et al. [40], the usefulness of the qualitative approach lies in the great richness that the cases that interest the researcher can offer in terms of data collection and analysis. In this sense, the convenient sample used in this work was composed of 72 students of the University of Huelva from an initial group of 85 of the Degree in Social Education; 13 were discarded for not adequately completing the evaluation instrument. Regarding the percentage out of the total, 16.7% were men ($n = 12$) and the remaining 83.3% were women ($n = 60$); this difference is in line with the sex ratio found in the degree program. In terms of age, they were distributed in two groups, one from 20- to 22-year-old group, which constituted 88.9% of the sample ($n = 64$), and the other from 25- to 26-year-old group, completing the sample with the remaining 11.1% ($n = 8$). No differences in any of the assessed dimensions between the age groups were found in the selected sample. All 100% of the sample was studying for a degree in Social Education, with at least two years completed in the degree program, as for the research it was considered necessary for the sample to have previous experience in the university context; 66.5% were enrolled in the second year of the degree program and the remaining 33.5% in the third year. Finally, 100% of the students from 25–26-year-old group are simultaneously studying and working. The rest are only studying.

2.3. Instruments

A specifically designed 30 item questionnaire was used according to the objectives of the research and the population under study. It consisted of purely descriptive questions such as age, sex, last studies carried out (excluding the current one), and work, using Likert-type questions and open questions to deal specifically with content analysis.

Considering the research objective, a group of experts was chosen to validate the instrument. In this sense, the initial questionnaire was presented to 4 professionals related to the area of developmental psychology and education with extensive research experience, who screened the initial questionnaire composed of 38 questions, discarding 8 items that were either not clearly related to the research objective or were redundant, leaving a total of 30. The distribution of the instrument combines purely descriptive questions such as sex, age group, with a Likert-type scale that measure the students' beliefs about critical thinking (Table 1), and open-ended questions that seek in-depth content analysis to determine the degree of knowledge they have about the topic under investigation (Table 2). The scale presented acceptable factorial validity, KMO = 0.53, Bartlett Sphericity test $\chi^2(105) = 192.75$, $p < 0.001$, with items' communalities over 0.50 and one bigger factor with eigenvalue = 2.69. Moreover, Guttman's split-half coefficient reliability was 0.46. An overall factor on critical thinking was calculated and the indicators were also separately examined in the subsequent analyses, as they represent different aspects of critical thinking.

Table 1. Questionnaire structure.

14 Likert-Type Questions:	
•	I consider my level of knowledge of critical thinking to be high
•	The university favors critical thinking
•	Today's society favors critical thinking
•	The people with whom I usually interact outside the university have critical thinking skills
•	The people with whom I usually interact at the university are critical thinkers
•	The subjects taken at university favor critical thinking
•	I have taken subjects at university that have had the explicit objective of developing critical thinking
•	The situation of today's society demands people with critical thinking
•	I know how to discriminate the essential from the circumstantial
•	I have the ability to argue
•	Critical thinking is fundamental in my degree
•	Critical thinking is fundamental in my profession
•	I have taken or am taking specific training courses in critical thinking

Table 2. Questionnaire structure.

Open Questions:	
•	How would you define critical thinking?
•	What are the defining characteristics of a critical thinker?
•	Who has influenced you most in your critical thinking?

2.4. Procedure

The used data analysis techniques were, first, quantitative analysis to extract information from the questionnaire, using descriptive statistical techniques, frequency analysis, contingency analysis, and Pearson's correlation coefficient. The SPSS.23 statistical package was used for this purpose.

Furthermore, a qualitative analysis was performed, aimed at analyzing the content in order to extract the relevant information for the present research. For this purpose, the phases of data reduction, data presentation, and drawing of conclusions were followed, using the ATLAS.ti 7.5.7 program, following the steps of preparation, planning, data collection, analysis and writing that frame the qualitative analysis. The use of this method is based on the need to explore this socio-educational reality without explaining it on the basis of any preconceived theory. On the contrary, it is used to develop and describe concepts and hypotheses based on the data and categories that emerge from the discourses.

3. Results

3.1. Quantitative Analysis

When examining the frequencies of responses of the sample to the different questions, the following results were obtained: 95.8% of the sample considers critical thinking to be very important; in turn, 12.5% say that their degree of knowledge about critical thinking is very low, with most of opinions being that they know something about critical thinking (79.2%). As for the opinion they have about the university on the subject in question, 27.8% think that the university does not encourage critical thinking, with the remaining proportion having a positive opinion in this regard (72.2%). When asked if they consider that the taken subjects favor, in its majority, critical thinking, only 20.8% totally agree, with the majority having doubts in this regard (54.2%) or expressing their total disagreement with this statement (25%); however, this tendency is significantly reversed when the question is reduced to some subjects throughout their studies with 11.1%, compared to 69.4% who indicate that they have had certain subjects that fostered critical thinking; even so, 100% of the sample considers it important and positive that, in the university, there are workshops and specific courses that encourage the learning of critical thinking and argumentative capacity, 86.1% expressing in this last case total agreement and 13.9% agreement. Moreover, 100% consider critical thinking necessary in the degree of Social Education and in professional performance. This intention clashes with a reality: only 20.8% of the sample has been interested in taking courses, going to workshops, attending to readings, etc., on critical thinking, while 79.2% indicate that they have not done anything related to the topic in question.

As for the question regarding the characteristics of today's society requiring people with critical thinking, who know how to discriminate the fundamental from the accessory, 23.6% say that they do not agree at all, 29.2% express that they totally agree, and a majority of 47.2% say that they agree somewhat. In this same context of reflection, when asked about the degrees of agreement with the statement "today's society favors critical positions", 33.3% totally disagree, with 11.1% indicating the opposite; the majority, 55.6%, opt for a more intermediate position.

Focusing on the perception that the sample has about critical thinking in relation to itself, the following frequencies appear: only 8.3% admit having a high knowledge of what critical thinking means, with the majority (79.2%) thinking that they have some knowledge about the subject in question; the remaining 12.5% admit not knowing about critical thinking. When asked if they believe that they know how to discriminate the accessory from the essential in speeches, 73.6% indicate that they do not always, compared to 25% who indicate that they always do. Along the same lines, when we focus on the ability to argue in the field of Social Education, we find a more polarized position, in the sense that 52.8% consider that they do not have the ability to argue at all, with 40.3% indicating the opposite. Finally, when asked about their argumentative capacity beyond the degree, referring to their daily life in general, 38.9% indicate that their argumentative capacity is high, while 8.3% say it is low or very low; even so, the majority show doubts about their argumentative capacity in general (52.8%).

No significant differences were found in any of the variables according to gender or age group. No differences in the overall factor were observed in gender, $t(70) = -0.84$, $p = 404$, nor in age group, $t(70) = 0.28$, $p = 777$.

Furthermore, significant correlations are obtained (Table 3) between "I consider that my degree of knowledge of critical thinking is high" and "I know how to discriminate the essential from the circumstantial in a discourse" ($r = 0.248$; $p < 0.05$); "I consider that my degree of knowledge of critical thinking is high" and "critical thinking is necessary in my degree" ($r = 0.250$; $p < 0.05$); and "I consider that my degree of knowledge of critical thinking is high" and "it is necessary for the university to teach critical thinking" ($r = 0.243$; $p < 0.05$).

An interesting result obtained is to consider that, due to the characteristics of today's society, it is necessary to enhance the knowledge of critical thinking in the degree of Social Education ($r = -0.271$; $p < 0.05$).

Regarding the people with whom the respondents usually interact, it is observed that there is a significant correlation when interacting with people who present critical thinking both in the university context and outside of the same institution ($r = 0.270$; $p < 0.05$).

Table 3. Bivariate correlations.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
GC	1													
UF	-0.107	1												
SF	-0.020	-0.001	1											
PNU	-0.123	0.268 *	-0.154	1										
PU	0.076	0.127	-0.097	0.270 *	1									
MU	0.076	-0.060	-0.063	0.055	0.078	1								
AU	0.034	-0.087	-0.005	0.044	0.231	-0.025	1							
SP	0.049	0.077	0.205	0.088	0.267 *	-0.016	0.019	1						
D	0.248 *	0.064	0.001	0.001	0.040	-0.051	0.138	0.170	1					
TPC	0.250 *	-0.058	-0.271 *	-0.066	0.098	0.099	0.275 *	-0.155	0.061	1				
PPC	0.147	-0.033	-0.109	0.053	0.189	0.191	0.196	-0.141	0.119	0.626 **	1			
A	0.212	-0.153	0.174	0.064	0.108	-0.036	-0.037	0.170	-0.092	-0.140	-0.030	1		
USIPC	0.243 *	-0.097	0.049	-0.111	0.151	0.000	0.015	0.087	0.104	0.314 **	0.260 *	0.258 *	1	
CPS	0.047	0.179	0.270 *	0.124	0.166	-0.128	0.063	0.244 *	0.334 **	-0.231	-0.071	0.174	-0.013	1

* Correlation is significant at the 0.05 level (bilateral). ** Correlation is significant at the 0.01 level (bilateral). Note. GC = degree of knowledge of PC; UF = university favors PC; SF = society favors PC; PNU = known outside the university PC; PU = known in the university PC; MU = university subjects favor PC; AU = there are subjects in the university that favor PC; SP = society demands people with PC; D = I can discriminate the important from the accessory; TPC = in my degree, PC is fundamental; PPC = in my profession, PC is fundamental; A = I am able to argue; USIPC = it is necessary that the university teaches PC; CPS = I take PC courses.

Moreover, a positive correlation is also evident when positively valuing that "the situation of the current society demands people with critical thinking who know how to discriminate the fundamental from the circumstantial" with the fact of "taking specific training courses in critical thinking" ($r = 0.244$; $p < 0.05$).

Regarding the variable "it is necessary for the university to teach critical thinking", there is a significant correlation with a) "in my profession critical thinking is fundamental" ($r = 0.260$; $p < 0.05$); and b) "I know how to discriminate the essential from the circumstantial in a discourse" ($r = 0.258$; $p < 0.05$), implying that the greater the critical capacity, the greater the need for specialized training is felt.

The highest significance in the correlations is found between the variables "I know how to discriminate the essential from the circumstantial in a discourse" with "I take specific training courses in critical thinking" ($r = 0.334$; $p < 0.01$); "critical thinking is necessary in my degree" with a) "critical thinking is fundamental in my profession" ($r = 0.626$; $p < 0.01$); and with b) "it is necessary that critical thinking be taught in university" ($r = 0.314$; $p < 0.01$).

Concerning the associations with the overall factor of critical thinking, the greatest correlations were observed with the indicators of the importance of critical thinking in the degree, $r = 0.853$, $p < 0.001$, and in the profession, $r = 0.772$, $p < 0.001$, while the lowest was detected with the role of people outside the university for critical thinking, $r = -0.078$, $p = 0.515$.

3.2. Qualitative Analysis

The content analysis of the answers given by the students analyzed yields interesting data indicating that, although in general they have not received specific training in critical thinking, according to 79.2% of the students surveyed, the degree of knowledge about it is

high. This is reflected in Table 4, which shows the definitions, synthesized in categories of analysis, that the sample as a whole gives about critical thinking, and which we categorize according to the three elements accepted by the scientific community and theorists of the subject Vendrell and Rodríguez [28].

Table 4. Categorization according to the elements detected in the responses to the question “How would you define critical thinking”?

Abilities	Dispositions	Knowledge
<ul style="list-style-type: none"> • Analysis • Reflection • Reasoning • Questioning • Evaluation • Interpret • Understanding • Expressing • Argue 	<ul style="list-style-type: none"> • Freedom • Fairness • Humility • Objectivity • Nonconformity • Search for information • Interest • Opinionated • Sincerity • Breadth of vision • Consistency 	<ul style="list-style-type: none"> • Grounded in some topic • Ideas formed from previous knowledge, with a theoretical basis

Table 5 shows the frequency of the words used by the sample to define the concept of critical thinking.

Table 5. Frequency of words used when defining critical thinking.

Words	Frequencies	Words	Frequencies	Words	Frequencies
Capacity	22	Search	2	Inquire	1
Get informed	18	Change	2	Take an interest	1
Analyse	17	Create	2		
Know	13	Differentiate	2	Judge	1
Reflect	8	Learn	1	Justify	1
Questioning	7	Assertive	1	Freedom	1
Influence	6	Compare	1	Propose	1
Give an opinion	6	Communicate	1	Position ourselves	1
Understand	5	Decide	1		
Express	5	Define	1	Reasoning	1
Contrast	4	Debug	1	Sincerity	1
Interpret	4	Doubt	1	Value	1
Rethink	4	Evaluate	1	Verify	1
Argue	3	Guide	1		
Order	3				

The characteristics that they consider a person with critical thinking should have are those shown in Table 6. The frequencies obtained for the words provided are shown in Table 7.

Finally, when asked why or who has influenced them the most in developing critical thinking, the results are shown in Table 8.

Table 6. List of characteristics related to critical thinking.

Categorization According to the Elements Established by the Research		
Abilities	Dispositions	Knowledge
<ul style="list-style-type: none"> • Reflective • Analytical 	<ul style="list-style-type: none"> • Curious • Interested • Ability to work with others • Intelligent • Extroverted • Calm • Social conscience • Critical • Autonomous • Mature • Empathetic • Eager and willing to learn • Confident • Consistent • A good listener • Does not allow herself to be manipulated • Determined • Humble • Nonconformist • Fighter • Hardworking 	<ul style="list-style-type: none"> • Cultured

Table 7. Frequency of words when indicating the characteristics of the critical thinker.

Words	Frequencies	Words	Frequencies	Words	Frequencies
Ability	17	Consistency	3	Sincere	2
Cultured	15	Influential	3	Calm	1
Reflective	12	Logic	3	Consistent	1
Analytical	11	Reasoning	3	Fair	1
Knowledge	9	Active	2	Fighter	1
Empathetic	8	Awareness	2	Freedom	1
Curious	6	Charisma	2	Good	1
Intelligence	6	Competent	2	Humble	1
Assertive	5	Contrast	2	Independent	1
Objectivity	5	Determined	2	interpersonal	1
Open	5	Educated	2	interpretation	1
Autonomy	4	Flexibility	2	intrapersonal	1
Interest	4	Maturity	2	Leader	1
Personality	4	Researcher	2	Outgoing	1
Confidence	3	Security	2	Responsibility	1
				Self-awareness	1
				Understanding	1

Table 8. Frequency of words in response to “Who/what has influenced you most in the development of your critical thinking”?

Words	Frequencies
teachers	38
studies	34
family	33
friends	11
All	8
books	6
experiences	4
circumstances	2
society	2

4. Discussion

Critical competence and the training of the future social educator are elements that, at least by educational intentions, are clearly established in the theoretical ideology of the degree.

As far as we know, research on critical thinking in Social Education university students is almost non-existent. Within the educational field, we are only aware of the study of Díaz et al. [31] which addresses the theoretical knowledge of students about critical thinking in a group of 4th year pedagogy students. These authors found that the most recurrent concepts regarding critical thinking were to analyze, reflect, reason, generate changes, and solve problems. When comparing our study with that of these authors, we find that those obtained by our research are informing, analyzing, knowing, reflecting, and influencing.

Another of the few studies found is that of Al-Mahrooqi and Denman [41], who analyze the level of critical thinking skills of Omani tertiary-level students enrolled in humanities- and science-based colleges. Results indicate a limited use of critical thinking. Female participants received higher overall test scores than their male counterparts, although there was no difference based on college of study.

However, in our study, we have gone deeper and tried to compare the data provided by our students with those from a theoretical model that analyzes critical thinking in depth, that of Vendrell and Rodríguez [28]. At this point, it seems important for us to point out the correspondence between the terms used by our students and those of the theoretical framework from these authors, noting that we found no significant differences as a function of sex and age in terms of position with respect to critical thinking. Thus, in relation to Knowledge, we consider that our students include the two main concepts referred by the theoretical framework, transmitted mainly through the words Get informed and Know, and secondarily by the terms Contrast, Learn, or Take an interest. In relation to the Abilities, it is noteworthy that our students use almost the same terms as the authors who have developed the theoretical framework of reference, indicating, in order of frequency: Analyze, Argue/Give an opinion/Communicate/Position ourselves, Reflect, Questioning, Influence, Rethink/Reasoning, Understand, Express/Define, Interpret, and Differentiate/Compare/Evaluate/Value.

There is more discrepancy and variability with respect to the Dispositions, coinciding with the theoretical framework the words Search and Inquire (by Search for information), Change and Create (by Nonconformity), Sincerity, Freedom, Verify (by Consistency), or Propose (by Interest). Moreover, our students did not refer to important words from the theoretical framework defined by Vendrell and Rodríguez [28] such as Fairness, Humility, Objectivity, Opinionated, or Breadth of Vision. In addition, there are words still to be framed in the theoretical framework referred to by our students as Capacity—which is

also the most frequent word among our students, Order, Assertive, Debug, Doubt, Guide, Judge, and Justify. In this sense, the results show a certain competence of the students of the Degree in Social Education in relation to the knowledge of what critical thinking is and means—of which they themselves are aware by their claims— and a coherent relationship between what they say and what the theoretical development of the same refers; in turn, they also understand theoretically the importance of acquiring critical competence, as well as the need for training; these results coincide with those obtained by Diaz et al. [31] in his research with students of pedagogy.

However, as is also highlighted by the students of our research, and commented on by several authors [15,28,32,33], critical thinking, although a recurrent discourse in universities, has little replication in the educational practices carried out. In this sense, we find it fundamental that university education, and teachers in particular, drive the development of critical thinking in their students. All this as, although the Social Education students of our research report that critical thinking is basic to their professional development, only the highly motivated and conscientious are able to seek this training autonomously, demanding greater impetus and direction from others in this regard. We agree with Valenzuela, Nieto, and Muñoz [24], when they conclude that the intervention to promote critical thinking in students does not only involve the cognitive component, but that students really want to use it.

Thus, in even recognizing this influence, students recognize that they present, in general, important gaps in its application. Although they admit the importance of this competence for their professional development, demanding courses and actions that favor their learning, the reality is that they are not usually involved in their learning, noting the disparity between how teaching and learning are thought and how they are actually applied [15] being a necessary involvement in the process of students and teachers [37,42]. As in the results obtained by Moreno and Velázquez [43], students find it difficult to analyse information, argue, and differentiate the important from the anecdotal, showing more of a reproductive thinking which has nothing to do with criticism, although they consider it important [44]. The person should not behave as a mere passive recipient of information but should take responsibility for their work in a critical, reflective, and proactive way [16].

Moreover, the importance of the university and, specifically, of the figure of the teacher as a great facilitator of critical competence in students is recognized [3,8] above the influence that the media, social networks, or the group of friends can exert. The role of the teacher appears as a fundamental figure that has an impact on the critical development of students [15,36] (see Huber and Kuncel [45] for a meta-analysis of studies). In this sense, the responsibility that university teaching must assume is endorsed by the recognition of this positive influence on the students' maturation process by themselves, in addition to the requirement imposed by the recommendations made by the different national and international organizations and institutions, proclaim the need for the training of critical thinking as a key competence for future professionals in order to face the new challenges of our societies [4,9,46].

The role of university teachers in the stimulation of critical thinking can be reinforced with the use of intervention programs that incorporate information and communication technologies (ICTs), which are highly motivating for students today. This is what is shown in the study by Svenningsen and Pear [47], who apply a computer-aided personalized system of instruction in developing knowledge and critical thinking in blended learning courses, obtaining positive results. In this sense, the work of Gayazov, Zamaletdinova, Amirov, Kostryukov, and Tikhomirova [48] is very useful, pointing out various strategies to stimulate critical thinking in university students. This work defends the usefulness of interdisciplinary units and the use of various learning technologies: interactive, design, and computer. It can also be very motivating for students that teachers encourage them to apply critical thinking to analyze favorite programs or movies among university students, as is done with very good results in the study of Lanagan-Leitzel and Diller [49].

The university becomes an ideal space where critical transfer is really favored [50]. However, Febres, Pérez, and Africano [20], among others, point out it is not enough that the critical intention is part of the programs of the different degrees in an explicit way, but that it is developed in the educational task of the classes [2], favoring the development of this competence in the students according to social demands, and not only as something exotic that has no value for evaluation.

5. Conclusions

Finally, despite the strengths of the study, the main one being the light provided on this important, yet underexplored field, we must also highlight its limitations, mainly the small sample, and the fact that it is not a probabilistic sample, as we focus on the investigation of critical competence in a determined group of students. Although this favors the knowledge of critical thinking in this particular group, we understand that it is also a limitation, due to the impossibility of generalizing the results to the entire population.

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