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Ethical decision-making in academic contexts: The impact of the KMDD® approach on moral competence

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Abstract

The present article explores the integration of the Konstanz Method of Dilemma Discussion (KMDD®) in doctoral education, particularly within Applied Ethics programs. The primary objective of this study was to examine how KMDD® contributes to the development of moral competence and consequently, ethical decision-making skills in doctoral students, preparing them to navigate complex ethical challenges in both academic and professional contexts. The methodology involved incorporating KMDD® into doctoral seminars, where students engaged in structured discussions on semi-real moral dilemmas. Over the course of the program, students' ability to reflect critically on ethical issues, engage in moral reasoning, and collaborate on problem-solving was assessed using both quantitative and qualitative measures. A validated moral competence test, alongside qualitative evaluations, was used to measure the study's results. The results revealed a significant 23% improvement in the students' average C-scores, indicating a notable enhancement in their ethical reasoning abilities. Additionally, students exhibited increased confidence in addressing moral dilemmas and ethical issues, leading to more stimulating and productive discussions. This improvement was further evident in stronger argumentation and a deeper understanding of ethical complexities. Furthermore, fostering moral competence resulted in an enhanced ability to apply ethical theories to real-world professional contexts. The findings underscore the effectiveness of KMDD® in fostering moral competence and enhancing ethical decision-making skills among doctoral students, suggesting its potential for broader application in doctoral education and across diverse academic programs and scientific disciplines.

Keywords: ethical decision-making, ethical reasoning, ethics in education, Konstanz Method of Dilemma Discussion®, moral competence

Introduction

The ability to navigate complex ethical dilemmas is essential in both academic and professional domains. Lind (2019) defines moral competence as the ability to resolve conflicts through free discourse grounded in moral principles, rather than resorting to violence, coercion, deceit, or blind submission to authority. This competence is crucial in shaping the abilities of responsible professionals who make sound ethical decisions rooted in reflective reasoning and judgment. It enables individuals to critically evaluate complex moral or ethical dilemmas, weigh diverse perspectives, and achieve reasoned conclusions. Additionally, empathy plays an important role in moral orientation, fostering emotional connections to the needs of others, and allowing professionals to respond to moral concerns with compassion and sensitivity. Together, these cognitive and affective layers of morality form the foundation of moral judgment and ethical decision-making, ensuring professionals not only reason effectively but also consider the relational dimensions of their decisions.

As fields like medicine, law, business, technology, and education face increasing ethical challenges, it becomes imperative to equip university students with the skills to approach these issues with critical thinking, integrity, and a strong moral compass. Ethical decision-making is fundamental for individual professional development, fostering trust, upholding ethical standards, and promoting social responsibility. Doctoral education offers a unique opportunity to cultivate these competencies, preparing the next generation of experts to confront and address complex ethical issues in their respective fields.

The development of moral competence is increasingly recognized as a core component of education, particularly in fields requiring ethical decision-making. While traditional approaches often focus on theoretical understanding, they frequently fall short in preparing students to

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apply ethical frameworks in real-world situations. Consequently, there is a growing need for pedagogical methods that actively engage students in reflective discussions on moral dilemmas, bridging the gap between theory and practice. These methods enhance students' ability to navigate the complexities of their fields and develop critical thinking, confidence, and ethical reasoning skills essential for responsible professional conduct. By fostering an environment where students can critically analyse, debate, and resolve moral and ethical issues, these approaches play a significant role in shaping the skills of future professionals.

This article explores the application of the Konstanz Method of Dilemma Discussion (KMDD®) in promoting moral competence within doctoral education, specifically in Applied Ethics programs. KMDD® is a method designed to foster moral competence through structured dilemma discussions, encouraging students to examine complex moral issues, engage in deep dialogue, and articulate their arguments while listening to others' perspectives. By stimulating critical ethical reflection and promoting collaborative problem-solving, KMDD® enhances ethical decision-making skills, fosters a deeper understanding of moral issues, and empowers students to apply ethical frameworks effectively in their academic and professional lives.

Background and theoretical framework

Moral competence refers to an individual's ability to make sound moral decisions grounded in a solid understanding of moral principles, critical reflection, and the capacity to navigate complex moral dilemmas. It encompasses not only knowledge of relevant principles and theories but also the practical ability to apply them effectively in real-world situations. Moral competence is essential in both educational and professional settings, as it enables individuals to make decisions that align with moral principles, ethical standards, societal values, and professional codes of conduct, and to act in accordance with those decisions. In education, moral competence plays a key role in developing students' ethical reasoning skills, enabling them to approach complex ethical issues with responsibility and integrity. In professional contexts, moral competence ensures that decisions are made with consideration for all stakeholders involved, particularly when confronted with competing values or limited resources. The development of moral competence empowers students and professionals to reflect on their actions, understand the consequences of their decisions, and engage in collaborative ethical problem-solving.

Development of moral competence

Moral competence involves the ability to consistently apply moral attitudes in decision-making and subsequent actions. Kohlberg (1964) defined moral judgment competence as the ability to make morally correct judgments based on internal principles and to act accordingly. Lind extended this concept, describing moral competence as the ability to resolve moral dilemmas by applying moral principles through discussion and deliberation. This process integrates both affective and cognitive aspects of moral judgment and behaviour, reflecting the moral orientations expressed by behaviours and the moral competencies that the behaviours reveal (Lind, 2008, 2013). Moral judgment links an individual's moral attitudes and values with their reasoning and actions, while moral competence enables individuals to reflect on and defend their moral positions with logically and ethically consistent arguments.

Kohlberg argued that moral judgment is influenced by interpersonal relationships, social norms, and rules. Moral reasoning starts with interpreting a situation, followed by moral judgment based on available information and the issue's moral relevance. This leads to formulating a moral decision and judgment, grounded in recognized moral principles respected by rational and morally conscious individuals (Kohlberg, 1976).

While moral orientations (such as justice or freedom) are inherent, moral competence requires active development, often through intentional fostering. Applying moral orientations,

i.e., attitudes and values, often leads to decision conflicts or dilemmas that require the exercise of moral competence to resolve them. Promoting moral behaviour that aligns with an individual's moral orientation (values) necessitates developing moral competence, which is tied to cognitive structure development (Lind, 2008). Improving cognitive abilities and education enhances moral reasoning and decision-making, which, in turn, fosters moral competence. Research confirms that the quality and quantity of education significantly influence moral competence development (Rest & Narvaez, 1991; Rest et al., 1999; Schillinger-Agati & Lind, 2003; Lind, 2008). Lind emphasized that moral competence must be actively taught, as educational programs are directly linked to higher levels of moral competence. He argued that since moral competence is a learnable skill, its development should be a central focus of educational curricula (Lind, 1995, 2008).

Kohlberg noted that theoretical education alone is insufficient for developing moral competence. Lind responded by advocating for practical exercises involving model situations and moral dilemmas as a means of fostering moral competence. Subsequent research supports this view, affirming that both theoretical education and practical discussions are essential for developing moral reasoning (Kohlberg et al., 1983; Lind, 1995; Thoma & Dong, 2014).

Though individual differences in moral competence are well-documented, the brain mechanisms behind these differences remain unclear. Neuroscientific studies, particularly using functional magnetic resonance imaging (fMRI), have revealed brain regions involved in both emotional processing and cognitive control during moral judgment. These findings suggest that individual differences in moral judgment relate to functional connectivity in these brain areas, with emotion regulation contributing to more objective and consistent judgments (Fang et al., 2017; Jung et al., 2016; Moll et al., 2008; Prehn & Heekeren, 2009; Prehn & Heekeren, 2014).

Theoretical foundations of KMDD®

KMDD® is a unique approach designed to foster moral competence through structured discussions of moral dilemmas. Drawing on the theoretical foundations of moral development, particularly Kohlberg's stages (Kohlberg, 1964), KMDD® is grounded in the foundation that active democratic participation in moral dilemma discussions fosters individuals' moral competence. This interactive method is an effective tool for promoting moral growth, as it enhances ethical reflection and offers a structured yet dynamic platform for exploring moral principles, engaging in moral reasoning, and refining decision-making skills. Drawing on insights from psychology, pedagogy, and ethics, the method encourages participants to reflect on their own beliefs and values, critically evaluate moral issues, and consider multiple perspectives in a collaborative setting. KMDD® has been adopted across diverse academic disciplines globally, particularly in fields where ethical decision-making is essential, such as healthcare and applied ethics. By providing a practical framework for ethical discourse, KMDD® addresses a gap often found in traditional education systems, where ethical discussions may lack the depth necessary to cultivate critical reasoning.

Description of KMDD®

Developed by Georg Lind in the early 1990s, KMDD® is an approach designed to foster moral competence through structured dilemma discussions. Its primary goal is to enhance moral reasoning by helping participants recognize moral issues and form moral judgments through critical engagement with diverse perspectives. KMDD® promotes collaborative evaluation of moral dilemmas, encouraging participants to present and reflect on various arguments. The method, also called *Discussion theatre*, combines moral-democratic learning with an element of enjoyment, making it suitable for individuals aged eight and older across different cultures (Lind, 2019).

KMDD® uses standardized dilemma stories in which a protagonist is faced with a decision between two morally conflicting courses of action under time pressure. Participants are divided into two groups based on their agreement or disagreement with the protagonist's decision and engage in a moderated discussion where they present arguments for and against the choices. This structured format encourages reflection on moral complexities from multiple angles, promoting a balanced, non-confrontational approach to moral or ethical issues. KMDD® creates a safe, open environment for participants to express their views without fear of judgment or criticism, fostering a space for open dialogue. By listening to the arguments of both sides and reflecting on them, participants are encouraged to confront their own moral values in comparison to those of others. This process enhances their ability to critically assess moral situations and formulate well-reasoned moral arguments.

In the context of doctoral education, particularly in applied ethics programs, KMDD® provides students with a structured approach to addressing ethical challenges that go beyond theoretical knowledge by allowing students to practise ethical decision-making in real-world scenarios. Students are encouraged to freely express their thoughts, with all responses considered valid, rather than being trained or coached to provide specific or more structured answers.

Techniques used in KMDD®

The core techniques employed in KMDD® include dilemma presentation, group division, and moderated discussion. This method provides a structured framework for the discussion process, ensuring that all participants have the opportunity to engage, present their arguments, and consider opposing viewpoints. The facilitator plays a key role in guiding the KMDD® session, ensuring productive discussions that remain focused on the moral dimensions of the dilemma, and adhere to established guidelines.

The discussion format promotes critical thinking, as participants are required to present and defend their own positions and understand and articulate the reasoning behind opposing views. This process helps refine moral reasoning by considering multiple perspectives and engaging in thoughtful dialogue. The collaborative nature of the discussions fosters teamwork, promoting collective problem-solving in moral conflicts. Reflection is an integral component of the KMDD® process. After each discussion, participants reflect on the arguments presented, reconsider their initial judgment, and critically evaluate how the debate has influenced their thinking. This reflective practice supports continuous development in moral reasoning and enhances decision-making skills over time.

The semi-real dilemma stories used in KMDD® are carefully selected to reflect real-world ethical conflicts, often involving competing moral values like justice versus compassion, individual rights versus social responsibility, or autonomy versus rules. The stories are designed to provoke discussion and reflection on complex issues without straightforward, clear-cut solutions. KMDD® has been successfully applied beyond academic settings, including prisons, the military, and retirement homes, demonstrating its universal applicability (Hemmerling, 2014).

The moral competence test

The effectiveness of the KMDD® method can be measured using the Moral competence test (MCT), developed by Lind. Grounded in a cognitive-developmental framework inspired by Piaget (1976) and Kohlberg (1964), the MCT assesses an individual's moral competence by evaluating their ability to analyse and discuss complex moral dilemmas using rational argumentation. The test differentiates between moral orientation (motivation and intention) and moral competence (reasoning and judgment). The MCT has been validated internationally (Lind, 2016) and translated into multiple languages, with each version meeting Lind's criteria

for accuracy and reliability (Martin, Mörch & Figoli, 2023). In 2014, the test was renamed from the Moral Judgment Test (MJT) to the Moral Competence Test (MCT) to emphasize its focus on moral competence rather than merely moral reflection (Lind, 2019). Lind drew on philosophical (e.g., Habermas and Apel's ethical discourse competence), psychological (e.g., Piaget's affective-cognitive parallelism, Kohlberg's morality definition, Rest's hierarchical moral preferences), and cognitive-experimental concepts (e.g., Torgerson's response scaling, Anderson's cognitive algebra, and Guttman's facet analysis) in developing the test (Lind, 2013).

The MCT begins with two short dilemma stories. Participants assess the protagonist's moral decisions on a seven-point Likert scale, followed by rating the acceptability of six supporting and six opposing arguments on a nine-point scale. The test evaluates how participants engage with moral dilemmas, focusing on their ability to consider arguments while emphasizing logical consistency and moral relevance over personal bias or preferences.

The primary outcome of the MCT is the competence score (C-score), which quantifies a participant's ability to make rational moral judgments. The C-score ranges from 0 to 100, with higher scores indicating greater moral competence. A score closer to 100 reflects the ability to assess both pro- and counter-arguments in a balanced manner, regardless of whether the arguments support or oppose the participant's position, while lower scores indicate a tendency to value only arguments that align with personal perspectives (Lind, 2008).

Administered before and after KMDD® sessions, the MCT serves as a feedback tool to measure the method's impact on moral competence. Its reliability and significance in research and applications within moral psychology, education, and ethics have been well-established through repeated validation across diverse populations (Zielina et al., 2024).

Cultural bias and the C-score

The potential for cultural bias in the C-score has been extensively examined, particularly by Lind (2005). A point of concern regarding the C-score was whether it could have been perceived as biased toward moral traditions or frameworks that prioritize reasoning. However, it is essential to recognize that moral competence is a multidimensional construct that extends beyond rational reasoning encompassing both cognitive and affective dimensions. According to Lind's dual-aspect theory of moral development, moral judgment and behaviour are shaped by both an individual's moral orientation and their cognitive functioning. While moral orientation represents the affective and value-based components of moral decision-making, moral competence reflects the cognitive aspect – both of which are essential in understanding moral reasoning. The C-score does not impose specific moral values; rather, it requires individuals to consistently pursue their own moral values, regardless of cultural context. This ensures that the measurement of moral competence remains fair and unbiased across different cultures, without privileging any particular moral framework (Lind, 2005). The dual-aspect theory further emphasizes that both moral orientation and moral competence are inseparable in practice, despite being distinguishable. While moral orientation can be simulated in any direction, moral competence can only decline, not improve in a simulated context. The MCT is designed to assess both aspects of moral judgment simultaneously: moral orientations, including attitudes and values (representing the affective aspect), and moral competence (the cognitive aspect). This dual focus has made the test suitable for rigorous cross-cultural and longitudinal studies (Lind, 1978; Lind & Wakenhut, 1985). Moreover, moral orientation follows a developmental trajectory, progressing from lower to higher stages. In contrast, moral competence requires not only the ability to apply moral orientation effectively in decision-making but also the capacity for principled reasoning, while rejecting pre-conventional (lower-stage) reasoning patterns. Importantly, moral orientation is strongly correlated with moral competence (affective-cognitive parallelism), and this developmental connection allows for a more comprehensive view of moral judgment and behaviour (Lind, 2005). The relationship

between moral orientation and moral competence is central to the MCT's approach to assessing moral reasoning, allowing the test to evaluate both the affective and cognitive aspects of moral reasoning.

The MCT evaluates moral judgment by asking participants to rate arguments for and against their own positions on specific moral dilemmas. This evaluation process engages individuals in moral discourse, confronting them with counter-arguments that trigger both self-protective and moral emotions (Haidt, 2001). The tension between defending one's own judgment and striving for moral truth aligns with Festinger's (1957) theory of cognitive dissonance. Previous research (e.g., Keasey, 1974; Damasio, 1994) has demonstrated that controlling these emotions requires a high level of moral competence (Lind, 2005).

By measuring universal cognitive and affective processes involved in moral judgment, the MCT avoids cultural bias. These processes are not confined to any particular moral tradition or cultural context; rather, they reflect fundamental aspects of human moral development, making the MCT well-suited for cross-cultural applications. The MCT has undergone rigorous cross-cultural validation, demonstrating that its results remain consistent and reliable across diverse cultural groups. The test's quasi-simplex structure, hierarchical preference order for stage-typical moral orientations, and affective-cognitive parallelism confirm that it measures moral competence consistently, regardless of cultural background or social context. The C-score, therefore, does not privilege any particular cultural tradition but reflects universal processes involved in moral reasoning and judgment (Lind, 2005). Through its cross-cultural validation, the MCT's design ensures that it measures moral competence without bias towards any particular cultural framework, making it suitable for cross-cultural applications while preserving the integrity of its measurement of moral reasoning. Importantly, the C-scores show consistent meaning across different cultural contexts. Differences detected across various cultures reflect authentic variations in moral orientations and moral competence, rather than issues with the MCT's measurement. This further supports the MCT's validity as a tool for assessing moral competence across diverse cultural groups, ensuring that cultural influences are appropriately reflected without compromising the integrity of the test's measure.

Acknowledging the link between Habermas' theory and KMDD®

A clear parallel exists between Habermas' theory of communicative action and KMDD®, as both emphasize communication, discussion, and reasoning as essential tools for fostering rational deliberation. Each approach provides a valuable framework for facilitating rational discourse and promoting mutual respect. While they share these core principles, they differ in their specific objectives and practical applications.

Common ground: Deliberative communication and rational discourse

Both approaches emphasize dialogue and rational deliberation as central to addressing moral or ethical challenges. Habermas (1981, 1991) asserts that, in ideal communicative situations, participants engage in discourse, critically examining different viewpoints through rational argumentation, ultimately leading to shared understanding and mutual moral consensus. Similarly, KMDD® facilitates structured communication and moral deliberations where participants explore diverse perspectives in a non-confrontational manner.

Habermas argues that ethical decisions should emerge from communication conducted under conditions of equality, non-discrimination, and openness. In communicative discourse, all arguments are evaluated based on rational justification, free from external pressures or authoritative power. All participants are given an equal opportunity to express themselves, and no argument is excluded from the discussion. This discursive process aims to achieve a consensus that is morally legitimate and universally accepted by all participants. In this context, consensus is viewed not as a mere majority opinion but as the outcome of a process where all morally relevant arguments are thoroughly considered and evaluated based on universal

principles. Habermas assumes that through rational dialogue, participants can negotiate and agree on universal norms, which are not predetermined but emerge during discussion. This underscores that discursive rationality involves not only evaluating arguments based on objective principles but also negotiating principles themselves among participants. This process requires a willingness to engage and evaluate claims based on the rational strength of better arguments. Habermas' theory of discursive ethics focuses on legitimating norms through a rational argumentation process that is open to all participants, forming the foundation for achieving consensus (Habermas, 1981, 1991).[2]

Similarly, KMDD® stresses the importance of openness and the acceptance of new ideas, fostering participants' ability to generate and formulate arguments. Both approaches highlight the role of open dialogue in enhancing moral reasoning, allowing participants to critically assess and integrate diverse perspectives.

Differences in goals and application

While Habermas' theory and KMDD® share common ground, they differ significantly in their goals and applications. Habermas aims to achieve consensus and resolve real societal conflicts through rational communication guided by the force of better arguments, where participants critically examine different viewpoints to reach a common understanding. This concept of communicative rationality is central to resolving conflicts and establishing shared norms in democratic societies. In contrast, KMDD® does not seek immediate resolution of dilemmas but rather focuses on fostering moral competencies. Its primary goal is to enhance moral reasoning abilities and help participants develop the skills needed for ethical decision-making in real-world situations, without the immediate pressure of reaching a consensus.

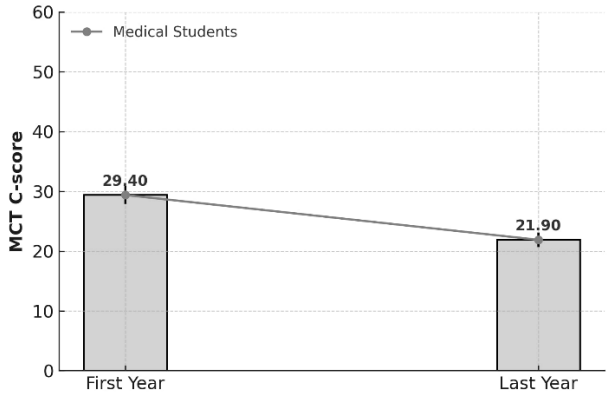
Another key distinction lies in the structure of the dialogue process. While Habermas advocates for ideal speech situations, KMDD® uses a more structured approach, with a facilitator guiding discussions. This ensures that all voices are heard and that the conversation remains focused on exploring ethical dilemmas, rather than reaching a definitive conclusion.

Research on the application of KMDD® in higher education

The primary aim of the study was to evaluate the specific impact of the KMDD® method on moral competence in advanced students within the field of applied ethics. The KMDD® approach was integrated into regular doctoral seminars, where it was consistently applied over time, creating a supportive environment for active ethical deliberation and reflection. The decision to focus on PhD students of applied ethics was intentional, driven by the unique characteristics of this participant group. Doctoral students in this field are already engaged in advanced moral and ethical reasoning, regularly confronting complex ethical dilemmas as part of their academic research and coursework. This group is not only familiar with a broad spectrum of ethical theories but is also experienced in critically examining and applying these theories to real-world issues across various disciplines, such as bioethics, psychology, political ethics, gender studies, and even artificial intelligence ethics. Given that these students already possess a high level of moral reasoning, the study focused on assessing whether the KMDD® approach can further enhance their ethical reasoning and decision-making abilities by fostering their moral competence and whether it could help prevent the decline in moral competence, which is commonly observed in medical students (Lind, 2000; Serodio, Kopelman & Bataglia, 2016; Zielina, 2024), or even enhance it. The inclusion of various healthcare professionals among the doctoral students involved in the study further reinforced the relevance of comparing the findings to those typically observed in medical students as shown in Figure 1.

[2] Habermas' concept of communicative action has been the subject of criticism by several philosophers, including Ernst Tugendhat, Richard Rorty, Pierre Bourdieu, and Michel Foucault.

Fig. 1
Decline of C-scores among medical students throughout their studies



Source: Adapted from Zielina et al., 2024

Methodology of the study

The study employed a comprehensive methodological approach, integrating quantitative and qualitative data to assess the impact of KMDD® on the development of moral competence among doctoral students in applied ethics.

***Sample size*:** The study involved a total of 17 PhD students who participated in doctoral seminars starting from the implementation of KMDD® in 2022 to the end of the follow-up phase in 2024. While the sample size is relatively small, it reflects the specialized nature of the group and the constraints of the doctoral seminar setting.

***Participant demographics*:** The participants were all enrolled in a doctoral program in Applied Ethics, with diverse academic backgrounds and research interests related to ethics. They explored a wide range of topics within applied ethics, including bioethical issues, psychology and psychotherapy, public relations, gender-related topics, and the ethics of artificial intelligence. All participants were actively engaged in the study of ethical theories and ethical decision-making.

***Study design*:** The study followed a longitudinal design, with participants engaging in monthly doctoral seminars incorporating the KMDD® approach as a core component. These seminars featured structured discussions based on semi-real dilemma stories, specifically selected to challenge participants' ethical reasoning and stimulate in-depth analysis. By addressing realistic yet hypothetical scenarios, the dilemmas encouraged students to navigate complex moral situations while applying ethical theories within a structured and dynamic context. Both quantitative and qualitative parameters were collected and analysed throughout the study period. Initial and follow-up administrations of the MCT measured shifts in participants' moral competence, while qualitative data were collected through observational notes documenting participants' engagement with the moral dilemmas. This design allowed for the assessment of changes in ethical reasoning over time, linked to participation in the KMDD® facilitated seminars.

***Research procedures*:** The KMDD® approach was implemented starting in November 2022. Each month, during the doctoral seminars, participants engaged in structured discussions focused on moral dilemmas, following the KMDD® procedure. These discussions were designed to provide a space for students to apply moral principles and ethical theories to diverse

moral and ethical dilemmas. Discussions were facilitated by a trained and certified instructor, ensuring consistent application of the KMDD® approach. To assess changes in ethical decision-making, both quantitative and qualitative data were collected as follows:

- *Quantitative changes* in moral competence were measured using the validated MCT. The first administration was postponed until the 2023/2024 academic year to ensure students' full understanding and accurate responses. At the time of KMDD® implementation in November 2022, the validated Czech version of the MCT was unavailable, and using an unvalidated or foreign-language version could have compromised the validity of the results. Although baseline C-scores were not collected initially, this decision was methodologically appropriate for ensuring reliable data. The first MCT was administered after the validated Czech version became available, and a follow-up test was conducted in the 2024/2025 academic year, allowing for the assessment of changes in moral competence following KMDD® implementation.
- *Qualitative data* were collected through observations, note-taking, and student feedback throughout and following each session. This provided a deeper understanding of students' engagement, the challenges they encountered, and their perceived growth in ethical reasoning. To enhance clarity and support the discussion, all student arguments were typed and projected during sessions. Observational notes captured key aspects, such as the clarification of moral dilemmas, voting outcomes, group formation and dynamics, and the formulation and expression of arguments. Notes also documented students' decision-making processes, final judgments, and their engagement in listening to peers' perspectives, reflecting on them, and demonstrating the depth of their ethical reasoning. Additional focus was placed on how students integrated ethical theories into their discussions and their self-confidence when presenting counter arguments. The facilitator also monitored the emotional climate, noting signs of stress or comfort to gauge students' readiness to confront challenging moral dilemmas.

Research results

The results of applying the KMDD® method with doctoral students demonstrate both quantitative and qualitative improvements, providing compelling evidence of its effectiveness in fostering moral competence. The results demonstrate that KMDD® is effective in advancing moral reasoning skills even among advanced students who already possess a solid theoretical foundation in ethical concepts.

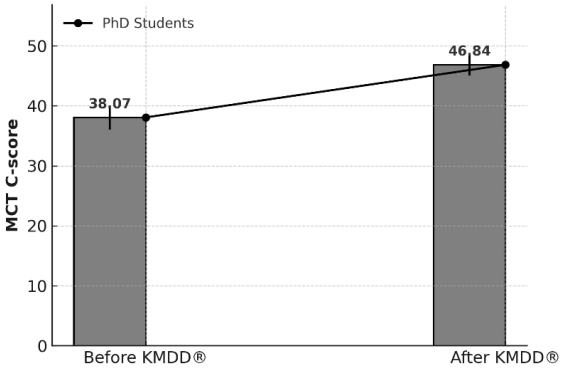
Increase in moral competence measured by MCT

The application of the MCT to doctoral students, both before and after the implementation of KMDD®, demonstrated the method's effectiveness in fostering moral competence. The MCT provided precise insights into students' ability to navigate moral and ethical challenges. The results from the group testing revealed a significant increase in the C-score.

Specifically, the average C-score of doctoral students rose by 23%, from 38.07 to 46.84 (see Figure 2), illustrating the positive impact of KMDD® on students' moral decision-making abilities. This increase indicates that the method effectively enhanced student's skills in analysing moral issues, engaging in structured argumentation, and fostering critical thinking. This substantial increase in the C-score highlights how KMDD® contributes to the development of students' moral reasoning and their ability to engage thoughtfully with moral and ethical dilemmas.

Fig. 2

Comparison of C-scores for PhD students before and after KMDD® implementation



Source: Own elaboration, 2025

The results underscore the value of KMDD® as an educational tool, enhancing students' capacity for reflection, dialogue, and ethical decision-making, ultimately leading to a deeper understanding of complex ethical topics.

Qualitative improvements and indicators

The study assessed qualitative improvements in ethical reasoning through participants' engagement in moral dilemma discussions during PhD seminars, with detailed notes focusing on key indicators of ethical reasoning. The specific indicators used to assess changes in moral reasoning included:

- *Critical thinking and reflection*: A key indicator of the assessment was the participants' ability to engage in critical thinking and reflect on ethical dilemmas from multiple perspectives. This involved evaluating the depth of their analysis and their capacity to consider a variety of ethical viewpoints when addressing complex issues. The emphasis was placed on their ability to critically assess potential outcomes and moral consequences, demonstrating intellectual rigor, and a reflective approach to decision-making. KMDD® enhanced students' analytical skills, fostering a more open-minded, reflective approach to moral reasoning and strengthening critical thinking and ethical reflection through respectful exchange of ideas.
- *Engagement and contribution to discussions*: This indicator assessed participants' active involvement in group discussions, focusing on the quality of their contributions and their ability to engage with the ideas of others. Over time, participants became more skilled at structured argumentation, with even initially reluctant students becoming more active. KMDD® fostered a collaborative environment, encouraging greater participation and the evolution of their reasoning through meaningful exchanges.
- *Application of ethical frameworks*: This indicator focused on participants' ability to integrate ethical theories, such as deontology, utilitarianism, virtue ethics, and principlism into their reasoning. Initially, students struggled to apply these frameworks effectively, but over time, they developed a deeper, more contextual understanding, enabling them to address a wider range of ethical issues with greater precision and insight. KMDD® effectively bridged the gap between theoretical knowledge and practical ethical skills, helping students link their academic knowledge to the practical challenges in fields like healthcare, law, technology, or business.

- *Depth and sophistication of argumentation*: This indicator emphasized the complexity and sophistication of participants' arguments, assessing whether they developed nuanced, well-rounded positions. The depth of their argumentation served as a vital reflection of their growing capacity to address ethical dilemmas with advanced reasoning and to present structured, well-reasoned arguments while strengthening their capacity to listen to and consider opposing viewpoints. Over time, students shifted from rejecting counterarguments to engaging with differing ideas, fostering more constructive discussions, a deeper understanding of diverse ethical perspectives, and presenting more sophisticated argumentation.
- *Confidence and self-expression in ethical discussions*: This indicator assessed participants' confidence in expressing their ethical views and the clarity of their reasoning. Greater self-assurance in presenting moral judgments reflected their growing comfort with ethical reasoning and decision-making. These improvements were evident not only in the student's individual development but also in the dynamics of group discussions.

The qualitative indicators summarized in Table 1 provide a comprehensive overview of the participants' moral development throughout the study.

Table 1
Comparison of key aspects before and after the implementation of KMDD®

ASPECT	***BEFORE KMDD®***	***AFTER KMDD®***
Critical thinking and reflection	Developing, Surface-level reasoning	Advanced, Reflective reasoning
Engagement and contribution to discussions	Passive participation, Limited contribution	Active engagement (even reserved students), Dynamic contributions
Application of ethical frameworks	Limited, Basic	Comprehensive contextual understanding, Integration of multiple frameworks
Depth and sophistication of argumentation	Basic arguments	Complex, nuanced, well-rounded arguments
Confidence and self-expression in ethical discussions	Hesitant, Uncertain self-expression	Confident, well-articulated moral judgments

Note: This table compares the key indicators of ethical reasoning before and after the application of KMDD®. It highlights the observed improvements across various indicators, illustrating the positive impact of KMDD® on critical thinking, engagement, the application of ethical frameworks, argumentation depth, and overall confidence in ethical discussions.

Source: Own elaboration, 2025

Limitations of the study

While the study provides valuable insights into the impact of KMDD® on moral reasoning, several limitations must be acknowledged. One notable limitation is the focus on doctoral students in applied ethics, a group already possessing a high level of moral reasoning. The advanced ethical knowledge and understanding in this cohort may have influenced the results, meaning the effects of the KMDD® method observed in this study could differ from those seen

in less experienced groups, such as undergraduate students or students from other academic disciplines. As a result, the findings may not be directly applicable to populations with less exposure to ethical frameworks and practices. Further research involving other student populations, such as undergraduates or students from different disciplines, will be essential in assessing the generalizability of the findings.

Additionally, the study lacked a control group, which limits the ability to draw direct causal inferences regarding the observed changes in moral competence. This decision was influenced by the unique nature of the participant group (doctoral students in applied ethics) and the challenges in establishing a comparable control group within this context. Given the small number of doctoral students in applied ethics, including a separate control group was not feasible. The study's primary aim was to explore whether moral competence could increase among advanced students who already possess a high level of ethical expertise, rather than to conduct a direct comparison with a separate group. The absence of a control group could mean that other factors, such as increased familiarity with the method, or general improvements in ethical reasoning over time, may have influenced the observed results. Notably, the risk of a decline in moral competence, as seen in studies involving medical students, was not evident in the doctoral students, suggesting that KMDD® may have a positive impact on advanced students in applied ethics. These findings also imply that KMDD® could play a role in preventing the decline in moral competence typically observed in medical students. However, further research with a control group is necessary to draw more definitive conclusions. The next phase of this research will incorporate a control group, allowing for more rigorous comparisons and a deeper exploration of the broader applicability of KMDD® across various educational contexts.

Another limitation of the study is its exclusion of alternative theoretical perspectives, including Gilligan's ethics of care and Haidt's social intuitionist model, both of which emphasize different aspects of moral development, such as intuition and relationships. While these frameworks provide valuable insights, they were not aligned with the primary objective of this study, which aimed to evaluate the specific impact of the KMDD® method on the moral competence of doctoral students. Given that these students already possess a high level of moral reasoning, the study focused on assessing whether KMDD® could help prevent the decline in moral competence observed in medical students, or even enhance it. The inclusion of healthcare professionals among the doctoral students further strengthened the relevance of comparing our findings to those typically observed in medical students. The decision to focus on Lind's method was based on its direct association with the concept of fostering moral competence, which was central to the study's goals. Gilligan's ethics of care and Haidt's social intuitionist model were not suitable for this research, as they explore different aspects of moral development that fell outside the scope of our specific focus on measuring moral competence following the implementation of KMDD®. Including these perspectives would have expanded the study's scope beyond its original objectives.

Despite these limitations, the study contributes to the growing body of research on KMDD® and its potential to enhance moral reasoning, particularly for individuals with a strong foundation in ethics. The findings indicate that KMDD® effectively refines the moral reasoning skills of individuals with advanced knowledge of ethics.

Advantages and challenges of practical application of KMDD®

One of the main advantages of KMDD® is its versatility to diverse age groups, professional backgrounds, and cultural contexts. This broad applicability enables the method to be effectively implemented in various settings, from educational institutions to professional environments and global corporations. KMDD® fosters the development of emotional intelligence, social responsibility, and the ability to analyse complex moral issues from multiple

perspectives. By promoting deeper moral reflection and structured ethical reasoning, KMDD® enhances cognitive, affective and social competencies crucial for both personal and professional growth.

Positive feedback from students consistently highlights KMDD®'s effectiveness in helping them understand complex ethical issues and apply ethical theories more effectively. Students have expressed interest in using the method in future semesters, and some have reported continuing to apply techniques learned through KMDD® in other contexts outside the seminar. These techniques, such as active listening and considering opposing viewpoints, reflect the lasting impact of KMDD® on fostering collaborative and reflective moral reasoning beyond the classroom. The experience of teaching applied ethics at the doctoral level further reinforces that KMDD® refines decision-making abilities and promotes sustained ethical reflection beyond the course itself. KMDD®'s applicability is not limited to ethics education and university settings. Its versatility makes it suitable for diverse age groups and professional domains, strengthening its potential as a universally applicable tool for educators, trainers, and professionals aiming to foster moral competence.

However, there are several challenges to KMDD's® practical application. First, skilled and well-trained facilitators are required to effectively guide discussions and manage complex moral dilemmas. Facilitators must possess deep subject matter expertise, group management skills, and the ability to create a safe, open environment where participants feel comfortable addressing difficult moral questions.

Another challenge is maintaining participant motivation and ensuring active engagement in discussions, particularly when confronted with morally difficult or ethically controversial topics. Initial resistance may arise from participants who feel uncomfortable confronting moral dilemmas that challenge their existing beliefs or provoke emotional responses. Facilitators must foster trust within the group and create a culture of openness to ensure ongoing engagement and willingness to explore diverse viewpoints.

Furthermore, while semi-real dilemmas are useful for stimulating ethical reasoning, they may not fully capture the complexity of the personal and professional implications associated with actual ethical decisions. KMDD® offers valuable practice but cannot replicate the full depth of moral decision-making in real-life contexts.

Future directions for KMDD® in practice

Over the years, KMDD® has established itself as an effective method for fostering moral competence across various contexts. However, its potential for innovation and expansion remains substantial. As the global demand for moral and ethical education continues to grow, it is expected that KMDD® will evolve and expand in its applications. Given the increasing complexity of moral dilemmas in the 21st century, the method holds promise not only within traditional educational settings but also in industries, businesses, and public sectors. The rising need for ethical decision-making in diverse fields highlights the relevance of KMDD® as a tool to promote ethical reasoning and responsible, informed action by fostering the moral competence of key decision-makers.

Looking ahead, KMDD® could evolve to include more complex dilemmas that reflect the intricate nature of contemporary ethical challenges. This expansion could involve integrating scenarios related to emerging fields such as artificial intelligence or environmental ethics, preparing participants to navigate future ethical issues. Additionally, the method could incorporate modern technologies, such as virtual or augmented reality, to create immersive environments where participants engage with ethical dilemmas in real-time. Such advancements would provide dynamic and interactive learning experiences, ensuring that moral competence continues to develop and remains relevant in an ever-changing world.

The future of KMDD® is promising, with significant potential for growth across a wide range of sectors. As ethical challenges become more complex and far-reaching, KMDD® is well-positioned to play a pivotal role in shaping responsible ethical decision-makers capable of meeting the demands of an interconnected, evolving world.

Conclusion

The application of the KMDD® method with doctoral students has led to both quantitative and qualitative improvements, providing compelling evidence of its effectiveness in fostering moral competence. Quantitative results, derived from the MCT, demonstrated a significant increase in students' C-scores, while qualitative findings highlighted notable shifts in how students approached ethical issues. These changes reflect the transformative impact of KMDD® on PhD students' moral reasoning, decision-making, and active participation in moral deliberation. Through its application in doctoral seminars, KMDD® not only fostered students' moral competence but also equipped them with the essential skills needed to address real-life ethical dilemmas. The method provided tools for ethical reflection that are applicable across a variety of professional contexts, from clinical ethics to technological innovations. The integration of structured discussions, alongside the use of the MCT to measure moral competence, further demonstrated KMDD®'s effectiveness as a pedagogical tool for enhancing students' decision-making abilities and the practical application of ethical theories.

The results of this study contribute to the increasing compendium of findings and evidence supporting the use of KMDD® as an effective method for cultivating moral competence. By promoting critical thinking, deepening moral reflection, and enhancing the quality of moral deliberation, KMDD® empowers individuals to make thoughtful and principled decisions when faced with morally or ethically complex situations. These qualities are vital not only in academic settings but also in professional environments where individuals frequently encounter difficult moral choices. KMDD® represents a powerful and versatile tool for developing moral competence across diverse contexts and its universal applicability allows it to be implemented effectively in a range of settings. Although challenges associated with integrating KMDD® persist, particularly regarding facilitator training, participant engagement, and its application across diverse cultural contexts, the method's benefits are evident. As KMDD® continues to expand, it holds the potential to shape the ethical decision-making abilities of individuals and organizations, contributing to the development of a more just and ethically conscious society.

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References

DAMASIO, A. (1994): *Descartes' error: Emotion, reason and the human brain*. New York: G. P. Putnam's Son.

FANG, Z. & JUNG, W. H. et al. (2017): Post-conventional moral reasoning is associated with increased ventral striatal activity at rest and during task. In: *Sci Rep*, 7(1), p. 7105.

FESTINGER, L. (1957): *A theory of cognitive dissonance.* New York: Harper & Row Publishers.

HABERMAS, J. (1981): *Theorie des kommunikativen Handelns*, Band 1 + Band 2. Frankfurt am Main: Suhrkamp.

HABERMAS, J. (1991): *Moral consciousness and communicative action*. Cambridge, MT: MIT Press.

HAIDT, J. (2001): The emotional dog and its rational tail: A social intuitionist approach to moral judgment. In: *Psychological Review,* 108(4), pp. 814–834.
HEMMERLING, K. (2014): *Morality behind bars – An intervention study on fostering moral competence of prisoners as a new approach to social rehabilitation*. Frankfurt am Main: Peter Lang.
JUNG, W. H. & PREHN, K. et al. (2016): Moral competence and brain connectivity: A resting-state fMRI study. In: *NeuroImage*, 141, pp. 408–415.
KEASEY, C. B. (1974): The influence of opinion-agreement and qualitative supportive reasoning in the evaluation of moral judgments. In: *Journal of Personality and Social Psychology,* 30(4), pp. 477–482.
KOHLBERG, L. (1964): Development of moral character and moral ideology. In: M. L. Hofmann & L. W. Hofmann (eds.): *Review of child development research*. New York: Russell Sage Foundation, pp. 381–431.
KOHLBERG, L. (1976): Moral stages and moralization: The cognitive developmental approach. In: T. Lickona (ed.): *Moral development and behavior: Theory, research and social issues*. New York: Holt, Rinehart and Winston, pp. 171–205.
KOHLBERG, L. & LEVINE, Ch. et al. (1983): *Moral stages: A current formulation and a response to critics.* Basel & New York: Karger.
LIND, G. (1978): Wie misst man moralisches Urteil? Probleme und alternative Möglichkeiten der Messung eines komplexen Konstrukts [How does one measure moral judgment? The issues and alternative methods of measuring a complex construct]. In: G. Portele (ed.): *Sozialisation und Moral* [*Socialization and morality*]. Weinheim: Beltz, pp. 171–201.
LIND, G. (1995): *Cultural fairness and the measurement of morality*. In: Www.unikonstanz.de. [online] [Retrieved December 12, 2024] Available at: https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=817434ad72d9a946ca436d65e856beb3682cc2ac
LIND, G. (2000): Are helpers always moral? Empirical findings from a longitudinal study of medical students in Germany. In: A. L. Communian (ed.): *International perspectives on human development*. Lengerich: Pabst Science, pp. 463–477.
LIND, G. (2005): The cross-cultural validity of the Moral competence test: Findings from 29 Cross-Cultural Studies. *Paper prepared for the American Psychological Association APA*, Aug. 18–22, 2005. [Retrieved December 12, 2024] Available at: http://moralcompetence.net/pdf/Lind_2005_Cross-Cultural-Validity-MCT.pdf
LIND, G. (2008): The meaning and measurement of moral judgment competence. A dual-aspect model. In: D. Fasko, Jr. & W. Willis (eds.): *Contemporary philosophical and psychological perspectives on moral development and education*. Creskill, NJ.: Hampton Press, pp. 185–220.
LIND, G. (2013): Thirty years of the moral judgment test – Support for the dual-aspect theory of moral development. In: C. S. Hutz & L. K. de Souza (eds.): *Estudos e pesquisas em psicologia do desenvolvimento e da personalidade: uma homenagem a Angela Biaggio* [*Studies and research in developmental and personality psychology: A tribute to Angela Biaggio*]. Sao Paulo: Casa do Psicólogo, pp. 143–170.
LIND, G. (2016): *How to teach morality: Promoting deliberation and discussion, reducing violence and deceit.* Berlin: Logos.
LIND, G. (2019): *How to teach moral competence*. Berlin: Logos.
LIND, G. & WAKENHUT, R. (1985): Testing for moral judgment competence. In: G. Lind, H. A. Hartmann & R. Wakenhut (eds.): *Moral development and the social environment. Studies in the philosophy and psychology of moral judgment and education*. Chicago: Precedent Publishing, pp. 79–105.
MARTIN, D. & MÖRCH, C. M. et al. (2023): The notion of moral competence in the scientific literature: a critical review of a thin concept. In: *Ethics and Behavior*, 33(6), pp. 461–489.

MOLL, J. & DE OLIVEIRA-SOUZA, R. et al. (2008): The neural basis of moral cognition: sentiments, concepts, and values. In: *Ann. N. Y. Acad. Sci*, 1124, pp. 161–180.
PIAGET, J. (1976): The affective unconscious and the cognitive unconscious. In: B. Inhleder (ed.): *Piaget and his school*. New York: Springer, pp. 63–71.
PREHN, K. & HEEKEREN, H. R. (2009): Moral judgment and the brain: A functional approach to the question of emotion and cognition in moral judgment integrating psychology, neuroscience and evolutionary biology. In: J. Verplaetse & J. Schrijver et al. (eds.): *The moral brain*. Dordrecht: Springer, pp. 129–154.
PREHN, K. & HEEKEREN, H. R. (2014): Moral brains–possibilities and limits of the neuroscience of ethics. In: M. Christen & C. van Schaik et al. (eds.): *Empirically informed ethics: Morality between facts and norms*. Cham: Springer International Publishing, pp. 137–157.
REST, J. & NARVAEZ, D. (1991): The college experience and moral development. In: *Handbook of moral behavior and development*, 2(3), pp. 229–245.
REST, J. et al. (1999): *Postconventional moral thinking: A neo-Kohlbergian approach*. Mahwah, NJ: Lawrence Erlbaum.
SERODIO, A., KOPELMAN, B. I. & BATAGLIA, P. U. R. (2016): The promotion of medical students' moral development: a comparison between a traditional course on bioethics and a course complemented with the Konstanz method of dilemma discussion. In: *International Journal of Ethics Education*, 1, pp. 81–89.
SCHILLINGER-AGATI, M. & LIND, G. (2003): Moral judgment competence in Brazilian and German university students. In: *Annual Meeting of the American Education Research Association*. Retrieved December 12, 2024] Available at: http://moralcompetence.net/pdf/Schillinger-Lind-2003_moral-development-Brazil.pdf
THOMA, S. J. & DONG, Y. (2014): The defining issues test of moral judgment development. In: *Behavioral Development Bulletin*, 19(3), pp. 55–61.
ZIELINA, M. & ŠKODA, J. et al. (2024): Exploring moral competence regression: a narrative approach in medical ethics education for medical students. In: *BMC Med Ethics*, 25(1), pp. 1–10.