Teaching Value-Loaded Critical Thinking in Philosophy Education

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Abstract

It is important that secondary school students learn to reason critically about normative issues. Philosophy teachers can contribute to this educational objective by promoting value-loaded critical thinking during philosophical dialogues. Value-loaded critical thinking is critical and reflective reasoning focused on deciding what is the right thing to believe or to do (Frijters et al. 2008). This paper describes the theoretical foundations of value-loaded critical thinking and presents four design principles for promoting value-loaded critical thinking during philosophical dialogues. The four design principles are: teachers should explicitly address moral values in dialogue (1), apply moral values to engaging or realistic examples (2), promote critical reasoning about moral values (3), and provide opportunities for reflection (4). To provide authentic illustrations and practical suggestions for teachers, each design principle includes selected excerpts of classroom dialogues of 10th grade philosophy classes in Dutch.

1. Introduction

Can genetic modification of farm animals be considered a more sustainable and animal-friendly way of producing food? Should schools be allowed to track students' location during school trips? Can unequal treatment, such as affirmative action, be considered fair? Young people are constantly confronted with normative questions that require careful consideration and critical reasoning. One aim of education is that young people learn how to make their own judgments on such issues. Value-loaded critical thinking captures this aim: value-loaded critical thinking is logically consistent, self-reflective reasoning, focused on making moral value-judgments about what is right to believe or do (Frijters et al. 2008; Rombout et al. 2021). As philosophy teachers, we have access to the tools of ethics, critical reasoning, and philosophical dialogue, all of which can help students develop value-loaded critical thinking skills. From ethics we derive the moral concepts and theories needed to analyze normative questions, understanding logic; argumentation and critical reasoning can help to analyze arguments from various stakeholders, and the potential of dialogue for developing moral and critical reasoning skills is widely recognized (Schuitema et al. 2008; ten Dam and Volman 2004). Moreover, multiple studies have empirically confirmed that dialogues about moral issues contribute to students' value-loaded critical thinking (Frijters et al. 2008; Rombout et al. submitted; Schuitema et al.

2009; 2011). However, not much is known about the specific characteristics of such dialogues and how teachers can facilitate the development of value-loaded critical thinking (Schuitema et al.: 2008). The present paper introduces four design principles for promoting value-loaded critical thinking during teacher-led, full-class philosophical dialogues. The four design principles are: teachers should explicitly address moral values in dialogue (1); apply moral values to engaging or realistic examples (2); promote critical reasoning about moral values (3); and provide opportunities for reflection (4). These design principles are based on scientific literature and empirically tested in a quasi-experimental study (Rombout et al., submitted). This paper describes each design principle in detail, what literature it is based on, and how teachers implemented it during philosophical dialogues. This is further illustrated with examples from dialogue transcripts.

The outline of this paper is as follows: in Section I, value-loaded critical thinking is conceptualized in relation to literature on critical thinking and moral education. Section II discusses how philosophical dialogue can contribute to value-loaded critical thinking of students in accordance to the four design principles.

2. Conceptualization of value-loaded critical thinking

2.1. Three perspectives on critical thinking education

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 and Barnett 2015; and ten Dam and Volman 2004[1]). In the 1970s, during what is called the first wave of critical thinking, a philosophical perspective on critical thinking was introduced in education. Robert Ennis' classic definition of critical thinking is "reasonable reflective thinking focused on deciding what to believe or do" (Ennis 1989). Critical thinking education of this wave 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 argumentation.

Since the 1980s, during the second wave of critical thinking research, the philosophical or traditional conception of critical thinking was criticized by authors in two different research traditions: educational psychology on the one hand, and critical pedagogy on the other. Educational psychologists focused attention on appropriate learning and instruction processes, and addressed the issue of the transferability of critical thinking skills. Halpern argued that we cannot expect young people to develop their thinking, unless we give them something to think

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[1] I am well aware that most of the literature cited in this paper originates from the Netherlands and English-speaking countries. Even though very relevant and important research on education in critical reasoning, moral judgment, and critical self-reflection has been done by philosophers, psychologists, and educationalists from other parts of the world. I decided to build on the body of work from which the concept 'value-loaded critical thinking' originates and complement that with recent literature on dialogic teaching, because this approach seemed to fit well within the context of Dutch secondary school philosophy classes. Thus, the present paper is not a systematic literature review, but rather a practical translation of recent scientific insights about teaching value-loaded critical thinking in philosophy education.

about (Halpern 1998). 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 these are the specific situations in which critical thinking is needed (ibid.). Additionally, several educational psychologists emphasized the reflective, self-evaluative nature of critical thinking (ibid; 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 has been argued that critical thinking is described in too individualistic terms, without acknowledging the social, political, and cultural context within which individuals are supposed to think critically Critical thinking from the perspective of critical pedagogy 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 as 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 exactly this (Frijters et al. 2008; Rombout et al. 2018; Schuitema et al. 2009).

2.2. Value-loaded critical thinking

I define value-loaded critical thinking as critical and reflective reasoning focused on deciding what is the right thing to believe or do (in line with Frijters et al. 2008). Value-loaded critical thinking therefore involves three dimensions: critical reasoning, moral values, and reflection (see figure 1). The first dimension, critical reasoning, is a cognitive dimension that corresponds to the traditional description of critical thinking. Starting with Ennis' definition of critical thinking, critical reasoning entails abilities such as to ask clarifying questions, to set definitions,
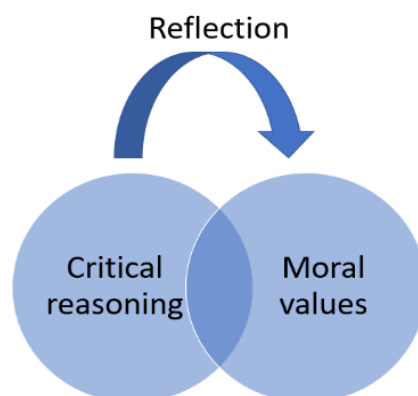

Fig.1: Three dimensions of value-loaded critical thinking

to provide reasons, to analyze and to judge the quality of argumentation, to develop and to defend a reasonable position, and to engage in suppositional thinking (reasoning about a

position with which one disagrees) (Ennis 1989). Knowledge about rhetorical strategies, fallacy labels, logical inferences and argumentation theory can contribute to these abilities (Ennis 2011). Moreover, a critical thinker is someone who is open-minded, strives to get it right and considers various positions fairly (ibid.).

The second dimension concerns moral 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. Moral values are ideals about the rightness of actions, what kind of person one wants to be, and how to live a good life in relation to individuals, the natural world and other cultures or ideals (Bleazby 2020; Veugelers 2000). In literature on moral values education, three types of learning objectives can be recognized: developing moral sensitivity, moral judgment, and one's own value orientation (Bleazby 2020; Narvaez 2006; Reid and Levinson 2023; Rest 1986; Veugelers 2011). First, moral sensitivity is a person's ability to recognize and consider moral issues (Bleazby 2020; Narvaez 2006; Reid and Levinson 2023), i.e., to recognize moral dilemmas in a situation and to consider which values are at stake for those involved (Reid and Levinson 2023). This requires taking the perspective of others, interpreting emotions, analyzing situations and understanding moral concepts (Narvaez 2006). Secondly, moral judgment is the ability to analyze a situation, generate possible courses of action, reason from various perspectives about pros and cons of these actions, and weigh arguments to come to a judgment about what is the right thing to do in that situation (Bleazby 2020; Narvaez 2006). Moral reasoning should address moral considerations, such as values, rights, responsibilities, obligations, and care and concern for others. In addition to this, non-moral arguments about the practicality, personal preferences, economic considerations etc. might also be considered. A moral judgment is the result of someone weighing the various arguments and deciding what is morally right. For this, a specific ethical framework could be used, but I adopt the meta-ethical stance that morality is complex and can be based on any number of values or principles without requiring a determinate order of precedence among them (Sprod 2001). Thirdly, the development of a learner's own value orientation is a constructive process. A more fully developed value orientation is more explicit and reflective than someone's initial, intuitive, almost automatic, and unreflected ideas about right and wrong (Veugelers 2011). A value orientation can be developed, among others, through life experiences, engaging in moral judgment, and reflecting on experiences, judgments and actions (Bleazby 2020; Veugelers 2011).

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. From the psychological perspective this third aspect is most prominent. Reflection is sometimes perceived as a 'looking *back*': something that happens after completion of a learning activity (Elshout-Mohr et al. 1999). Here, I employ a broader conception of reflection as 'looking *at*', or thinking about, oneself, one's own values, reasoning process, actions, and learning. As such, reflection is a metacognitive skill that can be relevant in various phases of the learning process: at the onset of engaging in a (learning) activity (to activate previous knowledge, for goalsetting, and for planning), during an activity (monitoring progress and process), and afterwards (to evaluate, recapitulate and look back) (Elshout-Mohr et al. 1999; van Stel and Veenman, 2014).

In the literature about critical thinking and moral values education, reflection is considered a central component of these two dimensions in value-loaded critical thinking. On the one hand, monitoring and evaluating one's own reasoning is a crucial criterion for thinking critically (Ennis 2011; Kienstra et al. 2015; Santos Meneses 2020). On the other hand, reflection plays an important role in developing moral sensitivity, moral reasoning and one's own value-orientation (Reid and Levinson 2023; Schuitema et al. 2011). However, by declaring reflection as a separate dimension of value-loaded critical thinking, I aim to highlight its importance. Being able and inclined to reflect on one's own moral values and critical reasoning is an important competence for any value-loaded critical thinker.

3. Design principles for teaching value-loaded critical thinking in philosophical dialogues

3.1. Philosophical dialogue

The four design principles for teaching value-loaded critical thinking are developed to be implemented in philosophical dialogue. In philosophy education, teachers adopt various approaches to classroom dialogue. The type of philosophical dialogue that I have in mind centers on a fundamentally open philosophical question (Reznitskaya and Gregory 2013) and the participants engage in a collaborative inquiry to form a reasoned judgment about this central question (Howe et al. 2019; Reznitskaya and Wilkinson 2017). For this, it is important that the participants feel free to express their thoughts, listen to and build on the contributions of others (Howe et al. 2019; Reznitskaya and Wilkinson, 2017). The aim is that the participants enlarge their understanding of the issue at hand as well as their own and others' judgments about it, but not to strive for consensus, since the participants may reasonably disagree about what the right answer to the central question might be (Bleazby 2020; Sprod 2001). In philosophical dialogue, teachers and students ideally share responsibility over the content and process of the inquiry (Kienstra et al. 2015; Schuitema et al. 2018). Especially when students first engage in philosophical dialogue, it is advised that the teacher is procedurally strong to model and prompt productive participation in dialogue (Alexander 2020; Reznitskaya and Gregory 2013). Through sustained practice combined with metalevel reflection, the participants become more skilled in dialogue and teachers could gradually release more responsibility to students (Reznitskaya and Wilkinson 2017). Philosophical dialogue is rooted in a philosophical tradition that emphasizes that inquiry dialogue is inherently critical and normative (Cam 2016; Lipman et al. 1980; Sprod 2001).

Meta-analyses on critical thinking education indicate that classroom dialogue can be an effective approach to teaching critical reasoning (Abrami et al. 2008; 2015). Especially teacher-led dialogue can contribute to students' critical reasoning skills, because the teacher can ask questions and highlight, prompt and model critical reasoning (Abrami et al. 2015; Oyler 2019; Reznitskaya and Wilkinson 2017). In a literature review on teaching strategies for moral education, Schuitema and colleagues identified that classroom dialogue is a recurring element in curricula for moral education. Engaging in dialogue can contribute to moral sensitivity, moral reasoning and developing one's value-orientations (Schuitema et al. 2008). Becoming aware that their peers may have other perspectives on moral issues and values through dialogue

increases the student's moral sensitivity to differences. By engaging with each other's arguments and criticism, students develop their moral reasoning skills (Bleazby 2020; Schuitema et al. 2008; ten Dam and Volman 2004). Dialogues can also contribute to value development, because students practice attitudes and habits such as open mindedness, autonomy, tolerance, being reasonable, being courageous, caring for emphasizing with others (Bleazby 2020; Lipman et al. 1980; Schuitema et al. 2008). Classroom dialogue in the context of moral education can be discourse among students in small-groups or in the whole-class while being led by the teacher. However, in literature on philosophy education there seems to be a preference for teacher-led dialogues because teachers can make sure that moral questions are addressed, and facilitate an egalitarian, democratic, as well as an open atmosphere in the classroom, in which students feel free to explore various options and values (Schuitema et al. 2008; Gregory 2008; Lipman et al. 1980).

3.2. Four design principles

In my dissertation, I have developed design principles for teaching value-loaded critical thinking during philosophy classroom dialogues. These design principles were based on a literature study and subsequently evaluated and revised during an educational design study in which my colleagues and I collaborated with five experienced Dutch philosophy teachers (Rombout et al. 2021). In a quasi-experimental study in which 12 teachers and 437 students participated, we evaluated the actual effects of dialogues in which these design principles were realized on students' value-loaded critical thinking skills (Rombout et al. submitted). Here, I present the design principles in relation to scientific literature and illustrate each principle with examples from transcripts of the philosophical dialogues that were observed during the quasi-experimental study. In this way, I aim to provide practical examples for philosophy teachers and present authentic examples from classroom observations. The observations were made in 10th grade philosophy classes in the Netherlands. The transcripts are from dialogues that were facilitated by philosophy teachers who participated in a professional development program about promoting value-loaded critical thinking during philosophical dialogue, in which they learned about the design principles. All participating teachers and students provided informed consent before participation. The ethics committee of our institution approved our research proposal before recruitment began. We made sure to handle our data securely and with respect for privacy of the participants.

The design principles for promoting value-loaded critical thinking during philosophy classroom dialogue are:

1) Explicitly address moral values in dialogue;
2) Apply moral values to engaging or realistic examples;
3) Promote critical reasoning about moral values;
4) Provide opportunities for reflection.

Design principle 1: Address values

Philosophical dialogues that contribute to students' value-loaded critical thinking, should explicitly address moral values (Aalberts et al. 2012; Ilten-Gee and Hilliard 2019; Schuitema et al. 2011). One way to do this is to ask normative questions, about what is desirable, right, just or fair, such questions often involve 'should' or 'ought' (Cam 2016; Veugelers 2011). Another strategy described in the literature is to discuss relevant moral concepts, such as values and virtues, or, more specifically, different definitions of 'justice' (Bleazby 2020; Cam 2016). This can help learners to recognize and distinguish moral aspects of a situation (Cam 2016). Moreover, to develop moral sensitivity, the participants of a dialogue should explicitly address what makes something a moral issue and why (Reid and Levinson 2023). Table 1 shows authentic examples of teaching strategies for addressing moral values that were observed in our quasi-experimental study (Rombout et al. submitted). This design principle makes clear that in order to teach value-loaded critical thinking, teachers have to prompt students to actually discuss moral values and moral dimensions during philosophical dialogue. The teachers that participated in our professional development meetings, indicated that explicitly addressing moral values and making it a central learning objective, was the biggest shift in their thinking about facilitation philosophical dialogues (Rombout et al. 2021).

Teaching strategy	*Authentic example*
Value-loaded central question	Should everyone be allowed to do with their possessions what they want?
Highlight moral values / explicitly name moral values at stake	Student 1: "I think people should be allowed to do with their money whatever they wish. But whether that is the right thing to do… That is, I don't know…" Teacher: "Can you tell why you think that is so important? What is the underlying value, what makes you say people should in principle be allowed to do as they wish?" Student 1: "I want to say that it's allowed when you have earned it yourself. But there are these spoiled children who inherit millions… So, well, I don't know, one's possessions are one's possessions, but it does depend a bit how you got it" Teacher: "Are you saying that, if you've earned it honestly, it is your right to do what you want with it?" Student 1: "That's when I consider it a more fairly deserved right." Teacher: "So it is about fairness and rights…"
Redirect to moral values	Student 1: "I do think that if developments continue in this way, that technology will take over from human beings. Yes, it probably will take over, but well… we should want that." Teacher: "One could conclude that this is the case. In this class, we are mainly focused on the question whether we want that, whether it is morally acceptable." Teacher: "Today, we'll discuss human enhancement. And the objective is that you practice developing your own, deliberate value judgments about that."

Tab. 1: *Teaching strategies for addressing moral values*

Design principle 2: Apply values

Literature on critical thinking and on moral education both stress the importance of teaching this objective in relation to meaningful content matter and emphasize authentic, rich, and realistic applications (Abrami et al. 2015; Schuitema et al. 2008; ten Dam and Volman 2004). Applying moral values to dilemmas or specific examples is important, because people tend to agree on the importance of moral values such as justice, freedom, or equality on an abstract level, but they often disagree on the right way to realize and protect such values in a specific situation (Rescher 2014). Discussing engaging and realistic examples and asking for students' value judgments about this can make the discussion more focused, meaningful, and relevant compared to an abstract discussion about the importance of different moral values. In our research, we observed that teachers used a variety of examples, such as thought experiments, fragments from literature or films, real-life examples from the news or documentaries, as well as questions about students' personal experiences or shared experiences of the participants (Rombout et al. 2021; 2022). See table 2 for authentic examples from dialogues in the quasi-experimental study. Such examples can be introduced when the discussion remains rather abstract and as a result oftentimes superficial and without much disagreement.

Type of example	Authentic example
Thought experiment / moral dilemma	Teacher presents Heinz-dilemma about stealing medicine and asks students whether stealing is just in this case.
Real-world example	Teacher shows video-clip of the band K foundation burning one million pound and subsequently asks students the central question: Should everyone be allowed to do with their possessions and money what they want?
Shared experience of the participants / student's personal experience	Teacher: "Okay, we watched this documentary about degrading working condition in the shrimp fishing industry and we discussed arguments about global justice. Tonight we will be eating tapas together. Will you be ordering these delicious garlic shrimps? Does seeing this documentary influence your actions?"

Tab. 2: *Teaching strategies for applying moral values*

Design principle 3: Reason critically about values

There is quite an extensive body of literature on characteristics of dialogue that promotes critical reasoning. It is important to discuss one issue or line of reasoning for an extensive period, rather that briefly touching upon a wide variety of arguments, because that allows for deeper, more elaborate and more critical consideration (Kohlmeier and Saye 2019; Oyler 2019). A general advice to promote the type of dialogue in which students can develop their own and build on each other's ideas, is to avoid the Initiate-Response-Feedback pattern (Alexander 2020). Instead of providing feedback after a student's contribution to the initial teacher question, the teacher should try to ask a follow-up question, invite other students to respond, or even remain silent (Alexander 2020). Possible follow-up questions that advance students reasoning are: asking for elaboration of one's ideas, a definition of central concepts, justification of a position taken, or weighing or evaluating arguments or values (Chinn et al.

2001; Oyler 2019). Teachers can also invite other participants to respond to the line of reasoning provided by a student, either by explicitly inviting others to build on the ideas that someone else expressed (by reminding them that it is important to do so or asking for reinforcement or elaboration), or asking for an alternative perspective (a counter argument, critical remark or alternative position). These are all strategies that can make the collaborative inquiry in a philosophical dialogue more critical, complex and shared. However, when various participants respond to each other, both with reinforcing and critical contribution, it may be difficult to keep track of what is said, which arguments have been rebutted and which still stand. To tackle this, a key responsibility of the teacher (possibly with the help of students), is to keep track of the various values, arguments, and judgments that have been discussed (Oyler 2019). For this, teachers can paraphrase and summarize contributions and keep the dialogue on track towards answering the main question by avoiding redirections and reminding the participants about the central line of inquiry (Oyler 2019). In the many classroom observations that I conducted during my PhD research, I found that philosophy teachers employed a large variety of teaching strategies to promote critical reasoning about moral values (Rombout et al. 2022). In Rombout et al. 2021, an elaborate appendix with excerpts from classroom dialogues can be found. In table 3 authentic examples from the quasi-experimental study are given. In the first longer excerpt the teacher tries out various strategies in the third turn: asking for elaboration, prompting reasoning, asking a value-loaded follow-up question, and asking for an example. However, as the student's responses indicate, not all of these prompts result in more critical value-loaded reasoning of students. For those who like to learn more about teaching strategies that promote critical reasoning in philosophical dialogue, I highly recommend the aforementioned paper by Joe Oyler, based on his dissertation, and the book *The Most Reasonable Answer* by Alina Reznitskaya and Ian Wilkinson (Oyler 2019; Reznitskaya and Wilkinson 2017).

Teaching strategy	*Authentic example*
Advance reasoning about values and value-judgments	Teacher: "As a school, should we allow all students to use prestation enhancing drugs like ADD-medication? […] Student 1: "Well, in the long run… when you did well in school because of those drugs, you can't be using drugs forever." Teacher: "Can you explain why one can't keep using the drugs?" Student 1: "Well, one can, but… I don't know…" Student 2: "You don't want students to become dependent of the drugs in order to do well in school." Teacher: "Because…" Student 2: "Well, I don't know… *Teacher points to another student.* Student 3: "Some students may not have enough money to buy the drugs and they will have a backlog." Teacher: "Is that unfair?" Student 3: "Yes, I think so, because of their background and parents, and I don't think that's fair."

	Teacher: "Why?"
	Student 3: "Because they have a backlog because of their parents and background, not because they are less smart. Student 4: "I also think people will take advantage of it." Teacher: "Can you give an example?" Student 4: They will be using it for fun and not to enhance their work focus." Teacher: "And why is that wrong?" Student 4: "Well, actually, I don't know…"
Remind or ask students to build on ideas of others	Teacher: "Okay, would you say that this is a reaction to, a reinforcement of, or an extension of a previous argument?"
Invite alternative perspective	Teacher: "Okay, I would like to add a new perspective. We have been discussing what this means for students, but would it be a good idea for our school to allow prestation enhancers?"
Track value-loaded arguments in the dialogue	Teacher: "Yes, Michael brings in an additional argument. We have heard several arguments about safety, how a DNA database can make it safer for all of us. And now, Michael says that a databank might reduce the safety of suspects of a crime. Because innocent people may be linked to crimes. […] Who can summarize the arguments we have heard thus far?"

Tab. 3: *Teaching strategies for promoting critical reasoning about moral values*

Design principle 4: Reflection

The fourth design principle concerns reflection. Teachers should create opportunities for students to plan, monitor, and evaluate value-loaded critical thinking and the philosophy classroom dialogue itself. In a qualitative study (Rombout 2022), I identified four topics to reflect on in three different lesson phases (before, during and after the dialogue). The four topics to reflect on are: Firstly, the quality of the collaborative value-loaded critical reasoning in the dialogue. In the literature this is often called 'cognitive dimensions of the dialogue' (Gregory 2008; Reznitskaya and Wilkinson 2017). Secondly, social dimensions of the dialogue. This includes rules, interaction patterns, turn-taking and other ways in which the interaction is managed (Golding 2012; Gregory 2008; Reznitskaya and Wilkinson 2017). Thirdly, outcomes of the dialogue: which insights, definitions, conclusions, examples, arguments or other 'inquiry milestones' have been reached during the dialogue (Golding 2012)? The fourth aspect concerns the participants rather than the dialogue itself: reflection on each individual student's skill in value-loaded critical reasoning (Golding 2012; Schuitema et al. 2011). Activities to engage students in reflection best focus on one or two of these topics, all four is too much and thus not motivating for students. Teachers can vary between individual, written reflection assignments, discussing reflection questions in pairs or small groups and whole-class reflection activities, such as deciding about dialogue rules, summarizing dialogue milestones, and evaluating which contributions were particularly insightful. Reflections about the skills and values of individual students are best done in a safe setting, individually, in pairs

among the students or one-on-one between teacher and student. Table 4 shows authentic examples of reflection activities in different lesson phases.

Metalevel reflection about…	*Authentic examples (from different lesson phases)*
Cognitive dimensions	*(During the dialogue)* Teacher: "Okay, nothing personal to you [Student 1], but I wonder who recognizes a reasoning fallacy in what has just been said?" Student 2: "Slippery slope" Teacher: "Yes, […] I could not let this go, because you know this. But maybe the argument is relevant is this situation. […] It could be the case that when we make this exception, more people will apply for exceptions to this rule. […] Is that a relevant objection according to you?"
Social dimensions	*(At the beginning of the dialogue)* Teacher: "What are characteristics of a productive classroom dialogue according to you?" Student 1: "That we let each other finish our sentences" Student 2: "That we are serious, don't talk nonsense." *(After the dialogue)* Teacher: "Please look at the characteristics of a productive dialogue. Write down for yourself: what should we do better next time? Did you contribute to this?"
Outcomes of dialogue	*(During the dialogue)* Student 1: "I have the feeling that everyone here has a different definition of inequality." Teacher: "Yes, because which different definitions have we heard thus far?" […] Student 1: "That people are not equal because their bodies are different, a blind person can be treated unequal because of their handicap. […] Whereas with criminals, they are treated unequally as a consequence of their actions, they broke the law. […] And then there is a question of a garbage collector and a medical doctor who earns much more money. Does the doctor treat the garbage collector unequally?"
Participants' value-loaded critical reasoning	*(Before and after the dialogue)* Teacher gives individual assignment to students. Before the dialogue students wrote down their answers to the central question (Should our school allow brain doping for all students?). They were prompted to consider arguments pro and con in their answer. After the dialogue the students were asked to expand or revise their previous answer and explicitly weigh which arguments they consider most important. After thinking and writing time, the teacher asks: "How are you changed because of this inquiry?" Student 1: "Well, I did not change my position, but is has been adapted. […] I thought I agreed, but when someone explains it with an example and argument, I really think 'Oh, that's true!'"

Tab. 4: *Examples of teaching strategies for metalevel reflection*

4. Conclusion and discussion

The main aims of this paper were to describe the theoretical foundations of value-loaded critical thinking and how philosophy teachers' facilitation of philosophical dialogue can contribute to students' value-loaded critical thinking. Four design principles summarize teaching strategies to do so: philosophy teachers should (1) explicitly address moral values in dialogue; (2) apply moral values to engaging or realistic examples; (3) promote critical reasoning about moral values; and (4) provide opportunities for reflection. With the design principles, the teaching strategies, and the authentic examples of classroom dialogue presented in the paper, I aimed to provide more insight into the characteristics of classroom dialogue that contributes to students' skills in value-loaded critical thinking. The examples are from transcripts of dialogues that were observed during a quasi-experimental study (Rombout et al. submitted). The selected examples all come from dialogues that were facilitated by teachers who participated in a professional development program and were asked to implement the design principles for promoting value-loaded critical thinking during these dialogues. Analyses of individual student tasks before and after six dialogues indicated that the students, taught by these teachers, outperformed other students under comparable conditions on value-loaded critical thinking in transfer tasks (ibid.). Here, a qualitative and practice-oriented description was given of the characteristics of value-loaded critical classroom dialogue.

To conclude, I would like to raise three points of discussion. The first remark concerns the lack of attention to research design and methodology. In the this paper, I present insights from previous projects in combination with qualitative findings from a larger scale quasi-experimental study that I elaborately reported on elsewhere (Rombout et al. 2022; submitted). Here, there is only limited discussion of the research design and methods that brought me to these findings. A more detailed methodological substantiation can be found in previous papers about value-loaded critical thinking (Rombout et al. 2021; 2022; submitted).

A second remark concerns the selected examples to illustrate the design principles. The main criterion for selection was that the fragments clearly illustrated how teachers were implementing the design principle and corresponding teaching strategy. Altogether, the selected examples do not provide a representative picture of how the philosophical dialogues proceeded, because of the focus on teacher contributions. When reading the fragments in Tables 1-4 the reader may come to the impression that the observed dialogues were strongly teacher-directed rather than teacher and students sharing responsibility of content and process. It is beyond the scope of this paper to analyze indicators of dialogic quality, such as control over content and process, but also the quality of students' value-loaded critical thinking during the dialogue or on the progress of the collective inquiry into the central issue. Those are relevant topics for further analysis.

A third remark is about teacher normativity. A recurring theme in my discussions with participating teachers concerns their own role in a value-loaded inquiry: Should they strive for impartiality, a balanced approach, take a committed position or only assume a position for the sake of the discussion (play the devil's advocate or assume a role of minority ally for instance)? A helpful discussion on this is can be found in the teacher training pack provided by the Council of Europe (2016) and Maxwell's article in the *Cambridge Handbook of Democratic Education*

(Maxwell 2023). My own take on this is summarized by this quote from Matthew Lipman: teachers can assume a role as participant and voice their opinions whenever they "feel that the children have been able to develop their own ideas and hold them in a confident manner" and "when the children themselves have failed to put forth such a point of view" (Lipman et al. 1980: 159).

A fourth point of discussion concerns the time investment that is needed to implement the four design principles in philosophy classroom dialogues. In our quasi-experimental intervention study, we found that a mere six dialogue lessons already resulted in a significant effect. However, that was in a study with philosophy teachers who were experienced in facilitating classroom dialogues. It can take some practice for a group of students and their teacher to become a supportive and critical dialogue community. My advice would be to just try it and not give up after a few dialogues, but to persist during the course of a term, semester or school year, and to continuously reflect with your students on the process and outcomes of dialogue.

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