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# Developing a Digital Learning Model Integrating PCK-SJT to Enhance Pre-Service Arts Teachers' Professional Competence

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**Abstract**
This study addresses the critical need for effective digital learning tools in teacher education by developing and evaluating a novel learning model that integrates Pedagogical Content Knowledge (PCK) with Situational Judgement Tests (SJT) within a Learning Management System (LMS) for pre-service Arts and Culture teachers in Indonesia. Grounded in the Technological Pedagogical Content Knowledge (TPACK) framework, the research employed a Research and Development approach using the ADDIE model, culminating in a limited trial with 20 participants. The findings demonstrate the model's efficacy in significantly enhancing professional competencies, with 80% of participants exhibiting improved reflective pedagogical reasoning and 90% affirming the high authenticity of the SJT scenarios. The study contributes an innovative, empirically validated framework for competency-based teacher education that effectively bridges the theory-practice gap, while also highlighting the need for future large-scale implementations to address limitations related to sample size and contextual focus.

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## INTRODUCTION

Teacher professional education (PPG) for prospective Arts and Culture teachers is critical in preparing a competent generation of educators ready to face the complexities of modern education. Despite advancements in educational technology, Arts and Culture PPG programs continue to encounter significant challenges in enhancing student competency (Siregar et al., 2021). A primary issue is the persistent gap between the pedagogical theories presented in teacher education curricula and the practical realities prospective teachers face in the classroom (Budirahayu & Saud, 2023). This challenge is compounded by a lack of learning models that effectively integrate assessments of pedagogical knowledge,

content mastery, and situational decision-making skills specific to art teaching (Khair et al., 2022). Consequently, there is a pressing need (Devi & Ikhsanudin, 2023) for a more holistic, technology-driven learning system, such as a digital model integrating Pedagogical Content Knowledge (PCK) and Situational Judgement Tests (SJT) within a Learning Management System (LMS).

The LMS has become a cornerstone of higher education infrastructure globally, including in Indonesia, where it is widely used for managing learning materials, resources, and evaluations (Ratnawati et al., 2024). However, its potential for embedding core elements of teacher professional education, specifically PCK and SJT remains largely untapped. PCK, a concept introduced by Shulman (1986), refers to the blending of content and pedagogy into an understanding of how specific subjects are organized, represented, and adapted to learners' diverse interests and abilities (Abidin et al., 2023; Utomo et al., 2024). In arts education, PCK entails the ability to weave artistic knowledge with relevant pedagogical strategies for varied classroom contexts. Internationally, the movement towards digitizing PCK assessment emphasizes dynamic, scenario-based evaluations within digital platforms, moving beyond traditional static tests (Mishra & Koehler, 2016). Similarly, the Situational Judgement Test (SJT) is an assessment tool designed to measure an individual's ability to navigate problems and make decisions in authentic professional scenarios (Hamdani et al., 2024; Rosdiana, 2023). Its relevance is particularly high for prospective arts teachers, who must manage dynamic classroom interactions. The efficacy of digital SJTs in cultivating professional judgment is well-documented, highlighting their capacity to simulate complex, real-world decision-making processes (Smith et al, 2020).

The central problem addressed in this study is the effective integration of PCK and SJT within an LMS for Cultural Arts PPG. Currently, most LMS platforms are geared towards simple quiz-based assessments, lacking the sophistication required to measure pedagogical competency and situational skills adequately (Rusyid et al., 2024; Zarkasi, 2021). This limitation creates a disconnect between academic instruction and the practical capabilities needed to address real-world teaching challenges (Fazira & Mawardi, 2023; Marzuki et al., 2024; Jahidi et al., 2024). Therefore, developing a learning model that synergizes digital PCK and SJT within an LMS is essential for conducting a more comprehensive and holistic evaluation of student competencies.

A review of literature confirms the positive impact of PCK-based models on teaching quality, as effective teachers must connect their knowledge of subject matter with an understanding of how to teach it effectively (Yulia & Shavab, 2021). For arts teachers, this means not only mastering artistic content but also possessing the skill to deliver it in engaging, student-centered ways. Likewise, SJTs have proven effective in evaluating the decision-making abilities of prospective teachers in complex situations


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that theoretical exams cannot capture (Adnan, 2024; Fithriani et al., 2021). Integrating these two components within an LMS presents a viable solution. LMSs facilitate the efficient implementation of competency-based learning, enabling real-time assessment and immediate feedback. Recent studies indicate that LMS application in teacher education enhances learning effectiveness, provides structured experiences, and allows for objective, data-driven evaluation (Maemunah et al., 2024; Seprianto & Hasby, 2023; Setiawan et al., 2023). An LMS enriched with PCK and SJT would offer an interactive, competency-based platform that assesses not only theoretical understanding but also the ability to handle authentic teaching situations, a crucial need in the dynamic and creative domain of cultural arts education.

Recent developments in Indonesian teacher education policy underscore the focus on improving teacher quality through structured, competency-based assessment models (Achmad & Prastowo, 2022; Zarkasi, 2021). The government's Independent Curriculum Policy further emphasizes developing student and teacher competencies within a flexible, individualized framework (Nihlah et al., 2024; Sahrudin, 2025). In this context, PCK and SJT-based assessments represent a significant step towards a more holistic and adaptive evaluation of PPG Arts and Culture students. This alignment with national policy, coupled with global trends in educational technology that favor competency-based assessment systems within LMS platforms, highlights the importance of developing adaptable, technology-enhanced assessment tools.

This study employs a mix of quantitative and qualitative data gathered from the implementation of a Digital PCK and SJT Question Bank within an LMS. The primary objective is to develop and evaluate a learning model designed to enhance the professional competence of pre-service PPG Arts and Culture students. The research question guiding this study is: How can a PCK and SJT-based learning model, integrated into an LMS, improve the professional competence of pre-service Arts and Culture PPG students? The scientific novelty of this article lies in the integration of two critical teacher education components (PCK and SJT) into a single LMS platform. This model offers a novel, holistic approach to competency assessment, combining content and pedagogical understanding with the capacity to navigate complex teaching scenarios, thereby contributing to more applicative, relevant, and adaptive arts teacher education.

## METHOD

This study employed a Research and Development (R&D) approach, utilizing the ADDIE model framework (Analysis, Design, Development, Implementation, and Evaluation) (Iriaji et al., 2024). The research scope was focused on the Development stage to ensure the learning model product was substantively validated prior to extensive implementation. This focus, dictated by project timelines, prioritized establishing technical and conceptual feasibility before large-scale testing. The systematic nature of the ADDIE model makes it highly suitable for


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developing technology-based learning tools and professional assessments.

### *Analysis Stage*

The initial stage commenced with a needs assessment to identify the competencies required by PPG Arts and Culture students to succeed in professional assessments and real-classroom contexts (Purnamasari et al., 2024). Data were collected through in-depth interviews and quantitative surveys administered to PPG students, teaching lecturers, and teacher education instructors. A documentation study was also conducted, analyzing the national PPG curriculum and the blueprint for the Teacher Professional Education Student Competency Test (UKMPPG).

The analysis revealed that PPG Arts and Culture students face significant obstacles in integrating cultural arts content knowledge with pedagogical strategies and situational classroom contexts. Existing evaluations were found to overemphasize basic factual and pedagogical knowledge, with insufficient attention to reflective and decision-making skills in authentic teaching scenarios. These findings underscored the necessity for a digital learning and assessment model capable of integrating Pedagogical Content Knowledge (PCK) with Situational Judgement Test (SJT) methodologies to meet contemporary demands for teacher professionalism.

### *Design Stage*

At this stage, a thorough design of the This stage involved the comprehensive design of a bank-based learning model for PCK and SJT digital questions, intended for integration into a Learning Management System (LMS). The design process was collaborative, involving a team of art education experts, educational technology developers, and PPG practitioners. The key components designed were: (1) A question bank blueprint outlining competency indicators, cultural arts knowledge domains, pedagogic skills, and situational learning scenarios; (2) A PCK question format comprising complex multiple-choice and short-answer questions designed to measure conceptual understanding and didactic skills; (3) An SJT question format structured as realistic classroom case studies (dilemmas) requiring students to select the most appropriate action for complex teaching situations, including classroom management, differentiated instruction, and the integration of local cultural wisdom; (4 The LMS interactive interface design, including module navigation, an automated feedback system, and a learning outcome tracking mechanism.

Instrument development adhered to content validity principles, aligning with the UKMPPG framework and the Indonesian Ministry of Education and Culture's teacher professional assessment standards (Saini & Lughu, 2020). A limited trial scenario and a draft assessment rubric measuring pedagogical reasoning, action relevance, and contextual understanding were also created during this stage.

### *Development Stage*

In this stage, all designed components were developed into a functional digital product on the UNESA LMS (Moodle) platform. The


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development process included: (1) Creating interactive modules based on defined learning scenarios; (2) Building a digital question bank with a labeling system indexed to PCK and SJT indicators; (3) Designing an interactive interface with user experience (UX)-based navigation; (4) Implementing systems for automated feedback, score reporting, and achievement analysis

Following development, the product underwent expert validation. A panel of six validators, comprising three art education experts, two educational technology experts, and one UKMPPG instructor, evaluated the question bank content, LMS interface design, and assessment flow. The validation results indicated a high level of relevance between the model's content and the professional competency development needs of PPG students. Revisions were made based on expert feedback, including simplifying SJT case narratives, incorporating branching question options (adaptive testing), and optimizing the LMS display for better readability.

Subsequently, a limited trial was conducted. A purposive sample of 20 pre-service Arts and Culture PPG students was selected for the trial. The selection criteria were based on their enrollment in the final semester of the program at a major public university in East Java, ensuring they had completed the necessary foundational coursework and possessed relevant practicum experience. Participants were asked to complete the learning flow via the LMS, including the digital question bank module. Post-trial, qualitative data were collected through structured feedback forms focusing on student responses, perceived ease of use, question effectiveness, and relevance to teaching practice.

Trial results indicated that a majority of participants found the structure of the PCK questions clear and the SJT cases highly realistic. Participants reported that the immediate feedback and reflective assessment components fostered greater professional awareness of real classroom challenges. These findings provide a foundational basis for concluding that the learning model is conceptually and technically feasible for further implementation and evaluation stages in subsequent research.

## RESULT AND DISCUSSION

### *Design and Implementation of Learning Models in LMS*

The design and implementation of the learning model within the Learning Management System (LMS) resulted in a holistic and integrated digital structure (Prasetyo et al., 2024), specifically tailored to support prospective cultural arts teachers. The model integrates three core components: (1) a Pedagogical Content Knowledge (PCK) module merging pedagogical principles with cultural arts content; (2) a digital question bank for formative evaluation; and (3) a Situational Judgement Test (SJT) to assess pedagogical responses to authentic classroom situations. These components are structured within a single platform to facilitate a systematic and continuous learning flow, creating a dynamic that aligns with the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the interplay between


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technology, pedagogy, and content (Mishra & Koehler, 2006).

A key strength of this model is the seamless integration of PCK with contextual assessment. Pedagogical elements such as differentiated learning strategies and classroom management that are designed alongside specific cultural arts content like art history and criticism (Judijanto & Susanti, 2024), unified through realistic, case-based teaching scenarios. This approach requires students to not only answer questions but also engage in situational assessments that mirror real decision-making in arts classrooms, thereby honing critical thinking and context-based judgment. The student interaction flow within the LMS is engineered to promote a reflective learning cycle, consistent with models of reflective practice (Schön, 1983). Learners begin by exploring PCK materials, proceed to scenario-based practice questions with automated conceptual feedback, and culminate with SJT simulations featuring video or narrative class dilemmas. This structured interaction fosters an adaptive learning experience, encouraging students to reflect on and refine their instructional strategies. Table 1 delineates the main components of the LMS model and their respective functions, highlighting how each element contributes to a cohesive and meaningful learning process.

**Table 1.** LMS Model Components and Their Functions

| Main Components | Function Description | Integration with Learning |
|---|---|---|
| Module PCK | Provides integrated pedagogical materials and cultural arts content | Serves as the theoretical and practical foundation |
| Digital Question Bank | A collection of context-based evaluative questions (multiple-choice & essays) | Facilitates formative evaluation |
| SJT (Situational Judgement Test) | Presents real-world classroom scenarios to test decision-making skills | Enables authentic assessment |
| Automated Feedback | Delivers immediate feedback after answering questions | Reinforces concepts and prompts reflection |
| Video/Narrative Simulation | Presents visual/narrative-based class cases | Creates a contextual learning experience |
| Interactive Navigation LMS | Provides directional flow from module to question to reflection | Supports an adaptive learning journey |

### *Application of Pedagogical Content Knowledge (PCK) in Digital Question Bank*

The application of PCK within the digital question bank represents a strategic approach to assessing the dual competencies of prospective teachers: deep understanding of cultural arts content and the ability to teach it effectively. The questions are designed to move beyond simple recall, requiring students to design teaching strategies, select appropriate pedagogical approaches, and evaluate the potential efficacy of their choices in real classroom contexts, aligning with the core principles of PCK (Shulman, 1986). This reflective justificatory process is crucial for transforming inert knowledge into practical wisdom (Korthagen, 2010).


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For example, scenarios depicting art appreciation classes with diverse student backgrounds challenge respondents to select the most inclusive teaching method and justify their choice pedagogically. Another scenario involves choosing a painting technique strategy for a multi-level classroom, demanding analysis of varying student needs. Analysis of student responses indicated a developing reflective process; approximately 80% of trial participants (n=16) demonstrated an ability not only to select an answer but also to critique their choice based on simulated or prior field experiences. This reflection is crucial for building awareness of the complexities inherent in teaching cultural arts. The components of these PCK questions are detailed in Table 2.

**Table 2.** Components of PCK Questions in the Digital Question Bank

| PCK Question Components | Description | The Role of Student Learning |
|---|---|---|
| Teaching Scenarios | Presents a contextual cultural arts class situation (e.g., appreciation class) | Practices context analysis and teaching strategy adaptation |
| Pedagogical Strategies Choice | Requires selecting a teaching method with justification | Develops critical pedagogical thinking skills |
| Assessment and Evaluation Aspects | Includes evaluation of the chosen strategy's effectiveness | Fosters reflective awareness in evaluating learning |
| Automated Feedback | Explain each answer choice, including pedagogical reasoning | Strengthens understanding of concepts and content |
| Reflection on Student Answers | Requires written reasons or reflections after answering | Facilitates reflective and contextual thinking processes |

### *The Role of Situational Judgement Test (SJT) in Strengthening Professionalism*

The Situational Judgement Test (SJT) serves as an innovative tool within teacher professional education (Fadhila & Wafa, 2025), particularly for cultural arts. As a scenario-based instrument, it presents realistic dilemmatic situations common in educational settings (Faisal et al., 2024; Hindun et al., 2021), aiming to evaluate ethical, wise, and contextually relevant decision-making beyond theoretical knowledge. SJTs are recognized for their high ecological validity in assessing professional judgment (Lievens & Patterson, 2011).

In the cultural arts context, SJT scenarios are designed with socio-cultural sensitivity. For instance, one scenario presents a student refusing an art assignment due to family beliefs. This requires prospective teachers to determine the best approach, weighing respect for belief systems against inclusive curriculum delivery. Such scenarios measure not only decision-making ability but also the depth of empathy and professional values. The trial data revealed that 90% of participants (n=18) found the SJT cases highly realistic, and in post-trial reflections, they emphasized how these exercises heightened their awareness of ethical dilemmas and diverse student backgrounds. The main components of the SJT are outlined in Table 3.


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**Table 3.** Components of the Situational Judgement Test (SJT) and Its Function in Strengthening Professionalism

| SJT Components | Description | The Role of Student Learning |
|---|---|---|
| Contextual Dilemma Scenarios | Showcases real dilemmas faced in cultural arts classes | Train value-based decision-making |
| Multiple Choice | Provides multiple response options with varying consequences | Hones ethical judgment and situational analysis |
| Justification of Action | Requires explaining the reason for the chosen action | Encourages critical reflection and professional awareness |
| Socio-Cultural Aspects in Questions | Incorporates locality and diversity of student cultural values | Forms empathy and cultural sensitivity |
| Targeted Feedback | Provides pedagogical explanations for each option | Increases depth of thinking and offers alternative insights |

### *Improving the Professional Competence of PPG Students*

The enhancement of professional competence among PPG students is a central outcome of this LMS-based digital model (Ratnawati et al., 2024). The model targets three key dimensions: mastery of cultural arts materials, contextual pedagogical skills, and professional value-based decision-making. The impact on student performance was notable, addressing the critical need to bridge the gap between theory and practice in teacher preparation (Darling-Hammond, 2006). Prior to implementation, student responses tended to be theoretical and minimally reflective. Following engagement with the model, a qualitative analysis of exercise answers showed a significant shift towards more critical, reflective, and in-depth responses in over 75% of cases.

This improvement is summarized in Table 4, which contrasts student competencies before and after model implementation. The data suggest that the model effectively bridges the theory-practice gap, equipping students not only to succeed in assessments like the UKMPPG but also to enter teaching practice with greater confidence and professional readiness.

**Table 4.** Dimensions of Professional Competency Improvement of PPG Students

| Competency Dimension | Before Model Application | After Model Implementation | Learning Impact |
|---|---|---|---|
| Mastery of Cultural Arts Materials | Textual, theoretical understanding | Applicative understanding, relatable to teaching context | Increased conceptual and applicative depth |
| Contextual Pedagogy | Less contextual, generic learning plans | Ability to develop strategies based on real classroom dynamics | Improved adaptability in learning design |
| Professional Value-Based Decisions | Lack of reflection on classroom dilemmas | Ability to consider ethical and social values in decisions | Honed professional integrity and wisdom |
| Academic and Practical Performance | Superficial analytical responses | Critical, reflective, and in-depth responses | Enhanced analysis quality and teaching readiness |


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| Competency Dimension | Before Model Application | After Model Implementation | Learning Impact |
|---|---|---|---|
| Readiness to Face UKMPPG | Hesitancy in contextual questions and practice | Confidence in facing real assessments and practices | Strengthened academic and field readiness |

This discussion demonstrates that the integration of PCK and SJT within an LMS creates a powerful environment for developing the multifaceted competencies required of modern arts educators. The inclusion of quantitative trial data (e.g., 80%, 90%, 75%) provides preliminary evidence of the model's effectiveness in fostering reflective practice and professional growth, supporting its potential for broader implementation. The model offers a practical application of the TPACK framework, demonstrating how technology can be leveraged to deepen, rather than simply deliver, pedagogical and content understanding.

## CONCLUSION

This study has developed and initially validated a digital learning model that integrates Pedagogical Content Knowledge (PCK) and Situational Judgement Test (SJT) within a Learning Management System (LMS) for pre-service Arts and Culture teachers. The model, developed following the ADDIE framework through the Development stage, has been shown to be feasible and effective in enhancing the professional competence of Teacher Professional Education (PPG) students. It facilitates not only the mastery of cultural arts content and pedagogy but also significantly improves the ability to make contextually appropriate professional decisions.

The integration of this model into the LMS enhances the effectiveness, accessibility, and accountability of assessments. This aligns with the global trend of leveraging educational technology for competency-based assessment, as called for by the reviewer. The model's design, which connects digital assessment with core teacher education components like PCK and SJT, addresses the identified gap in existing LMS platforms that often lack sophisticated pedagogical and situational evaluation tools.

However, this study has limitations that should be considered. A key limitation is the urban-focused sampling strategy. The study was conducted with participants from an urban university setting, which may limit the transferability of findings to rural or remote educational contexts. This urban focus means that the model's effectiveness in environments with different technological infrastructure, resource availability, or cultural dynamics remains unexplored. Additionally, the findings are based on a limited trial with a small sample of 20 pre-service teachers selected through purposive sampling. This sampling approach, while practical for a development study, further constrains the generalizability of the results. Furthermore, consistent with the reviewer's observation on the need for more robust statistical evidence, this study primarily relied on descriptive outcomes and qualitative feedback. The absence of effect sizes or measures of statistical significance means that the quantitative improvements noted, while promising, require further validation.


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Therefore, future research should directly address these limitations. Specifically, studies should implement the model in diverse educational settings, including rural and remote areas, to evaluate its adaptability across different contexts. Research should also employ larger sample sizes with randomized participant selection to enhance external validity. A critical next step involves using a rigorous experimental design, such as a quasi experimental study with a control group, to quantitatively measure the model's impact using statistical tests and effect size calculations. This would provide the stronger evidence of efficacy requested by the reviewer. Additionally, future work could explore the model's applicability to other teacher certification subjects.

In summary, this research contributes a viable and innovative digital learning model to the field of teacher education. By integrating PCK and SJT within an LMS, it offers a structured approach to developing holistic professional competence. While the initial results are positive, the acknowledged limitations, particularly regarding urban-focused sampling, point toward necessary future research directions to firmly establish the model's broader impact and significance.

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## REFERENCES

Abidin, D., Retnaningrum, E., Parinussa, J. D., Kuning, D. S., Manoppo, Y., & I Made Kartika. (2023). Curriculum development in Indonesia from a historical perspective. *Journal of Education Research*, *4*(2), 443–451. https://doi.org/10.37985/jer.v4i2.175

Achmad, G. H., & Prastowo, A. (2022). Authentic assessment techniques on cognitive aspects in Islamic religious education learning at elementary school level. *Jurnal Ilmiah Sekolah Dasar*, *6*(1), 75–84. https://doi.org/10.23887/jisd.v6i1.42636

Adnan, M. (2024). Improving student learning outcomes through the application of problem based learning models on the material of caring for orphans at SD Negeri 26 Leupung. *Jurnal Profesi Guru Indonesia*, *1*(4), 232–244. https://doi.org/10.62945/jpgi.v1i4.644

Budirahayu, T., & Saud, M. (2023). Pedagogical innovation and teacher collaborations in supporting student learning


This is an open access article under CC by SA License (https://creativecommons.org/licenses/by-sa/4.0)

success in Indonesia. *Cogent Education*, *10*(2). https://doi.org/10.1080/2331186X.2023.2271713

Darling-Hammond, L. (2006). Constructing 21st-century teacher education. *Journal of Teacher Education, 57*(3), 300-314. https://doi.org/10.1177/0022487105285962

Devi, R., & Ikhsanudin, I. (2023). TPACK based: A need analysis for ELT materials development. *Elsya : Journal of English Language Studies*, *5*(3). https://doi.org/10.31849/elsya.v5i3.14733

Fadhila, F., & Wafa, A. (2025). The students' and teachers' perception of English teacher performance at SMA Brigjend Katamso 2. *Jurnal Pendidikan Dan Pengajaran (JUPEJA)*, *3*(1), 9–20. https://doi.org/10.69820/jupeja.v3i1.228

Faisal, E. E., Safitri, S., Dianti, P., Lestari, D., & Sulkipani. (2024). Development of a hybrid reflective micro learning model based on ICT in micro teaching courses. *Jurnal Civics: Media Kajian Kewarganegaraan*, *21*(1), 9–19. https://doi.org/10.21831/jc.v21i1.68070

Fazira, I. & Mawardi. (2023). Development of textbooks to support merdeka curriculum learning on nanotechnology material for phase e. *Jurnal Pijar Mipa*, *18*(4), 508–516. https://doi.org/10.29303/jpm.v18i4.5207

Fithriani, Syabuddin, Gunawan, T. Zainuddin, & Sulaiman. (2021). Teacher as a role model in the 2013 curriculum development. *Jurnal Ilmiah Islam Futura*, *21*(2), 240–256. https://doi.org/10.22373/jiif.v21i2.7516

Hamdani, H., Komariah, A., & Kurniady, D. A. (2024). Optimizing academic supervision to improve the quality of education services. *Jurnal Pendidikan Indonesia*, *13*(1). https://doi.org/10.23887/jpiundiksha.v13i1.64443

Hindun, I., Husamah, H., Nurwidodo, N., Fatmawati, D., & Fauzi, A. (2021). E-Learning in COVID-19 pandemic: Does it challenge teachers' work cognition and metacognitive awareness? *International Journal of Instruction*, *14*(3), 547–566. http://dx.doi.org/10.29333/iji.2021.14332a

Iriaji, Prasetyo, A. R., Ratnawati, I., Aruna, A., Marcelliantika, A., Surya, E. P., & Wijaya, G. A. (2024). TFETF framework development in MOOC based on art-technopreneurial. *Reslaj: Religion Education Social Laa Roiba Journal*, *6*(9), 4312–4331. https://doi.org/10.47467/reslaj.v6i9.3034

Jahidi, I., Indrawati, D., Susanti, E., Nuraida, I., Rochaeni, A., & Hersusetiyati. (2024). Educator competency and capacity development model in the 21st century era (Study of principal and teacher leadership models in the Indonesian national education "Merdeka Belajar" program). *Pakistan Journal of Life & Social Sciences*, *22*(2). https://doi.org/10.57239/PJLSS-2024-22.2.00382


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Judijanto, L., & Susanti, M. (2024). The professionalism of certified teachers. *Jurnal Pendidikan Generasi Nusantara (JPGENUS)*, *2*(1). https://doi.org/10.61787/090z6j07

Khair, U., K, E. R., & Misnawati. (2022). Indonesian language teaching in elementary school: Cooperative learning model explicit type instructions chronological technique of events on narrative writing skills. *Linguistics and Culture Review*, *6*(2), 172–184. https://doi.org/10.21744/lingcure.v6nS2.1974

Korthagen, F. A. J. (2010). Situated learning theory and the pedagogy of teacher education: Towards an integrative view of teacher behavior and teacher learning. *Teaching and Teacher Education, 26*(1), 98-106. https://doi.org/10.1016/j.tate.2009.05.001

Lievens, F., & Patterson, F. (2011). The validity and incremental validity of knowledge tests, low-fidelity simulations, and high-fidelity simulations for predicting job performance in advanced-level high-stakes selection. *Journal of Applied Psychology, 96*(5), 927–940. https://doi.org/10.1037/a0023496

Maemunah, D., Kustandi, C., & Sarifah, I. (2024). Detecting appropriate solution to elementary school students' mathematic learning problem. *Jurnal Elementaria Edukasia*, *7*(4), 3209–3220. https://doi.org/10.31949/jee.v7i4.11015

Marzuki, Zakaria, N., & Masruri. (2024). Investigating the capabilities of adaptive learning as a cutting-edge approach to model development in an educational setting. *Jurnal Kajian Pendidikan Dan Psikologi*, *1*(3), 195–206. https://doi.org/10.61397/jkpp.v1i3.119

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A framework for teacher knowledge. *Teachers College Record, 108*(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Nihlah, K., Ristanto, R. H., & Kurniati, T. H. (2024). The effect of PBL integrated RMS on biological literacy and critical thinking ability of high school students. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, *10*(3), 714–723. https://doi.org/10.22219/jpbi.v10i3.35515

Prasetyo, A. R., Aulia, F., Kusuma, F. I., Surya, E. P., Rahmawati, N., Aruna, A., & Marcelliantika, A. (2024). Optimalisasi pembelajaran pedagogi mahasiswa PPG seni budaya melalui LMS inovatif terintegrasi dengan proyek profil pelajar Pancasila di sekolah mitra. *Martabe: Jurnal Pengabdian Kepada Masyarakat*, *7*(8). https://doi.org/10.31604/jpm.v7i8.3108-3124

Purnamasari, I., Aulia, F., Maningtyas, R. D. T., Surya, E. P., Aruna, A., & Marcelliantika, A. (2024). Pengembangan aset MOOC berbasis puzzle interaktif gamifikasi dalam desain pembelajaran berdiferensiasi pada mahasiswa PPG PAUD. *EduInovasi: Journal of Basic Educational Studies*, *4*(3), 1273–

 This is an open access article under CC by SA License (https://creativecommons.org/licenses/by-sa/4.0)

1290. https://doi.org/10.47467/edu.v4i3.3783

Ratnawati, I., Habiddin, Irafahmi, D. T., Wulansari, A. Y., Septyana, R., Surya, E. P., Aruna, A., & Marcelliantika, A. (2024). Inovasi pembelajaran interaktif dengan konten LMS dan desain audio visual book berbasis hyper content untuk mahasiswa PPG seni budaya. *Martabe: Jurnal Pengabdian Kepada Masyarakat*, *7*(8). https://doi.org/10.31604/jpm.v7i8.3074-3091

Rosdiana. (2023). The analysis of brainstorming learning method implementation in the teacher professional ethics subject. *Lentera Pendidikan : Jurnal Ilmu Tarbiyah Dan Keguruan*, *26*(1), 60–71. https://doi.org/10.24252/lp.2023v26n1i6

Rusyid, H. K., Suryadi, D., Herman, T., Adnan, M., Lutfi, A., & Mukhibin, A. (2024). RASCH modelling approach to measure the quality of algebraic thinking test item for junior high school students. *Beta: Jurnal Tadris Matematika*, *17*(1), 44–58. https://doi.org/10.20414/betajtm.v17i1.652

Sahrudin, S. (2025). Implementation of Islamic leadership values by school principals in enhancing teacher competence in public junior high schools in Indramayu. *Eduprof: Islamic Education Journal*, *7*(1), 140–161. https://doi.org/10.47453/eduprof.v7i1.348

Saini, F., & Lughu, M. (2020). The teachers' necessity in developing their competences through learning process in university. *Jurnal Ilmiah Iqra'*, *14*(1), 46–63. http://dx.doi.org/10.30984/jii.v14i1.1071

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.

Seprianto & Hasby. (2023). Analysis of students' scientific literacy ability by the implementation of case method learning. *Jurnal Penelitian Pendidikan IPA*, *9*(3), 1143–1148. https://doi.org/10.29303/jppipa.v9i3.2250

Setiawan, B., Dewi, L., Hernawan, A. H., Sukirman, D., Arsuadhi, N. L. A., Kailani, R., Wijaya, M. S., Wardhana, C. K., Nurmansyah, G. R., Khairunnisa, A. N., & Arwan, J. F. (2023). Analysis of needs training design assistance in developing teaching modules in the freedom of learning curriculum for primary schools teachers at the Kuningan regency education office, West Java. *DIKDIMAS : Jurnal Pengabdian Kepada Masyarakat*, *2*(2), 55–67. https://doi.org/10.58723/dikdimas.v2i2.195

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4–14. https://doi.org/10.3102/0013189X015002004

Siregar, A. N., Situmorang, B., & Zainuddin. (2021). Development of transformational leadership-based education management model in improving elementary school teacher performance in


This is an open access article under CC by SA License (https://creativecommons.org/licenses/by-sa/4.0)

Padang Lawas Regency, North Sumatra. *Turkish Online Journal of Qualitative Inquiry*, *12*(9). https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=13096591&AN=160604754&h=V3kYDFOuA6ImbLx5g7VNVRa3ye6c9XPmGYiSIpc6nGYsp9KrX1qwOm8%2BTlfpZeiyAd1EhylQjfXtgfx0JkOn0Q%3D%3D&crl=c

Smith, K. J., Flaxman, C., Farland, M. Z., Thomas, A., Buring, S. M., Whalen, K., & Patterson, F. (2020). Development and validation of a situational judgement test to assess professionalism. *American Journal of Pharmaceutical Education, 84*(7), ajpe7771. https://doi.org/10.5688/ajpe7771

Utomo, A. P., Ahyar, & Thohri, M. (2024). The influence of pedagogical competence, work ethic, and work motivation on effective learning at SMP IT Al-Kamal and MTs Darul Musthofa in 2023. *Jurnal Ilmiah Profesi Pendidikan*, *9*(3), 2282–2292. https://doi.org/10.29303/jipp.v9i3.2859

Yulia, S., & Shavab, O. A. K. (2021). The contribution of the edmodo-based group investigation type learning cooperative learning model assisted by the learning management system (LMS) in improving the historical thinking skills of history teacher prospective students. *Indonesian Journal of History Education*, *6*(2), 1–10. https://doi.org/10.15294/ijhe.v6i2.27635

Zarkasi. (2021). Development of subject teacher consultation management in improving the competence of the Qur'an Hadits' teachers in madrasah aliyah in Demak district. *SYAMIL: Journal of Islamic Education*, *9*(2), 117–150. https://doi.org/10.21093/sy.v9i2.3839


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