



## Implementation of Professional Ethics of Mathematics Teachers in Online Learning

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### ABSTRACT

This study discusses the implementation of professional ethics of mathematics teachers in online learning using the literature method. Teacher professional ethics play an important role in maintaining the quality of learning, especially in a challenging online situation. Mathematics teachers are expected to be able to maintain integrity, responsibility, and professional attitude even though learning is carried out without face-to-face. This study shows that math teachers must maintain effective communication, provide constructive feedback, and ensure that learning methods remain inclusive and fair to all students. In online learning, major challenges such as limited access to technology, differences in students' ability to understand the material, and lack of direct interaction can affect the application of professional ethics. The literature reviewed highlights the importance of careful planning, the appropriate use of digital platforms, and the utilization of technology to increase student engagement. Teachers also need to adhere to the principle of confidentiality, respect students' privacy rights, and avoid discriminatory actions. By combining an adaptive pedagogical approach and a commitment to ethical values, mathematics teachers can create an online learning environment that is both effective and meaningful. The findings of this study emphasize that the application of professional ethics not only maintains the credibility of teachers but also improves the quality of education in dynamic conditions such as the era of online learning.

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### INTRODUCTION

The development of digital technology has had a significant impact on the world of education, especially during the COVID-19 pandemic. This situation forced the education system to adapt quickly to the online learning model. Teachers, as one of the main pillars in education, are required to not only master technology but also apply professional ethical values in carrying out their duties. In this context, math teachers have a huge responsibility to ensure that learning continues to be effective even without face-to-face interaction. Online learning creates new challenges that require adaptation in pedagogical approaches, but must still be based on the principles of professionalism and ethics. Professional ethics of teachers includes a series of norms and values that become guidelines for behavior in carrying out

teaching duties. This ethics include the responsibility to educate students with integrity, give equal attention to all students, and maintain healthy professional relationships with students, parents, and colleagues. In online learning, the challenge of applying professional ethics is increasingly complex due to limitations such as gaps in access to technology, communication barriers, and obstacles in building personal relationships with students. Therefore, it is important to understand how mathematics teachers can optimally implement professional ethics in online learning.(Pattiasina et al., 2024)

One of the important aspects of online learning is the ability of teachers to create a conducive and inclusive learning atmosphere. Math teachers need to devise a teaching strategy that allows all students to understand the material well, regardless of device limitations or internet connection. In addition, they must also ensure that interactions during online learning still pay attention to ethical norms, such as maintaining student privacy and being impartial in providing attention or evaluation. Teachers are required to be adaptive to the needs of students, while maintaining professionalism in every learning activity.(Pratiwi, 2022) On the other hand, online learning provides opportunities for teachers to take advantage of various innovative digital platforms. Technology allows for the application of interactive and engaging learning methods, such as the use of math simulations, online quizzes, or app-based group discussions. However, the use of this technology must also be accompanied by an understanding of digital ethics, including respecting intellectual property rights and safeguarding students' personal data. Math teachers need to play a role model in the responsible use of technology, so that students can learn not only subject matter but also ethical values.

This study aims to examine the application of professional ethics of mathematics teachers in online learning through a literature method approach. The literature review is expected to provide an overview of the challenges and strategies that can be applied by mathematics teachers to maintain the quality of online learning. By understanding the application of professional ethics, it is hoped that teachers can present education that is not only academically effective but also meaningful in building students' character.(Agisti & Zuhri, 2020).

### METHODE

This research uses a qualitative approach with library research methods. This approach was carried out to examine various sources of literature related to the application of professional ethics of mathematics teachers in online learning. The data collected is in the form of information from books, scientific journals, articles, and other documents relevant to the research topic. The qualitative approach was chosen because it allows researchers to understand the concepts, values, and principles of professional ethics in depth in the context of online education. Data collection was carried out through a literature search using keywords such as "teacher professional ethics", "online learning", "mathematics teacher", and "educational technology". Literature sources are critically analyzed to evaluate the relevance and validity of the information presented. In data analysis, researchers use interpretation techniques to identify common patterns, challenges, and best practices that have been implemented in online learning. The results of the analysis were then synthesized to provide an overview of how mathematics teachers can integrate professional ethics in online learning. The focus of the research is on aspects such as professional responsibility, fairness, integrity, privacy, and adaptation to technology. This research is expected to provide

recommendations for teachers and education policy makers to improve the quality of online learning based on ethical values. (M.Pd & M.Pd.I, 2024).

## RESULT AND DISCUSSION

### The Role of Professional Ethics in Online Learning

Professional ethics are an important foundation that must be held by teachers, including in online learning. In this context, mathematics teachers are required to maintain integrity, responsibility, and a professional attitude, even though the teaching-learning process is carried out without direct interaction. Professional ethics help teachers to stay focused on educational goals, which is to guide students to achieve academic competence while forming good character. In online learning, this role is increasingly important because the limitations of technology and communication are often obstacles in delivering material effectively. (Zunidar, 2019) Mathematics teachers play a role in creating an inclusive and fair learning atmosphere. This involves recognizing the diverse needs of students, such as technical ability, level of understanding, and access to digital devices. By adhering to the principles of professional ethics, teachers can give equal attention to all students without discrimination. For example, in assigning assignments or evaluations, teachers should be objective and transparent, ensuring that every student has an equal chance to succeed.

In addition, online learning requires teachers to maintain professional relationships with students and parents. Professional ethics help teachers build trust through effective and polite communication. Teachers must also ensure that students' privacy is protected, especially in the use of digital platforms that contain personal data. This is important to create a safe and comfortable learning environment for students. (Syahbana, 2012) Through the application of professional ethics, mathematics teachers can become role models in the responsible use of technology. Not only teaching academic materials, teachers can also guide students to respect ethical values, such as honesty in doing assignments and respecting copyright in online learning resources. Thus, the role of professional ethics not only serves as a guideline for teacher behavior, but also contributes to the formation of students' character in the digital era.

In addition, the role of professional ethics can be seen in how teachers maintain professionalism in online learning. This includes punctuality, the presentation of relevant materials, and effective communication with students and parents. In online learning, teachers must also pay special attention to fairness, ensuring that all students, regardless of social background or technological constraints, have equal opportunities to learn. Ethical teachers will strive to create an inclusive online classroom atmosphere, where every student feels valued and supported to thrive. (*Analysis of the Application of Learning Video Media Using the Plotagon Application to the Understanding of the Concept of Building Flat in Class V / Polynomial: Journal of Mathematics Education*, n.d.) Professional ethics also include the protection of student privacy and the responsible use of technology. Teachers must ensure that the platform or application used is secure and in accordance with educational needs, while respecting students' right to the confidentiality of their personal data. For example, teachers may not share students' personal information or learning recordings without permission. This attitude not only maintains a good relationship between teachers and students, but also builds trust in the online learning system itself.

Through the application of professional ethics, mathematics teachers not only play the role of teachers, but also as moral guides. In online learning, teachers can integrate ethical values such as honesty, hard work, and responsibility in the teaching and learning process.

That way, students not only gain a better academic understanding, but are also motivated to apply those values in their daily lives. Professional ethics that are applied consistently can be the foundation for online learning that is not only technically successful but also educationally meaningful.(Shadiqien, 2020)

### Tantangan Penerapan Etika Profesi

The application of professional ethics in online learning faces various complex challenges. One of the main challenges is the technology access gap. Not all students have adequate digital devices or stable internet access to participate in online learning. This can lead to inequities in the learning process, where disadvantaged students tend to be left behind. Teachers, as guardians of professionalism and ethics, must face the dilemma of ensuring justice for all students even if these conditions are beyond their control. Another challenge is the limitation of direct interaction. In face-to-face learning, teachers more easily understand students' emotional and academic needs through non-verbal expression or communication. However, in online learning, this interaction becomes limited, making it difficult for teachers to give enough personal attention. This can affect teachers' ability to optimally apply ethical values, such as empathy and justice.(*Systematic Review: The Impact of Online Lectures During the COVID-19 Pandemic on Indonesian Students* | Argaheni | *Placentum: Scientific Journal of Health and Its Applications*, n.d.)

Data privacy and security are also big challenges in online learning. Teachers often use various digital platforms to manage classes, deliver materials, and conduct assessments. However, not all of these platforms have adequate security standards to protect students' personal data. Teachers are required to understand and comply with the principles of digital security so as not to violate students' privacy, which is one of the important aspects of professional ethics. In addition, the technical inability of some teachers to operate online learning devices or applications can also be an obstacle. Although professionalism requires teachers to continue learning, time pressures and training limitations often hinder them from mastering the necessary technology. This can affect the quality of learning and the application of ethics, for example in maintaining time efficiency and the quality of communication with students.(*Analysis of Student Engagement and Response in Online Learning Using Google Classroom During the Covid-19 Pandemic* | Febrilia | *Fibonacci: Journal of Mathematics and Mathematics Education*, n.d.) The increased workload is also a challenge in implementing professional ethics. In online learning, teachers often have to work harder to design materials, conduct evaluations, and answer students' questions individually. This condition can lead to fatigue that affects the consistency of applying ethical values such as patience and responsibility.

Finally, the lack of clear guidelines and regulations related to professional ethics in online learning is also an obstacle. Many teachers still do not get specific instructions on how to apply ethics in a digital context. This makes them have to adapt independently, which sometimes leads to inconsistencies in their practices. By understanding these challenges, teachers can be better prepared to overcome obstacles in implementing professional ethics, while continuing to strive to improve the quality of online learning.(*Model of Junior High School Mathematics Syllabus*, n.d.)

### Strategies for Implementing Ethics in Online Learning

Online learning has become the main choice in many education, especially since the COVID-19 pandemic. As it grows, it is important to instill the right ethics so that the learning process runs effectively and morally.(A, n.d.) Here are some strategies that can be applied to implement ethics in online learning. It is important for educational institutions to develop and communicate clear ethical policies for all students and teachers. This policy includes appropriate guidelines for conduct during online learning, such as respect for copyright, communication ethics, and good manners on online platforms. The use of technology in online learning must be done responsibly. This includes the use of secure learning applications and platforms, as well as the protection of students' personal data. Teachers should educate students on how to use technology wisely and avoid misuse.(Scott, 2013)

Ethics in online learning also includes creating an inclusive environment for all learners, regardless of background or condition. Teachers must maintain fairness, provide equal opportunities for all students to participate, and respect diversity of opinions. One of the big challenges in online learning is academic honesty, such as plagiarism and cheating in exams. Therefore, teaching about the importance of academic integrity should take precedence. Teachers can put together activities that encourage students to express their original thoughts and reward their work. In online learning, communication between teachers and students must be done in an ethical and open way. Teachers should listen carefully to student input and provide constructive feedback. Teachers also need to maintain clear and non-confusing communication in each material presented.

In online situations, it is often difficult to read facial expressions and body language. Therefore, it is important to develop social awareness and empathy between teachers and students. Teachers must show concern for the well-being of students and be ready to help them if there are problems in learning.(Fauziyati, 2018) Supervision in online learning must be carried out fairly and objectively. Teachers must ensure that every student has an equal opportunity to participate in learning and receive equal feedback. This also includes supervision in exams or assignments carried out online so that there is no cheating. Ethics in online learning are also related to the quality of the material presented. Teachers must ensure that the material provided is not only relevant and useful, but also adheres to academic standards and does not contain harmful or misleading content.(Waruwu & Lawalata, 2024) By implementing these strategies, online learning can be done in an ethical way, thereby creating a quality learning experience and supporting the positive formation of students' character.

Online learning presents new challenges for teachers, both in terms of technology and pedagogy. For this reason, providing comprehensive support to teachers is very important so that they can carry out online learning effectively and efficiently. One crucial form of support is training and professional development for teachers. This training includes technical skills in operating online learning devices and applications, as well as pedagogical training that teaches strategies for managing virtual classrooms, using interactive media, and building effective communication with students.(Elitasari, 2022) In addition, support related to access to adequate technology and infrastructure is also needed. Teachers must have adequate devices, such as computers or tablets, as well as a stable internet connection to optimize the online learning process. Educational institutions need to ensure that teachers have full access to these devices, and also provide the necessary technical assistance in case of constraints, such as hardware or software issues used in online learning.



Another support is the provision of an easy-to-use learning platform. An intuitive platform that has various features to support interaction between teachers and students will greatly help smooth learning. In addition, parental involvement is also an important factor in supporting the student learning process at home. Teachers need to work closely with parents to ensure that students can follow online learning well, and therefore, organizing training for parents related to online learning is very beneficial.(Erlinda, 2017) In addition, time for collaboration with fellow teachers is also an important support. Through this collaboration, teachers can share experiences, teaching strategies, and solutions to the challenges they face in online learning. By supporting each other, teachers can enrich their teaching methods and improve the quality of learning. In addition, appreciation for teachers' hard work in running online learning is also very important to maintain their enthusiasm and motivation.

Finally, it is important to pay attention to the well-being of teachers, both physical and mental, especially in online learning situations that can increase the workload. Well-being programs, such as counseling or adequate recess, should be provided to help teachers cope with the stress and burnout that arises from increased workloads. This comprehensive support will enable teachers to carry out their roles more effectively and create a better online learning experience for students.(Rosidi et al., 2024)

The application of professional ethics in online learning has a significant positive impact on both teachers, students, and educational institutions as a whole. One of the main impacts is the creation of a more professional and responsible learning environment. By adhering to professional ethics, teachers can ensure that learning is carried out with integrity, respect students' rights, and maintain the quality of the material taught. This not only increases students' confidence in the learning process, but also strengthens the reputation of educational institutions in the eyes of the public. In addition, the application of professional ethics in online learning also helps to improve the quality of interaction between teachers and students. Professional ethics encourage teaching that is fair, transparent, and respectful of differences. Teachers who follow the principles of professional ethics tend to value the right of students to equal learning and be free from discrimination. This creates a space for students to feel valued and motivated to actively participate in the teaching and learning process.(Setiyarini, 2013)

Another positive impact is the increased sense of responsibility and professionalism among teachers. When teachers adhere to professional ethical standards, they will be more careful in planning and executing online learning, ensuring that the material delivered is relevant, and providing constructive feedback. In addition, they are also more careful in managing student behavior, maintaining the confidentiality of students' personal data, and ensuring academic honesty during online learning. This not only supports the quality of education but also shapes the character of students better. The application of professional ethics also plays a role in creating a healthy academic culture. With ethics enforced, technology abuse, plagiarism, and cheating in online learning can be minimized. This is important to maintain the credibility of the education system and ensure that every student receives an equal, honest, and dignified learning.(Tungka, 2023) Thus, the positive impact of the application of professional ethics in online learning is not only felt in improving the quality of education, but also in the formation of student character, strengthening the relationship between teachers and students, and building a positive reputation for educational institutions.

## CONCLUSION

The implementation of professional ethics of mathematics teachers in online learning is essential to create a professional and effective learning environment. By following the principles of professional ethics, teachers can manage the online learning process more responsibly and transparently. Professional ethics teaches teachers to respect students' rights, maintain academic honesty, and provide materials that are in accordance with applicable educational standards. This not only improves the quality of teaching, but also builds a mutually respectful relationship between teachers and students. The application of professional ethics in online learning also has a positive impact on the interaction between teachers and students. Teachers who adhere to professional ethics tend to be more respectful of differences, provide constructive feedback, and create spaces for students to actively participate without feeling discriminated against. This fair and transparent attitude helps students feel valued and motivated to study harder. In addition, ethical-based classroom management also encourages the creation of a comfortable and conducive atmosphere for all parties involved.

In terms of professionalism, the implementation of professional ethics encourages mathematics teachers to continue to improve their pedagogical and technical skills, so that they can provide a better quality learning experience in online learning. Teachers who adhere to professional ethics will be more careful in planning materials, using technology wisely, and ensuring that learning takes place fairly. This not only improves the quality of mathematics education but also strengthens the credibility and integrity of educational institutions. Thus, the application of professional ethics in online learning has a great influence on the quality of education, both in terms of teaching, the relationship between teachers and students, and the achievement of learning outcomes. By maintaining high ethical standards, math teachers can make a significant contribution to the formation of students' character, as well as create honest, fair, and quality online learning. Professional ethics are the main foundation in creating sustainable learning with integrity.

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