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Digital Transformation in Religious Education: Development of Interactive Application-Based Modules to Improve the Competence of Junior High School Teachers in Merauke, Indonesia

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Abstract

The rapid development of information and communication technology demands adaptation of learning methods, especially for Generation Z and Alpha students who are highly familiar with digital technology. However, many teachers still rely on conventional learning tools that are less engaging for students. This community service activity aimed to improve the competency of Catholic Religious Education teachers at the junior high school level in Merauke City in developing interactive digital teaching modules. The activity used participatory workshop methods involving 18 Catholic Religious Education teachers from various junior high schools in Merauke Regency. The workshop was conducted in three sessions: understanding the concept of interactive digital teaching modules, training in the use of educational applications, and presentation with evaluation and reflection. Data collection used pre- and post-activity assessments, observation, and documentation studies. Results showed significant improvement in teacher competency from an initial average score of 2.00 (sufficient category) to 3.45 (good category) after the workshop. All competency aspects experienced improvement, with the highest increase in AI-assisted teaching module development skills from 2.17 to 3.67. This activity successfully equipped teachers with knowledge and skills to develop interactive digital teaching modules that support more creative, engaging, and meaningful Catholic Religious Education learning.

Keywords: *educational applications, teacher competency, digital teaching modules, interactive learning, Catholic religious education*

Abstrak

Perkembangan pesat teknologi informasi dan komunikasi menuntut penyesuaian metode pembelajaran, terutama bagi siswa Generasi Z dan Alpha yang sangat familiar dengan teknologi digital. Namun, banyak guru masih mengandalkan alat pembelajaran konvensional yang kurang menarik bagi siswa. Kegiatan pelayanan masyarakat ini bertujuan untuk

meningkatkan kompetensi guru Pendidikan Agama Katolik di tingkat SMP di Kota Merauke dalam mengembangkan modul pembelajaran digital interaktif. Kegiatan ini menggunakan metode workshop partisipatif yang melibatkan 18 guru Pendidikan Agama Katolik dari berbagai sekolah menengah pertama di Kabupaten Merauke. Workshop dilaksanakan dalam tiga sesi: pemahaman konsep modul pengajaran digital interaktif, pelatihan penggunaan aplikasi pendidikan, dan presentasi dengan evaluasi dan refleksi. Pengumpulan data menggunakan penilaian pra dan pasca kegiatan, observasi, dan studi dokumentasi. Hasil menunjukkan peningkatan signifikan dalam kompetensi guru dari skor rata-rata awal 2,00 (kategori cukup) menjadi 3,45 (kategori baik) setelah workshop. Semua aspek kompetensi mengalami peningkatan, dengan peningkatan tertinggi pada keterampilan pengembangan modul pengajaran yang didukung AI dari 2,17 menjadi 3,67. Kegiatan ini berhasil membekali guru dengan pengetahuan dan keterampilan untuk mengembangkan modul pengajaran digital interaktif yang mendukung pembelajaran Pendidikan Agama Katolik yang lebih kreatif, menarik, dan bermakna.

Kata-kata Kunci: aplikasi pendidikan, kompetensi guru, modul pengajaran digital, pembelajaran interaktif, pendidikan agama Katolik

Introduction

The rapid development of information and communication technology has significantly changed the landscape of education. The younger generation, who are familiar with digital technology, demands more interactive and relevant learning methods. In the context of Catholic Religious Education (PAK) learning, adapting to technological developments is a necessity to face the challenges of 21st-century education (Santosa & Rahmawati, 2022). Generation Z and Alpha students need 21st-century skills such as critical thinking, creativity, collaboration, and communication to face the increasingly complex challenges of future learning.

The Indonesian government has responded to these developments through the implementation of the Merdeka Curriculum, which provides educators with more space to innovate in the learning process. Through the Minister of Education, Culture, Research, and Technology Regulation No. 56 of 2022 concerning Guidelines for Curriculum Implementation in the Context of Learning Recovery, the Merdeka Curriculum introduces teaching modules as learning tools that replace the Lesson Plan (RPP) to address contemporary learning challenges (Kemendikbudristek, 2022). Teaching modules in the Merdeka Curriculum are designed to provide flexibility to teachers in developing learning materials that are appropriate to the characteristics of students and specific learning contexts.

Previous research shows that the use of digital teaching modules can significantly increase student motivation to learn. Sari et al. found in their research that students who used digital teaching modules showed increased engagement and better understanding of concepts compared to conventional learning (Sari, Hartono, & Wijaya, 2023). In line with this, Rahman et al. identified that technology-based interactive teaching modules can accommodate various student learning styles and increase active participation in learning (Rahman, Munandar, & Fitriani, 2022). Research by Widodo and Sari also shows that teachers who are trained in

developing digital teaching modules have better abilities in creating student-centered and contextual learning (Widodo & Sari, 2023).

Research has shown that the use of teaching modules can improve the effectiveness of the learning process in the classroom, but the implementation of digital teaching modules still faces various challenges in the field. Research by Putri and Anwar reveals that there are still many teachers who do not have adequate competence in developing interactive digital teaching modules (Putri & Anwar, 2023). Factors that influence this include teachers' limited digital literacy, lack of ongoing training, and minimal technological infrastructure support in schools. Similar conditions were also found in a study by Hartono et al., which showed that teachers in remote areas still need intensive assistance to be able to optimize the use of technology in learning (Sari, Hartono, & Wijaya, 2023).

In Merauke City, particularly at the junior high school level, the use of technology in Catholic Religious Education is still relatively limited. Based on initial observations, the majority of Catholic Religious Education (PAK) teachers still rely on conventional teaching tools such as lesson plans (RPP) that are dominated by text and require physical printing. Several schools observed by researchers also showed that they still use a one-page RPP format with a very minimalist format. The teaching modules developed still have a rigid *layout* and format, which seem ineffective and inefficient in the digital era, where students, Generation Z and Alpha, are very familiar with digital technology. This condition creates a gap between the learning methods applied and the characteristics and needs of contemporary students.

Table 1. Demographic Profile of PAK Teachers at Junior High Schools in Merauke City

Characteristics	Category	Number	Percentage
Gender	Male	9	50
	Female	9	50
School Status	Public	14	78
	Private	4	22
Employment Status	Civil Servant	11	61
	Honor	4	22
	Permanent Foundation Teacher	2	11
	Civil Servant Candidates	1	6
Implementation of the Merdeka Curriculum	Already	18	100

Source: Primary Data (Pranyoto, 2025)

Based on the data in Table 1, all junior high schools in Merauke Regency where Catholic Religious Education (PAK) teachers teach have implemented the Merdeka Curriculum. However, educational units, especially PAK teachers, still need to improve their competence in developing teaching modules in line with the spirit of the curriculum. The initial assessment results in Table 2 show that the level of teacher competence in developing digital teaching modules is still in the adequate category with an average score of 2.00 on a scale of 1-4 (Pranyoto, 2025). It shows that schools have implemented the Merdeka Curriculum

administratively, but in substance, educators do not yet have adequate competence regarding the Merdeka Curriculum itself.

The research framework is based on Vygotsky's social constructivism theory, which emphasizes the importance of *scaffolding* in the learning process (Vygotsky, 1978). In the context of teacher competency development, this workshop is designed as a zone of proximal development where teachers can develop their abilities through guidance and collaboration with facilitators and fellow participants. Knowles's andragogy approach also serves as the basis for designing adult learning that takes into account experience, intrinsic motivation, and problem-solving orientation (Knowles, Holton III, & Swanson, 2015).

Based on the situation analysis and literature review, the problem formulation in this activity is: How can a workshop on developing interactive digital teaching modules improve the competence of Catholic Religious Education teachers in junior high schools (SMP) in Merauke City, and to what extent will their competence improve after participating in the workshop? The objective of this activity is to improve the competence of Catholic Religious Education teachers at the junior high school (SMP) level in Merauke City in developing interactive digital teaching modules assisted by educational applications. This activity is expected to provide benefits for improving the quality of Catholic Religious Education (PAK) learning that is more innovative, interactive, and in line with the characteristics of the digital generation of students.

Method

This study uses a *mixed-methods* approach by integrating qualitative and quantitative methods to obtain a comprehensive understanding of the effectiveness of the interventions carried out. The quantitative approach was used to objectively measure improvements in teacher competence through standardized assessment instruments, while the qualitative approach was applied to explore the learning process, obstacles encountered, and participants' perceptions of the workshop.

The intervention in this study was a participatory workshop on the development of interactive digital teaching modules designed specifically for Catholic Religious Education teachers at the junior high school level. This workshop applied andragogical principles by emphasizing experience-based learning, active participant involvement, and direct application in authentic contexts. The workshop structure included theoretical sessions, practical sessions, and collaborative reflections to integrate new knowledge with participants' existing teaching experiences.

The participatory workshop format was chosen based on its suitability for adult learning characteristics, which require active involvement and knowledge construction through direct practice. This model allows for more effective transfer of knowledge and skills because participants not only receive information passively, but also actively construct understanding through collaborative discussions, experimentation with technology, and reflection on their learning practices (Supriyanto & Wahyudi, 2021).

The target of the activity was 18 Catholic Religious Education teachers at the junior high school level in Merauke City, Merauke Regency, South Papua Province, Indonesia. The selection of targets was carried out using purposive sampling with the following criteria: (1) Catholic Religious Education teachers who teach at junior high schools, (2) educational units (schools) that have implemented the Merdeka Curriculum, (3) willingness to participate in the entire workshop series, and (4) access to digital technology devices. The activities were carried out in the Hall of the St. James Catholic College Merauke in May 2025 with a three-day Saturday spread system.

The workshop was designed in three main stages that were interrelated. The first stage (May 10, 2025) focused on deepening the concept of interactive digital teaching modules, including regulations, component structures, and supporting educational applications. The second stage (May 17, 2025) consists of guided practical training in the development of interactive digital teaching modules using various applications such as Canva, Gemini, Chat GPT, Gamma, Reference Manager, Quizizz, Google Forms, Google Classrooms, and Quillbot. The third stage (May 24, 2025) is the presentation of results, evaluation, reflection, and preparation of a follow-up plan.

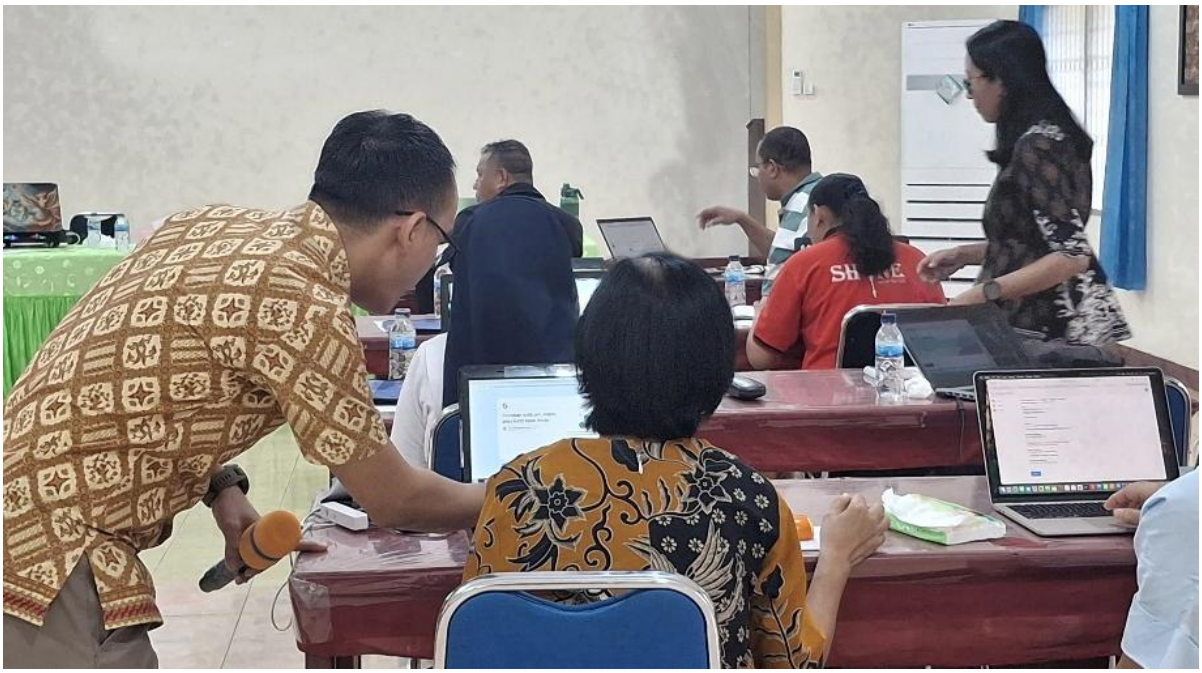

Figure 1. The process of assisting in the development of interactive application-based teaching modules

Quantitative data collection techniques were conducted through pre- and post-workshop diagnostic assessments consisting of 10 competency aspects with a Likert scale of 1-4. Qualitative data were obtained through participatory observation during the workshop, interviews with key participants, and analysis of participants' work documentation. The validity of the qualitative data was ensured through source triangulation, method triangulation, and member checking with workshop participants. The assessment instruments were validated by experts and tested for reliability with a Cronbach's Alpha value of 0.87. Quantitative data

analysis used descriptive statistics to describe participant profiles and changes in competency scores, as well as paired t-tests to test the significance of competency improvements. Qualitative data were analyzed using Miles and Huberman's thematic analysis technique, which includes data reduction, data presentation, and conclusion drawing (Miles, Huberman, & Saldaña, 2014).

Results and Discussion

Characteristics of Workshop Participants

The workshop participants, as shown in Table 1, consisted of 18 Catholic Religious Education teachers at the junior high school (SMP) level from various schools in Merauke Regency, South Papua Province, Indonesia. The composition of participants showed an excellent gender balance with 50% male and 50% female, reflecting proportional representation in the Catholic Religious Education teaching profession in the region. This gender balance is a positive indicator that the Catholic Religious Education teaching profession in Merauke Regency is not dominated by any particular gender, allowing for diverse perspectives in the learning process and the development of digital teaching modules. The geographical distribution of participants, covering various sub-districts in Merauke Regency, also shows a broad reach, from schools in the city center to suburban areas with different socio-economic characteristics.

Distribution based on school type shows the dominance of teachers from public schools (78%) compared to private schools (22%), which is in line with the proportion of educational institutions in Merauke Regency in general. This condition reflects the educational structure in border areas, which still relies on public schools as the leading providers of educational services. In terms of employment status, the majority of participants were civil servants (61%), followed by honorary teachers (22%), permanent foundation teachers (11%), and civil servant candidates (6%). This diversity in employment status reflects the complex dynamics of teacher employment in remote areas, facing the challenge of uneven teacher distribution, where there is still a dependence on temporary staff to meet teacher needs in certain areas. This diverse employment status also has implications for the level of career stability and access to continuing professional development, which varies among participants.

Participants' teaching experience varied greatly, from less than 5 years to more than 20 years, with a relatively even distribution across each experience category. This diversity of experience was a valuable asset in the workshop as it enabled a rich exchange of experiences among participants, where senior teachers could share their wisdom in managing classrooms and understanding student characteristics, while junior teachers could provide a fresh perspective on the latest technology trends and the preferences of the digital generation. This heterogeneity of teaching experience also creates a unique learning dynamic in the workshop, where a natural mentoring process occurs between participants and facilitates more effective collaborative learning. In addition, this variation in experience provides stronger external validity to the workshop results, as it involves teachers with varying levels of professional maturity who can implement digital learning in diverse contexts.

Initial Teacher Competency

The initial diagnostic assessment results show that the competence of Catholic Religious Education teachers in junior high schools in developing interactive digital teaching modules is in the adequate category, with an average score of 2.00 on a scale of 1-4. This finding aligns with the research by Wahyuni and Pratama (2022), which identified that teachers in remote areas still need to improve their competence in utilizing learning technology. The competency aspect with the highest score was understanding of regulations regarding teaching modules (2.33), indicating that teachers already have a pretty good understanding of regulations, possibly due to the dissemination of the Merdeka Curriculum that has been carried out.

Conversely, the aspect with the lowest score was the implementation of Problem-Based Learning (PBL) and Project-Based Learning (PjBL) learning models in teaching modules (1.72). It indicates that teachers still face difficulties in integrating constructivist learning approaches into the design of digital teaching modules. These findings are consistent with the research by Sari et al., which found that teachers need intensive scaffolding to be able to apply innovative learning approaches in a digital context (Sari, Hartono, & Wijaya, 2023).

Table 2. Initial Competencies of Junior High School PAK Teachers in Digital Teaching Module Development

No	Competency Aspect	Average Score	Category
1	Regulations on Teaching Modules	2.33	Fair
2	Basic Concepts of Teaching Modules	1.94	Fair
3	Principles of Teaching Module Development	1.89	Fair
4	Objectives of Teaching Module Development	2.28	Satisfactory
5	Teaching Module Components	2.06	Sufficient
6	Position in the Independent Curriculum	1.78	Sufficient
7	Difference from Conventional Lesson Plans	2.06	Fair
8	Creative Writing Skills	1.7	Fair
9	Implementation of PBL and PjBL	1.72	Fair
10	AI-assisted development	2.17	Sufficient
	Average	2.0	Sufficient

Creative and innovative teaching module development skills also scored low (1.78), reflecting the substantial challenges faced by teachers in integrating creativity with digital technology in the context of Catholic Religious Education. This condition is understandable, considering that creativity in a digital context requires adequate technological literacy and a deep understanding of the principles of engaging learning design for the digital generation (Hidayat & Kustandi, 2021).

This challenge becomes even more complex because digital creativity in education not only requires technical skills in operating various digital applications and platforms, but also requires an understanding of pedagogical content knowledge that can harmonize religious learning content with interactive multimedia elements such as gamification, digital storytelling, and interesting data visualization (Arbia & Amrullah, 2024). Catholic Religious Education

teachers at the junior high school level in Merauke City face a gap between the traditional learning approaches they have mastered and the demands of digital innovation, which require the ability to think outside the box in designing learning activities that are not only informative but also transformative for students.

The low scores in this aspect also indicate that teachers are still stuck in a conventional paradigm where learning modules are viewed as static documents containing simple text and images, even though the digital era opens up opportunities to develop modules that are dynamic, interactive, and adaptive to the individual needs of students. This limitation has an impact on teachers' ability to create memorable and meaningful learning experiences, which ultimately affects the effectiveness of transferring spiritual and moral values in Catholic Religious Education to Generation Z and Alpha students who have short attention spans and learning preferences that are very different from previous generations (Pranyoto, Berangka, & Noerjanto, 2024).

Implementation of the Digital Teaching Module Development Workshop

The workshop was conducted in three sessions designed to be progressive and interconnected. The first session focused on building a strong conceptual foundation for interactive digital teaching modules. The material presented included the pedagogical basis for the use of technology in learning, the characteristics of digital generation students, and the principles of effective learning design. The approach used was active learning with a combination of interactive presentations, group discussions, and individual reflection.

The participants' response to the first session showed high enthusiasm, especially when discussing the challenges of Catholic Religious Education in the digital age. Many participants expressed their frustration with conventional learning methods that struggle to capture students' attention. One participant stated, "Students are now more interested in their smartphones than their textbooks. We need new ways to reach them." This statement reflects teachers' awareness of the need to adapt learning methodologies to the characteristics of contemporary students.

The second session was the core of the workshop, which consisted of practical training on developing digital teaching modules using various educational applications. Participants were divided into small groups based on their level of digital literacy to ensure that each participant received guidance tailored to their needs. The applications covered included Canva for visual design, ChatGPT and Gemini for content development, Quillbot for text optimization, and other platforms relevant to interactive learning.

The training process used a scaffolding approach, where facilitators provided intensive support in the early stages, then gradually reduced assistance as participants' abilities improved. Observations during the practical session showed that participants experienced varying learning curves. Teachers with more technological experience were able to quickly master the new applications, while teachers who were less familiar with technology required more intensive guidance.

The main challenge faced in the practice sessions was the variation in participants' digital literacy levels. Some participants were very proficient in using technology, while others still needed assistance with basic operations. To overcome this, a peer learning strategy was

implemented in which more proficient participants helped their peers, creating a collaborative and supportive learning environment.

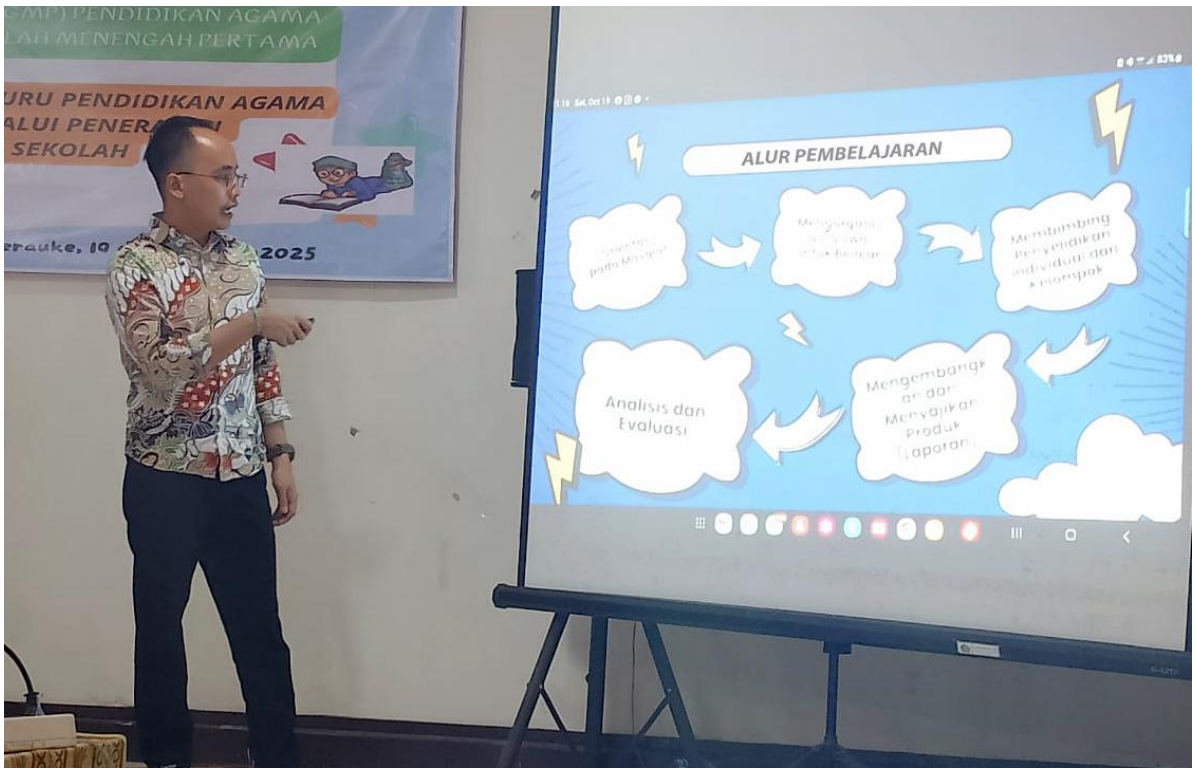

Figure 2. Facilitators provide feedback on teaching modules developed by teachers

The third session, consisting of presentations of participants' work, evaluation, and reflection, was the culmination of the collaborative learning process that had taken place during the previous two sessions. Each participant or group was given 10-15 minutes to present the digital teaching module they had developed, with the presentation format following a mutually agreed structure: background on the topic selection, development process, innovative features integrated, and implementation plan in the classroom. This presentation process not only served as a demonstration of learning outcomes but also as a golden opportunity to share best practices and learn from each other's creativity, as participants had successfully applied various digital applications such as Canva, ChatGPT, Gemini, and other interactive platforms in the context of Catholic Religious Education.

Each presentation was followed by a structured constructive feedback session from the facilitator and other participants, using a "glow and grow" approach where positive aspects were identified first before giving suggestions for improvement, thus creating a supportive and non-judgmental learning atmosphere. This peer-to-peer evaluation process proved to be very effective in enriching each participant's perspective on the various possibilities for innovation in digital module development, while also building a solid community of practice among teachers that can be sustained after the workshop (Ishomuddin & Baharuddin, 2024).

Improvement in Teacher Competence After the Workshop

Post-workshop assessment results showed a significant increase in the competencies of Catholic Religious Education teachers at the junior high school level in developing interactive digital teaching modules. The overall average score increased from 2.00 (adequate category) to 3.45 (good category), indicating an increase of 72.5%. The results of the paired t-test showed a p-value < 0.001, indicating that the increase was statistically significant.

Table 3. Comparison of Teacher Competence Before and After the Workshop

No	Competency Aspect	Before	Post	Improvement	%
1	Regulations on Teaching Modules	2.33	3.56	1.23	52.8
2	Basic Concepts of Teaching Modules	1.94	3.44	1.50	77.3
3	Principles of Teaching Module Development	1.89	3.39	1.50	79.4
4	Objectives of Teaching Module Development	2.28	3.50	1.22	53.5
5	Teaching Module Components	2.06	3.44	1.38	67.0
6	Position in the Merdeka Curriculum	1.78	3.33	1.55	87.1
7	Difference from conventional RPP	2.06	3.39	1.33	64.6
8	Creative Composition Skills	1.78	3.44	1.66	93.3
9	Implementation of PBL and PjBL	1.72	3.28	1.56	90.7%
10	AI-assisted development	2.17	3.67	1.50	69.1
	Average	2.00	3.45	1.45	72.5

The highest improvement occurred in the aspect of creative and innovative teaching module development skills (93.3%), followed by the implementation of PBL and PjBL learning models (90.7%). It shows that the workshop successfully addressed the main weaknesses identified in the initial assessment. The significant improvement in creativity indicates that exposure to various digital education applications has broadened teachers' perspectives on new possibilities for developing engaging and interactive learning.

The aspect of AI-assisted teaching module development also experienced a substantial increase, with the highest final score (3.67) compared to other aspects. This finding is interesting because it shows that teachers can relatively quickly adopt cutting-edge technologies such as AI in an educational context when given proper guidance. It is in line with research that found that teachers have great potential to adopt new technologies as long as they receive adequate scaffolding (Pratama & Sari, 2023).

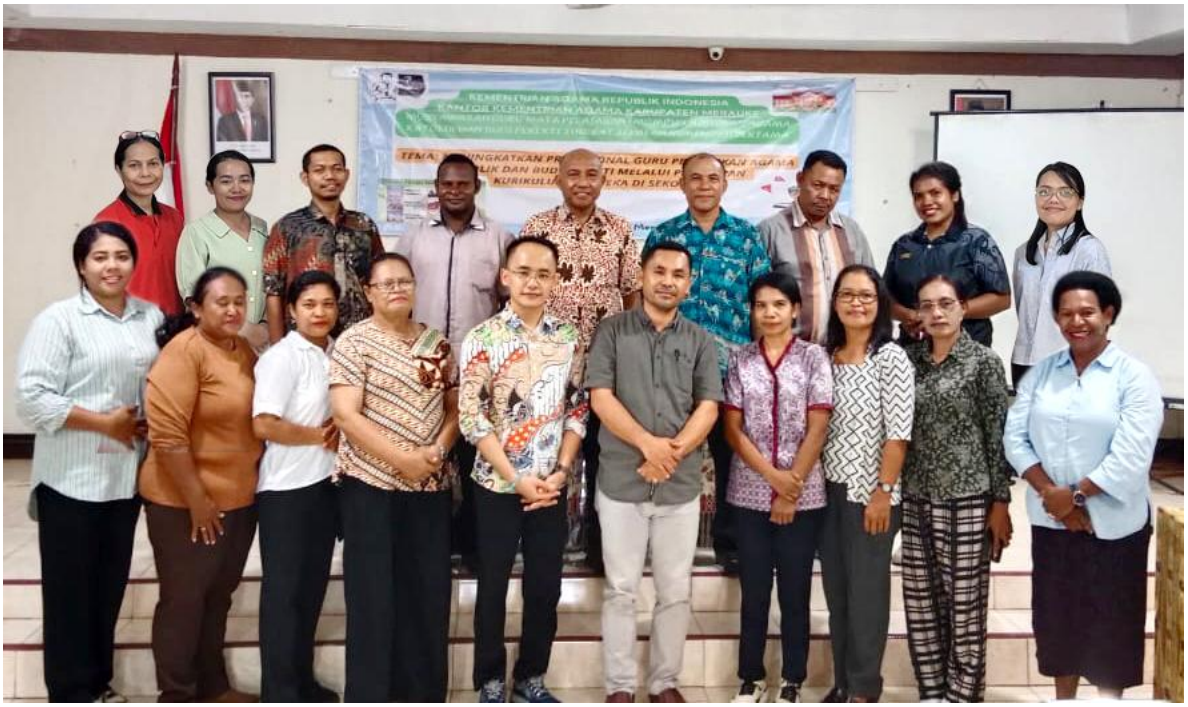

Figure 3. Facilitators posing with training participants

Analysis of the Quality of the Digital Teaching Modules Produced

Analysis of the 18 digital teaching modules produced by participants reveals diverse characteristics, yet they generally meet the criteria for good interactive teaching modules. From a visual design aspect, 16 modules (89%) show the use of attractive graphic elements in accordance with learning design principles. Participants successfully utilized Canva to create engaging layouts with a harmonious combination of colors, fonts, and images.

In terms of content, all modules showed good integration between PAK material and the context of students' lives in Merauke. For example, several modules raised the values of Papuan local wisdom integrated with Catholic teachings, demonstrating the teachers' ability to contextualize learning. The use of AI in content development was also evident in the quality of the more engaging narratives and in-depth reflective questions.

The interactivity aspect shows interesting variations. About 14 modules (78%) successfully integrate interactive elements such as digital quizzes, learning videos, and collaborative activities that can be accessed via QR codes. A notable innovation is the use of digital storytelling and gamification in several modules, which demonstrates teachers' understanding of the learning preferences of the digital generation.

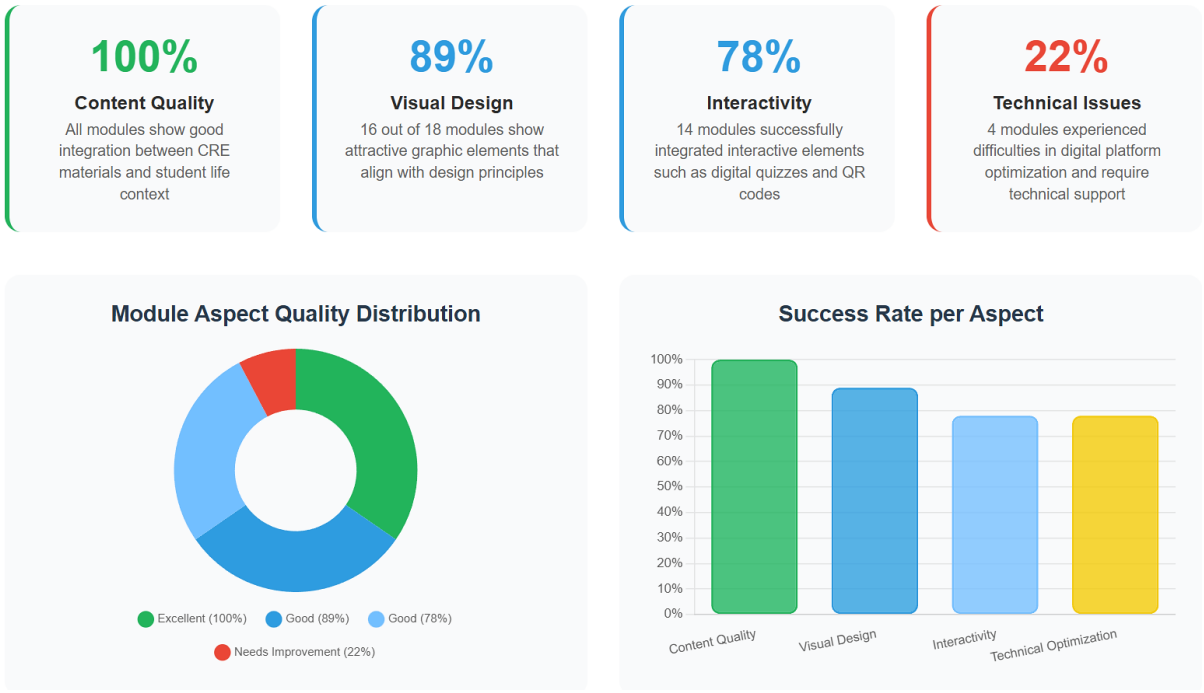

Figure 4. Analysis of the quality of digital teaching modules produced by workshop participants

However, there are still several challenges in the technical aspects. Approximately four modules (22%) experienced difficulties in optimization for various digital platforms, and some teachers still needed technical support for troubleshooting. It indicates the need for follow-up training that focuses on the technical aspects of implementation.

Impact on Catholic Religious Education Learning Practices

Follow-up observations conducted four weeks after the workshop showed positive changes in Catholic Religious Education learning practices in the classroom. Of the 18 participants, 16 teachers (89%) had implemented the digital teaching modules they developed in their daily teaching. It indicates a very high level of adoption. Teachers reported a significant increase in student engagement, with indicators such as active participation in discussions, enthusiasm for completing assignments, and student initiative to explore the material further. These findings align with Prensky's research on the characteristics of "digital natives," which indicates a positive response to learning that optimally utilizes digital technology (Prensky, 2010).

Analysis of changes in learning practices shows a transformation in line with Vygotsky's principles of social constructivism, where digital technology functions as a "mediating tool" that facilitates students' Zone of Proximal Development (ZPD) (Vygotsky, 1978). One of the most notable impacts is the change in classroom dynamics from teacher-centered to student-centered. Teachers report that students have become more active in learning because digital modules allow them to learn at their own pace and in their own style. The interactive features in the modules also facilitate more effective collaborative learning, in line with the principles of collaborative learning proposed by Johnson and Johnson in "Learning

Together and Alone," which emphasizes the importance of positive interdependence in achieving learning objectives (Johnson & Johnson, 2017).

Post-workshop reports submitted by participants showed qualitative changes in classroom interaction patterns, where teachers changed their role from "sage on the stage" to "guide on the side." This transformation was reflected in an increase in the frequency of high-quality questions from students, the emergence of spontaneous discussions among students, and students' initiatives to connect learning materials with their personal experiences. This phenomenon supports the engaged learning theory proposed by Kearsley and Shneiderman, where student engagement increases when learning is authentic, challenging, and multisensory (Kearsley & Shneiderman, 2018). Furthermore, the use of gamification elements in digital modules was proven to increase students' intrinsic motivation, where students showed very positive responses to the learning transformation that took place. Students appreciate learning that is more visual, interactive, and relevant to their lives. An interesting finding is the emergence of student initiatives to explore the application of religious values in the context of daily life, indicating the achievement of transfer learning, which is the ultimate goal of religious education according to Groome in "Christian Religious Education" (Groome, 1980).

Challenges and Limitations of Implementation

Although the workshop showed positive results, several challenges in implementation need to be considered. The first limitation is the technological infrastructure in some schools, characterized by precarious internet access and limited availability of digital devices. It requires teachers to develop adaptive strategies, such as using offline mode or providing low-tech alternatives to digital content.

Second is the variation in students' abilities to use technology. Although it is assumed that the digital generation has high technological literacy, in reality, there is still a digital divide among students. Some students from economically disadvantaged backgrounds have limited access to technology, which requires more comprehensive digital inclusion strategies.

Third is program sustainability. Technology is developing very rapidly, necessitating a system of continuous updates and training to keep teachers current. It requires a long-term commitment from various stakeholders, including local governments, schools, and universities.

Implications for Teacher Professional Development

The results of this activity have important implications for the future professional development of Catholic Religious Education teachers. First, this workshop shows that teachers have great potential to adopt learning technologies as long as they receive the proper support. It indicates the need for continuous and structured professional development programs in the field of educational technology.

Second, the peer learning approach applied in the workshop proved to be effective in addressing variations in teacher abilities. This model can be adopted in other teacher training programs to create a mutually supportive learning community. The formation of a community of practice among Catholic Religious Education teachers can be a long-term strategy for the sustainability of learning innovation.

Third, the integration of technology and pedagogy needs special attention in teacher training programs. Not only technical skills in using applications, but also a deep understanding of how technology can improve the quality of learning in accordance with sound pedagogical principles.

Conclusion

The workshop on developing interactive digital teaching modules for Catholic Religious Education teachers in junior high schools in Merauke City has successfully achieved its objectives. A significant increase in teacher competence from the adequate category (2.00) to the good category (3.45) demonstrates the effectiveness of the participatory workshop approach with intensive scaffolding. All aspects of competence improved, with the highest achievement in creative writing skills and the implementation of constructivist learning models.

This activity successfully equipped teachers with practical knowledge and skills in utilizing digital education applications to develop teaching modules that are more interesting, interactive, and in line with the characteristics of the digital generation of students. The implementation of the resulting digital teaching modules showed a positive impact on student engagement and the overall quality of Catholic Religious Education learning.

The long-term implications of this activity include the need for the development of continuous training programs, the formation of a community of Catholic Religious Education teachers, and the strengthening of educational technology infrastructure in schools. The limitations of this study lie in its limited geographical scope and relatively short follow-up period, so that longitudinal research is needed to measure the long-term impact.

Recommendations for further research include the development of technology-based teacher training models that can be adapted to different contexts, cost-benefit analysis of the implementation of educational technology in remote areas, and studies of the long-term impact on student learning achievement. For policymakers, it is recommended to allocate a special budget for teacher professional development in the field of educational technology and the strengthening of technological infrastructure in schools.

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