

The role of MPLB teachers in developing 21st-century skills: a literature study

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Abstrak

Pesatnya transformasi digital dan tuntutan dunia kerja saat ini mewajibkan peserta didik, khususnya pada Program Keahlian Manajemen Perkantoran dan Layanan Bisnis (MPLB), untuk memiliki keterampilan abad 21. Peserta didik dituntut menguasai keterampilan 4C, yaitu Collaboration, Communication, Critical Thinking, dan Creativity. Dalam konteks tersebut, guru MPLB memiliki peran yang strategis sebagai jembatan antara teori, praktik, dan tuntutan profesional di era modern. Guru MPLB perlu bertransformasi dari sekadar penyampai materi menjadi katalisator yang membantu melatih keterampilan peserta didik agar siap menghadapi tantangan kompleks dunia kerja di masa depan. Penelitian ini bertujuan mendeskripsikan peran guru MPLB dalam menumbuhkan keterampilan abad 21 pada peserta didik. Metode yang digunakan adalah kualitatif dengan pendekatan studi pustaka, yaitu mengkaji berbagai literatur seperti artikel, jurnal, atau sumber lain yang relevan. Hasil analisis konseptual ini menunjukkan bahwa efektivitas pembelajaran MPLB tidak lagi diukur hanya dari transfer pengetahuan, tetapi dari keberhasilan guru dalam membentuk individu yang siap menghadapi tantangan global. Implementasi peran-peran ini memerlukan dukungan dari kurikulum yang fleksibel, pelatihan guru yang berkelanjutan, dan ketersediaan sumber daya teknologi yang memadai.

Kata kunci: keterampilan 4C; kompetensi profesional guru; pendidikan vokasi; transformasi digital

Abstract

The rapid pace of digital transformation and contemporary labor market demands require students, particularly those enrolled in the Office Management and Business Services (MPLB) program, to acquire 21st-century skills. Students are expected to master the 4C competencies: Collaboration, Communication, Critical Thinking, and Creativity. In this context, MPLB teachers occupy a strategically pivotal position as a bridge between academic theory, professional practice, and modern workplace demands. MPLB teachers must transform from mere conveyors of content into

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catalysts who actively cultivate student competencies in preparation for the complex challenges of the future digital workplace. This study aims to describe the role of MPLB teachers in fostering 21st-century skills among students. A qualitative approach employing a systematic literature review was adopted, drawing on scholarly articles, peer-reviewed journals, and other academically credible sources. The conceptual analysis reveals that the effectiveness of MPLB learning is no longer measured solely by knowledge transfer, but by the teacher's capacity to develop individuals equipped for global challenges. The successful implementation of these roles requires systemic support in the form of flexible curricula, sustained teacher professional development, and adequate access to technological resources.

Keywords: digital transformation; professional teacher competencies; vocational education; 4C skills

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Introduction

The 21st century differs fundamentally from the 20th century across multiple dimensions, including employment structures, social environments, and pathways for personal development. This era is characterized by the rapid advancement of information technology and the accelerated proliferation of automated systems that operate with minimal human intervention. As a consequence, a substantial number of conventional occupational roles and administrative tasks are being supplanted by machines and sophisticated computing systems. These comprehensive and ongoing transformations are particularly evident in the domain of education, where they have generated new expectations regarding the graduate profile demanded by the modern labor market. Graduates can no longer rely exclusively on conventional technical competencies; rather, they must develop 21st-century skills, commonly referred to as the 4Cs: Collaboration, Communication, Critical Thinking, and Creativity (Nganga, 2019; Nurhayati et al., 2024). Mastery of the 4Cs is central to students' capacity to adapt, innovate, and navigate the complex, non-routine challenges of the future workplace.

The theoretical foundations for this study draw on the constructivist theories of Piaget and Vygotsky, who assert that learning occurs actively when students construct knowledge through personal experience and engagement with their social environment (Suryana et al., 2022). Within this framework, students are not passive recipients of information but are active agents who build their own understanding through experiential engagement. Complementing this perspective, the Framework for 21st Century Skills developed by the Partnership for 21st Century Skills (P21) underscores the necessity of comprehensive skills development to prepare graduates for global competition and adaptation to rapid change. Mezirow's (1997) Transformative Learning theory further emphasizes the imperative for teachers to reconceptualize their instructional approaches, enabling students to think critically and innovate in response to future challenges. The transformation of the teacher's role from instructor to catalyst represents a direct manifestation of this transformative learning paradigm. This perspective aligns with recent findings reported by Saputro (2025), who demonstrated that in the digital era, teachers no longer function solely as conveyors of information but as facilitators who encourage students to engage actively, critically, and creatively through meaningful technology integration. Afriani et al. (2024) further argued that the success of this transformation depends substantially on teachers' ability to reconstruct conventional instructional methods into an adaptive digital ecosystem.

In the context of vocational education particularly the Office Management and Business Services (MPLB) program these challenges are especially acute. Education plays a crucial role in

shaping students' competencies to meet the demands of 21st-century learning. The traditional MPLB curriculum, which was oriented toward routine administrative tasks, now faces significant pressure from office automation technologies, including document management software, cloud-based systems, and artificial intelligence (Angga et al., 2022). Accordingly, the competitive advantage of MPLB graduates increasingly depends on their ability to leverage technology in problem-solving, function effectively within virtual teams, and manage complex information systems, rather than on the performance of routine clerical tasks. This fundamental shift positions MPLB teachers in a highly strategic role as catalysts for educational and professional transformation (Hermansyah et al., 2024).

MPLB teachers must serve as a bridge between historical clerical practices and the professional demands of the future. To fulfill this role effectively in the 21st century, teachers must possess a set of professional abilities codified as teacher competencies. In accordance with Indonesian Law Number 14 of 2005, four mandatory teacher competencies are prescribed: (1) Pedagogical Competence, through which MPLB teachers develop the creative and collaborative potential of students within modern office simulation environments; (2) Personality Competence, through which teachers model professional integrity and a sound work ethic; (3) Social Competence, which underpins the formation of collaborative networks with the Business World and the Industrial World (*Dunia Usaha dan Dunia Industri, DUDI*); and (4) Professional Competence, which enables teachers to design authentic learning challenges that require students to solve complex, real-world office administration problems.

The effectiveness of MPLB teachers is therefore no longer evaluated by the breadth of curriculum content delivered, but by the degree to which 4C skills are successfully integrated into the learning process (Wulansari & Sunarya, 2023). These four competencies must be employed in an integrated and synergistic manner to ensure that graduates develop as adaptive individuals capable of meeting the evolving demands of the contemporary workplace (Septikasari & Frasandy, 2018).

Unlike prior studies that examine teacher competency or 4C skills in broad, theoretical terms, this article offers a distinct contribution by reconstructing the role of teachers specifically within the MPLB ecosystem. The novelty of this work lies in its conceptual analysis of how teachers integrate 4C skills directly into modern office practice simulations, reframing teacher competency not merely as general pedagogical mastery, but as a set of technical-professional capabilities that bridge students' transition to the digital workplace.

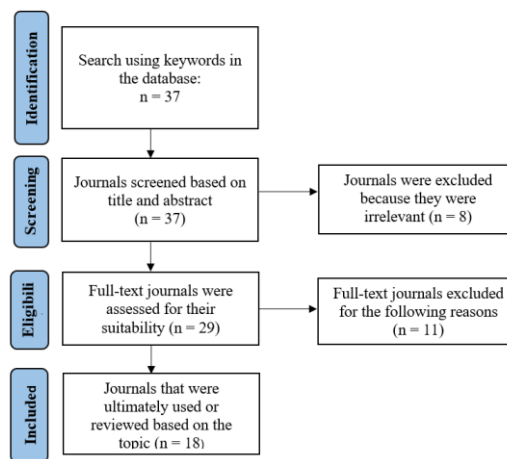
Research Methods

This study employed a qualitative research design using a library research (*studi pustaka*) approach, which was specifically selected as the most appropriate method for examining 21st-century skills in vocational education, vocational teacher competencies, and learning in the field of office administration and MPLB. Data were gathered from published research literature rather than from primary field sources, with the primary objective of analyzing, synthesizing, and constructing theoretical arguments concerning the role of MPLB teachers in developing 21st-century skills (4Cs). This approach facilitated in-depth exploration of relevant concepts, theoretical frameworks, and prior empirical findings, enabling the construction of a new and applicable conceptual framework without requiring primary data collection.

The data sources for this study consisted entirely of secondary literature, retrieved through systematic searches of the SINTA- and Scopus-indexed scientific journal databases, supplemented by Google Scholar. Literature searches were conducted systematically using a combination of keywords, including "4C Skills," "Teacher Role," "Office Management and Business Services (MPLB)," and "Digital Transformation." Inclusion criteria required sources to be peer-reviewed journal articles, academic textbooks, or official educational documents such as Teacher Professional Education (PPG) modules published between 2015 and 2025, with substantive relevance to educator competencies and the clerical work environment. Sources lacking academic credibility, including personal blog posts, popular opinion pieces, and works not subjected to a peer-review process, were excluded.

This study followed a systematic procedure guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure transparency and rigor in the analysis and synthesis of theoretical arguments regarding the role of MPLB teachers in developing 21st-century skills. Literature quality was assessed using the Critical Appraisal Checklist to verify the methodological validity and relevance of the findings of each selected source. Data that passed the quality appraisal were subsequently organized and classified using a thematic analysis matrix structured around three main categories: the urgency of 4C skills, challenges facing the MPLB domain in the era of automation, and the transformation of four teacher competencies (pedagogical, professional, personality, and social). This classification process ensured that the reviewed literature demonstrated a strong conceptual correlation and provided meaningful support for the theoretical arguments advanced in this study. Following classification, the data were subjected to thematic analysis to identify consistent conceptual patterns and relevant research gaps (Nurhamidah et al., 2025).

Figure 1
PRISMA Flow Diagram of Literature Selection



A key limitation of this study is its exclusive reliance on published literature, without direct fieldwork or empirical observation. Furthermore, the findings are necessarily contingent upon the scope of sources selected, which may introduce a degree of perspectival bias. Accordingly, the results of this study remain theoretical in nature and require further verification through empirical or field-based investigation.

Result and Discussion

Research Result

The conceptual analysis conducted in this study reveals that the role of MPLB teachers has undergone a significant qualitative transformation. The expanding influence of automation and digital transformation has rendered routine clerical competencies progressively obsolete, making 21st-century skills (4Cs) a core dimension of what MPLB teachers must both possess and actively foster. The analysis demonstrates that MPLB teachers are required to integrate multiple professional competencies in order to cultivate the 4C skills in their students. Table 1 maps the relationship between teacher competencies and 4C skills, illustrating how each competency translates into concrete pedagogical actions that support the development of specific 4C skills. These findings confirm a fundamental shift in the professional identity of MPLB teachers: effective teaching can no longer be defined by the transmission of routine administrative knowledge, but must be

reconceptualized as a catalyst function that actively develops students' capacity for collaboration, communication, critical thinking, and creativity.

Table 1
Mapping the relationship between MPLB teacher competencies as a catalyst in developing 4C skills

Teacher Competence	Key Actions of MPLB Teachers (Catalyst Role)	4C skills developed
Pedagogy	Project-based learning (PBL) designer and digital office simulation.	Critical thinking, collaboration, creativity
Professional	Expert in modern automation and e-office systems.	Critical thinking, creativity
Personality	Exemplary ethics, maturity, and open attitude towards technology.	Communication, collaboration
Social	Building industry networks and delivering real projects	Communication, collaboration

Discussion

The effectiveness of MPLB teachers is increasingly evaluated in terms of their success in developing students who are adaptive and globally competitive (Septikasari & Frasandy, 2018). Teachers who demonstrate thorough command of subject matter tend to foster greater student engagement and motivation (Hamzah et al., 2023). This is particularly significant in the 21st century, which demands that students master the 4C skills and competencies necessary to navigate the complexities of the modern era. These competencies encompass global cognitive skills, collaborative working methods, and technological proficiency (Nurhayati et al., 2024). Accordingly, embedding the 4Cs in vocational education is essential to cultivating graduates who are adaptive, creative, and competitive in the evolving labor market.

In this context, the role of MPLB teachers has become strategically vital. They are no longer confined to the function of content distributors; instead, they serve as digital facilitators and catalysts for meaningful learning (Pujiriyanto, 2021). This expanded role requires the application of innovative pedagogical competencies centered on designing learning experiences that stimulate critical thinking and collaboration principally through project-based learning (PBL) and digital office simulations. The overarching objective of strengthening the 4C competencies is to ensure that students develop skills that remain relevant amidst the rapidly evolving demands of contemporary society and the professional world.

Achieving the conditions necessary for MPLB teachers to fulfill this expanded role requires systemic enabling conditions, including dedicated time for professional reflection, opportunities for creative collaboration among educators, structured implementation of project-based learning, and institutional recognition of diverse creative and pedagogical approaches (Mantau & Talango, 2023). The effectiveness of PBL in this context is substantially dependent on teachers' capacity to design and manage structured learning processes with intentionality. Thorough instructional planning enhances the quality of PBL implementation and, consequently, its effectiveness in preparing students to meet the demands of a globalized professional environment (Pratiwi et al., 2025).

The enactment of the teacher's role in fostering the 4Cs is realized through the structured integration of four essential competencies: pedagogical, personality, social, and professional. Pedagogical competency is a foundational requirement of the teaching profession and constitutes the primary attribute that distinguishes teachers from other professionals. Competency in pedagogy encompasses the knowledge and skills necessary for teachers to understand students' developmental characteristics and psychological profiles. Teachers who have mastered pedagogical competency

are better positioned to interact effectively and efficiently with students and to address instructional challenges as they arise (Akbar, 2021).

Mastery of contemporary professional competencies particularly digital literacy and office automation systems is an essential prerequisite for MPLB teachers seeking to foster critical thinking and creativity in their students. Teachers with robust professional competencies are equipped to design authentic learning tasks that challenge students to analyze complex data sets and synthesize viable solutions. In the absence of current knowledge regarding e-office technologies, teachers risk designing assessments that measure only rote memorization rather than analytical reasoning, thereby failing to prepare graduates capable of solving complex, real-world problems. Professional competency thus enables teachers to translate flexible curriculum frameworks into practice-oriented learning activities (Kuswanto et al., 2023).

Collaboration and communication two of the most critical 21st-century skills are substantially influenced by teachers' social and personality competencies. Teachers leverage social competency to build partnerships with Business and Industry stakeholders (DUDI), enabling the incorporation of authentic case studies that require students to collaborate in developing solutions. Real-world projects sourced through DUDI networks create contexts in which students must interact, negotiate, and engage in professional discourse, thereby directly practicing communication and collaboration. Concurrently, personality competency functions as a model for essential professional soft skills. The mature, ethical, and composed comportment demonstrated by teachers exerts a significant influence on how students develop their capacity to manage interpersonal conflict and communicate effectively within collaborative work environments (Subarkah et al., 2024).

The effective integration of the 4C skills further requires the cultivation of domain-specific hard skills within office administration (Aulia, 2023). The development of these hard skills necessitates the concurrent mastery of 4C competencies, ensuring that students' technical abilities are aligned with 21st-century learning expectations. Teachers play an essential role in this process by delivering content through innovative, technology-enhanced instructional approaches—while respecting existing curriculum structures. 21st-century skills are also understood in relation to four foundational pillars of lifelong learning: learning to know, learning to do, learning to be, and learning to live together (Daryanto & Karim, 2017).

These findings carry substantive practical implications, underscoring that the cultivation of the 4Cs demands systemic institutional support that extends well beyond individual teacher effort. Specifically, two key forms of support are identified. First, sustained professional development: MPLB teachers require ongoing training focused on digital pedagogy and current administrative technologies, rather than reviews of outdated administrative content. Such professional development should emphasize how to teach the 4Cs, not merely what the 4Cs are (Tridiana & Rizal, 2020). Second, curriculum flexibility: MPLB program curricula should be dynamic and responsive to labor market changes, prioritizing problem-solving projects over content transmission. This approach provides students with work-relevant experiences that develop soft skills including critical thinking, creativity, communication, and teamwork thereby bridging the gap between classroom learning and industry expectations (Sibarani et al., 2025).

Considered as a whole, this conceptual article argues that MPLB teachers constitute a transformative catalyst: their effectiveness in fostering the 4Cs is contingent upon the holistic synergy of all four teacher competencies, integrated and oriented toward the demands of the 21st-century labor market. The success of MPLB teachers in developing these skills ultimately depends on their capacity to enact this competency synergy in ways that authentically reflect modern professional realities (Tridiana & Rizal, 2020).

Conclusion

The professional role of Office Management and Business Services (MPLB) teachers is undergoing a fundamental transformation in response to the dual forces of automation and digital change. Competencies that previously centered on the performance of routine administrative tasks are now being superseded by the imperative to cultivate 21st-century skills, encompassing

collaboration, communication, critical thinking, and creativity. In this context, MPLB teachers are required to integrate four core professional competencies pedagogical, professional, personality, and social to serve as active agents in the development of 4C skills among their students. These shifts represent a profound reconceptualization of the MPLB teacher's professional identity: from administrative manager to learning facilitator who shapes students' critical and creative thinking capacities in preparation for an increasingly digitalized global workplace. From a theoretical standpoint, this study reinforces the contemporary relevance of Constructivism and Transformative Learning theory in the context of modern vocational education. The findings demonstrate that teacher competencies are no longer static attributes but must be holistically integrated and dynamically enacted as a catalyst to bridge the gap between academic theory and the practical demands of the 21st-century workplace. This conceptual reframing introduces a new evaluative standard for office administration education: effectiveness is measured by the adaptability and innovative capacity of graduates, not merely by their mastery of clerical technical skills. This study is subject to several limitations. The research was confined to a qualitative literature review methodology; accordingly, the findings remain at the level of conceptual and theoretical analysis and have not been empirically validated through primary data collection or direct field observation. Furthermore, the included literature encompasses educational institutions with widely varying levels of access to technological resources, which may limit the generalizability of the conclusions. On the basis of these findings, future researchers are encouraged to conduct empirical studies or institutional case studies to observe the direct implementation of the Project-Based Learning (PBL) model in fostering the 4Cs among MPLB students. Additionally, subsequent research could productively examine the influence of curriculum flexibility and sustained teacher professional development on the work readiness of MPLB graduates in the digital age.

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