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Human-Centric Learning Model for Smart Office Management in Society 5.0 Era

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Abstract
This study aims to develop an innovative learning model called Smart Innovation for Future Office Learning *for vocational students majoring in Office Management and Business Services. The model was designed in response to the need for vocational learning aligned with technological advancements and humanistic values in the Society 5.0 era. The research method used is Research and Development (R&D), modified from Borg & Gall into five main stages: preliminary study, initial product development, expert validation, small- and large-scale testing, and final revision. Validation results showed that the model achieved feasibility scores of 90% from media experts and 86% from material experts. Small- and large-group trials yielded acceptance scores of 87% and 89%, respectively. The model integrates project-based learning with digital technology utilization and soft skill development based on a human-centric approach. Supported by an interactive web-based learning platform, this model is proven to be feasible, relevant, and capable of bridging the gap between education and industry needs.*

Keywords: Learning Model, Society 5.0, Smart Innovation, Human-Centric, Vocational School

INTRODUCTION

In the era of Society 5.0, where smart technology and digital innovation are becoming integral to human life, education plays a pivotal role in preparing human resources capable of adapting to rapid changes (Budiman, 2017; Sibuea et al., 2023). Society 5.0 is a concept that integrates the physical and digital worlds with the goal of creating a more prosperous society through the use of technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and Big Data (Husna & Wiratmo, 2023; Nastiti & Ni'mal, 2020). Unlike the previous stage of Industry 4.0 which primarily emphasized efficiency and automation, Society 5.0 places human beings at the center, ensuring that technological progress contributes to solving social issues and enhancing the quality of life. In this context, education must be able to produce individuals who possess not only technical competencies but also critical thinking, creativity, and solution-oriented mindsets grounded in human values. Vocational education, particularly in the field of Office Management, which closely relates to information management, faces a significant challenge in adapting to these developments (Ramadhan & Muhyadi, 2021).

Education, therefore, is no longer limited to transmitting knowledge through conventional classroom instruction but must also cultivate higher-order thinking skills, adaptability, and resilience. Learners are expected to be equipped with future-oriented skills that enable them to navigate uncertainty, anticipate disruption, and contribute to innovation while remaining anchored in ethical awareness, empathy, and social responsibility. It is increasingly evident that mastery of technical skills alone is insufficient in preparing students for the evolving world of work. What is equally critical is the ability to collaborate across disciplines, to solve real-world problems in creative and practical ways, and to leverage digital technologies for human-centered purposes. This requires a paradigm shift in how learning is designed, implemented, and evaluated, particularly in vocational schools where graduates are expected to directly enter the labor market.

In Indonesia, Office Management education in vocational schools (SMK) often remains focused on conventional teaching approaches, such as rote memorization, textbook-driven

instruction, and limited practical engagement with digital platforms. Many institutions have yet to fully integrate smart technology and digital innovation into their curricula (Rismanto & Pahlevi, 2022). As a result, there exists a widening gap between what students learn in school and the competencies demanded in the digital workplace. In contrast, the labor market has undergone significant transformation, with technology becoming a central force in driving efficiency, productivity, and even innovation across industries (Zulhan, 2017). Employers now expect graduates who are proficient in operating digital tools, managing cloud-based office systems, analyzing data for decision-making, and coordinating tasks within technology-driven organizational ecosystems. Consequently, the development of an innovative learning model that reflects these changing realities is an urgent necessity to ensure that vocational graduates remain competitive in the Society 5.0 era.

Research on technology-based learning models and human-centric approaches has gained increasing prominence as scholars and practitioners recognize the transformative potential of digital technologies for education. The Society 5.0 framework itself emphasizes that intelligent technologies should be utilized to improve human life quality, including the way individuals learn, interact, and work (Fukuda, 2020; Husna & Wiratmo, 2023). Within the scope of Office Management education, this highlights the need for learning models that align not only with the rapid development of technological tools but also with the cultivation of interpersonal competencies. Prior studies suggest that the adoption of platforms such as cloud-based learning management systems, office simulation software, and document management applications can enhance efficiency and engagement in administrative learning. For example, Suputra & Susanto (2023) demonstrated that websites integrated with interactive office materials can serve as effective learning kits, improving both conceptual understanding and practical competence in office administration tasks.

A human-centric approach in education has therefore gained recognition as an essential complement to the adoption of smart technologies. By placing learners' needs, experiences, and values at the center of the process, such an approach ensures that technology is not used for automation alone but for creating meaningful, inclusive, and contextually relevant learning experiences. Barkah et al., (2024) found that the Human-Centered Learning Design (HCLD) model promotes active engagement, fosters inclusivity, and ensures that learning outcomes are not only measurable but also transformative for students. Meanwhile, smart innovation in education involves harnessing AI, IoT, and data analytics to design adaptive learning environments where students can receive personalized feedback, engage in collaborative projects, and practice real-world problem-solving. According to Muhammad Yahya et al. (2023), AI-based platforms enable teachers to design more active and interactive lessons while reducing repetitive administrative tasks, thereby allowing more time to focus on mentoring and student development. However, in Indonesia, the application of these concepts, particularly in vocational education for Office Management, remains limited, leaving much room for further exploration and implementation.

This gap between educational practice and workplace requirements has been highlighted by several scholars. Rahmawati, (2022) noted that the skills taught in many vocational schools are misaligned with the expectations of industry, particularly in relation to digital competencies and interpersonal skills. Employers increasingly emphasize communication, teamwork, and adaptability in addition to mastery of digital systems. The underdevelopment of these competencies limits graduates' employability and restricts their potential to thrive in dynamic, technology-driven environments. Addressing this issue requires a holistic learning model that integrates both smart technology and human-centric pedagogy, ensuring that learners acquire comprehensive skills that balance technical proficiency with ethical, social, and emotional intelligence.

The Society 5.0 framework, which emphasizes synergy between advanced technologies and human values, has already influenced educational policies in several advanced countries, guiding the development of curricula that are both technologically advanced and socially responsible. Hanjowo et al., (2023) argue that implementing Society 5.0 in education requires designing systems where digital innovation goes hand-in-hand with the cultivation of empathy, ethics, and inclusivity. In the Indonesian context, however, studies that adapt this concept specifically to vocational education, especially in the domain of Office Management, remain scarce. This indicates a pressing need for research that bridges this gap and develops localized models that are both relevant and practical for the Indonesian vocational education system.

Based on this review, several research gaps can be identified. First, there is a lack of studies explicitly focused on developing learning models that integrate smart technologies with human-centric approaches for Office Management students in vocational schools. Second, while most existing research prioritizes the mastery of technical skills, little attention has been given to exploring how technology can be leveraged to foster interpersonal and humanistic competencies such as communication, problem-solving, and collaboration. Addressing these gaps, the present study aims to contribute to the development of a *Human-Centric Learning Model for Smart Office Management in the Society 5.0 Era*. This research is expected not only to improve the quality and relevance of vocational education in Office Management but also to support the broader vision of Society 5.0, which seeks to harmonize technology with human values in creating a just, inclusive, and future-ready society.

RESEARCH METHODS

This study employed a modified version of the Research and Development (R&D) method proposed by Borg & Gall (1983), adapted into five main stages to address the needs of vocational education in Office Management and Business Services in the context of Society 5.0.

1. Preliminary Research
   This stage included both field and literature studies.
   a. *Field Study:*
      An analysis was conducted on the development of technology, the existing curriculum for Office Management students, and the availability of learning support at schools. The study also identified the need for integrating smart innovation with a human-centric approach to support Society 5.0.
   b. *Literature Study:*
      A review of relevant literature was carried out regarding Office Management learning elements, the concept of Society 5.0, and the human-centric learning approach. Additionally, the study designed an authentic, performance-based assessment format.
2. Initial Product Development
   This stage involved the development of a Smart Innovation-Oriented Learning Model, including instructional materials such as modules, teacher guides, and evaluation tools based on the human-centric approach. The learning materials were tailored to incorporate technology within the Office Management curriculum.
3. Expert Validation and Product Revision
   Product validation was conducted by media and subject matter experts to assess its feasibility. Feedback and suggestions were collected and used for product revision.
4. Small-Scale Field Trial and Revision
   The model was tested with 50 students in the Office Management and Business Services department at a pilot school. Data on product feasibility were collected through observation, interviews, and questionnaires. Revisions were made based on the trial results.

5. Large-Scale Field Trial and Final Product Revision
   The revised product was tested on 100 students from several vocational schools in East Java. Final revisions were carried out based on the outcomes of this large-scale trial. The final product was then disseminated.

Data Analysis

Data in this study were collected using interviews and questionnaires, resulting in both qualitative and quantitative data. The analysis was performed using the descriptive percentage method to depict proportions or comparisons within the population in percentage form. This method is typically used to summarize categorical or discrete data, making it easier to interpret.

The percentage was calculated using the following formula:

$$P = \frac{X}{Xi} \text{x } 100\%$$

Where:
P = Percentage of trial subject results
x = Score obtained
xi = Maximum possible score of question items

RESULT AND DISCUSSION

This research has successfully developed an innovative learning model titled Smart Innovation for Future Office Learning, specifically designed for vocational high school (SMK) students in Office Management and Business Services. This model addresses the complex and evolving demands of vocational education in the digital era. To support its implementation, an interactive web-based learning platform was developed and can be accessed via https://pelatihanai.my.canva.site/manajemen-perkantoran.

This learning model provides a solution to the predominance of conventional, theory-based instruction that often lacks practical skill engagement and optimal use of digital technology. In the Society 5.0 era, where human life is significantly shaped by technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and big data analytics, education systems must produce tech-literate individuals who also demonstrate critical thinking, creativity, empathy, and strong work ethics.

Smart Innovation for Future Office Learning combines principles of smart innovation, intelligent technology integration in teaching, with a human-centric approach that places students at the center of active, reflective, and socially engaged learning. The model promotes not only the mastery of digital office tools such as Google Workspace, Trello, and e-filing systems, but also cultivates soft skills such as collaboration, leadership, and professional communication.

The model incorporates project-based learning (PjBL) to simulate real-world office environments, allowing students to learn through hands-on, relevant tasks. All teaching resources, modules, worksheets, teacher guides, assessment rubrics, and digital simulations, were systematically developed and centralized on the interactive web platform to enhance accessibility and engagement. This model offers not only an enriched classroom learning experience but also a transformative tool for vocational institutions to bridge the gap between education and the industry in the digital era.

Figure 1. Smart Innovation for Future Learning Interface

To evaluate the feasibility of the developed model, expert validations were conducted. Media experts assessed aspects such as visual design, accessibility, and interactivity.

Table 1. Media Expert Validation Results

No	Indicator	Score Obtained (x)	Ideal Score (xi)
1	Interface Design and Visualization	4	5
2	Navigation and Interactivity	4	5
3	Responsiveness Across Devices	5	5
4	Aesthetics and Layout Consistency	5	5
5	Relevance to Learning Objectives	5	5
6	Ease of Access	4	5
7	Format and Output Suitability	4	5
8	Creativity and Innovation	5	5
9	Technical Functionality	5	5
10	User Experience (UX)	4	5
	Total	45	50

The total score indicates a **90% feasibility rate**, suggesting that the media aspects of the learning model are of high quality and suitable for digital-based learning environments.

Table 2. Material Expert Validation Results

No	Indicator	Score Obtained (x)	Ideal Score (xi)
1	Curriculum Relevance	5	5
2	Material Relevance	4	5
3	Depth and Integration	4	5
4	Clarity of Learning Objectives	4	5
5	Information Accuracy	5	5
6	Engagement and Interactivity	4	5
7	Language Appropriateness	4	5
8	Content Completeness	4	5
9	Industry Relevance	5	5
10	Integration of Human-Centric Values	4	5

No	Indicator	Score Obtained (x)	Ideal Score (xi)
	Total	43	50

The material validation resulted in an **86% score**, indicating strong alignment with vocational learning needs and the integration of smart technology and human-centric values. Further trials with student groups also yielded promising results.

Table 3. Results of Small and Large Group Trials

No	Group	Percentage	Validity Criteria
1	Small Group	87 %	Very Valid
2	Large Group	89 %	Very Valid

These findings reinforce that the developed model is feasible and effective for implementation in vocational schools.

The integration of human-centric values into the model encourages the development of empathy, communication skills, and teamwork, crucial competencies for today's collaborative digital workplace. This aligns with the study by Barkah et al. (2024), which emphasizes the value of human-centered learning design in creating meaningful and inclusive learning experiences. Additionally, the use of tools such as Google Workspace, Zoom, and Trello enhances learning efficiency, accessibility, and student engagement, consistent with previous findings (Husna & Wiratmo, 2023; Suputra & Susanto, 2023). Real-world simulations through digital projects, such as creating customer service SOPs, e-filing systems, or cloud-based reports, further equip students with practical skills relevant to modern office settings.

One of the model's key strengths is its web-based accessibility, enabling students to engage with materials anytime and anywhere, while teachers can monitor student progress in real-time. This digital format serves not just as a learning platform, but as a simulation tool that mirrors real workplace dynamics, deadlines, and professional communication standards—thus fostering adaptive and responsive skills vital to the Society 5.0 framework (Fukuda, 2020). Despite these advantages, successful implementation of the model depends heavily on teachers' and schools' readiness to adopt technology and apply project-based approaches. Continuous training and mentoring are essential to ensure optimal facilitation. Moreover, digital infrastructure availability remains a determinant factor in model adoption across schools.

With its comprehensive approach, from planning, digital collaboration, and project execution to reflective learning, Smart Innovation for Future Office Learning has proven to be a transformative educational innovation. It enhances both the technical and interpersonal capacities of vocational students, aligning educational practices with the demands of the 21st century.

CONCLUSION

The development of the *Smart Innovation for Future Office Learning* model represents a strategic response to the growing demands of vocational education in the era of Society 5.0. By integrating smart technology with a human-centric approach, this model enhances both technical competencies and interpersonal skills of vocational students in Office Management and Business Services. Validation results strongly support the feasibility of this model. Media experts evaluated aspects such as design, navigation, and user experience, resulting in a total score of 45 out of 50 (90%), which indicates a very high level of feasibility. Material experts assessed curriculum relevance, content accuracy, and integration of human-centric values, producing a score of 43 out of 50 (86%), categorized as highly valid. Furthermore, field trials involving vocational students showed consistently positive outcomes, with the small group trial achieving 87% validity and the large group trial 89% validity, both classified as very valid. These results

confirm that the model is both pedagogically relevant and technically feasible for implementation.

This model not only bridges the gap between education and industry but also supports the formation of adaptive, collaborative, and innovative learners. Its interactive web-based platform and project-based learning orientation create a realistic and engaging learning environment that mirrors the modern workplace. To ensure successful implementation, however, continuous teacher training and adequate digital infrastructure remain essential. Ultimately, this study contributes to the advancement of vocational learning innovation by offering a practical, validated, and future-oriented model that aligns vocational education with both technological advancements and the human values emphasized in Society 5.0.

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