

Article

Methodologies for Fostering Critical Thinking Skills from University Students' Points of View

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Abstract: Developing critical thinking skills appears to be a challenge for higher education institutions. However, little is known about the students' points of view regarding the methodologies they consider to foster the development of this competence. To answer this question, a total of 263 Spanish university students participated in this study and were asked what they understood by critical thinking and the methodologies they considered to be the most effective for developing it. The results indicated that, based on students' points of view, there were six methodologies that mainly contributed to developing critical thinking: Debates, project-based learning, practices in real contexts, doing research, cooperative learning, and case studies. These results were unanimous regardless of the student's understanding of critical thinking: Analyzing/organizing, reasoning/arguing, questioning/asking oneself, evaluating, taking a position/taking a decision, compromising/acting. These findings have important theoretical and practical implications for teachers and educational institutions in relation to the development of critical thinking in higher education.

Keywords: methodology; critical thinking; thinking skills; students' conception; higher education



Citation: Campo, L.; Galindo-Domínguez, H.; Bezanilla, M.-J.; Fernández-Nogueira, D.; Poblete, M. Methodologies for Fostering Critical Thinking Skills from University Students' Points of View. *Educ. Sci.* **2023**, *13*, 132. <https://doi.org/10.3390/educsci13020132>

Academic Editor: James Albright

Received: 13 December 2022

Revised: 12 January 2023

Accepted: 23 January 2023

Published: 27 January 2023



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1. Introduction

Over the last decades, critical thinking has become a keyword within pedagogic theory and practice. According to Song [1], it is one of the main issues in educational communities, conferences, research studies, workshops, or within university policies. As suggested by Bezanilla et al. [2], critical thinking is oriented to understanding and solving problems, evaluating alternatives, and decision-making. It also involves self-evaluation, meta-thinking, and reflecting before reaching conclusions. These authors also defend, according to research, that in higher education, critical thinking is a key element to achieving a sustainable society. Nevertheless, there seem to be few universities that meet the conditions to develop critical thinking in students [3].

In order to foster this competence, methodologies used by universities and teachers should accomplish certain features oriented to learning. The main characteristic of the different approaches to developing critical thinking in education is that it should be learner-centered instead of teacher-centered [4]. That is, the depth of the learning process that students reach with the methodology chosen by the teacher is crucial for their learning to be durable and transferable to other real situations [5]. This idea can also be found in other studies. For instance, Turner and Baskerville [6] found that teachers thought that students may experience deeper learning when learning tasks were individualized and authentic,

with regular formative and summative feedback, as long as teamwork, teacher-student relationship, and instruction were integrated. In addition, some authors claim that the expectations and instruments used for assessment will predict the performance of the student during their teaching-learning process [5,7].

These elements are presented in different active methodologies as some studies have previously pointed out. Lira-Valdivia [8] proposes that active methodologies may develop students' critical thinking as they stimulate and make their learning process more significant, as well as help them rethink their ideas and opinions. It may, moreover, foster their autonomy, responsibility, and cooperative work. In addition, these active methodologies need to face students with real-world situations and encourage students to ask questions and study the effect and causes of their thoughts and reflections [9].

Furthermore, Kusumoto [10] revealed how interventions based on active learning approaches significantly helped Japanese *EFL* learners enhance their critical thinking disposition ($n = 72$) more than a teacher-centered class ($n = 62$). Despite the fact that the sample was relatively small, these results showed the relevance of active learning methodologies when teaching critical thinking.

As students' points of view should be taken into consideration in their learning process, this study has two main objectives. First, which methodologies they consider to enhance the acquisition of the competence of critical thinking, and second, if these methodologies differ according to their understanding of the competence.

2. Theoretical Background

With regard to teachers' interventions and their points of view, there are studies that highlight the effectiveness of certain methodologies for developing critical thinking skills. Amongst others, there is evidence of the effectiveness of debates or lecture discussions in fostering critical thinking [11–19]. In addition, other studies analyze the advantages of applying the following methodologies: Project-based learning [13,20,21], simulations and practices in real contexts [22,23], service learning, in which students are exposed to authentic or situated problems [24–26], doing research [27], problem-based learning [28–32], cooperative learning [13,33], case studies or scenarios [34,35], feedback and assessment [13,36], role-playing [13], reading [37], analyzing and synthesis of resources [38], writing assignments, essays or reports [18,39,40], conceptual and argument maps [31,41], oral presentations [18], flipped classroom [42], and master classes/storytelling [18].

Despite the fact that the previous studies mentioned above analyzed the effectiveness of those methodologies based on teachers' points of view in order to develop critical thinking, little is known about the effectiveness of teaching-learning methodologies from the students' points of view. If teachers want to develop critical thinking, it may be understood that the perceptions of higher education students would be an important factor to study.

What is clear is that higher education students consider themselves competent in thinking critically when it comes to solving complex problems, analyzing ideas objectively, and evaluating advantages or disadvantages or certain situations [43] and hence, it could be interesting to consider their thoughts. Although there is a scarcity of studies based on students' points of view, these should be considered to analyze the impact of certain methodologies to develop critical thinking. The following are some of the main studies that analyze the effectiveness of certain methodologies from the student's points of view.

- *Feedback*: A study by Castro and González-Palta [44] shows that most of the participant students perceived that the use of peer feedback and discussion through social networks, concretely *Facebook*, contributed to the development of critical thinking. Besides, there was a general degree of satisfaction and a favorable attitude towards the use of this platform to complement their classes.
- *Debate*: Lira Valdivia [8] highlights the importance of using active methodologies, and in particular, the face-to-face forum, for the development of critical thinking in higher education. Students value this methodology at a cognitive level, favoring

“understanding complex ideas”, “ability to analyze problems”, “learning to confront different ideas”, “rethinking opinions before expressing them”, and the “ability to reflect”, to name but a few. Moreover, attitudinal aspects were described, such as “motivation to learn”, “valuing consensus”, “respect for the opinion of others”, “honesty in facing weaknesses”. Scott’s [16] study, which included 111 students in a technology classroom, also examines the effectiveness of debates for developing critical thinking. The results showed that students believed that this methodology helped them to improve their critical thinking skills due to the fact that debates require research, assessing arguments, analysis, questioning assumptions, and demonstrating interpersonal skills. This finding was also shared by Zare and Othman [19], who reached similar conclusions with undergraduate students majoring in Teaching English as a Second Language. According to their study, students thought that they developed their critical thinking skills through debates, as they had to look for evidence and proof to support their arguments and consider different perspectives, as well as points of view. Finally, Zelaieta and Camino [45] found that undergraduate students in Early Childhood Education stated that academic debates in the classroom improved their critical thinking skills as they had to search and analyze information.

- *Problem-Solving, Service Learning, and Reflective Learning*: Collazo Expósito and Geli de Ciurana [46] analyzed students’ points of view about three methodologies employed for the development of critical thinking: Problem-solving, service learning, and reflective learning through a teaching portfolio. Results showed that 90% of the 30 students surveyed were convinced that the application of active methodologies allowed them to develop critical thinking, teamwork, the search for solutions, and understand their surroundings in such a way that they could feel the need to engage themselves to change it for better. Approximately 82% of the participants strongly agreed that the problem posed as a starting point for PBL is essential for their learning process. PBL allows them to work on critical and reflective thinking, and providing a link with real experience and emotions is an effective way to foster greater engagement with the environment. Moreover, 83% of the students agreed that sometimes the questions or learning resources used in the classroom provoked a dilemma or reflection concerning their previous ideas on the topics covered. Further, 77% of the students thought that they sometimes preferred lectures, and 73% said that they would always like to be able to apply some of what they have learned in their work as a secondary school teacher.
- *Practices in real contexts*: García-Carpintero [47] analyzed the thoughts of students regarding the use of a portfolio as a part of an internship context subject (*practicum*). Results showed that the portfolio was a tool that facilitated students’ reflection and critical thinking during their practicum. They saw it as a valuable resource that facilitated self-assessment through a reflective process, as well as generating self-criticism, and the analysis of their practice. This process allowed them to make changes in order to improve their learning.
- *Flipped Classroom*: Rodríguez et al. [9] applied the Flipped Classroom methodology with Medicine students. They mixed jigsaw, cooperative work, and role-play activities. The students thought these activities and methodology contributed to the development of their critical thinking skills, as they had to use their imagination, reflect, and discuss different issues, and thus, the methodology led them to construct sound arguments, elaborate new ideas, and consider different points of view.
- *Role-playing*: Latif et al. [48] observed that role play and debate were both well accepted by medical students in the Problem-Based Learning curriculum as an effective teaching methodology. Both were perceived as good methodologies for improving critical thinking skills. However, role play was perceived as better than debates for integrating knowledge of basic medical sciences into clinical skills and reflecting on real-life experiences.
- *Doing Research*: Sahoo and Mohammed [49] claimed that medical students reported improvement in their critical thinking skills when doing research for writing tasks. All

participants agreed that it helped to apply concepts to new situations in their studies. Moreover, it enhanced higher-order cognitive skills.

- *Case studies:* González-González and Jiménez-Zarco [50] found that, according to students, the use of audio-visual cases in an e-learning context helped students reach accurate problem identification, sensible problem resolution, and critical thinking development.

What is clear from the analysis of these studies is that although there is some evidence of how a certain methodology may develop students' critical thinking skills, little is known about the effectiveness of the different methodologies from the students' point of view. This is the reason why this study attempts to give a reply to the following research questions (RQ):

- RQ1: What are the main methodologies that, according to students, contribute more to developing critical thinking?

Hence, the first aim of this study is to understand what are the main methodologies that contribute more to developing critical thinking according to students' points of view.

In addition, we could infer that depending on the conception that the students have about critical thinking, the perceived effectiveness of different methodologies to develop critical thinking may vary. Though little is known about in what way, and that is why the current study also attempts to reply to the following research question (RQ):

- RQ2: Is the perceived effectiveness of the methodologies for developing critical thinking different based on the conception the students have about critical thinking?

Hence, the second aim of this study is to analyze whether there is any type of association between the different methodologies and the students' understanding of critical thinking.

3. Methodology

3.1. Sample

A total of 263 Spanish university students in the field of Social Sciences (Age = 20.40; $SD = 1.38$) participated in this study: 203 came from the University of Deusto (private university) and 63 came from the University of the Basque Country (public university). 187 were females and 76 were males. From the total sample, 56 were students from the double degree of Primary Education and Sports Sciences, 23 from Sports Sciences, 33 from Early Childhood Education, 125 from Primary Education, 15 from Social Education, 3 from Social Work, and 8 from other degrees. From the total sample collected, 42 were enrolled in their first academic year, 62 were enrolled in their second year, 107 were in their third year, and 52 were in their fourth year.

Convenience sampling was used for this sample selection. That is, data were collected from participants based on their proximity to the researchers. Specifically, information was collected from students who belonged to the classes in which the researchers of this study were teaching during the year of data collection. Therefore, this sample represents a portion of the total population of students ($n = 1085$).

3.2. Instruments

An ad-hoc online survey was designed for the entire study. First, students were asked about sociodemographic variables such as age, gender, degree they are studying, etc. Next, they were asked about their conception of critical thinking. In order to do so, they were provided with a list of six different dimensions extracted from a model based on the teacher's perception of critical thinking [2]. These dimensions were analyzing/organizing, reasoning/arguing, questioning/asking oneself, evaluating, taking a position/taking decisions, and acting/compromising. A more detailed description of the dimensions is shown in Appendix A.

- From these six dimensions, students were asked to choose a maximum of three dimensions that corresponded more to their understanding of critical thinking.

Finally, they were provided with a list of methodologies that are commonly applied in higher education. From this list, they were required to select the five methodologies that they considered contributed the most to the development of critical thinking. The list of these methodologies included: Debates, PBL, practices in real contexts, doing research, cooperative learning, case studies, feedback, role-playing, reading and analysis of resources, written work, conceptual maps, service learning, oral presentations, flipped classroom, master classes, and others. Due to the fact that the participants were students in the field of Social Sciences, in which these methodologies were commonly used in both participant universities, they were familiar with all the methodologies listed above.

3.3. Procedure

The procedure of data gathering of students began in May 2021, when the deans and degree coordinators of the faculties gave their permission to collect data for this study. The students were then asked, through their voluntary participation, and always respecting their anonymity and privacy, to accept the terms of the study. They completed the ad-hoc online survey by digital means through *Google Forms* outside university hours. It should be added that students were asked for their email if they wanted to receive a report with the main results of the study.

3.4. Data Analysis

The data analysis process started by studying the frequencies of the different methodologies that contributed more to developing critical thinking. For this purpose, students were given a predetermined list with the different methodologies. From this list, students had to choose five. Then, these frequencies were collected in a cross table with the conception students had about critical thinking. Students' conception of critical thinking was quantitatively measured by means of the different dimensions of the model (analyzing/organizing, reasoning/arguing, etc.). From the different dimensions of critical thinking, students selected a maximum of three.

Finally, based on the information from the cross-table, a correspondence analysis was carried out in order to know whether there was any type of relationship between the different methodologies and students' conceptions of critical thinking. From this analysis, special attention was given to Chi-square value, *p*-value, and explained inertia. First, Chi-square value was useful in order to determine the strength of the association between the different methodologies and students' conception of critical thinking. Moreover, in order to make a sound decision on the correspondence analysis, the *p*-value linked to the Chi-square test revealed whether the association assessed was statistically significant. Second, explained inertia is a concept used in correspondence analyses that express the quantity of explained variance of a cross table regardless of its length. It is calculated by dividing the Chi-square value (X^2) by the total frequencies of the cross-table. Low inertia values mean that all points are located very close to the center and are therefore, very similar, whereas high inertia values in certain categories imply large significant differences in the average profile of rows or columns. This statistical analysis was useful in order to evaluate the quality of the model.

4. Results

In reference to the first aim focused on the students' view of which methodologies contributed more to the development of critical thinking (see Table 1), there are some methodologies that students considered to contribute to developing critical thinking to a greater degree.

As seen in Table 1, university students consider that the best methodologies for developing critical thinking, in order of preference and based on the frequencies (*f*), are debates (*f* = 650; 19.7%), project-based learning (*f* = 468, 14.2%), practices in real contexts (*f* = 364; 11.0%), doing research (*f* = 321; 9.7%), cooperative learning (*f* = 312; 9.5%), and case studies (*f* = 263; 8.0%). These methodologies totaled 8% or more of all the responses.

This threshold, although arbitrarily selected, makes it possible to discriminate between methodologies with more and with less than 200 responses, and there is a gap of more than 2% between the sixth methodology (case studies) and the seventh methodology (feedback). Moreover, there are some other methodologies that students consider do not contribute as much to the development of critical thinking. These methodologies are service learning ($f = 63$; 1.9%), oral presentations ($f = 59$; 1.8%), flipped classroom ($f = 30$; 0.9%), and master classes ($f = 21$; 0.6%).

Table 1. Methodologies that students consider to contribute to developing critical thinking.

Methodologies	f (%)
Debates	650 (19.7%)
PBL	468 (14.2%)
Practices in real contexts	364 (11.0%)
Doing research	321 (9.7%)
Cooperative learning	312 (9.5%)
Case studies	263 (8.0%)
Feedback	195 (5.9%)
Role-playing	170 (5.1%)
Reading and analysis of resources	161 (4.9%)
Written work	114 (3.4%)
Conceptual maps	103 (3.1%)
Service learning	63 (1.9%)
Oral presentations	59 (1.8%)
Flipped classroom	30 (0.9%)
Master classes	21 (0.6%)
Others	2 (>0.01%)
Total	3296 (100%)

Concerning the second aim, a cross-table was built to analyze the association between students' understanding of critical thinking and the methodologies that were considered the most effective for developing this competence. As can be seen from the frequency (f) analysis in Table 2, from students' points of view and according to the model of the six dimensions proposed, there are mainly two ways of understanding critical thinking. Firstly, as a competence closely related to reasoning/arguing (REA/ARG in Table 2, total $f = 970$), and secondly, as a competence very related to questioning/asking oneself (QUE/AO in Table 2, total $f = 904$). Besides, students considered analyzing/organizing (ANA/ORG in Table 2, total $f = 505$) and taking a position/taking decisions (PO/TD in Table 2, total $f = 405$) also are dimensions related to critical thinking skills. Finally, acting/compromising (COM/ACT in Table 2, total $f = 268$) or evaluating (EVAL in Table 2, total $f = 244$) were not chosen as the most related dimensions when defining critical thinking.

Furthermore, on the one hand, it can be seen that the cells with the highest frequencies (arbitrarily, those $f \geq 100$ in order not to extend the explanation of results) are observed in the crossover between debates and reasoning/arguing ($f = 190$). That is, the majority of students who would define critical thinking as reasoning/arguing also believe that debates are a methodology that fosters critical thinking. Other correlations with a high frequency were found, as debates and questioning/asking oneself ($f = 185$), PBL and reasoning/arguing ($f = 134$), PBL and questioning/asking oneself ($f = 127$), practice in real contexts and reasoning/arguing ($f = 110$), and practice in real contexts and questioning/asking oneself ($f = 110$).

On the other hand, there are certain cells with a low frequency (arbitrarily, those $f \leq 3$, in order not to extend the explanation of results), such as oral presentations and compromising/acting ($f = 3$), master classes and positioning/taking a decision ($f = 3$), flipped classroom and evaluating ($f = 3$), oral presentations and evaluating ($f = 2$), master classes and compromising/acting ($f = 2$), master classes and evaluating ($f = 1$), or flipped classroom and analyzing/organizing ($f = 0$).

Table 2. Cross-table between methodologies that students consider to contribute to developing critical thinking and their conception of critical thinking.

	ANA/ORG	REA/ARG	QUE/AO	EVAL	POS/TD	COM/ACT	TOTAL
Debates	97	190	185	49	78	51	650
PBL	75	134	127	36	59	37	468
Practices	49	110	110	29	34	32	364
Doing research	43	94	97	18	43	26	321
Cooperative learning	45	92	79	26	44	26	312
Case studies	47	77	68	24	27	20	263
Feedback	31	58	50	12	27	17	195
Role-playing	25	50	47	11	20	17	170
Reading and analysis of resources	22	50	47	12	19	11	161
Written work	24	34	28	9	15	4	114
Conceptual maps	21	30	25	5	13	9	103
Service learning	10	17	14	7	7	8	63
Oral presentations	11	19	14	2	10	3	59
Flipped classroom	0	9	7	3	6	5	30
Master classes	4	6	4	1	3	2	21
Others	1	0	1	0	0	0	2
Total	505	970	904	244	405	268	3296

Note. ANA/ORG, Analyzing/Organizing; REA/ARG, Reasoning/Arguing; QUE/AO, Questioning/Asking oneself; EVAL, evaluating; POS/TD, taking a position/Taking a decision; COM/ACT, Compromising/Acting.

Nonetheless, in order to verify whether there was an association between the methodologies students considered the most effective for developing critical thinking and what they understood by critical thinking, a correspondence analysis was carried out (see Table 3).

Table 3. Summary of the correspondence analysis.

Dimension	Singular Value	Inertia	χ^2	Proportion of Inertia	
				Accounted for	Cumulative
1	0.079	0.006		0.440	0.440
2	0.058	0.003		0.240	0.680
3	0.052	0.003		0.193	0.873
4	0.038	0.001		0.100	0.972
5	0.020	0.000		0.028	1.00
Total		0.014	46.86 ($p = 0.996$)	1.00	1.00

As can be seen in Table 3, there is not a significant association between the different methodologies and the different conceptions of critical thinking ($\chi^2 = 48.86$; $p = 0.996$). Therefore, it is impossible to name dimensions 1 and 2 of the different axes of the correspondence analysis. As a result, it could be understood that there are certain methodologies that contribute to developing this competence from the students' points of view, regardless of what they understand by critical thinking. In addition, as seen in Figure 1, most elements are located close to the origin point, hence, reflecting that there is not a clear association between the dimensions of critical thinking and the methodologies. This finding can be accounted for by the low inertia explained both from the first dimension ($\lambda_1 = 0.006$) and from the second dimension ($\lambda_2 = 0.003$), and in general, by the low total explained inertia ($\varphi^2 = 0.014$).

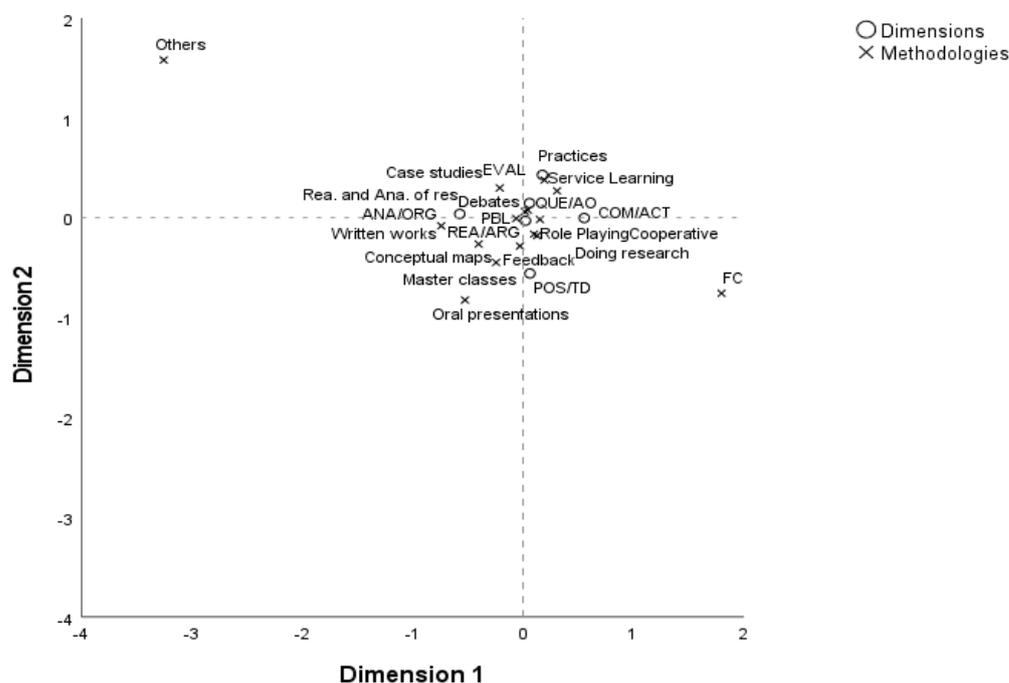


Figure 1. Plot of the results of the correspondence analysis. ANA/ORG, Analyzing/Organizing; REA/ARG, Reading/Arguing; QUE/AO, Questioning/Asking oneself; EVAL, Evaluating; POS/TD, Taking a position/Taking a decision; COM/ACT, Compromising/Acting; Practices, Practices in real contexts; PBL, Project-based Learning; Rea. and Ana. of res., Reading and Analysis of resources; Cooperative, Cooperative Learning; FC, Flipped Classroom.

5. Discussion

The aim of this research has been to analyze the methodologies students think may contribute the most to the development of the different dimensions of critical thinking. The results revealed that students consider that critical thinking can be better developed with six different methodologies: Debates, PBL, practices in real contexts, doing research, cooperative learning, and case studies. These results are partially consistent with previous literature on the topic that, in order to develop critical thinking, highlighted the effectiveness of debates [11–19], project/problem-based learning [13,20,21] practices in real contexts [24–26], doing research [27], cooperative learning [13], and case studies [34]. Moreover, these results may be related to the knowledge that students perceive about these methodologies. Likewise, this result could be a positive sign of changes in teaching-learning methods towards teaching-oriented to meaningful learning and related to the development of thinking.

Nonetheless, our results suggest that there are certain methodologies that, contrary to previous research, do not seem to contribute so much to the development of critical thinking from students' points of view. This is the case of service learning [51], oral presentations [18,52,53], flipped classroom [42], and master classes [18]. This finding could be justified by the fact that students may have valued these methodologies less highly because they have been less exposed to them, or when they have been exposed to them, they have used them in an inappropriate way.

In addition, this study revealed that there is not a significant association between students' conceptions of critical thinking and the different types of methodologies to enhance its development. This finding is novel in the literature due to the fact that studies up to now have mainly focused on analyzing the effectiveness of critical thinking based on only one methodology. In contrast, this study sheds some light on how the perception of the effectiveness of the main methodologies applied in higher education is not affected by students' conceptions of critical thinking.

The results from this study have a significant impact on theoretical and practical knowledge. First, theoretically, these results are useful for strengthening the basis of how critical thinking should be taught considering students' points of view. Knowing the students' perceptions and opinions could bring interesting knowledge to the literature and complement previous findings, mainly based on teachers' perspectives.

In addition, these findings also have practical implications for students, university teachers, and institutions. Firstly, with regard to students, knowledge about the development of critical thinking skills will be useful and crucial in their professional careers in ever-changing workplaces, as well as citizens of today's society [54]. Moreover, most of the participants in this study will work as teachers in the future, hence, these results contribute to deducing which kind of methodologies these students could apply in the near future with their primary school students. In addition, with regard to university teachers, these results highlight the relevance of communicating and dialoguing with their students to meet teaching and learning processes in a coherent way.

In the previous literature (e.g., [38]), teachers' conceptions of critical thinking vary from those of students. In fact, some recent literature has started to debate the necessity of co-creating and co-planning the courses so that learning outcomes, methodologies, evaluation techniques, and other curricular elements can be agreed upon beforehand [55,56]. Moreover, these results emphasize the need to consider students' points of view when designing and planning the curricula. More specifically, these findings could be useful for university teachers as they can get to know the most effective methodologies for developing critical thinking from the students' point of view and hence, introduce them into their programs. Likewise, these results could be interesting for educational institutions when developing their institutional plans for developing transversal competencies, as in the case of critical thinking.

Finally, this study is not exempted from limitations when interpreting the results. The main limitation of this study stems from the fact that students were asked two different questions, first, their understanding of critical thinking, and second, what were the methodologies that they considered to contribute the most to developing this competence. In this sense, despite the fact that this research has selected the main methodologies thought to develop critical thinking, there could be other equally adequate methodologies. That is why future studies could attempt to ask students one by one the perception of the effectiveness of each methodology for developing critical thinking, as well as what they understand by critical thinking.

Another limitation is that students did not have a description of the meaning of each methodology. Despite the fact that all students were familiar with the different methodologies as they had already used them in their degrees, it cannot be ensured that all students interpreted all the methodologies in the same way, and they may have chosen those that they knew better. Therefore, it would be interesting for future research to try to replicate this study by adding a description of each methodology.

Finally, it should be remarked that the vast majority of the sample came from the educational field. Hence, future studies could attempt to replicate the procedure of this paper by carrying out comparative analyses considering the knowledge field of the student (engineering, architecture, sciences, social sciences, health sciences, arts, and/or humanities).

Despite these limitations, it is hoped that this study will be the origin of a series of future research studies that will help to investigate the students' points of view on how critical thinking should be taught in a higher education classroom.

Author Contributions: Conceptualization, M.-J.B., L.C., D.F.-N. and M.P.; methodology, M.-J.B. and H.G.-D.; software, L.C. and H.G.-D.; validation, H.G.-D.; formal analysis M.-J.B., L.C., D.F.-N. and H.G.-D.; investigation, M.-J.B., L.C., D.F.-N. and M.P.; resources, M.-J.B. and L.C.; data curation, H.G.-D.; writing—original draft preparation, M.-J.B., L.C., D.F.-N., H.G.-D. and M.P.; writing—review and editing, D.F.-N.; visualization, M.-J.B., L.C. and H.G.-D.; supervision, M.-J.B., L.C. and H.G.-D.; project administration, M.-J.B. and L.C.; funding acquisition, M.-J.B. All authors have read and agreed to the published version of the manuscript.

Funding: The APC was funded by eDucAR research team through the University of Deusto/Basque Government Contract-Programme.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are available online at: https://drive.google.com/drive/folders/1NqI_AIpEuZuGng7ANG1WGqDEs4lxAbdB?usp=sharing (accessed on 24 January 2023).

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Theoretical Model of the Different Dimensions of CT (Bezanilla et al., 2018)

- Analyzing/organizing: These are answers that refer to critical thinking as a way of examining something in detail (a text, a reality...) considering its parts in order to know its characteristics and draw conclusions. In some cases, they include aspects related to the structuring and organization of information, but do not go beyond that (e.g., I analyze the information by contrasting different sources).
- Reasoning/arguing: These definitions add to the analysis the relation and comparison of ideas and experiences based on arguments, to obtain conclusions and form a reasoned judgment. It involves expressing in words or in writing reasons for or against something, or justifying it as a reasonable action to convey a content and promote understanding (e.g., When I give my opinion I provide reasons or arguments that justify it).
- Questioning/asking oneself: Critical thinking is understood as the questioning of an issue that is controversial or commonly accepted. It means to question things, to ask oneself questions about the reality in which one lives (e.g., When reading an article, I ask myself questions about the topics covered).
- Evaluating: It means to value, to weigh, to determine the value of something, to estimate the importance of a fact, taking into account various elements or criteria. It is more than an argumentation (deducing pros and cons of a reality) because it implies determining the value of something according to certain criteria (e.g., Before making a decision, I evaluate the pros and cons of the situation).
- Taking a position/taking decisions: It implies not only analyzing, reasoning, questioning or evaluating, but also making a decision about it. It means to give a solution or make a definitive judgment on a matter in a certain way, including a position or proposed solution (e.g., When I make a decision, I take it and move forward, despite the fact that others may think differently).
- Acting/compromising: Critical thinking is understood as a means of transforming reality through social commitment. It is to take action, to act, to behave by performing voluntary and conscious acts in a determined and committed manner. It implies the adoption of a certain attitude or position before a certain matter (e.g., I get involved to respond to a situation of injustice or inequality).

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