



Building a Culture of Professional Ethics for Mathematics Teachers Through Professional Development Programs

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ABSTRACT

This study aims to analyze the importance of developing a professional ethical culture in the mathematics teacher profession through professional development programs. This research uses a literature review method by exploring various literature related to professional development, professional ethics, and challenges faced by mathematics teachers in maintaining their professional ethics. Professional development programs for mathematics teachers, including training, seminars, and workshops, are one of the efforts to improve competence and ethical awareness among teachers. In this study, it was found that the development of a culture of professional ethics through these programs can create a better understanding of the values of professionalism, such as responsibility, integrity, and honesty in carrying out teaching duties. In addition, the development of professionalism also aims to improve the quality of teaching, which in turn will have a positive impact on student learning outcomes. This study shows that the success of professional development programs is highly dependent on the commitment and active participation of teachers in participating in various activities organized. Therefore, building a culture of professional ethics among mathematics teachers is essential to create a dignified and quality educational environment.

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INTRODUCTION

Teachers have a central role in creating a quality generation. As educators, teachers are required not only to master professional competence, but also to be able to maintain their professional ethics. Mathematics teachers, as one of the professions that play an important role in building students' logical and analytical thinking skills, need to instill ethical values in the learning process. The culture of professional ethics is not only about personal behavior, but also includes how a teacher carries out his or her responsibilities to students, colleagues, and society with integrity and professionalism. (Priyambodo, 2023) However, in practice, there are many challenges faced by mathematics teachers in implementing professional ethics. Lack of awareness of the importance of ethical values, administrative pressure, and demands to achieve academic results often make professional ethics neglected. In this context, professional development programs are one of the effective solutions to build and integrate a culture of professional ethics among teachers. The program includes training,

workshops, and seminars designed to improve technical competence while strengthening understanding of professional ethics.(Prihantoro, 2011)

The development of a culture of professional ethics through these programs has a long-term impact on the quality of education. Teachers who understand and apply professional ethics well will create a conducive and inspiring learning environment for students. In addition, the culture of professional ethics also strengthens the relationship between teachers, students, and the community, thereby creating better trust and collaboration in the world of education. Thus, the formation of a culture of professional ethics through professional development programs is not only a necessity, but also a collective responsibility for all parties involved in education. This study aims to explore approaches that can be applied to support the development of a professional ethical culture of mathematics teachers, as well as identify the factors that influence the success of such professional development programs.(Anwar, 2020)

In addition to building technical competence, the development of a culture of professional ethics is also important to shape the character and integrity of mathematics teachers. As an educator, teachers are often role models for students, both in and out of the classroom. Therefore, the professional behavior of teachers not only affects the quality of learning, but also contributes to the formation of students' morals and attitudes. In this case, values such as honesty, responsibility, and fairness are the main pillars that must be internalized by every teacher through various training and professional development programs. In addition, professional development programs can help mathematics teachers understand more deeply about the professional code of ethics, including how to deal with ethical dilemma situations in teaching and learning activities. For example, teachers can learn how to provide objective assessments, avoid discrimination, and maintain professional relationships with students and colleagues. With proper guidance, teachers are able to navigate these challenges while maintaining integrity and professionalism.(Anwar, 2020)

Professional ethics culture is also important in increasing collaboration between educators. Teachers who have a high ethical awareness tend to be more open to working with peers in sharing knowledge and experience. This not only enhances individual competence, but also strengthens the professional community that supports the overall improvement of the quality of education. Professional development programs can be an effective platform to create this collaborative work culture, where teachers support each other in facing professional challenges. With the development of technology and increasing demands in the modern world of education, professional development programs also need to be adapted to be relevant to the needs of the times. The use of digital technology in mathematics learning, for example, presents new challenges for teachers in maintaining the ethics of responsible use of technology. Therefore, training that integrates technological and ethical aspects is indispensable to ensure that mathematics teachers can utilize technology in a professional and moral way. With a comprehensive and sustainable approach, the development of a culture of professional ethics through professional development programs can have a significant positive impact, not only for teachers, but also for the entire education ecosystem.(Hasibuan, 2018).

METHODE

This study uses a library research approach to analyze how professional development programs can build a culture of professional ethics among mathematics teachers. The literature method was chosen because it is relevant to explore theories, concepts, and results of previous research related to professional ethics and professional development. This research relies on literature sources, such as academic books, scientific journals, articles, and official documents related to the study topic. The research steps began with the identification of relevant literature using keywords such as teacher professional ethics, professional development, mathematics teachers, and ethical culture in education. The literature sources used are selected based on their validity, credibility, and relevance to the topic being discussed. After that, the collected data is analyzed descriptively to identify key concepts, relationships between variables, and best practices in building a professional ethics culture through professional development programs. The data analysis approach in this study is carried out by studying, comparing, and synthesizing findings from various literature. This process aims to gain a comprehensive understanding of the importance of professional ethics for mathematics teachers and how professional development programs can contribute to the formation of such cultures. The results of this analysis are then used to develop strategic recommendations for education stakeholders in improving the quality of teacher professional ethics.

RESULT AND DISCUSSION

The Importance of Professional Ethics for Mathematics Teachers

Professional ethics are moral principles and standards of behavior that become guidelines for a teacher in carrying out his duties. For mathematics teachers, professional ethics have a crucial role because they are not only responsible for teaching abstract concepts, but also shaping the character of students. Math is often considered a challenging subject, so an ethical approach to teaching, such as patience, honesty, and attention to student needs, is key to creating a conducive learning environment. (AK & Si, t.t.) A math teacher who applies professional ethics will provide an objective and fair assessment, ensuring that every student is treated equally without discrimination. In addition, they are also able to maintain professional relationships with students, so as to create an atmosphere of mutual respect. This is important because teachers are often role models for students, both in academic and moral contexts. By providing examples of ethical behavior, math teachers can help students develop the values of honesty, responsibility, and hard work. (Prihantoro, 2011)

Pentingnya etika profesi juga terlihat dalam interaksi guru dengan rekan sejawat dan masyarakat. Sebagai bagian dari komunitas pendidikan, guru matematika harus menjaga integritas dan profesionalisme, baik dalam bekerja sama dengan sesama pendidik maupun dalam menjalankan peran sosialnya. Guru yang memahami etika profesi cenderung lebih efektif dalam menciptakan kolaborasi yang produktif, berbagi pengetahuan, dan mendukung inovasi dalam pembelajaran. Dengan berkembangnya teknologi dalam pendidikan, etika profesi juga menjadi semakin relevan. Guru matematika perlu memastikan penggunaan teknologi secara bertanggung jawab, baik dalam penyampaian materi maupun dalam penilaian siswa. Mereka harus menjaga kerahasiaan data siswa, menghindari plagiarisme, dan memastikan bahwa teknologi digunakan untuk mendukung pembelajaran, bukan sekadar sebagai alat formalitas. Oleh karena itu, etika profesi bukan hanya kebutuhan, tetapi

juga fondasi bagi guru matematika untuk menjalankan tugasnya secara bermartabat dan efektif.(Zulhimma, 2013)

The Role of Professional Development Programs

Professional development programs play an important role in improving the quality of teachers, not only in terms of technical competence, but also in building awareness of the importance of professional ethics. This program is designed to update teachers' knowledge and skills to suit the demands of the times, including the moral and ethical aspects that must be upheld by an educator. For mathematics teachers, professional development is a means to strengthen their understanding of the professional code of ethics while improving pedagogical skills.(Oseven, t.t.) Through programs such as training, workshops, and seminars, teachers get the opportunity to reflect on their teaching practices and adapt them to applicable ethical standards. The program provides guidance on how a teacher can deal with situations that test integrity, such as providing fair assessments, dealing with students with special needs, or maintaining professional relationships with students and colleagues. In addition, the professional development program also introduces new approaches to mathematics learning that are relevant to technological developments and student needs.

In addition to improving individual competencies, this program also encourages the formation of a culture of collaboration between educators. Teachers can share experiences and best practices in applying professional ethical values in the classroom. This collaboration not only enriches individual insights, but also creates a community of professionals who support each other to achieve shared educational goals. Teachers who are active in professional development programs tend to be more confident and competent in managing ethical dilemmas that may arise in their work.(Wijanarko & Syafiq, 2013) Thus, professional development programs not only function as a means of learning, but also as a catalyst in building a culture of professional ethics. With the integration of technical competence and ethical values, mathematics teachers can become educators who are not only academically competent, but also have high morals, so that they are able to have a positive impact on students and the world of education as a whole.

Factors Supporting Professional Ethics Culture

The culture of professional ethics among mathematics teachers does not arise out of nowhere, but requires support from various interrelated factors. One of the main factors is the support of educational institutions. Schools as a work environment for teachers must create an atmosphere that supports the application of professional ethics. This can be done by providing regular training on professional codes of conduct, rewarding teachers who demonstrate high integrity, and ensuring that ethical values are consistently applied in policies and daily practices. In addition, support from peers is also very important. Collaboration between educators allows teachers to share experiences, discuss ethical challenges faced, and find solutions together. Teachers who feel supported by their professional community tend to be more motivated to apply ethical values in their teaching. In this community, constructive dialogue can help clarify ethical boundaries and strengthen a commitment to professionalism.(*Professional, Inspiring, and Fun Teachers - Google Books*, t.t.) Another supporting factor is the teacher's individual awareness of the importance of professional ethics. Teachers who have a personal commitment to maintaining integrity and moral responsibility will find it easier to internalize ethical values in every aspect of their

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work. This awareness often grows from self-reflection, experience, and learning gained through professional development programs.

Technology is also one of the supporting factors that can strengthen the culture of professional ethics. Digital platforms that provide educational resources and discussions on professional ethics allow teachers to continuously learn and update their knowledge. However, the use of this technology must be balanced with the application of ethical principles, such as maintaining the privacy of student data and using learning materials that comply with legal and moral standards.(Astuti et al., 2023) Finally, support from the community and parents of students also plays a role in creating a culture of professional ethics. When the community appreciates the role of teachers and supports them to carry out their duties with integrity, this will strengthen the motivation of teachers to continue to uphold professional ethics. With the synergy between these various factors, the culture of professional ethics can grow and become an inherent part of the education system.(Nabila & Siregar, 2022)

Challenges in Applying Professional Ethics

Although professional ethics have an important role in the world of education, its application among teachers, including math teachers, often faces various challenges. One of the main challenges is the lack of formal understanding or training related to professional ethics. Many teachers have not received sufficient debriefing on professional ethical standards, both through formal education and professional development programs. This leads to a lack of awareness and understanding of how ethical principles are applied in everyday practical situations. In addition, excessive administrative workload often distracts teachers from their primary task of teaching. In many cases, teachers have to manage reports, attend meetings, or handle other administrative matters that take up time. As a result, teachers have little time to reflect on their ethical practices or take additional training that can strengthen their ethical awareness.(Lestari et al., 2024)

The demands of the social environment and external pressures are also challenges in maintaining professional ethics. Teachers may face pressure from students' parents, co-workers, or others who want special treatment, such as student grading or unfair treatment. In situations like this, teachers are required to maintain their integrity, even though they risk facing conflict or displeasure from certain parties. Technological developments also present new challenges in professional ethics. Math teachers, for example, often use digital platforms to teach or evaluate students. However, a lack of understanding of data privacy, plagiarism, or misuse of technology can lead to ethical violations. In addition, teachers must also face the possibility of spreading unethical or less valid information in the digital environment.

Another challenge is the imbalance between expectations and available facilities. In some schools, especially in remote areas, teachers often work in unsupportive conditions, such as lack of access to learning resources or periodic training. This condition can reduce teachers' motivation to apply ideal ethical standards.(M.A, 2024) To overcome these challenges, collaborative efforts from various parties are needed, including educational institutions, governments, and the teacher professional community. With adequate support, teachers can more easily apply professional ethics consistently in every aspect of their work.

Building a Professional Ethics Culture

Teacher training programs should include learning about professional ethics as a core part of their curriculum. This training material can include case studies, simulations, and discussions about ethical dilemmas that teachers often face. This approach not only enhances theoretical understanding, but also practical skills in applying ethical values in real-world situations. Schools and educational institutions need to hold periodic training that focuses on strengthening professional ethics. This training can be done through seminars, workshops, or mentoring programs involving educational experts and experienced practitioners. This allows teachers to keep their knowledge updated and learn from best practices. Teachers who show a high commitment to professional ethics need to be appreciated, for example through awards, promotions, or other incentives. This step can motivate other teachers to follow in the same footsteps and create a positive culture in the school environment.

Forming a professional community for mathematics teachers can be a platform to share experiences, challenges, and solutions related to the application of professional ethics. Through open discussion and collaboration, teachers can support each other and strengthen their commitment to ethical values. Schools must have policies that support the consistent application of professional ethics. This policy can be in the form of guidelines on teacher-student relations, ethical complaint mechanisms, and rules regarding the ethical use of technology in learning. Digital platforms specifically designed to support ethical learning can be a modern solution. This technology can provide learning modules on professional ethics, practical guidance, and discussion forums for teachers. However, this technology must be supported by training to ensure that its use remains in accordance with ethical principles.

Parents and the community need to be involved in efforts to build a culture of professional ethics. Support from them, both in the form of trust and appreciation for the role of teachers, will strengthen teachers' motivation to maintain their integrity. Educational institutions need to conduct periodic evaluations of the application of professional ethics in schools. This can be done through surveys, observations, or ethical audits to ensure that teachers comply with the standards that have been set. By implementing these recommendations, a culture of professional ethics among mathematics teachers can be formed systematically and sustainably, having a positive impact not only on the teachers themselves but also on students and the educational community as a whole.

CONCLUSION

Building a culture of professional ethics among mathematics teachers is an important step to improve the quality of education as a whole. Professional ethics are not only a code of conduct that helps teachers in carrying out their duties with integrity, but also contribute to the formation of students' character. Mathematics teachers who uphold professional ethics can create a conducive, fair, and inclusive learning environment, as well as be an example for students in developing moral values. Professional development programs play a crucial role in realizing a culture of professional ethics. Through training, workshops, and discussions, teachers gain the knowledge and skills necessary to confront ethical dilemmas in their work. The program also encourages collaboration between educators, creates a supportive community, and reinforces a commitment to high ethical standards. Thus, professional development is not only a tool to improve competence, but also a means to strengthen ethical values in the world of education.

However, the application of professional ethics is inseparable from various challenges, such as lack of formal training, external pressures, and limited facilities. Therefore, support from various parties, including educational institutions, government, and society, is needed to overcome these barriers. Recommendations such as integrating ethics into teacher training curricula, awarding, and developing supportive school policies are strategic steps to address these challenges. Success in building a culture of professional ethics depends on the synergy between the individual efforts of teachers and institutional support. With a shared commitment, professional ethics can be a solid foundation for creating quality education, producing a generation that is not only intellectually intelligent but also moral, and strengthening the role of teachers as a key pillar in the education system.

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