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Value-loaded critical thinking in philosophical dialogues

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CARE

Chapter 1

Introduction

rights
equality

SOLIDARITY

welfare

FREEDOM

justice

rights

equality

SOLIDARITY

CARE

Learning to think critically about moral and societal issues is an important educational objective (Davies & Barnett, 2015; Ten Dam & Volman, 2004). Critical thinking is traditionally described as higher order thinking involving logical reasoning (Facione, 1990). A critical thinker has good reasoning skills, is open-minded, and evaluates reasons for and against before making a judgment (Facione, 1990). This traditional concept of critical thinking has been criticized for its one-dimensional focus on logical reasoning skills and lack of reflection on the meaning, social relations, and consequences of judgments (Davies & Barnett, 2015; Santos Meneses, 2020; Ten Dam & Volman, 2004). In recent literature, critical thinking has been conceptualized as an inherently normative competence, also involving making moral value judgments about what is worth pursuing and why (Davies & Barnett, 2015; Frijters et al., 2008). In accordance with Frijters et al. (2008), I call this *value-loaded critical thinking*.

Another current debate in the literature on critical thinking education, concerns the way critical thinking should be taught. There is a large body of evidence suggesting that explicit instruction combined with deliberate practice is the most effective way to teach critical thinking (Abrami et al., 2008, 2015; Heijltjes et al., 2014; Marin & Halpern, 2011; Tsui, 1999). However, this concerns the more narrow, traditional account of critical thinking. Many researchers have acknowledged the potential of a dialogic approach to teaching critical thinking, especially when the objective is to teach young people a more normative form of critical thinking, such as value-loaded critical thinking (Santos Meneses, 2020; Schuitema et al., 2011; Ten Dam & Volman, 2004; Veugelers, 2011). Arguments for a dialogic approach are that this actively involves students in collaborative meaning-making, which promotes elaboration and reasoning (Howe et al., 2019; Kim & Wilkinson, 2019), and that dialogue makes it possible to take the perspective of others into account (Kim & Wilkinson, 2019). There is a growing body of empirical evidence of the effectiveness of dialogic interventions for developing students' critical reasoning capacities (Fair et al., 2015; Frijters et al., 2008; Iordanu & Rapanta, 2021; Schuitema et al., 2009; Topping & Trickey, 2007). However, most of these studies analyze small-group peer dialogues, whereas the most common form of dialogic classroom interaction is teacher-led, whole-class dialogue (Alexander, 2020; Howe & Abedin, 2013). Until now, empirical evaluations of whole-class, teacher-led classroom dialogue interventions and their effect on students' critical thinking capacities have been scarce.

In this dissertation, my aim is to contribute to these two current debates on critical thinking education in the context of secondary education. I want to provide insight into how whole-class, teacher-led classroom dialogue can contribute to students' value-loaded critical thinking capacities. I consider Dutch secondary school philosophy classes a suitable context to study this, for several reasons: first, because critical thinking, logic, argumentation, ethics, and moral values are part of the philosophy curriculum in pre-university and higher general education (Oosthoek, 2021). Second, because Dutch philosophy teachers are academically trained in these

domains (Kienstra et al., 2015; Oosthoek, 2021). Third, because philosophy teachers report that they often make use of classroom dialogues (Marsman, 2010). Thus, I expect to find examples of dialogic approaches to value-loaded critical thinking in secondary school philosophy classes and aim to use these to articulate teaching strategies and develop design principles for teaching value-loaded critical thinking in whole-class, teacher-led, classroom dialogues. The central question of this dissertation is: *How can whole-class, teacher-led, philosophical dialogues contribute to students' value-loaded critical thinking?*

Three perspectives on critical thinking

In the educational literature three perspectives on critical thinking are often distinguished: a philosophical, psychological and critical pedagogical perspective (the following is mainly based on Davies & Barnett (2015) and Ten Dam & Volman (2004)). In the 1970s, during what is called the first wave of critical thinking, a philosophical perspective on critical thinking was introduced in education. Critical thinking education focused on the skills of identifying and evaluating arguments. A critical thinker from this perspective is mainly concerned with the rational norms of good thinking, which are thought to be generally applicable across disciplines and topics. As a result, critical thinking education was offered in specialized critical thinking courses, that were essentially programs to develop the skills of logic, reasoning, and argument.

Since the 1980s, during the second wave of critical thinking research, the philosophical or traditional conception of critical thinking was criticized by authors from two different research traditions: educational psychology on the one hand and critical pedagogy on the other. Educational psychologists focused attention on the appropriate learning and instruction processes, and addressed the issue of transferability of critical thinking skills. Halpern (1998) argued that we cannot expect young people to develop their thinking, unless we give them something to think about. Critical thinking should therefore be taught in the context of meaningful, rich, domain-specific subject-matter, such as ill-defined, messy, real-life problems, because those are the situations in which critical thinking is needed (Halpern, 1998). Additionally, several educational psychologists emphasized the reflective, self-evaluative nature of critical thinking (Halpern, 1998; Kuhn, 1999). Critical thinking entails thinking about one's own thinking, regulating one's own reasoning process, and reflecting on one's own epistemological beliefs (Kuhn, 1999).

The traditional account of critical thinking has received even more fundamental criticism from critical pedagogy. It was argued that critical thinking has been described too individualistically, without acknowledging the social, political, and cultural context that individuals are thinking critically within. Critical thinking from a critical pedagogy perspective refers to revealing and overcoming social injustices and is concerned with the interests and needs of humanity. In this account of critical thinking the normative dimension is considered the most important; critical

thinking is about making the world a better place, rather than reasoning logically. In the 21st century, during the third wave of critical thinking research, authors have tried to combine valuable aspects of the philosophical, psychological and critical pedagogical perspectives on critical thinking. Value-loaded critical thinking is an approach to critical thinking education that aims to do so.

Value-loaded critical thinking

In this dissertation, I define value-loaded critical thinking as involving three dimensions (see figure 1). First, a cognitive dimension that corresponds with the traditional description of critical thinking. This provides criteria for valid and consistent reasoning. The second dimension concerns ethics, morality, and values: in line with critical pedagogues, I emphasize that critical thinking is inherently normative and focused on making moral value judgments about which actions are worth pursuing and why. The third dimension is reflective: critical thinking entails monitoring and evaluating one's own reasoning as well as reflecting on one's own values, judgments and actions. This third aspect is most prominent in the psychological perspective. Our conceptualization is consistent with and an extension on the work of Frijters et al. (2008) and Schuitema et al. (2009).

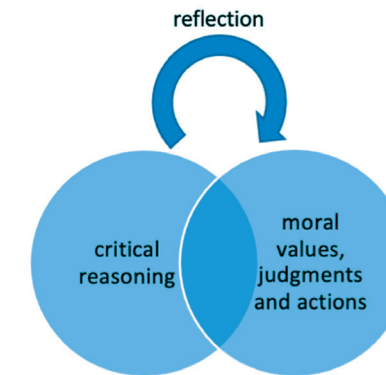
Transfer

Transfer is a person's ability to apply what has been learned in a variety of new situations, different from the original learning context (Peters et al., 2015; Van Oers, 1998). As educational psychologists in the second wave of critical thinking research pointed out: transfer of critical thinking skills from one domain to another does not happen automatically (Halpern, 1998). Thus, teachers preferably employ teaching strategies that make transfer of value-loaded critical thinking more likely to occur. This is particularly relevant in the present study, where I take a dialogic approach to teaching critical thinking. Previous research has shown that it can be hard for students to apply the reasoning skills they learned during classroom dialogue in individual transfer tasks (Reznitskaya et al., 2012).

As a starting point, I adopted three design principles for transfer-oriented teaching that Peters et al. (2015) propose: transfer can be promoted 1) by making the learning content more meaningful to students, 2) by creating intercontextuality, that is making connections to other contexts, and 3) through metalevel reflection on the learning process and outcomes. However, these design principles were not specifically developed for dialogic teaching, nor in relation to moral values. An aim of this dissertation is to gain insight into how teachers can implement transfer-oriented design principles for value-loaded critical thinking in the context of educational classroom dialogue.

Figure 1

Three dimensions of value-loaded critical thinking



Teacher-led philosophical dialogues

I focus on whole-class, teacher-led dialogues, rather than small-group, peer dialogue. The main reason for this is that the large majority of research into dialogic approaches to critical thinking and moral reasoning education have focused on small-group peer dialogues (Howe & Abedin, 2013; Schuitema et al., 2008), even though teacher-led, whole-class dialogue has been shown to be the most common form of dialogic pedagogy in primary and secondary education (Alexander, 2020; Howe & Abedin, 2013). Also, in the context of this study, Dutch secondary school philosophy classes, teacher-led dialogue is the most commonly used form of classroom dialogue (Marsman, 2010). Moreover, teachers can fulfill various roles in dialogue that might contribute to high quality value-loaded critical reasoning (Sprod, 2001). First, an organizational role: to organize and scaffold dialogues that invite the participants to engage in value-loaded critical thinking. Second, teachers have an epistemic responsibility, namely to address fallacies, inconsistencies and factual mistakes, thus to maintain the rigor of reasoning and safeguard truth. Third, teachers have the pedagogic responsibility to make the dialogue an inclusive, inviting, and safe environment for students to talk about their personal values.

Study design and research questions

The research project as a whole can be characterized as an educational design study. Plomp (2010) defined educational design research

“as the systematic study of designing, developing and evaluating educational interventions [...] as solutions to problems, which also aims at advancing our knowledge about the characteristics of these interventions and the processes to design and develop them.”

The educational problem I address in this dissertation is ‘how to teach value-loaded critical thinking in whole-class, teacher-led, philosophical dialogues.’ In educational design research three consecutive research phases are distinguished: the preliminary research phase in which the context and needs are analyzed, the development phase

in which prototypes of the solution are designed, evaluated, improved, and evaluated (again and again, etc.). The final phase is for assessment, this contains a summative evaluation of the designed solution: does it solve the problem?

In the four studies in this dissertation, I go through the three stages of design research, as summarized in table 1, in order to answer the main research question:

How can whole-class, teacher-led, philosophical dialogues contribute to students' value-loaded critical thinking?

In this research project I developed an intervention consisting of design principles to promote value-loaded critical thinking in whole-class, teacher-led, philosophical dialogues and a professional development (PD) program for teachers aimed at learning to apply these design principles. In the literature on educational design research, four quality criteria are distinguished for evaluating educational interventions: relevance, consistency, practicality and effectiveness (Nieveen & Folmer, 2013). Relevance and consistency are also referred to as validity: **relevance** or content validity concerns the need for an intervention, and **consistency**, or construct validity, whether its design is logically consistent and the elements form a coherent whole. Researchers need to be able to present convincing evidence of the validity of their design, before evaluating the practicality and effectiveness (Plomp, 2013). **Practicality** refers to how usable the design is for practitioners in the setting for which it has been developed: can the teachers work with it in their daily practice, in the way that was intended by the developers? The final quality criterion is the **effectiveness** of an intervention: does it result in the desired learning outcomes? In the four studies in this dissertation, I evaluate the designed intervention on all four quality criteria, as summarized in table 1.

The first study (chapter 2) addresses the preliminary research phase. In an exploratory multiple case-study I answer the research question:

What are the teaching strategies used by philosophy teachers to promote value-loaded critical thinking and transfer thereof in classroom dialogues?

The participants are five philosophy teachers who were asked to conduct three whole-class philosophical dialogues in their 10th grade classes as they would normally do. A qualitative analysis of the dialogue transcripts was conducted. This resulted in a detailed description of teaching strategies to promote value-loaded critical thinking and transfer thereof. With this study I provided insight into existing practices of teaching value-loaded critical thinking during philosophy classroom dialogues and also in which aspects of value-loaded critical thinking and transfer thereof are not being addressed.

The second study (chapter 3) concerns the development and assessment phases. Based on the results of the first study, I developed design principles and a professional development program and I evaluated those with teachers. The research question for this second study was:

How do teachers evaluate and implement the design principles for (transfer of) value-loaded critical thinking?

I evaluated the design principles on relevance, consistency, and practicality in a mixed method educational design study using semi-structured interviews and dialogue transcripts. The participants were five philosophy teachers (all different teachers than those in the previous study) and their 10th grade students, who participated in several whole-class, teacher-led philosophical dialogues over the course of one school year.

In studies 3 and 4 (chapter 4 and 5) I assessed the effectiveness of the design. Both chapters are based on the same quasi-experimental study. In study 3 (chapter 4) I evaluated the effect of a classroom dialogue intervention on students' value-loaded critical thinking performance in transfer tasks. The research question was:

What is the effect of the PD and classroom dialogue intervention on students' value-loaded critical thinking?

I used a pretest-posttest control group design and conducted quantitative analyses on data from value-loaded critical thinking tasks. In this study I compared participants in three treatment conditions: first, students whose teachers participated in the PD program and implemented the five design principles during philosophical dialogues, second, students who participated in regular philosophical dialogues, whose teachers did not participate in the PD program, and third, students who followed their regular 10th grade curriculum, which did not contain philosophy lessons. In total 437 students and 12 philosophy teachers participated in this study.

In chapter 5, I analyzed the transcripts of the classroom dialogues that were recorded in this study. The aim of this fourth study was twofold: on the one hand, I wanted to gain insight into the quality of value-loaded critical thinking that was achieved in the recorded dialogues. The second objective was to gain more insight into the third dimension of value-loaded critical thinking, metalevel reflection. In chapters 2 and 3, I did not find many examples of metalevel reflection, even though this is considered of crucial importance for teaching value-loaded critical thinking in a transfer-oriented way. In this fifth chapter, I describe how teachers who participated in the PD program did promote various kinds of metalevel reflection during value-loaded critical classroom dialogues.

The research questions were:

- a) *what is the effect of a PD intervention about value-loaded critical thinking on the three dimensions of value-loaded critical classroom dialogue: moral values, critical reasoning and reflection?*
- b) *how can metalevel reflection in value-loaded critical classroom dialogue be characterized in detail and how do teachers promote metalevel reflection in the observed dialogues?*

Participants were the same 12 philosophy teachers and their students from study 3. I performed a mixed method analysis of the dialogue transcripts: a quantitative analysis in order to study the amount of value-loaded, critical reasoning, and reflective contributions in each dialogue and a qualitative analysis to gain more insight into the teaching strategies that teachers used to promote metalevel reflection.

In this dissertation, I go through a full educational design research cycle and I assess all four quality criteria for educational interventions. In table 1 the outline of this dissertation is summarized. Each of the next chapters addresses one part of the research project. Each chapter is set up as a separate journal article, so some overlap in theoretical framework and context description is inevitable. In chapter 6 I conclude this dissertation with a general discussion of the results of the research in light of the main research question.

Table 1
Overview of this dissertation

Chapter	Research question	Research phase	Study design	Participants
Chapter 1	Introduction			
Chapter 2	What are the teaching strategies used by philosophy teachers to promote value-loaded critical thinking and transfer thereof in classroom dialogues?	Preliminary research	Qualitative exploratory multiple case study using dialogue transcripts	5 philosophy teachers and their 10 th -grade classes
Chapter 3	How do teachers evaluate and implement the design principles for (transfer of) value-loaded critical thinking? (Evaluation of relevance, consistency, practicality)	Development and assessment phase	Mixed method educational design study using semi-structured interviews and dialogue transcripts	5 philosophy teachers and their 10 th -grade classes
Chapter 4	What is the effect of the professional development and classroom dialogue intervention on students' value-loaded critical thinking performance in transfer tasks?	Assessment phase	Quantitative quasi-experimental pretest-posttest study using reasoning tasks	437 students
Chapter 5	What is the effect of a PD intervention about value-loaded critical thinking on the three dimensions of value-loaded critical classroom dialogue: moral values, critical reasoning and reflection?	Assessment phase	Mixed method quasi-experimental design using dialogue transcripts	12 philosophy teachers and their 10 th -grade classes
Chapter 6	General discussion and conclusion			