

# Teachers' Professionalism in Enhancing Students' Collaborative Skills and Information Technology: A Case Study at Senior High School

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## ARTICLE INFO

### *Keywords:*

Teacher professionalism;  
collaborative skills;  
information technology;  
hybrid learning;  
project-based learning

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### *Article history:*

Received 2024-10-04

Revised 2024-12-25

Accepted 2025-03-13

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## ABSTRACT

Teacher professionalism is essential in fostering students' collaborative skills and integrating information technology in learning. At SMA Negeri 1 Kabila, teachers face challenges in designing effective teaching modules and utilizing digital tools for hybrid learning. This study explores how teachers manage these challenges and enhance their professional competence. This qualitative research employs a phenomenological approach, with data collected through observations, interviews, and documentation. The study examines teachers' strategies in implementing collaborative learning and digital technology integration, particularly in Project-Based Learning (P5). Findings indicate that teacher professionalism is evident in collaborative teaching approaches and the use of digital platforms. Teachers work with colleagues to improve instructional methods and develop students' character. Despite this, they encounter difficulties in designing hybrid learning modules and effectively using digital tools. To address these issues, teachers engage in guided and independent training, receive mentoring, and utilize tools like Flip PDF Professional for content development and data management. While teachers make efforts to enhance their competencies, ongoing challenges in hybrid learning persist. Training programs and digital tool adoption help bridge these gaps, improving both teaching effectiveness and student learning outcomes. Future research should explore the long-term impact of these strategies on student performance. Teacher professionalism plays a crucial role in adapting to modern educational demands. Continuous professional development and digital literacy training are essential for optimizing collaborative learning and technology integration in hybrid education.

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## 1. INTRODUCTION

The role of teachers in contemporary education extends beyond mere knowledge transmission. As the architects of students' intellectual and moral development, educators play a crucial role in preparing them for an increasingly complex and digital world. The rapid evolution of technology and globalization has significantly altered educational expectations, requiring teachers to develop not only subject expertise but also competencies in managing collaborative learning and integrating digital tools into instruction. These skills are essential in fostering critical thinking, adaptability, and problem-solving abilities—key attributes for success in the 21st century (Akrim, 2018).

At SMA Negeri 1 Kabila, Bone Bolango Regency, teacher professionalism has become a focal point in the pursuit of quality education aligned with 21st-century demands. The traditional role of teachers as sole knowledge providers has shifted to that of facilitators and mentors, guiding students in collaborative and technology-enhanced learning environments. This transformation reflects broader national efforts in Indonesia to modernize the education system in response to globalization and digital advancements. However, many teachers struggle to design effective teaching modules that incorporate collaboration and digital tools, often due to insufficient training and limited access to educational resources (Jayus, 2023).

The case of SMA Negeri 1 Kabila provides valuable insights into how teacher professionalism intersects with Indonesia's educational reforms, particularly within the Merdeka Curriculum. Designed to foster student autonomy, critical thinking, and problem-solving, this curriculum aligns with global educational trends. However, its implementation presents significant challenges for teachers, who must transition from conventional methods to more student-centered approaches. This shift necessitates not only classroom management skills but also expertise in mentoring students in technology use and independent learning (Suyanto & Jihad, 2013).

One of the key strategies under the Merdeka Curriculum is Project-Based Learning (P5), aimed at enhancing collaboration and integrating technology into education. While P5 holds promise in addressing many of the curriculum's challenges, its effective execution remains a concern (Irawati, 2021). Many teachers lack confidence and adequate training in using digital platforms, limiting their ability to facilitate both in-person and online collaborative learning. Furthermore, managing hybrid learning environments—balancing traditional classroom settings with digital instruction—poses additional difficulties. These challenges underscore the need for sustained professional development programs to equip teachers with the necessary skills to navigate evolving educational demands effectively (Arviansyah & Shagena, 2022).

Teachers at SMA Negeri 1 Kabila face significant barriers in implementing collaborative and technology-driven pedagogy. One of the main challenges is the limited training in the use of digital tools. Although many teachers have access to various learning management systems and virtual collaboration platforms, many are not skilled in using them optimally. Limited training makes it difficult for teachers to integrate technology into their teaching in a way that can enhance student engagement and effectiveness. Without adequate training, many teachers use technology passively, without exploring the full potential of digital tools available to support interactive learning (Jannah, Fathuddin, & Zahra, 2022).

Another challenge is the difficulty in designing teaching modules that can facilitate collaboration, especially in hybrid learning environments that combine face-to-face and online teaching. Organizing activities that involve student collaboration using technology in a hybrid setting requires complex instructional design skills and a deep understanding of how to facilitate effective interactions both virtually and in person. Additionally, infrastructure limitations, such as unstable internet access and outdated hardware, further exacerbate this situation. These resource constraints make it difficult for teachers to create learning environments that fully support the use of technology and collaboration, ultimately hindering efforts to improve the quality of education at SMA Negeri 1 Kabila (Alexandro, Misnawati, & Wahidin, 2021).

This study aims to explore how teachers at SMA Negeri 1 Kabila face challenges and manage collaborative skills and technology integration in the learning process. Focusing on identifying challenges such as limited training and infrastructure, as well as the strategies applied by teachers to overcome these

obstacles, the research is expected to provide practical and applicable recommendations. These recommendations will not only focus on improving the quality of teacher training but also on policies that can support the creation of more effective and innovative learning environments. Through this study, it is hoped that a deeper understanding will be gained of how teachers in Indonesia can be better prepared to meet the demands of the increasingly dynamic 21st-century education (Nugraha, 2022).

The significance of this research lies in its ability to address gaps in teacher preparedness faced by many schools in Indonesia. In the context of the ongoing educational reforms through the Merdeka Curriculum, this study provides valuable insights related to the concrete experiences of teachers on the ground (Sutikno, Hosan, & Irawati, 2022). By understanding how teachers at SMA Negeri 1 Kabila overcome challenges in implementing collaborative and technology-driven learning, the findings of this study can serve as a reference to formulate more effective strategies to support the development of teacher competencies at the national level. The insights gained from this research can help strengthen the implementation of educational policies that support improving the quality of teaching and fostering teacher professionalism across Indonesia (Jafar, 2021).

This research underscores the transformative role that teachers play in managing collaboration and integrating technology to meet the evolving demands of modern education. By closely examining the challenges and solutions encountered at SMA Negeri 1 Kabila, the study provides valuable, actionable insights that can help educators effectively adapt to the requirements of 21st-century teaching. As teachers navigate the complexities of new pedagogical approaches, the findings emphasize the critical need for continuous professional development, which empowers educators to stay current with technological advancements and educational best practices. Moreover, the study highlights the importance of strong institutional support—such as access to training, resources, and collaborative networks—which is essential for fostering teacher professionalism. Ultimately, these efforts contribute to building a more resilient and effective education system in Indonesia, one that can better prepare students to thrive in a rapidly changing, globalized world.

## 2. METHODS

This study uses a descriptive qualitative approach to explore and describe phenomena related to teacher professionalism in managing students' collaborative and technological skills. This method was chosen to provide an in-depth understanding of teaching practices at SMA Negeri 1 Kabila, Bone Bolango Regency, a school implementing a modern educational approach through the Merdeka Curriculum. The study involves various groups, including school administrators, teachers, students, parents, and stakeholders, all of whom provide insights from different perspectives. The selection of the research site is based on its excellent accreditation and conducive environment, which are considered relevant to the goal of exploring best practices in education that support innovation in collaborative learning and technology (Rukminingsih, Adnan, & Latief, 2020).

Data collection was carried out through observations, interviews, and document analysis. Observations were conducted in the classroom and informal observations to gain a direct view of classroom interactions and the use of technology. The frequency and duration of observations were adjusted to the school's teaching schedule. Interviews were semi-structured, lasting approximately 30-60 minutes per session, covering topics such as the implementation of collaborative learning, technological challenges, and teacher professionalism. Document analysis included reviews of lesson plans, teacher performance evaluations, and curriculum guidelines to understand the educational context at the school. Participants were selected using purposive sampling, with specific criteria such as teachers directly involved in technology-based teaching and parents actively engaged in school activities. Data were analyzed using open coding and axial coding to identify themes and patterns related to the implementation of collaborative learning and technology integration. The analysis process was supported by qualitative data analysis software to ensure rigour in drawing conclusions (Sugiyono, 2015).

### 3. FINDINGS AND DISCUSSION

In the context of the implementation of the Merdeka Curriculum, teacher professionalism plays a crucial role in managing students' collaborative skills and information technology (IT) management in the classroom. This curriculum emphasizes collaborative learning and the use of technology to support a more interactive and innovative teaching and learning process. The primary focus of this section is to explore how teachers develop students' collaborative skills and integrate technology into learning, while also discussing the challenges faced in both areas. Teacher professionalism in managing students' collaborative skills and the use of information technology has emerged as a key factor in the success of the Merdeka Curriculum, particularly at SMA Negeri 1 Kabila. This section will present the main findings from the research, challenges encountered in teaching practices, as well as recommendations to support teacher professionalism in managing collaborative skills and technology to meet the demands of the Merdeka Curriculum. Additionally, this section discusses the challenges and strategies that have been implemented to overcome barriers and presents an analysis of the collected data to answer the research questions previously posed.

#### 3.1. Teacher Professionalism in Managing Collaborative Skills of Students

The research conducted at SMA Negeri 1 Kabila highlights the significant role of teacher professionalism in managing students' collaborative skills, particularly within the context of the Merdeka Curriculum, which emphasizes student-centered and collaborative learning. Teachers at this school integrate collaborative activities into their lessons, using strategies such as Project-Based Learning (PBL) and cross-disciplinary projects to foster teamwork, critical thinking, and problem-solving among students. These activities encourage peer-to-peer interactions and help students develop essential skills in cooperation and communication (Syamsuddin, Tahir, & Munir, 2022).

**Table 1.** Teachers' professionalism in learning at SMA Negeri 1 Kabila

No.	Aspects Observed	Observation Results
1.	Teacher Professionalism Managing Students' Collaborative Ability in Learning	There are still teachers who adhere to independent work procedures in addition to collaborative work procedures in designing learning to assess and supervise the learning process and results in the form of providing feedback together.
2.	Teacher Professionalism Managing Students' Collaborative Ability in P5 Activities	Teachers seem to provide guidance and assistance to each other, in addition to the principal and coach, during training activities. The activity is focused on the ability to design and implement and assess P5 activities in strengthening the character of students which are carried out collaboratively, especially those carried out in a <i>hybrid learning</i> manner for new students.

*Data Source: Researcher Observation Sheet*

The research found that teachers who successfully incorporated collaborative learning activities experienced positive outcomes. Students showed increased engagement, demonstrated higher levels of motivation, and took more ownership of their learning. For example, in PBL activities, students worked together to complete complex tasks and research topics and present their findings. This not only enhanced their academic understanding but also improved their social and teamwork skills. Teachers also utilized peer assessments and open discussions to further encourage collaborative learning, allowing students to learn from one another and solve problems collectively (Novitasary, 2023).

However, the research also revealed significant challenges in managing collaborative skills. One major difficulty was addressing the diverse engagement levels and varying motivation among students. While some students were highly motivated and took on leadership roles, others were less engaged, which led to an imbalance in group participation. Another challenge was the time required

to plan and implement collaborative activities. Teachers found that organizing group work, facilitating discussions, and evaluating student contributions demanded more time and effort than traditional lecture-based teaching. These challenges often made teachers hesitant to fully embrace collaborative teaching methods.

To overcome these challenges, SMA Negeri 1 Kabila organized professional development workshops aimed at equipping teachers with strategies for effective classroom management in collaborative settings. These workshops focused on organizing group activities, managing classroom dynamics, and ensuring active participation from all students. Teachers were also trained on how to provide constructive feedback to students during collaborative tasks, helping to improve the quality of teamwork (Lubis, Amelia, Alvionita, Nasution, & Lubis, 2023).

An additional finding from the research was the importance of teacher collaboration in modeling effective teamwork. At SMA Negeri 1 Kabila, teachers worked together to design lessons and interdisciplinary projects, setting a positive example for students. This collaboration not only promoted teamwork but also allowed teachers to share resources and ideas, leading to more effective and engaging lesson plans. For example, the science and mathematics departments collaborated on projects that integrated knowledge from both subjects, which helped students develop a deeper understanding of the material (Suhandi & Robi'ah, 2022).

The research suggests several recommendations for improving collaborative learning at SMA Negeri 1 Kabila. Continuous professional development is essential to ensure teachers are equipped with the necessary skills to manage collaborative learning effectively. Furthermore, school leadership should continue to support teacher collaboration by providing opportunities for teachers to plan and implement lessons together. Additionally, it is important to ensure that all students have equal opportunities to participate in group activities, taking into account their diverse learning styles and abilities. By addressing these challenges, SMA Negeri 1 Kabila can further enhance the effectiveness of collaborative learning within the framework of the Merdeka Curriculum.

In managing students' collaborative skills, teachers at SMA Negeri 1 Kabila face several significant challenges. One of the main challenges is balancing the varying levels of student engagement. In each collaborative activity, there are students who are highly motivated and actively participate, but there are also students who are less involved, even passive, during group activities. This imbalance often leads to frustration both for the more active students and for teachers who strive to ensure that all students participate equally. Some less active students may struggle with collaboration or lack self-confidence, which hinders the effectiveness of collaborative activities.

Additionally, managing the class dynamics, which consists of diverse student characteristics and backgrounds, is another challenge. Each group has different dynamics in terms of skills, personality, and learning styles. Teachers need to adjust their approach to ensure that interactions within groups run smoothly and that all group members contribute constructively. In some cases, conflicts between group members or dominance by certain students can disrupt the flow of collaborative activities, requiring appropriate attention and management from the teacher.

Another challenge is the time required to plan and implement collaborative activities. Unlike traditional teaching methods, which are more structured and require less preparation, collaborative activities require more detailed planning. Teachers must prepare materials, design group tasks, allocate time for discussions and presentations, and ensure that every student is actively involved. This process takes more time, both for preparation and execution in the classroom. In some cases, the limited time available in class makes it difficult for teachers to implement collaborative activities optimally, especially in large classes with many students. This can lead to teachers feeling overwhelmed and hesitant to fully adopt collaborative teaching methods (Yamin & Syahrir, 2020).

According to existing data and literature, these challenges are difficult to overcome due to the complex nature of collaborative learning itself. Collaborative learning requires dynamic interactions between students, which can sometimes be unpredictable. This demands skills and experience from teachers in classroom management and understanding the individual needs of students (Cholilah,

Tatuwo, Komariah, & Rosdiana, 2023). Furthermore, the imbalance in student engagement levels is often influenced by external factors, such as socio-economic background, personal motivation, and family support, which are not always within the teacher's control (Utari & Widodo, 2019). Therefore, while efforts to address these challenges can be made through training and specific strategies, these issues remain concerns that require ongoing attention.

To address the challenges in managing collaborative skills, SMA Negeri 1 Kabila has implemented several strategies to enhance teacher professionalism and support the success of collaborative learning. One of the primary strategies has been the introduction of professional development workshops for teachers. These workshops have focused on improving teachers' ability to organize group work, manage classroom dynamics, and ensure active student participation in collaborative activities. Teachers have also received training on how to provide constructive feedback during group activities, which helps improve collaboration and ensures that students benefit from peer interactions.

In addition to individual professional development, the school has fostered teacher collaboration by encouraging teachers to work together in planning lessons and activities. This collaboration has been particularly effective in cross-disciplinary projects, where teachers from different departments design projects that require students to apply knowledge from multiple subjects. By working together, teachers model the importance of teamwork for their students and help create a learning environment that promotes cooperation and shared responsibility.

Despite the progress made, there are several recommendations to further improve the implementation of collaborative learning at SMA Negeri 1 Kabila. First, the school should offer more focused training on classroom management in collaborative settings. This training should help teachers develop the skills necessary to handle diverse student needs and manage the dynamics of group work effectively. Teachers also need additional support in managing the time-consuming nature of collaborative activities, such as planning group assignments and facilitating discussions. Providing tools and resources to streamline these processes would help alleviate the burden on teachers.

Second, it is important to create an even more supportive environment for teacher collaboration. The school leadership should continue to facilitate opportunities for teachers to collaborate, perhaps through regular meetings or shared planning sessions. These sessions would allow teachers to exchange best practices, discuss challenges, and develop new teaching strategies together. This collaborative approach could also extend to peer observations, where teachers can observe each other's practices and provide feedback.

Lastly, it is crucial to ensure that all students have equal opportunities to participate in collaborative activities. Teachers should be trained to recognize and address differences in learning styles, abilities, and motivation within their classrooms. By assigning specific roles within groups or providing targeted support for struggling students, teachers can create a more inclusive and effective collaborative learning environment. These strategies, when combined, would help further enhance the success of collaborative learning at SMA Negeri 1 Kabila, fostering deeper student engagement and improving overall learning outcomes.

### ***3.2. Teacher Professionalism in Managing Information Technology for Students***

In addition to collaborative skills, the research also focused on how teachers at SMA Negeri 1 Kabila managed the integration of information technology (IT) into their teaching practices. With the increasing emphasis on digital literacy in education, the ability of teachers to effectively use IT tools has become a critical component of their professionalism. The research findings indicate that while significant progress has been made in this area, there are still challenges that need to be addressed. Information technology has revolutionized the way education is delivered, offering new opportunities for interactive and flexible learning. At SMA Negeri 1 Kabila, IT has been integrated into both traditional classroom settings and the hybrid learning model adopted during the COVID-19 pandemic. Teachers used various digital tools, such as Google Classroom, Zoom, and Microsoft Teams, to deliver lessons, assign tasks, and communicate with students. Additionally, multimedia resources like videos,

interactive simulations, and online quizzes were used to enhance the learning experience (Firman & Rahayu, 2020).

The research found that teachers who effectively utilized IT in their teaching saw significant improvements in student engagement and performance. For instance, students were more motivated to participate in lessons when digital tools were used to make the content more dynamic and accessible. Teachers reported that the use of IT allowed them to differentiate instruction more easily, providing students with personalized learning experiences that catered to their individual needs. Despite the benefits of using IT in education, several challenges were identified in the research. One of the primary challenges was the varying levels of digital literacy among teachers. While some teachers were proficient in using digital tools, others struggled to adapt to the new technologies. This digital divide was particularly evident during the transition to hybrid learning, where teachers were required to deliver lessons online. Many teachers lacked the necessary training to use online platforms effectively, leading to difficulties in managing virtual classrooms, monitoring student progress, and providing feedback (Nirmala, Agustina, Robiah, & Ningsi, 2023).

Another challenge was the limited access to technology in certain areas. Although SMA Negeri 1 Kabila is located in an urban area, some students came from rural communities where access to reliable internet connections and digital devices was limited. This created a digital divide among students, with some being able to fully participate in online learning while others faced significant barriers. Teachers noted that this disparity made it difficult to ensure that all students received equal educational opportunities, particularly during periods of remote learning.

To address these challenges, the school implemented several initiatives aimed at improving both teacher and student access to technology. These included providing additional IT training for teachers, offering technical support during online lessons, and distributing digital devices to students who did not have access to them. Teachers were also encouraged to use blended learning approaches, combining online and face-to-face instruction to ensure that students who faced technological barriers could still participate in the learning process. The research also explored teacher attitudes toward the integration of IT in education. While many teachers recognized the value of digital tools, there was also a degree of resistance to change. Some teachers expressed concerns that the increasing reliance on technology could detract from the personal interaction and hands-on learning that are central to effective education. Others felt overwhelmed by the rapid pace of technological change and were unsure how to keep up with the latest developments in educational technology. Despite these concerns, the majority of teachers acknowledged that IT would play an increasingly important role in education moving forward. They expressed a willingness to continue learning and improving their digital skills, particularly if given the necessary support and resources. Teachers who had participated in professional development programs related to IT integration reported feeling more confident in their ability to use digital tools and were more likely to incorporate them into their teaching (Rafikayati, Badiah, Alifah, & Salsabila, 2022).

**Table 2.** Observation Sheet on Teacher Professionalism in Managing Students' Information and Technology Skills

No.	Observed Aspects	Observation Results
1.	Carrying out digital transformation in learning and P5	The realization of a learning system and education administration including digital-based P5. Teachers of all subjects are able to realize a management system so that the operation, performance, efficiency, and quality of learning services are optimal.
2.	Microsoft Office PowerPoint as Interactive Media Training	The principal and teachers collaborated with the service team from students of the Department of Informatics Engineering, Gorontalo State University, to provide training on the use of Microsoft Office PowerPoint as an Interactive Media to manage students' information and technology skills.

*Data Source: Observation Sheet*

Based on the research findings, several recommendations can be made to improve the integration of IT in education at SMA Negeri 1 Kabila. First, there is a need for ongoing professional development that focuses specifically on digital literacy and the use of educational technology. This training should be tailored to the needs of teachers at different skill levels, ensuring that all educators have the support they need to become proficient in using digital tools. Second, the school should continue to invest in improving its technological infrastructure, particularly in ensuring that all students have access to the necessary devices and internet connections. This could involve partnering with local governments or private organizations to provide resources to students in rural areas, helping to bridge the digital divide. It is important to create a culture of innovation within the school, where teachers feel encouraged to experiment with new technologies and teaching methods. School leadership can play a key role in fostering this culture by recognizing and rewarding teachers who demonstrate creativity and innovation in their use of IT.

### ***3.3. Enhancing Teacher Professionalism in Managing Collaborative Skills and Information Technology in the Merdeka Curriculum***

The findings from the research at SMA Negeri 1 Kabila reveal significant insights into the professional development of teachers in managing two critical aspects of 21st-century education: collaborative learning and information technology (IT). These findings highlight both the successes and challenges faced by teachers as they adapt to the demands of the Merdeka Curriculum, which emphasizes student-centred learning, critical thinking, and digital literacy. In this discussion, we will analyze the implications of these findings, focusing on how teacher professionalism can be enhanced to improve student outcomes in collaborative learning and IT integration.

The Merdeka Curriculum represents a paradigm shift in Indonesian education, moving away from rote learning and teacher-centred instruction to a more dynamic, student-centred approach. Central to this shift is the need for teachers to facilitate collaborative learning environments where students work together to solve problems, share knowledge, and develop critical thinking skills. Additionally, the integration of IT into the curriculum has become essential, particularly in light of the increased use of hybrid and online learning models. Teacher professionalism, in this context, goes beyond traditional definitions of instructional competence. It involves the ability to create engaging, interactive learning environments that foster collaboration and leverage digital tools to enhance the learning experience. The findings from SMA Negeri 1 Kabila demonstrate that teachers who have embraced these aspects of professionalism have seen positive outcomes in their classrooms. Students in these classrooms reported higher levels of engagement, improved communication skills, and a greater sense of ownership over their learning. Furthermore, teachers who effectively integrated IT into their lessons were able to provide more personalized and flexible learning opportunities, catering to the diverse needs of their students. However, the findings also reveal that not all teachers have fully embraced these changes. Some continue to rely on traditional teaching methods, while others struggle with the technical challenges of using digital tools or managing collaborative activities. These disparities suggest that teacher professionalism is a dynamic and evolving concept that requires continuous support, training, and adaptation.

One of the key challenges identified in the research is the difficulty teachers face in managing collaborative learning, particularly in classrooms with diverse student abilities and motivations. Collaborative learning requires teachers to take on new roles as facilitators rather than simply being knowledge providers. They must design group activities that are meaningful and engaging, manage classroom dynamics to ensure all students participate equally, and provide feedback that helps students improve their collaboration skills. The findings indicate that while some teachers have successfully implemented collaborative learning, others struggle with balancing the demands of the curriculum with the time and effort required to manage group work. In particular, the varying levels of student participation in group activities were highlighted as a significant challenge. Some students were highly motivated and took on leadership roles, while others were less engaged, leading to

imbalances in group dynamics. This issue is common in collaborative learning environments and requires teachers to develop strategies for ensuring that all students contribute meaningfully to group tasks.

Professional development workshops aimed at improving teachers' collaborative teaching skills were introduced at SMA Negeri 1 Kabila as a way to address these challenges. These workshops focused on practical strategies for organizing group work, managing diverse student abilities, and providing effective feedback. While these initiatives have helped some teachers improve their collaborative teaching practices, the findings suggest that more support is needed, particularly for teachers who are resistant to change or lack confidence in their ability to manage collaborative activities.

The integration of IT into education has been both a boon and a challenge for teachers. On the one hand, digital tools offer unprecedented opportunities for creating interactive, flexible learning environments that cater to individual student needs. On the other hand, many teachers face technical challenges in using these tools effectively, particularly in areas where access to technology is limited. The findings from SMA Negeri 1 Kabila highlight the impact of the digital divide on both teachers and students. While some teachers are proficient in using digital tools to enhance their lessons, others struggle with the technical aspects of IT integration. This digital divide is compounded by the fact that not all students have equal access to the necessary technology, particularly those from rural areas with limited internet connectivity or access to devices.

To address these issues, the school implemented several initiatives, including providing additional IT training for teachers, offering technical support, and distributing digital devices to students in need. These efforts have helped bridge some of the gaps in IT access, but challenges remain. Teachers who are less confident in their digital skills may still hesitate to fully embrace IT in their teaching, and students in rural areas may continue to face barriers to accessing online learning. One of the key takeaways from the findings is the importance of ongoing professional development in IT literacy. Teachers need continuous training and support to keep up with the rapidly changing landscape of educational technology. Furthermore, school leadership must ensure that all students have access to the necessary tools and resources to participate fully in digital learning. This may involve partnering with local governments or private organizations to provide technological support to students in underserved areas.

An important finding from the research is the role of teacher collaboration in promoting professional growth and improving student outcomes. At SMA Negeri 1 Kabila, teachers who worked together to plan lessons, share resources, and develop interdisciplinary projects saw significant improvements in both their own teaching practices and their students' performance. Collaboration among teachers not only helped them refine their approaches to collaborative learning and IT integration but also served as a model for students, demonstrating the value of teamwork and cooperation. The establishment of professional learning communities (PLCs) at the school provided a formal structure for teacher collaboration. Through these PLCs, teachers were able to share best practices, discuss challenges, and brainstorm solutions together. This collaborative approach to professional development proved to be particularly effective in helping teachers navigate the challenges of the Merdeka Curriculum and adapt to the increasing demands of digital literacy.

Teacher collaboration also had a positive impact on student outcomes. Students who observed their teachers working together were more likely to adopt collaborative behaviors in their own group work. This was particularly evident in the implementation of Project-Based Learning (PBL), where students were required to collaborate on complex tasks that drew on knowledge from multiple subject areas. By seeing their teachers model effective collaboration, students were more motivated to engage in teamwork and develop their own collaboration skills.

### 3.4. Recommendations for Enhancing Teacher Professionalism

To enhance the integration of Information Technology (IT) at SMA Negeri 1 Kabila, the school has implemented several key initiatives, including additional training for teachers and providing devices to students. The training aims to improve teachers' skills in utilizing technology in teaching, especially in digital-based learning and the use of online collaborative tools. Teachers are given training focused on mastering relevant learning software and applications, as well as methods for integrating technology into their teaching approaches. In addition, the school provides technology devices such as computers and tablets to students to support digital learning in the classroom.

However, to further strengthen IT integration in the school, several additional steps can be taken. First, ongoing digital literacy training for both teachers and students should be introduced. This training will not only focus on the use of technological tools but also on a deeper understanding of digital security, online ethics, and how to use technology for effective learning. This digital literacy will help prepare students for a world increasingly dependent on technology, while also equipping teachers with the necessary skills to manage digital classrooms more effectively.

Second, the school could consider forming partnerships with local organizations or the private sector to improve access to technology in the school. These partnerships could involve providing the latest hardware or software that can help expand the scope and quality of digital learning. Collaborating with external organizations could also provide additional resources for teacher and student training and technical support.

Finally, fostering a culture of innovation among teachers and students is another key step. The school can create more open spaces for technology experimentation and encourage teachers to share new ideas and methods for using technology in the classroom. This could be done through project-based programs, inter-class technology competitions, or sharing sessions where teachers demonstrate how they integrate IT into their lessons. By creating an environment that supports innovation and collaboration, the school can help both teachers and students more easily adapt to technological advancements and fully harness the potential of IT to enhance the quality of education.

## 4. CONCLUSION

The findings and discussion highlight that teacher professionalism at SMA Negeri 1 Kabila plays a pivotal role in managing students' collaborative skills and information technology to support the implementation of the Merdeka Curriculum. Teachers who effectively incorporate collaboration and technology into their teaching create an interactive learning environment that fosters character development among students. This underscores the central role of teacher professionalism in realizing the curriculum's objectives. However, the study also reveals significant challenges, particularly in designing teaching modules that align with the Merdeka Curriculum and transitioning from manual teaching methods to digital systems in a hybrid learning context. Addressing these challenges requires targeted efforts, such as intensive training, mentorship programs, and the adoption of advanced technological tools like Flip PDF Professional and data storage systems. These tools have contributed positively by enhancing teacher capabilities, yet further optimization is necessary to maximize their impact on educational quality. The broader implications of these findings suggest that other schools and the national education system in Indonesia can draw valuable lessons from this study. By prioritizing teacher professionalism and leveraging technology effectively, schools can foster interactive and competency-based learning environments nationwide. Additionally, recognizing the importance of institutional support, such as school leadership initiatives in providing mentorship and resources, is vital to the success of educational reforms. It is important to acknowledge the study's limitations, particularly its focus on a single school, which may limit the generalizability of the findings. Future research should explore similar dynamics across various educational settings to provide a more comprehensive understanding of the factors influencing the successful implementation of the Merdeka

Curriculum. Moreover, further investigation into the specific contributions of tools like Flip PDF Professional and their scalability across different contexts would offer deeper insights. In conclusion, this study reinforces the centrality of teacher professionalism in implementing educational reforms. By addressing existing challenges, leveraging institutional support, and fostering innovation, schools can empower teachers to drive meaningful improvements in student competencies, thereby advancing the broader goals of Indonesia's educational system.

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