

Critical thinking and inclusive practice: A qualitative study of Spanish primary school teachers' perceptions

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As one of the most necessary skills of the 21st century for problem solving, critical thinking should be taught and included in the curriculum of those schools in which inclusivity towards all their students is a priority. From this perspective, this study presents the educational implications for the teaching and evaluation of this skill. In addition, teachers' perceptions regarding the teaching methods used, evaluation techniques and limitations that they encounter at the moment of enhancing the critical thinking of their students are analysed. A descriptive-comprehensive research with a qualitative approach was adopted, with data collected from interviews with 10 primary education teachers in the Spanish educational system. The analysis suggests that, although there is some knowledge on the part of teachers about critical thinking skills, most of them are not able to respond to this learning need. They highlight the technique of joint discussion and interactions between teams as among the effective tools for fostering critical thinking skills. Notably, these teachers have referred to the existence of certain relationships between critical thinking and equitable and quality education.

Introduction

Our current education system has undergone numerous transformations in recent years. The changes in our society have reflected the need for an educational transformation in order to respond to the new demands of 21st century society. In this regard, it is essential to ensure an inclusive and quality education, that is, that it responds to the needs of each and every one of our students, understanding diversity as a value and considering all students and their diverse characteristics. Inclusive practices constitute one of the dimensions of the inclusion process (Booth & Ainscow, 2002). Good inclusive practices, according to Marchesi, Durán, Giné & Hernández (2009), are actions that teachers carry out to achieve presence, participation and success for all students in the class and in the school, in order to reach this objective on the basis of equality of opportunities (Muntaner, Rosselló & de la Iglesia, 2016). Likewise, school institutions should offer comprehensive training so that students acquire the necessary skills to function in this society (Petek & Bedir, 2018; Tsankov, 2017; Uribe, Uribe & Vargas, 2017). Among all the skills that, in recent decades, have been valued as fundamental for the integral development of people, critical thinking is one of the most important. (Boa, Wattanatorn & Tagong, 2018; Larsson, 2017). Critical thinking has long been a tool for thinking for oneself and a means for the formation of the individual's personality. Through this ability, the individual can analyse information provided or obtained by him or her and then use it to solve issues in a creative, self-directed way, considering the pros and cons of his or her actions.

The interest of this work refers specifically to the evaluation and implementation of critical thinking in the classroom through specific dynamics for its development. Some studies have shown favourable results after its application in the area of science (Forawi, 2012) and even in language learning (Muhammadiyah et al., 2020; Uribe et al., 2017). Despite being considered a crucial skill in student learning, little educational research to date has analysed this skill from the teacher's point of view (Larsson, 2017; Smith et al., 2018). On a day-to-day basis, activities that stimulate critical thinking in the classroom, both in their design and implementation, are not abundant. Consequently, the purpose of the study is to answer the question: What role do teachers' perceptions play in the process of teaching critical thinking at the primary education stage?

Learning from a curriculum based on conceptual content means that students are unable to develop thinking skills to reason their conclusions, reflect flexibly and creatively, solve problems and make timely decisions. In this sense, teachers' beliefs about intelligence and the ways in which their students learn can often explain the difference in interest in designing and implementing critical thinking activities in the classroom.

Theoretical framework

School institutions (Boa et al., 2018; Larsson, 2017; Vendrell & Rodríguez, 2020) should offer good training that prepares students for a future in which they are able to think well ("thinking well" is a commonly used term linked to what is known as critical thinking). Precisely for this reason, one of the main objectives of schools refers to the need to provide their students with optimal training at all levels and modalities (Tsankov, 2017). Teachers train in thinking skills and, specifically, their educational actions also contribute to the development of critical thinking. However, on many occasions this influence is carried out without systematisation and prior intention or reflection. Critical thinking often appears in the *Programme for International Student Assessment* (PISA) and the *US National Assessment of Educational Progress* (NAEP) (in the assessment of science, mathematics and reading). However, it is surprising how little attention and importance is given to it in the classroom (Alazzi, 2008).

There are various ways of defining critical thinking. Some specialist authors (Arango, 2003) describe critical thinking as an active and systematic attempt to understand and evaluate the ideas and arguments of others and oneself. For Vendrell and Rodríguez (2020), critical thinking comprises a series of skills and attitudes that play an essential role in learning about and analysing the diversity of information that characterises our social context. For his part, Facione (2007) considered that critical thinking is about thinking with the aim of interpreting a meaning, solving a problem or analysing a question. It implies an involvement of the subject to expose skills such as analysis, inference, interpretation, explanation, self-regulation and evaluation on an individual or group basis. Furthermore, critical thinking requires the interrelation of skills related to assessing the credibility of sources, analysing the quality of arguments, making inferences using reasoning, and making decisions or solving problems (Lai & Viering, 2012).

The process of critical thinking involves three phases (Kallet, 2014). Firstly, clarity. This is about understanding the issue, problem, goal or objective, that the problem you have is evident and no doubt arises about it. Secondly, conclusions. The problem or goal must be brought to a solution through the process that will be explained later. And finally, decisions, in that once a solution to the problem or goal has been given, each person is responsible for deciding whether or not to take it. In this sense, critical thinking has a fundamental purpose: to make a conscious effort to leave the automatic mode when starting to mentally consider a certain situation. Thanks to this skill, the person is able to understand more deeply (Nganga, 2019; Smith et al., 2018; Vedrell & Rodríguez, 2020) and starts to think differently from others by implementing some of the techniques of critical thinking.

Depending on the cognitive abilities of each person, critical thinking has the potential to achieve different outcomes (Halpern, 1998). These outcomes involve goal-oriented and problem-solving thinking, the formulation of inferences and decision-making (Silverman & Smith, 2003). Critical thinking would include reasoning about open-ended or unstructured problems, whereas, from problem solving, the process is considered in a narrower form. Problem solving can be seen as a process that seeks a solution to specific situations. In contrast, critical thinking seeks to construct a possible representation of a situation that can be produced through coherent arguments. In addition, this critical thinking seeks to determine the validity of a fact, seeks new and additional information that may or may not agree with the conclusion, and, finally, seeks alternative explanations (Gulbakhor, 2019).

Currently, there are numerous instruments available to assess critical thinking (Bueno & Castanedo, 1998; Facione, 2007; Halpern, 2010; Meza & Lazarte, 1998; Miranda, 2003; Saiz & Rivas, 2012; Watson, 1980). However, few of them are used in education. Table 1 shows a summary of the most relevant ones. Among all the available instruments, different skills closely related to critical thinking are grouped together. For the assessment of this mental ability, different cognitive competences and personal dispositions are proposed that refer to the individualities of each person related to critical thinking. In other words, each of the instruments includes the analysis of different skills. In addition to incorporating the skills that are assessed in each of these tools, they also differentiate between the types of responses that are proposed to allow their analysis: open, closed or mixed. All of them assess the critical thinking skills of different age groups and with applicability in the field of education.

Considering this set of assessment instruments, the need arises to carry out studies that highlight the importance of promoting critical thinking as an essential skill for the integral development of the individual. Similarly, an analysis of the different ways of reinforcing this mental ability at different educational levels is required. In this sense, Almulla (2018) presented in his study some of the activities that had been effective in stimulating critical thinking in his secondary school students. Among others, the author highlighted tasks such as posing open questions in the classroom, performance tasks or comparing and contrasting different perspectives or theories. He also stated that these tasks are

Table 1: Critical thinking assessment instrument

Instrument	Author and year	Response type	No. items	Skills to be assessed
WGCTA (Watson-Glaser Critical Thinking Assessment)	Watson (1980)	Closed	80	1. Inference 2. Recognise assumptions 3. Deduction 4. Interpretation 5. Evaluation arguments
CCTST (California Critical Thinking Skills Test)	Facione (1990)	Closed	34	1. Interpretation 2. Inference 3. Analysis 4. Evaluation 5. Explanation
CCTDI (California Critical Thinking Disposition Inventory)	Facione (2007)	Closed	75	1. Critical thinking self confidence 2. Open-mindedness 3. Analyticity 4. Systematicity 5. Truth seeking 6. Inquisitiveness 7. Cognitive maturity
CCTT (Cornell Critical Thinking Test)	Ennis & Millman (1985)	Cerrada	75	1. Assumptions identification 2. Induction 3. Deduction 4. Credibility 5. Semantics 6. Definitions 7. Prediction
HCTAES (Halpern Critical Thinking Assessment using Every-day Situations)	Halpern (2010)	Mixed	50	1. Verbal reasoning 2. Argument analysis 3. hypothesis testing 4. Likelihood assessment 5. Decision-making
PENCRISAL	Saiz & Rivas (2006)	Open	35	1. Inductive reasoning 2. Deductive reasoning 3. Practical reasoning 5. Decision-making 6. Problem-solving
PENTRASAL	Saiz & Rivas (2012)	Open	35	1. Deductive reasoning 2. Inductive reasoning 3. Practical reasoning 5. Decision-making 6. Problem-solving
TPC (Critical Thinking Tasks)	Miranda (2003)	Open	14	1. Inquiry 2. Analysis 3. Communication

LASSI (Learning and Study Strategies Inventory)	Meza & Lazarte (1998)	Closed	77	1. Attitude, motivation, time management, anxiety and concentration 2. Information processing 3. Selection of main ideas 4. Study aids 5. Self-evaluation 6. Testing strategies
CEA (Learning Strategies Questionnaire)	Bueno & Castanedo (1998)	Closed	105	1. Awareness raising 2. Elaboration 3. Personalisation 4. Metacognition

transferable to other educational levels. Other authors (Boa et al., 2018; Cargas et al., 2017; Larsson, 2017; Petek & Bedir, 2018; Smith et al., 2018) have also obtained favourable results in the development of critical thinking in their students through the introduction of different educational strategies in their teaching models. Considering this evidence, this study is proposed with the intention of expanding and offering evidence, from the point of view of primary school teachers, about the importance of stimulating critical thinking and the educational strategies used for its development.

Method

A qualitative research was designed to analyse the teachers' perceptions about the intervention processes on the critical thinking of the students and about the importance that these professionals attribute to this reasoning ability. The qualitative paradigm allows us to interpret the reality of the study phenomenon as understood by some of the main protagonists (Delamont, 2012), that is, the primary education teachers of the school context in which the study takes place (specifically, in the Autonomous Community of Aragon, Spain). This Autonomous Community represents one of the 17 Communities that make up Spain. More specifically, it is approached from a phenomenological theoretical-methodological perspective. For this, it is necessary to analyse in depth the discourse, perceptions and opinions of the interviewees.

Participants

The sample was constituted by selecting the participants through a process of theoretical-intentional sampling (Robinson, 2014) and according to a series of previously defined inclusion criteria. The first selection criterion referred to the need for teachers to develop their profession in the educational stage of Primary Education (ranging from 6 to 12 years). Teachers also had to perform different jobs (specialists, tutors, coordinators, etc.) or, where appropriate, they had to teach in different courses. A total of 10 different schools were represented by these participating teachers. Finally, an attempt was made to maintain gender balance among the interviewees. Even so, a majority of the participants were females due to the reality of this professional sector. Fulfilling the above criteria, the sample consisted of a total of ten teachers who were voluntarily interviewed (these schools are financially supported by public and private funds). All of them developed their

professional work in public and concerted schools of the Autonomous Community of Aragon (Spain). The size of classrooms in urban schools was between 18-25 students, while classrooms in rural schools have between 6 and 14 students. Table 2 shows the socio-demographic characteristics of the sample.

Table 2: Socio-demographic characteristics of the participants

Participant No.	Gender	Age	Years exp.	Level of studies (1)	Job
1	M	31-40	12	MEd	Tutor (2), member of management team
2	M	41-50	18	BEd	Tutor of an urban school
3	F	41-50	9	BEd	Tutor of a rural school
4	F	22-30	1	MEd	Tutor of an urban school
5	F	41-50	20	BEd	Hearing and language teacher (3)
6	F	51-65	16	BEd	Hearing and language teacher
7	F	41-50	23	BEd	Therapeutic pedagogy specialist (4)
8	M	41-50	21	BEd	Music specialist teacher and headteacher
9	M	51-65	42	MEd	Tutor and education inspector (5)
10	F	51-65	25	BEd	Tutor

1. MEd - Masters in Education degree. BEd - Bachelor of Education degree.
2. The tutor teacher is the one responsible for teaching the general subjects of the primary education stage (language, mathematics and natural sciences).
3. The hearing and language teacher is a specialist teacher in the area of language and communication and is responsible for responding to the educational needs of students who present needs in this area of communication development.
4. The therapeutic pedagogy specialist is a specialist teacher responsible for responding to the needs of students with special educational needs in different areas. She also has the responsibility to contribute to promoting the educational inclusion of these students.
5. The education inspector is a professional who works in public administration and is competent in educational issues and supervises non-university education.

Instrument

The semi-structured interview was used as an instrument to collect information from the interviewees. This type of interview allows collecting the perceptions and opinions of individuals on research questions with some freedom (Longhurst, 2003). The interview consisted of a set of eleven questions, all of them open-ended questions to facilitate freedom of expression and opinion. These questions were grouped around a general script that included the following topics: knowledge of critical thinking assessment methods, steps and strategies to use in the classroom with students, benefits of critical thinking, links between critical thinking and inclusion, and, finally, teacher training to stimulate this mental ability (Figure 1).

This research was conducted in Spanish, with translations into English for presenting quotations done by the authors.

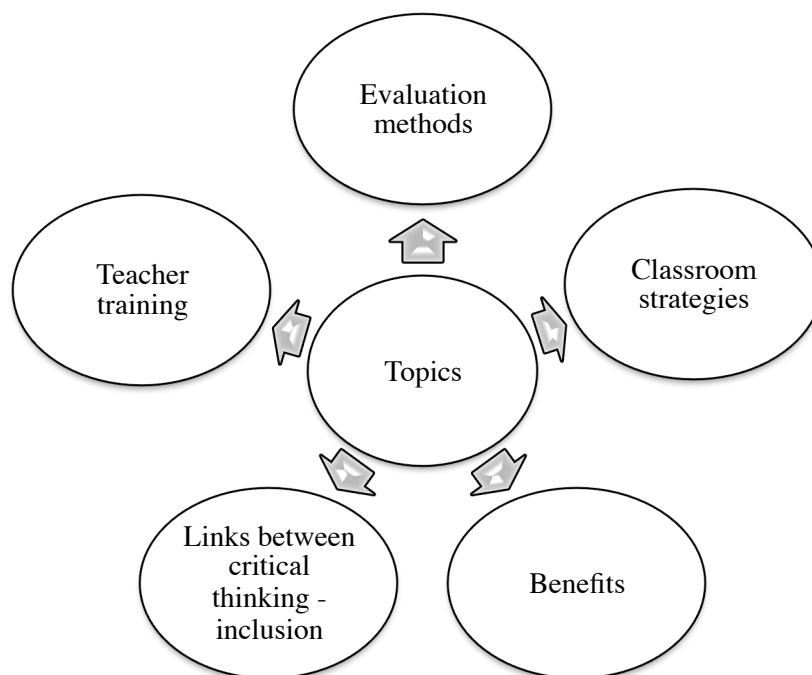


Figure 1: Interview topics on critical thinking

Information analysis and procedure

The investigation was structured around a set of successive phases. First, after a thorough review of the literature, the general themes on which the interview questions were to be designed were extracted. Subsequently, contact was made with the teachers who were to be interviewed. The interviews were conducted orally during the months of February and March 2021 (by videoconference and through the *Google Meet* platform due to restrictions caused by the Covid-19 pandemic) and individually and all of them were recorded. At the beginning, they were informed of the reason for the interview and of the anonymity and confidentiality of the information. A numerical code was used to identify each of the interviews and preserve their privacy. The duration varied between 20 and 40 minutes according to the involvement of the people interviewed. Subsequently, the information was transcribed.

Finally, the discourse and the results were analysed following the criteria of Miles and Huberman (1994) and Lowe, Norris, Farris and Babbage (2018). Considering the general themes initially set, the information was identified, codified and categorised. This coding process was carried out with each interview individually and, later, considering them as a set. To guarantee the methodological rigour of the research, the indicators of qualitative research were considered (Hernández, Fernández & Bautista, 2014). The dependency criterion was applied while the theoretical perspective, the design, the selection of the participants, the collection and the analysis of the information were detailed. The

credibility criterion was considered because the triangulation of the research team was used to enrich the information and contrast it (Onwuegbuzie & Leech, 2007). The transferability of the information was also ensured as the research process and context were described in depth. This allowed the design and procedure to be replicated in other studies. The interviews were recorded and all decisions made during the investigation were recorded. This fact allowed the auditability criterion to be met.

Results

Considering the objectives, the presentation of results takes each of the categories previously exposed as a starting point: beneficial aspects of critical thinking in the formation of students, links between critical thinking and school inclusion, methods of evaluating it, strategies and relevant techniques to teach students to think critically, and finally, teacher training.

In the first category, which refers to beneficial aspects of critical thinking in the education of students, these teachers mention the need to design educational processes that include critical thinking. A phenomenon that will allow students to develop a much deeper and more coherent personality. In addition, they highlight that critical thinking allows developing a way of thinking and reasoning different from the morality that is imposed by society, that is, different from single thought. In this way, the students would have the possibility to contrast their personal vision with the facts that surround them and analyse the reasoning of other people. This allows them to make the best decisions, both to shape their thinking and to successfully solve problems. A clear example of this can be seen in the testimony of some of the participants.

We need citizens capable of using critical thinking. It would not only be a benefit in the primary educational stage, but also a training to exercise citizenship with greater freedom. Being able to think critically and assess information from different points of view allows students to make decisions and develop their own thinking to act accordingly. Of course, always within your margins of action. (Participant 1)

I think it is fundamental today, since in a society in which the "majority" often leads a single thought, critical thinking will allow the student to get his or her own idea of each situation. In addition to providing strategies to deal with everyday problems in a creative way, trying to find the best solution in each case. (Participant 2)

On the other hand, most of the teachers interviewed coincide in highlighting the connection between critical thinking and the paradigm of educational inclusion in the classroom. They agree that it is a cross-cutting issue linked to any area of knowledge and development. Thanks to the development of critical thinking, students will be able to enhance their strengths as they have had the opportunity to discover their ways of thinking both on their own and with their peers. Furthermore, all of them can be accepted, discussed or debated. This is how students develop a much broader vision of events.

Of course, even more than many curricular aspects and contents that must be taught in school. Critical thinking will allow students to present their answers from a respect and understanding of all points of view. It also encourages teamwork where everyone contributes their solutions, which gives a multitude of possibilities and solutions to problems. (Participant 2)

Yes, each student questions and knows her strengths to enhance them and also recognises the weak ones, trying to improve them. (Participant 4)

Critical thinking allows to recognise the limitations and potential of oneself and that of others. Only with an open and critical mind can it be accepted that others have, like me, limitations and potentialities. All this is very necessary to recognise the value of the difference. In this case, critical thinking is as important as the generation of attitudes favourable to that thinking. (Participant 9)

In addition, teachers comment that the diversity of opinions and ways of thinking allow learning to be much richer and more meaningful. Consequently, it is necessary to develop critical thinking from the classroom. Through this, students are able to strengthen quality mental processes based on rationality and, in this way, their quality of life will improve. In addition to all this, a significant improvement in problem-solving and decision-making capacity will be achieved. By making better and higher quality decisions, we can find more innovative solutions and obtain faster and more effective results. On the contrary, some teachers do not identify the concepts of critical thinking and inclusion as directly related issues. They consider that they are not connected learning that can occur explicitly within the classroom. In any case, these learnings can be encouraged through specific activities and projects.

Yes. An inclusive classroom respects diversity in all aspects, it is contrary to indoctrination. (Participant 6)

Of course it is. The heterogeneity of the classroom allows you to grow as a person and be prepared for adult life. (Participant 7)

Critical thinking by itself does not have to guarantee inclusion in the classroom. In order not to reject this statement, it would be necessary to develop serious investigations that positively correlate both variables, with the difficulties that this entails. However, it should be possible to link both variables ... (Participant 1)

Critical thinking should be linked to all aspects of life. However, this is not the case, since the single thought usually prevails. Furthermore, in the classroom the desire to be accepted by the group at these ages may negatively influence the inclusion of different children. (Participant 3)

I don't see a direct connection between the two concepts. Why? An educational project can be designed that favours the inclusion of the students and does not promote critical thinking with the students. It may also be the case that the inclusion of students generates classroom situations that allow reflection on them and thus promotes critical thinking. (Participant 8)

On the other hand, many of the teachers are unaware of the methods and ways of evaluating critical thinking that are more objective and analysed in a systematic way. This fact could be due to the lack of information and training on these evaluation procedures. Some of them have previously had the opportunity to meet, work and learn from professionals who implemented some evaluation method. This allowed them to observe and analyse the benefits that the development of critical thinking has for students. An example of this can be seen in the following testimonies.

It is something transversal, I do not know if there are specific methods. (Participant 5)

I don't know of any way to systematically assess critical thinking. (Participant 8)

I do not understand the evaluation of critical thinking if it is not from the perspective of generating it. That is, it must be within the activities themselves to promote it. It is not necessary to make a value judgment on thought, but to discover what it is that hinders it within ourselves. (Participant 9)

Lack of knowledge of critical thinking assessment methods is directly linked to teacher training. In this sense, the teachers interviewed have referred to non-existent learning during their previous training. However, they also highlight the importance of the will of each professional and the interest in acquiring knowledge and experience on ways to promote critical thinking in the school context. These statements are certainly striking. Despite not having received any specific training, some of the teachers know the general way to assess the critical thinking skills of their students. Only Participant 1 highlighted feeling competent to carry out a systematic evaluation through the design of activities that aim to establish different points of view and their possible solutions.

Training as such, I have not received. But I have had the great luck to meet, work and learn from professionals who have allowed me to observe the benefits that learning with this method has for students. (Participant 2)

No, I have not received any. Personally, I believe that critical thinking does not interest society, much less educational authorities. The less critical people are, the easier they are to manipulate. (Participant 3)

No. Some occasional readings within other areas of knowledge that, indirectly, have dealt with the issue of critical thinking. (Participant 9)

Yes. There are several tests published since the 80s: I know more about Watson-Glaser, the California ones from Faccione and I think I remember that there was one from Salamanca (PENCRISAL), more adapted to our population and Spanish. (Participant 1)

Some methodologies proposed by Robert Swartz and David Perkins develop this thought. The Thought Based Learning methodology is a good tool for this through routines and thinking skills. (Participant 2)

Any method in which the student has to apply what they have learned: a project, a debate, thought routines ... I would say that the self-assessment instruments used by the

student are a good tool to evaluate this critical thinking. Evaluation rubrics would also enhance this skill. (Participant 4)

There is a diversity of responses on the way in which teachers would evaluate their students, considering the training they have. This could be due to the little information they have about the development of critical thinking skills. Even with this, they coincide in highlighting the importance of choosing the most fair and equitable mode of evaluation for their students. Assessing critical thinking involves three interrelated processes: analysing, assessing, and connecting. The student thinks critically when analysing arguments, classifying objects, identifying assumptions and main ideas and finding sequences, judging or evaluating, solving problems, and making deductive or inductive decisions or inferences through open-ended tasks that need to go further than simply remembering previously learned information. In this sense, some of the teachers use rubrics because they consider that it is the most objective and equal for all. These instruments include those parameters of student development (regarding critical thinking) that most interest the teacher:

With the knowledge I have, if I wanted to do an investigation I would use a test that has already been validated. If I only wanted to make a comparison between my students, I would use a simple rubric with the categories that most interest me at all times, considering the starting point ... (Participant 1)

Through rubrics, in which you put parameters to evaluate the objectives. So, I could analyse if the student has developed critical thinking through a project and it would be reflected in that rubric. (Participant 10)

Considering the testimonies of the teachers, a variety of resources are also appreciated with which the students are given opportunities to reflect, evaluate, determine criteria, prioritise and verify, among many others. Several of these teachers use methods such as routines, thinking skills, self-evaluation, evaluation by targets, co-evaluation, observation in the classroom, dialogues, debates, expositions of arguments on a topic, and analysis of student perceptions. However, some of these teachers had not thought about how to evaluate this critical thinking since they consider that it is a very subjective aspect to be analysed objectively and through written tests:

Would use routines and thinking skills and would assess the answers given by the students. I would not focus only on knowing if it is correct or not, in terms of solving the problem, but on the process to get to that answer. (Participant 2)

Mainly I would use self-evaluation instruments such as evaluation by targets or co-evaluation, accompanied by a little reflection from the student. (Participant 4)

Observation in the classroom, dialogues with students, between students, debates and expositions of arguments on a topic. (Participant 7)

I would greatly emphasise the issue of the analysis of beliefs and prejudices in the students themselves, trying to make sure that they themselves are the ones to explain them. (Participant 9)

Honestly, I wouldn't know. I'm not very good at evaluating with some standards and I don't know if it is possible to evaluate everything. I doubt that this can be evaluated objectively beyond knowing your students. (Participant 3)

There has also been diversity of opinion about the strategies and methods for teaching critical thinking. Teachers consider dialogue as a fundamental step to teach to develop critical thinking, reinforce and improve personality in aspects related to self-esteem, security, confidence and verbal and corporal expression. Through dialogue, the criteria for making decisions is fostered since the students learn to expose the advantages and disadvantages of different points of view. In addition, they have the possibility of making known to others the options and opinions they have. Therefore, dialogue is a very enriching tool to forge critical thinking.

First, plan open and interactive activities in which the use of language is possible and essential to solve them. Second, I would encourage and plan the interaction between students both at the discursive and non-discursive levels. Considering the emotional and affective aspects. Third, I would try to encourage exploratory conversation and not so much the predominant cumulative conversation. (Participant 1)

The first place, the dialogue. I usually speak to them very clearly and I look forward to feedback. Second, take advantage of the present time to do so. I believe that the school should not be a bubble isolated from society as we sometimes pretend. And then I use some media that facilitate critical thinking like WonderPonder Thinking Cards. (Participant 3)

I do not know in depth a specific method. In any case, I would reinforce these aspects: clarity in the definition of what they think (avoid confusion and unfounded generalisations, mix of topics, etc.); accuracy (that when they make any judgment, they do so with specific, clear, demonstrable information, not by ideas or approximations); precision in the provision of data or references (not based on general data); relevance of the elements that make up a fact or thought (distinguish between the essential and the accessory); open-mindedness and contrast of thoughts (compare what others think, not just look at one version of events with a single thought, but look for others that support and contradict a situation ...). (Participant 9)

Lastly, it should be noted that two of the teachers interviewed coincide in pointing out the PBL technique (problem-based learning, or sometimes project-based learning). PBL is an innovative and active method that has been widely extended in recent years in educational systems. It fits perfectly with the most important aspects that define the learning of critical thinking. Through PBL, research and creation processes are carried out in which students must develop a final product to achieve learning standards. This final product reflects the learning process, the development of skills, creativity, communication, collaboration, problem solving and deepening what has been learned, in addition to giving greater breadth and freedom at the time of learning.

Thought-based learning helps students to be aware and exercise their thinking by extracting the information that is offered to them and analysing it to get an adequate response. (Participant 2)

In class I would use methods such as thinking routines, visual thinking or problem-based learning. (Participant 4)

Discussion

From a general approach, these teachers have become aware that, at present, critical thinking is an issue that very few education professionals explicitly include and work on in their classrooms. One aspect that practically all teachers have referred to is that the development of critical thinking in 21st century society is considered to be of fundamental importance. A relevance that the results of different previous studies (Choy & Cheah, 2009; Ngang et al., 2015) have also highlighted. We are a society in which a large majority often leads a single way of thinking (Abdur, 2014). This thinking will allow students to extract their own ideas and judgements for each situation. Moreover, and in line with Stedman and Adams (2012), this thinking provides them with the tools to deal with everyday problems in a creative way and try to find the most appropriate solution in each case. Developing unique thinking allows students to be included in the classroom even more than with other curricular aspects and theoretical content taught at school. In fact, it offers them the possibility to approach their answers with respect and understanding of all points of view. In this way, teamwork is encouraged in which everyone contributes their own particular solutions, which gives a multitude of possibilities to respond to the problems. This diversity of solutions to problems achieved with critical thinking is consistent with the contributions that various authors (Aizikovitsh-Udi & Cheng, 2015; Changwong et al., 2018) have concluded in their studies.

On the other hand, the previous literature has reported a variety of methods for the performance and assessment of critical thinking in the classroom (Radulović & Stančić, 2017). However, and in a similar line to what Allamnakhrah (2013) concludes, the teachers interviewed here state that they have little information on specific strategies and techniques for assessing and encouraging their students' critical thinking, that is, they show a training deficit in this aspect. Specifically, the method mentioned most frequently was PBL. This finding could perhaps be due to the high effectiveness that its practical application has demonstrated in some studies (Saiz & Rivas, 2012), even with pre-school children. However, the discussion technique is among the most commonly used. In this sense, the students surveyed in the study by Zare and Othman (2015) also pointed out clear benefits of using debate to develop critical thinking, communication skills and teamwork.

There is also no unanimity among teachers' opinions on the implementation of individual or group methods to promote critical thinking and their assessment. However, in studies that present methods to foster critical thinking from a group perspective, better learning outcomes are obtained (Florea & Hurjui, 2015; Hasan et al., 2013; Chen, 2006). In general terms, these teachers consider group work to be more optimal for forming differentiated and self-directed thinking. In fact, the advantages of the group approach for enhancing

critical thinking at different educational levels have been evidenced in numerous previous research studies (Devi et al., 2015). In individual tasks, the results are more diverse. In short, and in agreement with Florea and Hurjui (2015), the teaching of critical thinking is effective if certain conditions are met, such as the creation of learning situations, the provision of sufficient time to carry out the activities, the creation of incentives for students to think independently, to speculate, to reflect, to accept the diversity of opinions and ideas, to participate actively, to engage, to cooperate and to collaborate in the search for solutions.

The teachers interviewed also reflected on the critical thinking-inclusion binary. In general terms, they consider that the development of critical thinking in pupils is essential as part of their all-round education. Therefore, the stimulation of this mental ability can provide students with benefits in their way of thinking, transmitting, arguing or debating in the classroom. Moreover, from a more holistic point of view and as Ballard (2013) concluded, possessing this skill will enable them to support social judgements and to critically analyse beliefs and circumstances in their environment. Furthermore, Norman et al. (2017) highlighted the importance of teaching in environments of discussion and multiculturalism in order to foster the development of critical thinking and inclusion. Educational inclusion will always favour the development of critical thinking as this mental ability is enriched through the diversity of thoughts and opinions in the environment (Thomas, 2009).

An important aspect to highlight is the development of an evaluation in which a coherent and meaningful type of critical thinking is encouraged. In addition, it is important to consider the process followed to obtain the answer (not only whether it is correct or not) and the argumentation offered by the students. In the face of this variability, there is agreement among the teachers interviewed about the few training opportunities available to them to promote critical thinking explicitly in the classroom. Despite this, they all have the minimum necessary resources (which usually include assessment rubrics) to be able to carry out a more or less fair assessment of these skills in their students. Previous research (Halpern, 2010; Miranda, 2003) has mainly opted for self-assessment, co-assessment, the application of different tests and, in some cases, assessment rubrics. On the other hand, teachers are dissatisfied with the insufficient measures taken in schools to develop critical thinking. This is why they are calling for training that prepares them and provides them with the tools to respond to this need and to implement actions that favour the transformation of the mental patterns established today. In this regard, several authors (Beyer, 2008; Tiruneh et al., 2014) have highlighted the importance of teacher training in this regard, insofar as this variable, together with previous teaching experience in teaching critical thinking, has a direct influence on the effectiveness of educational interventions for the development of this skill.

Conclusions

Young children engage in many of the same cognitive activities and processes as adults (Rozendaal et al., 2010). Therefore, critical thinking should have a reserved educational

space in the curriculum of primary schools. Through this thinking, one learns to think, in an autonomous and collaborative way with others (Facione, 2007). Consequently, in order to transform society and turn it towards rationality, values, plurality and diversity, critical thinking becomes absolutely necessary. This requires conscious, continuous and open teaching instruction that fosters critical thinking, as well as numerous practice opportunities for students. In this sense, a key condition for such learning to take place is that teachers engage in reflective practice and are able to model this practice with students so that they also develop reflective skills. Precisely for this reason, teachers' perceptions and behaviours that foster critical thinking need to be identified and assessed on an ongoing basis. The results of this study highlight the need to learn how to design educational interventions in teacher education plans that have, as their ultimate aim, the preparation of students for life and their inclusion among the diversity of needs in the classroom.

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