The Development Of Critical Thinking In Primary School: The Role Of Teachers’ Beliefs

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Abstract

This paper refers to studies and research concerning teachers’ knowledge and beliefs. From the 1980s researchers have examined several aspects of teachers’ thought processes [1], [2], [3]. Teachers’ beliefs are considered in order to understand how teachers conceptualize their work, how they make decisions and how they choose their practices. Some definitions and the nature of teachers’ beliefs are about teaching, learning and intelligence. A growing body of research argues that teachers’ beliefs should be examined in context, considering the influence of culture [4], [5]. In spite of all the social factors which might influence teachers’ beliefs, many authors ask themselves if teachers’ beliefs can be changed and how. There are some models of conceptual change and alternative models of belief change [6], [7]. I am currently investigating these arguments as a PhD student. I planned a research project considering the implications for teachers’ education and ways to improve that. My research questions are: What is the relationship between teachers’ beliefs about intelligence and learning, and the use of critical thinking activities in the classroom? Is it a relationship influenced by the teachers’ self-efficacy? I prepared a questionnaire for primary teachers using validated instruments: the critical thinking beliefs appraisal [8]; the teacher beliefs survey [9]; the learning inventory [10]; the teachers’ sense of efficacy scale [11] and the implicit theories of intelligence scale [12]. I have started handing out the questionnaire and I am proceeding with data analysis.

Keywords: Teacher beliefs, critical thinking, intelligence, self efficacy, teacher education.

1. Introduction

During the past three decades research on teachers’ knowledge and beliefs has grown rapidly. This new line of research has generated a considerable area of inquiry on the nature of teaching. From the 1980s research on teacher
thinking aim to describe teachers’ beliefs and to understand and explain how and why the professional teachers’ practices emerge and develop. Research has examined how teacher behaviour influences student behaviour and student achievement scores. Pajares [2] cites several sources in support of the assumption that beliefs are the best indicators of the decisions individuals make throughout their lives and he suggested a strong relationship between teachers’ educational beliefs and their planning, instructional decisions, and classroom practices. The findings about the relationship between teacher beliefs and practices of teaching could be used by teachers themselves, teacher educator, school administrator, policymakers, and curriculum designers. There are different views about the concept of beliefs. These depend on the point of view of theorist or researcher. Since the 1970s, research has tried to classify the concept through a multi-dimensional system. For example Wehling and Charter [13] discuss beliefs in terms of complex organizations consisting of discrete sets of inter-related concepts. They include beliefs in the category of representations, or cognitive maps of the external world which serve as mediators for experiencing and responding to reality. This conception of beliefs fits with the notion of beliefs as personal knowledge, personal pedagogies and implicit theories. Pajares [2], refers to beliefs as a “messy construct”, one that has not always been accorded much precision. However, research indicates that teacher behaviours are not always consistent with their beliefs.

A growing body of research asserts that teachers’ beliefs should be studied through a framework aware of the influence of culture [5], so are constantly situated in a physical setting as the school, the classroom, the community, or curriculum. One common conclusion in the literature about teachers’ beliefs is that changing is a complex, perhaps even, mysterious, process [14] and that powerful teacher education programs are needed to impact beliefs [15]. Teachers’ beliefs appear to be static [16], resistant to change [17], and are generally not affected by reading and applying the findings of educational research [18]. However, some researchers have noted that reflecting on practice can change beliefs. Critical thinking, as the ability to involve in meaningful, self-regulatory judgment, is generally recognized as an essential skill for the knowledge and most educators would agree that learning to think critically is one the most desirable goal of formal schooling. This means not only thinking about important problems concerning disciplinary areas but thinking about the political, ethical and social challenges in everyday life.

2. Critical Thinking in Children

Critical thinking is a complex and controversial notion and there are widely contrasting views about it [19], [20]. The origin of literature on critical thinking can be traced in two academic disciplines: philosophy and psychology. Stenberg [21] has also referred a third critical thinking area within the field of education. The philosophical approach focuses on the hypothetical critical thinker as someone who is e.g. inquisitive in nature, open-minded, flexible, understands diverse viewpoints [22]. The cognitive psychological approach focus on how people actually think versus how they could or should think under ideal conditions [20] and to define critical thinking by the types of actions of behaviours critical thinkers can do and shows a list of skills and procedures performed by critical thinkers [23]. Bloom and his colleagues [24] are included in the educational approach. Their taxonomy for information processing skills, especially the three highest levels (analysis, synthesis and evaluation) are frequently considered as representation of critical thinking. The educational approach is based on years of classroom experience and observations of student learning but the frameworks in this field have not been tested as firmly within either philosophy or psychology [21]. Many researchers working in the area of critical thinking lament the poor state of critical thinking in most educated adult and children. Early research in the Piagetian tradition tended to view the cognitive processes of young children as insufficient in relation to those of older individuals. Following the Piaget’s stages of development, young children are incapable of formal operations which are required for critical thought. In spite of more recent research has found that young children engage in many of the same cognitive processes that adults do, that means that there is a place for critical thinking in the lower elementary curriculum [25]. Kennedy [26] refers although critical thinking ability appears to improve with age, even young children can benefit from critical thinking instruction. Bailin et al. [27] argue that critical thinking instruction at the primary school can include teaching student to e.g.: value reason and truth; be open-minded; respect others during discussion; be willing to see thinks from another’s perspective. A large number of critical thinking researchers confirm that critical thinking skills and abilities can be taught. Halpern [28] offers evidence of two instructional programs. Kennedy et al. [25] concluded that instructional interventions improving critical thinking skills generally shows positive results. Although critical thinking skills and abilities are part of the context to be learned according
with some authors they are not the focus of direct and explicit instruction. Students are expected to acquire these skills as a natural consequence of engaging with the subject matter [29]. A second way to teach thinking skills involves direct and explicit instruction in critical thinking skills as a separate course, where critical thinking skills and abilities are brought outside the context of specific subject matter and this approach is the most common in the Italian context. A third approach combines elements of both the general and subject specific approaches and in their meta-analysis of 117 empirical studies, Abrami et al. [30] found that the mixed approach had the largest effect-sizes on student’s skills and dispositions. The authors also found that if educators receive special training in teaching critical thinking the course curricula have the largest effect. Successful interventions may require professional development for teachers specifically focused on teaching critical thinking [30].

3. Teachers’ belief about learning and teaching

Teacher educational researchers have in the past two decades demonstrated an increasing interest about some aspects of teacher cognition and their relationship to practices in the classroom [31], [32]. Researchers often classify teacher beliefs either behaviourist or constructivist. That dichotomy is useful in terms of categorize beliefs but maybe is simplistic. Theories of learning such as constructivism are so diverse that it is questionable whether we can possibly categorize sets of beliefs in terms of a behaviourist/constructivist dichotomy [33]. Calderhead [1] argues that some teachers consider teaching as a process of knowledge transmission, others as a process to guide children’s learning or as a process of developing social relationships. He also distinguishes beliefs of teachers based on their experience and pre-service teachers start with control-oriented belief systems that emphasize the importance of maintaining order and good discipline and guiding the activities of the children. During training, these attitudes become more liberal and child-centred. However, when teachers enter full-time teaching, they once again revert to a control-oriented belief system. Many teacher educators are incorporating teaching methods founded on constructivist theories of learning in their courses and programs [14]. It is recognize that teachers frequently teach as they were taught based on years of observing their own teachers [34]. Tsai [35] argues that the belief of a large number of teachers, who hold traditional views of teaching science, learning science, and the nature of science, originated these views of their own school science experience. Trumbull and Slack [36] believe that teachers fail to develop constructivist ideas about teaching and learning because they have all experienced in the existing traditional educational environments.

Some researchers have noted that reflecting on practice can change beliefs. As an example, Luft [37], conducted a study about changing beliefs during an in-service programme about problem-solving with a group of teachers in grades 3 for 10 months. Focus groups, interviews, and observation were used in this programme to capture emerging beliefs and behaviour changes were documented throughout the year.

4. Beliefs on intelligence

Intelligence is one of the most valued psychological attributes that has relevance not only for teachers, parents, students and the educational system in general but also for people, as fundamental human ability. There seems to be no doubt on the importance for psychology in general and for everyday behaviours in social and professional interaction. The consensus on intelligence ends when it tries to defining it and to find its origin. Various definitions of intelligence have appeared and the intelligence theories are one the most laboriously researched psychological constructs in the past one hundred year [38]. Intelligence is a relevant argument because students’ implicit beliefs about intelligence can influence their beliefs and behaviours [12], [39] and these intelligence beliefs have been found to be related by teachers’ conceptions of intelligence [40]. As a result, teachers’ beliefs about intelligence could influence their teaching approaches and interactions with their students. Suppose you are asked to agree or disagree with the following sentences: You have a certain amount of intelligence and you really cannot do much to change it, Your intelligence is something about you that cannot do much to change it, and You can learn new things, but you cannot really change your basic intelligence. If you are agree with these sentences, you are affirming entity theory. This means that human intelligence is limited and fixed. On the other hand, you can reject these propositions, displaying an incremental theory approach to human intelligence. Incremental theory implies that
people can learn new skills which may increase their intelligence. If there is a firm relationship between teachers’ views of intelligence and student’s views of intelligence, then the need for teacher to support malleable beliefs about intelligence and ability is decisive to encouraging developing learners. Student’s implicit beliefs about the nature of intelligence and ability are important factors affecting their motivation and achievement [12]. These students believe they can improve their intelligence through effort, learning, persistence and strategies. When teachers interact with students in the classroom, they make judgements concerning student’s intelligence and abilities [41]. Teachers’ judgments, in accordance with their implicit views of intelligence and ability, can influence their classroom practice, their relationship with students, and students’ self-perceptions e.g. [40]. Additionally, a school’s culture can be influenced by these conceptions of intelligence and ability. Oakes et al. [42], noted several aspects of conventional views of intelligence which may contribute to trace and influence teachers’ classroom practice, including that intelligence is an innate, fixed entity; intelligence is unidimensional; intelligence can be explained by racial and cultural difference. They argued that teachers who embraced these conceptions of intelligence and ability will reduce their perceived responsibility for student’s learning.

5. Conclusions

As a PhD student in Education I have designed under the supervision of my tutor Professor P. Perucchini, a research project. I have considered how in recent years critical thinking has become a central focus of education. For example Ball [43] has documented the emergence in OECD countries of policies, programs and projects designed to develop higher level competencies e.g. related to creativity, initiative, problem solving, flexibility. We can also find the term critical thinking in educational policy documents that underline the inclusion of critical thinking skills in curricula and academic education systems. Studies on teachers’ beliefs about teaching and learning have showed the influence of these beliefs on teachers’ practices in the classroom and the achievements of the student. Researchers on teachers’ beliefs about intelligence have demonstrated the influence of different views of intelligence on teachers’ classroom practices too.

A considerable amount of research can be found concerning the role of beliefs in teaching scientific subjects but not much about other topics. In spite of the general agreement of the importance to teach students to think critically, there are very few studies about the beliefs of teachers’ regarding critical thinking activities. At the same time there are no studies about the relationships between different aspects of beliefs (e.g. about intelligence, or learning or teaching) and classroom practices.

The purpose of my study and my research is to examine the role that beliefs play in teaching critical thinking in primary school. Critical thinking has been an important issue for many years. It is generally agreed that by learning only a content-based curriculum, children cannot become better thinkers able to give reasons for their conclusions, to think flexibly and creatively, to solve problems and make good decisions. I think teachers’ beliefs about learning and intelligence can explain the difference in the use of critical thinking activities in the classroom. In Italy studies and interest about teachers’ beliefs are quite recent and there are no specific studies about critical thinking activities in primary school.

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