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TECHNOLOGY AND TEACHER PROFESSIONALISM: ADAPTING HYBRID AND DIGITAL LEARNING

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Abstract
The digitalization era has fundamentally transformed educational landscapes, demanding transformation in teacher professionalism regarding technology integration in learning. The COVID-19 pandemic accelerated the adoption of hybrid and digital learning, creating new challenges in teachers' pedagogical competencies. Teacher professionalism is now measured not only by conventional teaching abilities but also by proficiency in utilizing technology as effective learning media. This research aims to analyze technology adaptation in teacher professionalism, identify hybrid learning challenges, and formulate strategies for developing teachers' digital competencies. The study employs library research methodology with qualitative descriptive analysis of various current academic literature sources. Data collection was conducted through systematic review of national and international journals from 2019-2024. Data analysis utilized content analysis techniques with source triangulation to ensure findings validity. Results indicate that technology adaptation requires comprehensive transformation in teachers' pedagogical, personality, social, and professional competencies. Hybrid learning provides flexibility but demands more complex time management and technological skills. Teacher professionalism development strategies must include continuous training, technical mentoring, and adequate technological infrastructure development.
Keywords: Digital Learning, Hybrid Learning, Learning Adaptation, Technology, Teacher Professionalism.

Abstrak
Era digitalisasi telah mengubah lanskap pendidikan secara fundamental, menuntut transformasi profesionalisme guru dalam mengintegrasikan teknologi pembelajaran. Pandemi COVID-19 mempercepat adopsi pembelajaran hibrid dan digital, memunculkan tantangan baru dalam kompetensi pedagogis guru. Profesionalisme guru kini tidak hanya diukur dari kemampuan mengajar konvensional, tetapi juga kecakapan dalam memanfaatkan teknologi sebagai media pembelajaran efektif. Penelitian ini bertujuan menganalisis adaptasi teknologi dalam profesionalisme guru, mengidentifikasi tantangan pembelajaran hibrid, dan merumuskan strategi pengembangan kompetensi digital guru. Penelitian menggunakan metode penelitian kepustakaan dengan analisis deskriptif kualitatif terhadap berbagai sumber literatur akademis terkini. Pengumpulan data dilakukan melalui tinjauan sistematis jurnal nasional dan internasional periode 2019-2024. Analisis data menggunakan teknik analisis isi dengan triangulasi sumber untuk memastikan validitas temuan. Hasil penelitian menunjukkan bahwa adaptasi teknologi memerlukan transformasi menyeluruh dalam kompetensi pedagogis, kepribadian, sosial, dan profesional guru. Pembelajaran hibrid memberikan fleksibilitas namun menuntut keterampilan manajemen waktu dan teknologi yang lebih kompleks.

Strategi pengembangan profesionalisme guru harus mencakup pelatihan berkelanjutan, pendampingan teknis, dan pengembangan infrastruktur teknologi yang memadai.
Kata Kunci: *Adaptasi Pembelajaan, Pembelaajaran Digital, Pembelajaran Hibrid, Profesionalisme Guru, Teknologi*

INTRODUCTION

The digital revolution has fundamentally changed the global education paradigm, creating new demands on teacher professionalism in integrating learning technologies. This transformation does not only involve the use of simple digital devices, but requires a comprehensive understanding of digital pedagogy that is able to optimize the learning process. Teachers as the vanguard of education are required to develop technological competencies that are in line with the development of the times. This change reflects the evolution of the teacher's role from just a conveyor of information to an adaptive and innovative digital learning facilitator. (Trust, 2017) (Granstrand & Holgersson, 2020)

The COVID-19 pandemic has become a catalyst for the acceleration of the digitalization of education which requires the implementation of distance learning on a massive scale. This sudden transition reveals a digital competency gap among teachers, both in technical and pedagogical aspects. Hybrid learning that combines face-to-face and online into an adaptive solution that requires more complex learning management skills. This phenomenon demands a redefinition of the professionalism of teachers who not only master teaching materials, but are also able to utilize technology as an effective learning enhancer in various modalities. (Malik et al., 2023) (Achmadi et al., 2024)

The urgency of increasing teacher professionalism in the context of learning technology is increasingly critical considering the digital indigenous generation that is the subject of education today. Students who grow up in the digital era have different learning characteristics, requiring a learning approach that integrates technology in a meaningful way. The significance of this research lies in the need to design a framework for teacher professionalism that is responsive to the challenges of 21st century learning. Teacher professionalism that is adaptive to technology is the key to the successful implementation of quality and sustainable digital education. (Kelly Clarke, 2024) (Kayalar, 2016)

Meinawati's research revealed that 68% of teachers experienced difficulties in integrating learning technology during the pandemic, especially in the aspect of effective digital learning design. These findings show the need for systematic and sustainable development of digital competencies. The study also identified factors that hinder technology adoption, including limited infrastructure, lack of training, and resistance to change The implications of this study emphasize the importance of a holistic approach in developing teacher professionalism that includes technical, pedagogical, and psychological dimensions. (Meinawati, 2022) (Montero-Mesa et al., 2023).

International research by Munawar and Jannah demonstrates that teachers with high digital competence are able to increase student engagement by up to 45% in hybrid learning. This longitudinal study involved 1,200 teachers from different countries and

measured learning effectiveness based on indicators of student participation, academic achievement, and learning satisfaction. Significant findings show a positive correlation between teachers' digital literacy levels and the quality of hybrid learning held. This study provides empirical evidence on the importance of investing in the development of teachers' digital competencies as a strategy to improve the quality of education. (Munawar & Jannah, 2025a)

Meta-analysis of López-Martín et al. Studies on digital teacher professionalism confirm that effective technology integration requires a paradigm shift from teacher-centered to student-centered learning. The synthesis of this research identifies four critical dimensions of digital teacher professionalism: technological competence, digital pedagogy, adaptability, and digital learning evaluation ability. These findings show the complexity of the challenges faced by teachers in developing professionalism in the digital era. This meta-analysis also revealed significant variations in the level of teachers' readiness to face digital transformation based on geographical, demographic, and educational factors. (López-Martín et al., 2023)

The novelty of this research lies in the development of a comprehensive framework that integrates the technological, pedagogical, and professional aspects of teachers in the context of hybrid and digital learning. In contrast to previous research that tended to focus on technical or pedagogical aspects separately, this study adopts a holistic approach that analyzes the interconnection between digital competencies and teacher professionalism. The novelty also lies in an in-depth exploration of the adaptation strategies of Indonesian teachers in facing the digital transformation of education. The theoretical contribution of this research is the development of a model of teacher professionalism that is responsive to the dynamics of contemporary learning technology. (Kim et al., 2021)

Based on this background, this study aims to analyze how technological adaptation affects teacher professionalism in hybrid and digital learning, identify challenges and opportunities faced by teachers in the implementation of hybrid and digital learning, and formulate strategies for developing teacher professionalism to optimize the use of technology in learning. These three objectives are designed to provide a comprehensive understanding of the transformation of teacher professionalism in the digital era and provide a practical roadmap for the development of teacher competencies that are adaptive to learning technology.

METHODS

This study uses a literature research approach with qualitative descriptive analysis methods to explore the phenomenon of teacher professionalism in the context of adaptation of hybrid and digital learning technologies. The literature research approach was chosen because it allows for a comprehensive analysis of a wide range of theoretical perspectives and empirical findings that have been published in the academic literature. This method facilitates the synthesis of knowledge from a variety of credible sources to develop a holistic understanding of the research topic. The characteristics of literature

research allow for an in-depth exploration of the trends, patterns, and dynamics of teacher professionalism as reflected in scientific publications for the 2019-2024 period. (Renz et al., 2018) (Paré et al., 2015)

Data collection was carried out through a systematic literature search strategy using reputable academic databases including Google Scholar, ERIC, Scopus, Web of Science, DOAJ, and Garuda Portal. Search keywords are designed in Indonesian and English with variations of relevant terminology such as "teacher professionalism", "digital competence", "hybrid learning", and "learning technology". The inclusion criteria include publications that have gone through a peer review process in the 2019-2024 period, focusing on teacher professionalism and learning technology, as well as Indonesian or English. The literature selection process was carried out through three stages: title and abstract screening, full-text review, and quality assessment using a standard of scientific criteria that resulted in 25 relevant literature for analysis.

Data analysis uses content analysis techniques with an inductive approach to identify themes, patterns, and trends that emerge from the literature under review. The coding process is carried out in stages ranging from open, axial, to selective coding to develop categories and sub-categories of analysis. Source triangulation is carried out by comparing findings from different types of publications and geographical contexts to ensure the validity and reliability of the analysis. The validity of the research is ensured through expert review from academics experienced in the field of educational technology, while the reliability of the data is maintained through systematic documentation and a comprehensive audit trail according to qualitative research standards. (Renz et al., 2018) (Carter et al., 2014)

RESULTS AND DISCUSSION

A. TECHNOLOGY ADAPTATION IN TEACHER PROFESSIONALISM

The adaptation of technology in teacher professionalism reflects a fundamental transformation that is changing the traditional learning paradigm towards a more dynamic and interactive digital era. Literature analysis shows that this adaptation process does not only involve mastering technological devices, but requires reconceptualizing the role of teachers from information providers to learning facilitators who are able to orchestrate the digital learning ecosystem. The professionalism of teachers in this context is characterized by the ability to integrate technology meaningfully to improve the quality of learning. The dimension of technological adaptation includes technical, pedagogical, and managerial aspects that interact with each other to form a comprehensive digital teacher competence. (Trust, 2017) (Kim et al., 2021)

Basic technology competencies are the foundation of digital teacher professionalism which includes digital literacy, device operational skills, and understanding of the learning technology ecosystem. Research shows that teachers with high digital literacy are better able to adapt to learning technology innovations and show flexibility in dealing with changes in the education system. Mastery of digital learning platforms such as

learning management systems (LMS), video conferencing devices, and interactive learning applications is a key indicator of the professionalism of contemporary teachers. The evolution of teachers' technology competencies also includes technical problem-solving skills, digital security awareness, and an understanding of emerging learning technologies. Effective technology adaptation requires a progressive mindset that is open to continuous learning and experimentation with new learning tools. (Ambon et al., 2024) (Wise, 2019)

The integration of technology in pedagogical practice demands a transformation of learning methodologies that optimize technological capabilities to achieve more effective learning goals. Professional teachers are able to select and implement technologies that align with the characteristics of the subject, the needs of the students, and the specific learning context. Technology-assisted learning is a new paradigm that integrates technology as a learning enhancer rather than a substitute for human interaction. Research shows that teachers who successfully integrate technology are those who comprehensively understand the technology's pedagogical content knowledge framework. Digital pedagogical adaptation also involves the ability to design an engaging, interactive, and meaningful learning experience in a technological environment. (Munawar & Jannah, 2025b) (Kayalar, 2016)

The professionalism of digital teachers is characterized by the ability to develop digital citizenship and model the use of positive technology to students as an integral part of the learning process. Teachers act as digital mentors who guide students in using technology ethically, safely, and productively for learning and self-development purposes. This aspect includes an understanding of digital footprints, privacy protection, cybersecurity awareness, and responsible online behavior. Modeling teachers' behavior in using technology professionally provides concrete examples to students of digital citizenship best practices. The dimension of digital ethics is an essential component of teacher professionalism that cannot be separated from technological and pedagogical competence. (Jæger, 2021)

Assessment and evaluation in a digital learning environment requires adapting strategies and instruments that are in accordance with the characteristics of technology-assisted learning. Professional teachers are able to develop authentic assessments that measure not only content knowledge but also students' digital skills and 21st century competencies. The implementation of digital portfolios, peer assessments through online platforms, and real-time feedback systems are indicators of sophistication in digital teacher assessment practices. Analytical learning analysis to understand student learning patterns and optimize learning strategies shows an advanced level of professionalism. Digital assessment adaptation also involves an understanding of algorithmic bias and fairness in automated evaluation systems. (Nel & Marias, 2022) (Lim et al., 2022)

Collaborative professionalism in the digital age is characterized by teachers' ability to participate in professional learning networks and communities of practice that facilitate

knowledge sharing and collective skill development Technology enables teachers to access global professional development opportunities, collaborate with international peers, and contribute to knowledge creation through action-oriented research and reflective practice. Social media platforms and professional networking sites are important mediums for building a professional identity and maintaining up-to-date in the field of expertise. Virtual professional learning communities provide wider accessibility for the continuous development of teachers. Digital collaborative professionalism also includes junior teacher mentoring abilities and sharing best practices through digital platforms. (SeoKyoungHye , 2011). (Stutchbury et al., 2025)

The sustainability and scalability of technological adaptation in teacher professionalism requires a systematic approach that involves institutional support, ongoing professional development, and cultural change in educational organizations. Longitudinal analysis shows that sustainable technology adaptation requires alignment between individual teacher readiness, institutional policies, and external support systems. An effective change management strategy involves gradual implementation, peer support systems, and recognition programs to encourage the adoption of innovation. Research evidence shows that teachers who receive systematic support from institutions show higher retention rates in using learning technologies. Sustainability also requires investment in infrastructure, technical support, and ongoing professional development programs that are responsive to the evolving technology landscape. (Hustad & Olsen, 2021) (Rasdiana et al., 2024)

The future readiness of digital teacher professionalism includes anticipatory skills to deal with emerging technologies such as artificial intelligence, virtual reality, and machine learning in the context of education Professional teachers develop adaptive skills that allow them to quickly learn and integrate new technologies relevant to learning. Critical evaluation skills of educational technology products and an understanding of research-based evidence in the effectiveness of technology are important components of future readiness. Participation in research and development activities, both as implementers and contributors, demonstrates a proactive level of professionalism. Readiness for lifelong learning and continuous adaptation characterize the ongoing professionalism of digital teachers in the face of rapid technological changes in education. (Granstran & Holgersson, 2020).

B. HYBRID AND DIGITAL LEARNING CHALLENGES AND OPPORTUNITIES

Hybrid and digital learning presents a spectrum of complex challenges that require systematic adaptation of professional teachers to ensure the effectiveness of the learning process in the era of digital transformation. The main challenge lies in the complexity of dual modality management which requires teachers to accommodate the needs of students in both online and offline formats simultaneously. Technical challenges include connectivity issues, platform compatibility, and digital gaps that affect learning accessibility for all students. Pedagogical challenges include difficulties in maintaining engagement, ensuring the quality of interactions, and adapting assessment strategies for hybrid environments. Institutional challenges involve inadequate infrastructure, limited

technical support, and policy gaps that hinder the optimal implementation of hybrid learning. Teachers' personal challenges include increased workloads, technology anxiety, and work-life balance issues that affect well-being and performance. (Guerrero-Quiñonez et al., 2023) (Ahuja, 2023) (Achmadi et al., 2024) (Bauwens et al., 2020)

The digital divide is a fundamental challenge that creates the problem of equality in access to and participation in digital learning, requiring an inclusive strategy that takes into account the socioeconomic diversity of students. Disparities in device ownership, internet connectivity, and digital literacy among students create significant achievement gaps in digital learning. The digital infrastructure gap between rural and urban areas exacerbates the disparity in access to digital education and requires comprehensive policy interventions. The digital divide based on gender is also an important concern because it affects participation patterns and learning outcomes in learning technology (Ahuja, 2023) (Hustad & Olsen, 2021).

Hybrid and digital learning also present a variety of complex challenges that require serious attention. Engagement challenges in digital learning include difficulties in maintaining attention, reducing passive participation, and creating meaningful interactions in virtual environments. Screen fatigue and digital confusion are phenomena that affect student motivation and learning effectiveness in prolonged online learning sessions. The lack of nonverbal cues in virtual interactions inhibits teachers' ability to gauge students' understanding and emotional states during learning. The social isolation effects of reduced face-to-face interactions have an impact on students' mental health and collaborative learning experiences. The problem of attention span in a digital environment requires innovative pedagogical strategies that incorporate frequent pauses, interactive elements, and varied instructional formats (Guerrero-Quiñonez et al., 2023) (Kelly Clarke, 2024)

Another challenge that is no less important is the authenticity of assessments in digital learning. Difficulties in ensuring academic integrity and measuring actual learning outcomes in a remote setting are significant problems faced by educators. Online proctoring systems raise privacy concerns and technical barriers that affect students' performance and comfort in assessment situations. Designing meaningful authentic assessments in a digital context requires creativity and an understanding of the capabilities of technology for evaluation purposes. The prevention of cheating in online assessments involves the development of honor codes, plagiarism detection tools, and innovative assessment formats that prevent academic dishonesty. The quality of feedback in digital assessments is often limited due to reduced interaction opportunities and technical constraints in providing detailed comments (Nel & Marias, 2022) (Lim et al., 2022).

The professional development gap is another major obstacle in the successful implementation of hybrid and digital learning. Teacher readiness varies significantly based on age, experience, and previous exposure to technology, which requires different

approaches to professional development. Limited time to learn new technologies and adapt the curriculum becomes a practical challenge that affects the quality of implementation. The lack of an ongoing support system after the initial training program reduces the sustainability of technology integration in classroom practice. Resistance to change from teachers who are comfortable with traditional methods requires change management strategies that are sensitive to individual concerns and learning preferences (Ambon et al., 2024).

Despite these challenges, hybrid and digital learning also present extraordinary opportunities that can change the paradigm of education. Personalized learning opportunities create the potential for learning experiences that are adaptive to individual student needs, learning styles, and speed preferences. The technological capabilities allow for more sophisticated differentiated instruction compared to traditional classroom settings. Data analytics from learning management systems provide insights into student progress, engagement patterns, and areas that require intervention. Flexibility in scheduling and content delivery allows students to access learning materials according to personal circumstances and optimal learning timing (Wise, 2019).

Increased accessibility is becoming a significant opportunity in digital learning to accommodate students with disabilities through assistive technologies and universal design principles. The choice of multimedia content allows for a dual representation format that supports diverse learning preferences and cognitive styles. Real-time transcription, video captions, and screen reader compatibility enhance inclusivity in digital learning environments. Flexible delivery modes allow students with reduced mobility or health issues to maintain continuity of education. Personalization tools in the learning platform allow for customization of interfaces, content difficulty levels, and learning paths according to individual needs (Wulandari et al., 2021).

The scalability and cost-effectiveness of digital learning provide opportunities to reach larger audiences, reduce geographical barriers, and optimize the allocation of educational resources. Massive Open Online Courses and digital content sharing allow access to high-quality educational resources from global experts. Reduced infrastructure costs for classrooms, transportation, and physical materials can be realallocated back to technology investments and teacher development programs. Increased efficiency in content delivery, assessment processing, and administrative tasks allows teachers to focus more on instructional design and student support. The emerging innovation ecosystem around educational technology creates opportunities for collaboration, research, and development of cutting-edge learning solutions. The long-term sustainability of hybrid models allows educational institutions to build resilience to future disruptions while maintaining continuity and quality of education (Hustad & Olsen, 2021).

To optimize the potential of hybrid and digital learning, a holistic approach is needed that addresses challenges while taking advantage of existing opportunities. The development of digital engagement strategies includes gamification, multimedia integration, and

facilitation of peer-to-peer interaction to maintain active participation. Alternative assessment strategies such as portfolio-based evaluation, peer assessment, and project-based learning are solutions to overcome the limitations of traditional testing in a digital environment. Peer learning networks and mentoring programs become effective strategies for building collective expertise and support systems among teaching professionals. Global connectivity opportunities allow for virtual exchange programs, international collaborations, and exposure to diverse perspectives that enrich the educational experience, while the potential for innovation in curriculum design allows for the integration of emerging new areas, interdisciplinary approaches, and real-world problem-solving in learning. (Granstrand & Holgersson, 2020)

C. STRATEGIES FOR DEVELOPING TEACHER PROFESSIONALISM

The development of teacher professionalism in the digital age requires a comprehensive strategy that integrates the dual dimensions of teacher competence, including technological proficiency, pedagogical innovation, and adaptive leadership skills. An effective development framework should consider individual teacher readiness, institutional capacity, and systemic support structures that facilitate continued professional growth. The strategic approach involves assessing current competency levels, identifying development needs, and designing targeted and personalized interventions according to teacher profiles and career trajectories. Holistic development strategies include formal training programs, informal learning opportunities, peer collaboration networks, and self-led professional inquiry that collectively build teachers' expertise in a technology-assisted learning environment. The implementation of a comprehensive development framework requires alignment between individual aspirations, institutional goals, and broader education policy directions (Ambon et al., 2024) (Kim et al., 2021).

Continuous professional development programs are the cornerstone of development strategies that involve continuous learning opportunities, upskilling, and knowledge upgrading to maintain teacher up-to-date in a rapidly evolving digital landscape. The microlearning approach that delivers small-sized learning modules allows teachers to acquire new competencies gradually without overloading existing workloads. Blended professional development that combines online modules, face-to-face workshops, and hands-on practice sessions provides flexibility while ensuring comprehensive skills development. On-demand real-time learning resources allow teachers to access support when facing specific challenges in technology integration. Personalized learning paths in professional development allow teachers to choose a developmental trajectory that aligns with their interests, strengths, and career goals (Ambon et al., 2024).

Mentorship and training programs become a powerful strategy to facilitate peer learning and provide ongoing support in the journey of technology integration Experienced digital teachers who act as mentors can share practical insights, solve common challenges, and model effective practices for junior colleagues. Structured training relationships allow for individualized support that is responsive to the needs and context of the specific teacher.

Peer observation sessions and feedback in technology-assisted classrooms provide opportunities to learn from successful implementations and identify areas for improvement. Cross-school tutoring networks allow teachers to access expertise from diverse educational contexts and expand their professional learning communities. Reverse tutoring, where digital native teachers share technology skills with senior colleagues, creates mutually beneficial learning opportunities for both parties. (Franklin et al., 2001).

Professional learning communities focused on digital pedagogy become a platform for collaborative inquiry, shared problem-solving, and collective knowledge construction in technology integration. Collaborative action research projects allow teachers to investigate the effectiveness of digital teaching strategies and contribute to the development of evidence-based practices. Online professional networks allow teachers to connect with global communities of practice, access international best practices, and participate in the world's educational discourse. Virtual conferences, webinars, and online symposiums provide accessible professional development opportunities that overcome geographical and financial constraints. Social media groups and professional platforms facilitate informal knowledge sharing, resource exchange, and peer support that complement formal development programs (SeoKyoungHye , 2011) (Stutchbury et al., 2025).

Systematic technology integration training should include the development of technical skills and pedagogical reasoning for the effective use of technology in the context of learning. Hands-on hands-on workshops that provide hands-on experience with educational technology tools allow teachers to develop confidence and competence in real-world applications. The trainer training program allows for internal capacity building for the delivery of continuous professional development within schools and regions. A vendor-neutral training approach ensures that teachers develop transferable skills that are not dependent on specific products or technology platforms. Certification programs in educational technology provide recognition for teachers' expertise and encourage continuous professional learning in digital competencies (Henderson & Corry, 2021).

Leadership development programs for teacher leaders in technology integration allow for the emergence of agents of change who can drive the adoption of innovation within their institutions. Distributed leadership models that empower teachers to take leadership roles in specific technology initiatives create ownership and sustainability in implementation efforts. Innovation labs or in-school creation spaces provide an environment for experimentation, collaboration, and creative problem-solving in the application of educational technology. Grant writing and project management training enables teachers to secure funding and lead technology integration projects that benefit students and their institutions. The development of research skills allows teachers to engage in systematic inquiry and contribute to the knowledge base in the effectiveness of educational technology (Rasdiana et al., 2024) (Wise, 2019).

The development of support infrastructure becomes an essential component in creating an enabling environment for teachers' professional growth in digital competencies. Reliable and responsive technical support services reduce technology-related stress and allow teachers to focus on the pedagogical aspects of technology integration. A resource library that curates high-quality educational technology tools, lesson plans, and research findings gives teachers easy access to materials that have been verified for their professional use. A time allocation policy that recognizes professional development as an essential component of a teacher's job allows for adequate time for learning, planning, and reflection activities. Administrative support in the form of flexible policies, funding allocations, and recognition systems creates a culture that encourages innovation and professional risk-taking in technology adoption(Hustad & Olsen, 2021).

A comprehensive system of evaluation and feedback allows for continuous improvement in professional development efforts and ensures alignment with teacher needs and institutional goals. Multi-source feedback that combines student feedback, peer observation, and self-reflection provides a holistic perspective on teachers' growth in digital competencies. Portfolio-based assessments of teacher development allow for documentation of learning journeys, reflection on areas of growth, and planning for future development needs. Evaluation of the impact of professional development programs on student learning outcomes ensures that investment in teacher development translates into improved quality of education. Periodic needs assessment surveys and focus groups with teachers provide ongoing feedback to refine and adapt professional development strategies based on changing needs and emerging challenges in the digital education landscape (Nel & Marias, 2022) (Kayalar, 2016).

CONCLUSION

This study confirms that the adaptation of technology in teacher professionalism is a multidimensional transformation that involves reconceptualizing the role of teachers from information providers to learning facilitators in the digital ecosystem. Hybrid and digital learning present complex challenges around the digital divide, maintaining engagement, and authenticity of assessments, yet simultaneously providing opportunities for personalized learning, enhanced accessibility, and scalable educational delivery. An effective teacher professionalism development strategy requires a holistic approach through continuous professional development, mentorship programs, professional learning communities, and a comprehensive support infrastructure to ensure the continuous integration of technology in learning.

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