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Evaluating Teaching Assistance Programs Using the CIPP Model and Cognitive Apprenticeship Framework

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Abstract: This study evaluates the Teaching Assistance program of a Madrasah Ibtidaiyah Teacher Education study program at an Islamic elementary school in Sidoarjo by integrating the CIPP (Context, Input, Process, Product) evaluation model with Cognitive Apprenticeship theory to assess professional identity formation. Utilising a qualitative case study design with the CIPP model of evaluation study, data were collected through document analysis, classroom observations, and structured interviews with key stakeholders, including the program head, field supervisors, preservice teachers as students' tutees, and tutor teachers. Thematic analysis was conducted using an interactive model, employing CIPP as the macro-framework and the six pillars of Cognitive Apprenticeship as the analytical lens. The findings indicate that the Teaching Assistance Program successfully facilitated the transfer of expert pedagogical reasoning. The pillars of modelling, coaching, and scaffolding organically emerged, enabling preservice teachers to overcome initial culture shock and achieve independent classroom mastery. However, the current Learning Management System (LMS) primarily serves as a summative tool and lacks the interactive features needed to support the articulation and reflection phases fully. Integrating Cognitive Apprenticeship within the MBKM framework effectively fosters preservice teachers' pedagogical reasoning. Upgrading the digital infrastructure to support asynchronous metacognitive reflection and providing specialised coaching for field supervisors are recommended to optimise the program.
Keywords: Cognitive apprenticeship, teacher education, teaching assistance program, CIPP of program evaluation

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A. Introduction

In the current era of disruption characterized by rapid scientific and technological advancements, higher education faces the critical challenge of preparing graduates who are highly adaptive to a complex global workforce (Meyer & Norman, 2020). Modern students are required to move beyond mere content mastery in their respective fields; they must develop robust 21st-century skills, particularly critical thinking, creative problem-solving, collaboration, and communication (Kivunja, 2015). Furthermore, the integration

of Technological Pedagogical and Content Knowledge (TPACK) is essential for future educators to continuously adapt to evolving pedagogical theories and technological integration (Santos & Castro, 2021). Consequently, global educational paradigms are shifting towards experiential, off-campus learning models designed to cultivate these practical competencies and bridge the gap between academic preparation and professional demands.

Responding to these global demands, the Indonesian higher education system implemented a curriculum that emphasises real-world experience and professional collaboration. Within teacher education, specifically the *Pendidikan Guru Madrasah Ibtidaiyah* (PGMI) or Madrasah Ibtidaiyah Teacher Education program, this policy translates into a comprehensive 20-credit Teaching Assistance Program. PGMI serves as an Education Personnel Education Institution called *Lembaga Pendidikan Tenaga Kependidikan* (LPTK) that parallels general elementary education programs but requires the additional competency of integrating Islamic religious knowledge into pedagogical practice. By extending the duration of field placement from traditional models to a robust 20 credits (Vhalery et al., 2022), the program provides prospective teachers with immersive exposure to school culture, curriculum management, and classroom dynamics, thereby fostering the practical adaptability required in modern educational environments (González-Pérez & Ramírez-Montoya, 2022).

To effectively transition from preservice students to professional educators, prospective teachers must develop a distinct, expert-oriented pedagogical mindset (Gulliksen & Hjardemaal, 2016). Extensive field experience enables novices to design instruction under real conditions, cultivating analytical and intuitive decision-making skills in a shorter timeframe (Kannengiesser & Gero, 2019). This professional identity formation is best understood through the lens of Cognitive Apprenticeship, where pedagogical knowledge is transferred and internalised through modelling, coaching, scaffolding, articulation, reflection, and exploration (Cakmakci et al., 2025). To ensure this intensive teaching assistance program effectively facilitates this transformation, rigorous evaluation is necessary. The CIPP model provides a structural framework for this evaluation (Stufflebeam, 1971), helping to assess how well the program alters preservice teachers' design and implementation of effective learning.

Extensive research has evaluated the teaching assistance program in Indonesia (Budi Bhakti et al., 2022; Fadhilah & Aini, 2025; Khaerunnisa et al., 2024; Nasution et al., 2023; Sumadi et al., 2023). Previous research on the evaluation of Teaching Assistant (TA) programs has generally focused on systemic effectiveness and participant satisfaction using various managerial models. Sumadi et al. (2023) and Bhakti et al. (2022) apply systemic approaches such as CIPP and Antecedent, Input, Transaction, Product, Outcomes (AITPO)'s combined model to analyze organizational aspects, inputs, and program outcomes comprehensively. On the other hand, studies by Nasution et al. (2023) and Fadhilah and Aini (2025) place greater emphasis on descriptive surveys to measure student satisfaction and the success of program implementation in the field. Meanwhile, Khaerunnisa et al. (2024) shift the focus to measuring the specific

competencies of prospective teachers, especially in mastering TPACK, using Kirkpatrick's evaluation levels.

However, most existing evaluations utilise a model to measure program efficiency in a broad sense, often overlooking the specific pedagogical transformation that occurs during the internship process, which bridges the gap between theory and practice. There is a lack of focus on how pedagogical knowledge is transferred and internalised through the lens of Cognitive Apprenticeship.

In the context of Islamic Elementary Schools, the challenge is even more complex as preservice teachers must integrate 21st-century skills with specific religious pedagogical values. Previous studies have not sufficiently addressed how the six pillars of Cognitive Apprenticeship—modelling, coaching, scaffolding, articulation, reflection, and exploration—are manifest within the *Merdeka Belajar Kampus Merdeka* (MBKM) framework, an Indonesian higher education reform policy that grants students up to three semesters of experiential learning outside their home study programs, to ensure that students do not merely 'work' at schools, but 'think and act' like expert educators. This study fills this gap by integrating the CIPP evaluation model with Cognitive Apprenticeship theory to provide a deeper understanding of the quality of professional identity formation in the Teaching Assistant Program. Therefore, this study evaluates the MBKM program by examining how the natural mentoring dynamics at the school align with the principles of Cognitive Apprenticeship, exploring how modelling, coaching, and scaffolding organically emerge to shape professional identity.

B. Method

The research employed a qualitative case study design utilising the CIPP evaluation model as a summative framework (Stufflebeam, 2003). This approach was selected to provide an in-depth, holistic description of the program's implementation and to uncover the factors influencing its effectiveness within a specific educational setting. While the CIPP model structured the macro-evaluation of the program, the Cognitive Apprenticeship framework was utilised as an analytical lens to examine the micro-pedagogical transformation occurring during the internship.

Data collection was conducted during the Teaching Assistance program involving sixth-semester students from the 2021 cohort of the PGMI study program at a State Islamic University in East Java, situated at an Islamic elementary school in Sidoarjo. The research process lasted over 3 weeks, namely 1 May – 6 June 2024, utilising snowball sampling as the research sampling technique. The research sampling technique is snowball sampling. Interviews were conducted with 8 informants: the Head of the PGMI Study Program, who also became the field supervisor, 2 students participating in the

program (student tutees), 3 teacher tutors, and 2 primary students who had learning experiences with the program participants.

The data collected consists of activity documentation and five recorded interviews, each averaging 15-30 minutes. Data collection is described in accordance with the steps of the CIPP model, as shown in Figure 1.

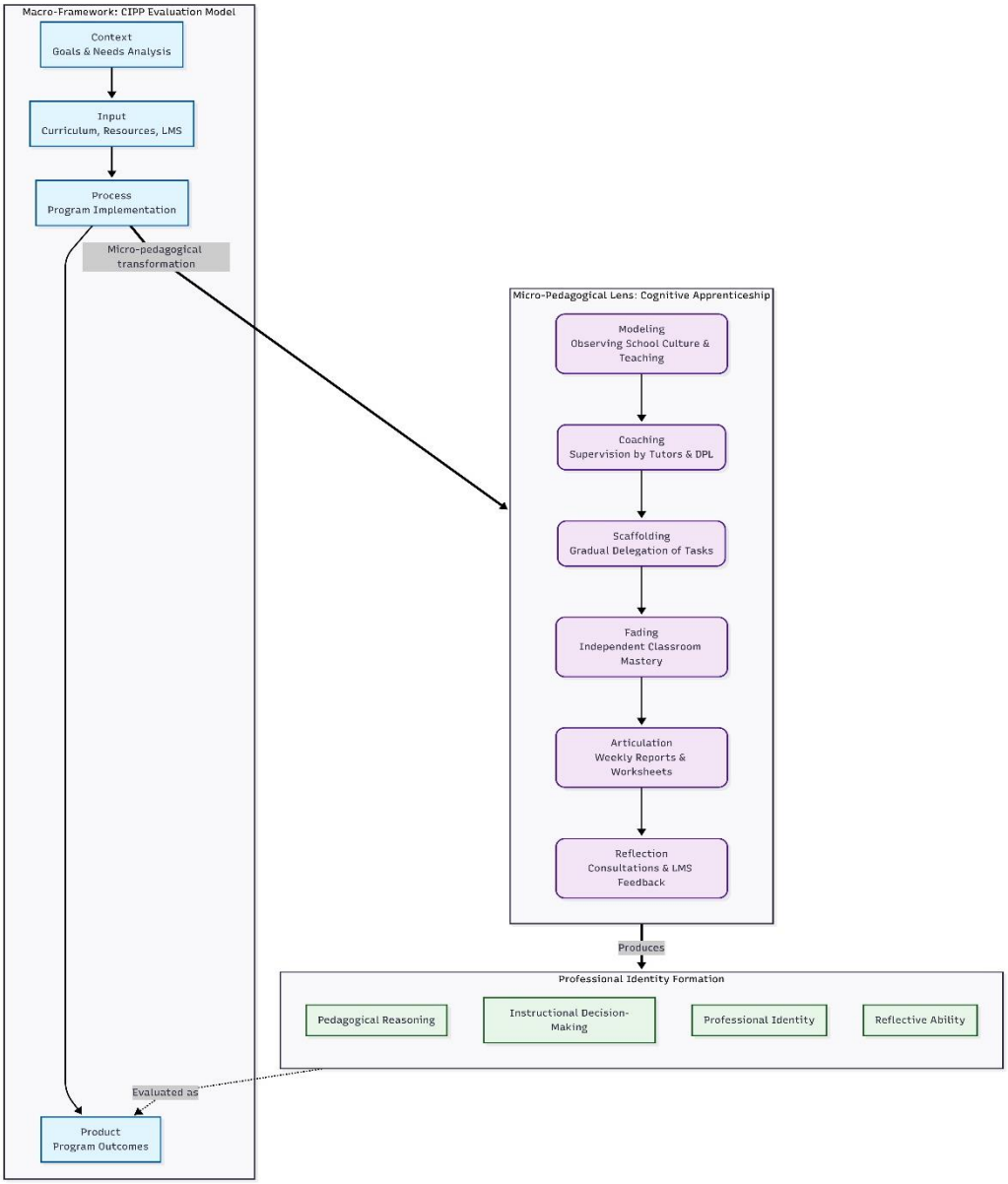

Figure 1. Conceptual Framework Integrating the CIPP Evaluation Model with Cognitive Apprenticeship Theory

Context Evaluation: In this step, the context of program implementation is identified and analysed. Context analysis is carried out to identify the needs required to achieve program objectives. Needs analysis was implemented by collecting documents related to teaching assistance, namely the MBKM curriculum in PGMI study programs,

and guidelines for implementing teaching assistance. In addition, information was collected through interviews with activity implementers to determine the goals of the teaching assistance program. Interviews were also conducted with school principals and students' tutees participating in the program to gain further insight into the needs and assets of the intended beneficiaries, as well as potential problems.

Input Evaluation: The input evaluation stage aims to analyse the program's strategy, plan, and budget. The researcher analysed interview results on the competencies of students who participated in the teaching assistance program and examined program resources, including the media used in the mentoring process and funding.

Process Evaluation: At this stage, the program's implementation is evaluated. Observations were made as students' tutees implemented teaching practices, based on documentation and interviews about their experiences during the 3-month field period. Researchers also interviewed accompanying teachers and students' tutees who received lessons from students' tutees participating in the teaching assistance program.

Product Evaluation: Product evaluation is carried out by assessing the program's achievements. Product evaluation is done by comparing the program's output and outcome through analysis of the assessment form. The results of the analysis are supported by interviews with tutor teachers, school principals, students' tutees, and field supervisors. At the same time, an analysis of the PGMI curriculum documents, as well as guidelines and guidance modules for implementing Teaching Assistance, was carried out. Table 1 below summarises the core interview questions.

Table 1. List of Core Interview Questions.

No.	Aspect	Informants	Question
1.	Context	Head of PGMI Study Program, Headmaster, Master Teacher, Participating Students	1) What do you expect from implementing this program? 2) What benefits do you get from this program?
2.	Input	Head of PGMI Study Program	1) What is the process for selecting partner schools for the teaching assistance program? 2) What is the selection process for students' tutees who can take part in the teaching assistance program?
		Headmaster	1) What is the process for selecting tutor teachers? 2) What is the process for schools joining the Teaching Assistance program?
3.	Process	Head of PGMI Study Program Supervisor Headmaster Master Teacher Participating Students	1) What is the process of equipping students' tutees before going into the field? 2) How are the teaching assistance activities carried out during these 4 months? 3) What makes this program run smoothly? 4) What obstacles did you face in the process of running the program? 5) What things do you learn during the program at school?

Continued Table 1

No.	Aspect	Informants	Question
			6) What is the assessment and guidance process carried out by teachers and supervisors, and what obstacles are faced?
4.	Product	Head of PGMI Study Program Headmaster Master Teacher Participating Students Field supervisor	1) What are the benefits felt from the teaching assistance program after the implementation of the program? 2) What aspects are assessed in the teaching assistance program? 3) What skills do students' tutees gain from the program? 7) How is the work attitude and culture developed through the program?

Source: Researcher Study (2024)

Thematic analysis was carried out manually to analyse the interview results. Data reduction, coding, and categorisation were carried out based on the context, input, process, and product. The researcher clarified the data by comparing interview results with findings from various informants and observations. Triangulation is achieved by comparing the results of observations, document analysis, and interviews to ensure the validity of qualitative data.

C. Results and Discussion

Result

Data collection was conducted at the Islamic Elementary School in Wage sub-district, Sidoarjo Regency, to provide an overview of how the system developed within the Teaching Assistance program supports the objectives set at the outset. Appendix 1 shows the Teaching Assistance Program Evaluation Analysis Matrix. Based on the results of interviews, document analysis, observations, and weekly students' tutees reports, the data is grouped into 4 categories: context, input, process, and product. Of the four categories, codification was carried out based on the aspects identified in the data collection results.

Context Evaluation

Goal Analysis

Context analysis was conducted to map the fundamental goals of the Teaching Assistance program and evaluate the underlying needs that necessitate a specific pedagogical approach. Based on an analysis of the PGMI curriculum, the program's primary goal is to address the persistent theory-practice gap in traditional teacher education. While preservice teachers often acquire strong theoretical knowledge during their on-campus studies, they frequently struggle to translate and apply these concepts in the complex, dynamic realities of actual classrooms.

To overcome this gap, the program emphasizes the urgent need for authentic experiences. Preservice teachers require more than just theoretical lectures; they need

immersive, real-world exposure to develop essential 21st-century skills, particularly critical thinking, adaptive problem-solving, collaboration, and communication. This authentic experience is crucial to ensuring the work-readiness of future educators, transitioning them from passive learners into competent professionals capable of managing diverse and inclusive primary schools.

Consequently, achieving these multifaceted goals necessitates the Cognitive Apprenticeship approach. Simply placing preservice teachers in schools is insufficient if they are not systematically guided to 'think and act' like experts. Cognitive Apprenticeship specifically bridges the theory-practice gap by making the invisible cognitive and decision-making processes of expert teachers visible to novices. Through this framework, the authentic experiences gained in schools are structured through *modelling, coaching*, and *scaffolding*, ensuring that the program effectively builds the preservice teachers' professional identity and instructional readiness.

The implementation of the teaching assistance program is in accordance with the Minister of Education and Culture Regulation Number 3 of 2020, Article 15, paragraph 1, concerning learning outside the study program, which consists of other learning within the higher education institution, learning at other higher education institutions, and learning at non-higher education institutions. The 20-credit content was systematically formulated based on a six-month analysis of the program's intended outputs and outcomes. Consequently, comprehensive implementation guidelines and supporting instruments were developed to operationalize the Teaching Assistance program. During that time, an application for reporting the student tutees' performance in the field was also developed.

Based on the explanation from the head of the PGMI study program, as the field supervisor, students' tutees were able to understand the dynamics and management within the school, and they also developed learning in accordance with the student tutees' characteristics as outlined in the implemented program. The guidelines for implementing teaching assistance include: analyses of the management and curriculum development; educators and education personnel; student affairs; facilities and infrastructure management; finance; public relations; school/madrasah program development; and School-Based Operational Curriculum document instruments. It indicates that the teaching assistance program has been mapped in detail in accordance with a broad, multidisciplinary understanding of the world of work, namely, the school's scope. It further differs from the previous internship program, which focused solely on how to conduct in-class learning.

Program Benefits

In Table 2, the conclusions from interviews with the program's person in charge, the principal of the Islamic Elementary School in Sidoarjo, where the program takes place, and the students' tutees participating in the program are outlined to identify the goals to be achieved through the Teaching Assistance program. Based on the results of this interview, as shown in Table 2, both universities and educational units benefit from

the program, especially in the student tutees' learning outcomes, which are reported to the school. Universities benefit from producing student tutees who are ready to enter the world of work, while schools receive studies to improve management and learning. These two benefits are obtained from the Cognitive Apprenticeship program, which the university carefully developed by creating a program guide that includes 8 courses from the teaching assistance program (Dennen, 2013; Hunaepi & Suharta, 2024; Putra et al., 2023).

Table 2. Expectations of School Principals, Tutor Teachers, and Student Tutees.

Element	Data Collection Results
Headmaster	School principals have been seeking collaborative programs with universities to improve the quality of the school learning process, and this program is an opportunity to realise the principal's vision and mission.
students' tutees	Students' tutees can adapt to the complexity of the world of work and can master classes with diverse student characters.
Tutor Teacher	Tutor Teachers receive assistance in organising students' tutees and in obtaining the latest information on learning outcomes in higher education. There is an exchange of information between tutor teachers and students' tutees to actualise student-centred learning that is fun and improves HOTS thinking skills.

Source: Interview Results (2024)

Input Evaluation

In the input evaluation, the analysis shifts from merely examining administrative prerequisites to assessing whether the program's resources—human, institutional, and infrastructural—adequately support the cognitive apprenticeship process.

1. Participant Readiness and Expert Mentorship

For the Cognitive Apprenticeship framework to function effectively, the readiness of the 'apprentices' (novices) and the availability of 'expert practitioners' are critical inputs. The program strictly requires preservice teachers to have completed at least 90 credits. Pedagogically, this ensures that apprentices possess a robust theoretical foundation, enabling them to focus on practical pedagogical reasoning rather than struggling with basic concepts in the field. At the Islamic elementary school in Sidoarjo, 11 students from the Islamic Education, known as Pendidikan Agama Islam (PAI), and PGMI study programs participated. Equally important is the input of human resources. The tutor teachers and field supervisor serve as the 'expert practitioners' tasked with modelling, coaching, and scaffolding. While detailed budgeting data was limited, the university provided financial compensation to tutor teachers. This budget allocation is not merely an administrative honorarium; it serves as an essential input to secure the mentors' commitment to actively guide and provide continuous pedagogical feedback to the preservice teachers.

2. Institutional Affordances of Partner Schools

The selection of partner schools is not solely based on administrative criteria, such as holding an 'A' accreditation, but on the school's capacity to provide an authentic environment for professional modelling. The Islamic elementary school in Sidoarjo was

selected because it uniquely implements both the national elementary curriculum and the Ministry of Religion's Madrasah Diniyah curriculum. This dual curriculum provides a complex, authentic learning environment where preservice teachers can observe and practice integrating 21st-century skills with specific religious values. Furthermore, the school's physical infrastructure—such as Wi-Fi, projector screens, and LCDs in classrooms—serves as vital scaffolding. These facilities enable preservice teachers to seamlessly transition into the exploration phase by designing and implementing digital-based instructional media.

3. Instructional Guidelines and Digital Infrastructure

To systematically support the articulation and reflection phases of Cognitive Apprenticeship, the university provides two main infrastructural inputs: the Teaching Assistant Guidebook and an integrated MBKM LMS. The guidebook serves as a crucial cognitive scaffold, providing students with structured worksheets to focus their analysis of school management and lesson plan design.

However, an evaluation of the digital infrastructure reveals a functional gap. According to the field supervisor and Head of PGMI Study Program, several features are needed. However, they are not available in applications such as "Moodle", the feedback column from the supervisor to improve the report, so that the student tutees can correct it if, for example, elements have not appeared in connecting concepts with practice in the field (Pisoni, 2022). Apart from that, only the supervisor, examining lecturers, and student tutees can access the application, while tutors cannot. As a result, confirmations such as attendance and report content cannot be processed via the LMS, so attendance is still handled manually. In this way, the LMS application can be further developed to enable discussion, and lecturers can provide feedback on students' tutees' portfolio products by creating an online forum that connects students' tutees, supervisors, and teacher tutors.

The current LMS operates primarily as an administrative and summative tool for uploading daily and final reports. It lacks interactive features—such as asynchronous discussion forums or dedicated feedback columns—that are essential for the field supervisor to provide continuous metacognitive coaching. Furthermore, the tutor teachers do not have access to this system, isolating the in-field experts from the students' digital reflection process. Consequently, while the administrative and physical inputs are highly supportive, the digital pedagogical inputs require significant enhancement to sustain a collaborative cognitive apprenticeship ecosystem fully.

Process Evaluation

Preparation Process

This teaching assistance program comprises 8 courses, namely School Management, School Program Development, Curriculum Analysis, Learning Plan Development, Teaching Material Development, Learning Media Development, Learning Assessment, and the practical application of analysis and planning results. There was a 1-

week debriefing before the student tutees were sent to the field. For two days, the course lecturer prepared the student tutees to simulate analysing the curriculum and developing learning plans using YouTube videos, which were then assessed. Then, for the next 3 days, the student tutees were gathered in one room for reinforcement before going into the field to analyse aspects that needed to be addressed and to develop the curriculum and learning tools**.**

School Guidance and Assessment Process

The technical implementation of the teaching assistance program follows the Cognitive Apprenticeship steps, from observing the teacher's teaching process to the students' tutees taking complete control of the learning process (Dennen, 2013) as follows.

1. Modelling

In the first month, students' tutees engaged in the Modelling phase, where they were strictly allowed to analyse and observe the dynamics and school culture. The data show that students did not teach directly but were "forced" to be disciplined and creative by the rhythm of school. Students observe how teachers manage the classroom and interact with critical students. This process of adapting to the work culture of schools/madrasas is the basis for students' understanding of an educator's professional expectations before they practice them directly.

In this phase, the student tutees initially tried to adapt to the school/madrasah's work culture. Preservice teachers at school were treated as fellow teachers, so they had to adhere to the school culture. At the destination school, students experienced a culture shock as they were forced to be disciplined and creative. The student tutees at the school were also critical, so they were overwhelmed at the start. As time went by, students were encouraged to follow the school's rhythm and try to meet the challenges they faced. The student tutees were encouraged to maximise the use of media and learning models in the program assessment process. One of the preservice teachers who taught second grade initially found it challenging to manage the primary students. However, over time, they succeeded in getting them to participate and be more active in class. It aligns with the finding that assistance programs that utilise cognitive apprenticeship can increase students' confidence and self-efficacy (Cooper, 2015).

2. Coaching

The coaching process was carried out through collaboration between the school and the university. In the field, teachers accompanied students, guided by the principle of openness to learning from each other. Students positioned themselves to learn many things from school management and culture, while teachers were also open to learning about students' use of digital media. On the other hand, the field supervisor provided guidance and encouragement, both in pedagogical knowledge and in mental health support for students facing challenges in the field. This guidance was delivered online via WhatsApp groups or through direct consultations.

3. Scaffolding

Entering the second month, the scaffolding phase began; the tutor teachers provided structured support by giving students the authority to manage habitual learning, such as reading prayers and organising congregational prayers.

4. Fading

In the last two weeks, the fading phase was applied. The teachers gradually withdrew their direct support, leaving the learning process entirely to the students. Students were encouraged to maximize the use of media and learning models. The student tutees also faced various challenges in teaching, especially when placed in lower grades, such as second grade. At first, the students' tutees had difficulty mastering the class because they had to deal with transitional-age children ranging from early childhood to childhood.

Student tutees: "*I taught in second grade, ma'am, and at first I had difficulty with the students' unruly behaviour. However, over time, I was able to control the children by implementing icebreakers and games. I also taught mathematics, ma'am. I used interesting media as a strategy to teach them about integers using project-based learning and dice media to study linear diagrams*."

Although they initially encountered difficulties in the classroom (especially when working with transition-age children in grade 2), students eventually managed the class independently. They took the initiative to implement icebreakers, games, and innovative strategies such as project-based learning and dice media for mathematics learning.

5. Articulation

The articulation process was carried out by reflecting on coaching results and by preparing learning tools comprising 8 integrated courses, including curriculum analysis, material development, and learning media. This articulation process also emerged when students discussed the use of digital media with teachers, leading to a two-way exchange of information between the teacher's practical experience and the students' theoretical/digital knowledge.

6. Reflection

The reflection stage was accommodated through weekly reports and daily reports uploaded to the university's MBKM application system. In this report, students evaluated the challenges they faced, such as difficulties dealing with disorderly or critical students, and how they found solutions through learning innovation. However, the findings show that the reflection feature in the current system is still limited to report collection and does not yet support an interactive reflective dialogue between students and their supervisor.

The school principal implemented a policy that, in addition to familiarising students with the real world of work. Hence, they followed the learning process from start to finish, also regulated students' hours and socialisation, with designated periods of direct involvement in learning. In the first month, the student tutees were allowed to analyse and observe the school's dynamics. In the second month, the student tutees were given the authority to manage habitual learning, such as reading prayers, organising congregational prayers, memorising surahs of the Qur'an, and so on, until, in the last two

weeks, the learning process was handed over to primary students in full. Cooperation among tutor teachers, along with tight supervision by the school principal, was needed to implement the program and ensure a positive impact on student internships and learning processes, keeping them structured and orderly.

The school's openness to accepting the student tutees into the program, a sense of mutual learning among the tutor teachers and student tutees, and the student tutees to tutor teachers played important roles in the program's effectiveness. Students who positioned themselves to learn many things from the school's management and positive culture, as well as teachers who were open to learning new things about the use of digital media from students, made the program's positive impact felt by both parties.

Higher Education Guidance and Assessment Process

In the systematic mentoring process, the university prepared a Teaching Assistant Guide to help students implement the program in line with course needs, which was then translated into practical assistance. In the guide, there is a worksheet for students to complete to focus on problems to be analysed and aspects to be developed in preparation for teaching practice.

The mentoring and assessment process with the field supervisor was conducted online via a WhatsApp group or through direct consultation with students. The field supervisor provided encouragement and guidance, both in terms of knowledge and in supporting the student tutees' mental health in the field. This support was essential to the program, enabling students to adapt to the real world of work quickly. There were challenges faced by students in the field that were known to the field supervisor, such as low-grade primary students who were challenging to manage, high-grade primary students who were critical, and a disciplined school work culture that made it difficult for the student tutees in the beginning and middle of the program.

However, there was no technical guidance on addressing the challenges the student tutees faced in the field. Hence, the characteristics of the field supervisor influenced the student tutees' success in developing their respective guidance. Thus, there was a need for technical guidance or a synchronous or asynchronous field supervisor's discussion forum to guide the student tutees, with attention to emotional support.

Product Evaluation

1. The Development of Pedagogical Reasoning

The main product of this program is the improvement of students' ability to integrate theoretical knowledge (8 supporting courses) into complex classroom practice. Students demonstrated the development of pedagogical reasoning by creating learning tools that not only met administrative standards but also addressed the critical characteristics of Madrasah Ibtidaiyah students. This can be seen in students' ability to transform abstract mathematical concepts into concrete activities through the use of dice as media and the Project-Based Learning (PjBL) model, which demonstrates a deep understanding of how the material should be taught (pedagogical content knowledge).

2. Instructional Decision-Making Skills

In this part, students remained compliant with the learning plan they agreed to implement in the classroom, as confirmed by the field supervisor and mentors. Time constraints also affected the strategy decisions taken. Students felt their strategy was right because the children were happy with the process. However, they were unsure whether the learning process would be effective in other classes with different student characteristics, and the results of formative evaluations indicate that there have been no significant changes in student learning outcomes.

3. Formation of Professional Identity of Teachers (Professional Identity)

This program successfully facilitated the transition of identity from "practical student" to "professional educator". By fully engaging with the school culture (such as managing worship habits and discipline), students began to internalize the values of the teaching profession. Recognition of teachers who treated them as "fellow teachers" strengthened self-efficacy and a sense of belonging in the profession. This identity is reflected in changes in the attitudes of students who initially experienced culture shock, who became more responsible and disciplined in following the authentic work rhythm at school.

4. Reflective Ability

Students' reflective abilities are documented through a portfolio of weekly and daily reports. This reflection product shows that students can reflect on learning outcomes, but, on the surface, they are not able to reflect deeply on the problems in the field and the TPACK choices they apply in class. The disadvantage of this process is that the reflection report is not bidirectional, so lecturers cannot provide feedback on the quality of students' reflections. The LMS only serves as a data-collection tool; it is not interactive, so the field supervisor cannot guide asynchronous learning, preventing students from delving deeper into their reflection process.

The following is a product evaluation, namely the learning outcomes in the Teaching Assistant program, from the aspects of attitudes, knowledge, and skills:

Attitude Output

The experience that the student tutees gain in this program is excellent preparation for adapting to various work environments. The skills to adapt to and accept challenges are important to develop before students' tutees enter the school environment as a real teacher. The student tutees experienced structured assistance, starting with analysing school conditions, involvement in the familiarisation process, and, finally, teaching as a whole. The school's assistance helped the student tutees adapt and develop their teaching skills.

The choice of school culture also significantly impacts learning outcomes. The student tutees at the Islamic elementary school in Sidoarjo are generally critical and ask many questions, which challenges them to design student-centred learning beyond the demands of the Teaching Assistant program assignment, using learning tools and videos.

Table 3. Analysis of the Skills and Knowledge gained by students' tutees through the Teaching Assistance Program

Aspects Learned	**Assignment**	**The level of Cognitive Skills**	**Knowledge Level**	**21st Century Skills**
School Program Development	Analysis and Evaluation of the Operational Curriculum of the Educational Unit known as *Kurikulum Operasional Satuan Pendidikan* (KOSP) and the Operational Curriculum of the Madrasah known as *Kurikulum Operasional Madrasah* (KOM)	C4 (Analysis) and C5 (Evaluation)	Factual and Conceptual Knowledge	Communication, Critical Thinking
School Management	Analysis and evaluation of how the school practices planning, organising, implementing and monitoring what is carried out by the school	C4 , C5	Procedural and Metacognitive Knowledge	Communication, critical thinking
Development of learning plans	Analysis of the Annual Program to teaching modules developed by tutors, and then developing learning plans independently	C4, C5, C6 (Creation)	Procedural and Metacognitive Knowledge	Communication, critical thinking, creative thinking, collaboration, Information, Media and Technology Skills
School Program Development	Analysis of the School Program through interviews with school principals and teachers	C4, C5	Factual and Conceptual Knowledge	Communication, critical thinking
Teaching Practice	Student tutees' practice material from the teaching modules they each develop	C4, C5, C6	Procedural and Metacognitive Knowledge	Communication, critical thinking, creative thinking, collaboration, Information, Media and Technology Skills

Source: Data Processing from Primary Sources (2024)

The field supervisor also feels that attitudes of responsibility, discipline, and self-confidence are formed through the Teaching Assistance program at elementary schools in Sidoarjo. This is illustrated by the culture of discipline, exemplified by teachers and school principals, that made the student tutees feel embarrassed if they were not disciplined and did not adhere to the predetermined schedule. Apart from that, there were moments when students' tutees asked the principal for leniency so that the implementation time would be more relaxed. It shows that an attitude of responsibility, discipline, and self-confidence is formed through example and a fairly long, scheduled, and guided program implementation period. This habit serves as a means for students' tutees to build a new character, namely, an authentic culture of the world of work.

Knowledge and Skills Output

The knowledge gained by the student tutees was mapped into 8 courses: School Management, School Program Development, Curriculum Analysis, Learning Plan Development, Teaching Material Development, Learning Media Development, Learning Assessment, and putting the results of analysis and planning into practice. Based on the document analysis, Table 3 presents what the student tutees learned in the Teaching Assistant program.

Discussion

The evaluation results indicate that the Teaching Assistance Program at the Islamic elementary school in Sidoarjo has successfully integrated the principles of Cognitive Apprenticeship within the CIPP framework. This integration ensures that the program does not merely focus on administrative attendance but emphasises the transformation of pedagogical reasoning, which is essential for developing 21st-century thinking skills (Alahmad et al., 2021; Cakmakci et al., 2025).

The evaluation results indicate that the Teaching Assistance Program at the Islamic elementary school in Sidoarjo has successfully integrated the principles of Cognitive Apprenticeship within the CIPP framework. However, before delving into micro-pedagogical processes, it is crucial to discuss how the program's context and inputs lay the foundation for authentic learning. Contextually, the evaluation reveals that the persistent theory-practice gap in teacher education can only be bridged through immersive, authentic experiences. The selection of an Islamic elementary school implementing a dual curriculum (National and Ministry of Religion) provides a highly complex and authentic ecosystem. This specific context forces preservice teachers out of their theoretical comfort zones, demanding them to negotiate real-world pedagogical and religious challenges, thereby strongly fulfilling the MBKM program's mandate for experiential learning.

Furthermore, the success of the cognitive apprenticeship process relies heavily on the readiness of the program's inputs. The findings indicate that while human resources—such as highly committed tutor teachers and field supervisors—served as effective 'expert practitioners' ready to mentor the novices, the digital infrastructure presented a significant

bottleneck. The LMS, as a primary structural input, functioned merely as an administrative repository rather than a collaborative pedagogical tool. As highlighted in previous studies (Holmes & Prieto-Rodriguez, 2018; Pisoni, 2022), digital platforms in teacher education must transcend administrative functions to support continuous, asynchronous metacognitive feedback. Therefore, the readiness of inputs—not just physically and humanly, but digitally—directly dictates the depth to which the reflection and articulation phases of the apprenticeship can be effectively executed.

1. Modeling

The student tutees observed the tutors' teaching processes to develop a conceptual model of instructional decision-making (Matsuo, 2024; Matsuo & Tsukube, 2020). This observational phase is crucial for building a conceptual model of teaching before pre-service teachers are required to perform independently (Ruimei et al., 2024). In addition, through observations, Bandura argued that, by looking at experts carrying out assignments, students can observe and build conceptual models about the processes needed to complete them, to build student tutees' self-efficacy to complete tasks as professionals (Jones et al., 2007; Peters-Burton et al., 2015). In this study, the modelling process was implemented through observation for 1 month, not only in the learning process but also in the school environment. The school instructed the student tutees to pay attention to the school culture. By allowing the student tutees to observe and engage in school culture, they will understand that teachers' roles extend beyond the classroom (Daug, 2025). It is a new thing from the initial syntax of Cognitive Apprenticeship, which focused on the classroom scope to the introduction of school culture.

2. Coaching

The tutor teachers and the school principal provided direct supervision, feedback, and guidance during the student tutees' involvement in the learning process (Pianta et al., 2021; Thurlings & den Brok, 2017). This external monitoring serves as a coaching mechanism, providing feedback to align tutees' performance with the school's professional standards (Mees et al., 2025). Cognitive Apprenticeship emphasises this process through talk-aloud, where teachers define the learning process they go through for tutees (de Bruin, 2019; Dennen, 2013). This is difficult to apply in teaching practice because the tutor teachers have to explain to the student tutees, and there is a fear of overlap between what is conveyed to the student tutees and to students who are learning. Thus, the coaching steps involve the student tutees reading the learning plan and then observing the process carried out by the teacher (Akhavan & Walsh, 2020).

3. Scaffolding and Fading

The scaffolding process was evident in the gradual increase in responsibility given to the student tutees to build their self-efficacy (Valencia-Vallejo et al., 2019) . In the first month, the student tutees focused on analysing school conditions and dynamics. By the second month, they were given authority over routine activities such as prayer and Quranic memorisation. Finally, in the last two weeks, students' tutees were given full authority to manage the classroom learning process (Matsuo, 2024). Through the

adaptation process, students' tutees are finally able to master the class(Salajegheh et al., 2024).

The fading aspect, where support is gradually removed, is essential to building professional independence (Belland et al., 2017; Dennen, 2013). This is supported by the finding that the students who initially experienced culture shock eventually gained the confidence to manage critical students and complex classroom situations. One student tutee said that she used icebreakers and games to manage students and used interesting media to teach mathematics. She used project-based learning and dice media to study graphs, demonstrating creativity in their teaching strategies. This adaptation process is the key to the success of the Teaching Assistant program. According to Greve, what is built in the classroom is not only the implementation of learning plans but also emotional support, class organisation, and instructional support for students (Greve et al., 2020).

4. Articulation and Reflection

These stages are where the student tutees internalise their field experiences through metacognition (Cooper, 2015). In the articulation stage, they were required to produce weekly reports and complete a worksheet focusing on problem analysis and preparation for teaching practice. By writing down their pedagogical strategies, they transform tacit knowledge into explicit understanding. In the reflection stage, they should compare their teaching modules and practices with feedback from the teaching tutor. Reflection allows the student tutees to evaluate their performance against 'expert' benchmarks.

Ultimately, these contextual, input, and process factors culminate in robust professional products that go beyond basic administrative outputs. The program's outcomes manifest as the holistic development of professional competence and 21st-century skills among preservice teachers. By successfully navigating the phases of cognitive apprenticeship and taking full control of the classroom, the students demonstrated advanced pedagogical reasoning and instructional decision-making. They effectively utilised critical thinking to solve sudden classroom disruptions, creativity in designing digital teaching media, and communication and collaboration skills in managing students and working with tutor teachers (Kivunja, 2015; Santos & Castro, 2021). This product aligns perfectly with the ultimate goal of shaping a professional teacher identity that is not only theoretically sound but practically resilient, adaptable, and fully equipped with the 21st-century skills necessary to face future educational demands.

Though the evaluation found that the LMS was primarily used for summative assessment rather than interactive reflection (Simon et al., 2024; Torres-Madroñero et al., 2020). This lack of interactive features limits the 'community of practice' where the student tutees can reflect collectively on their field challenge (Holmes & Prieto-Rodriguez, 2018). The limitation can pose a significant barrier to optimising the Articulation and Reflection phases, as it functions primarily as a summative assessment tool rather than a collaborative platform. To achieve the full potential of the Teaching Assistant program, it is imperative to transform digital infrastructure into 'reflective

spaces' that connect the student tutees, tutor teachers, and supervisor in a continuous cycle of cognitive growth and professional feedback.

However, this research is limited to one school's scope; further research is still needed, and the findings of this study can serve as a foothold for the next program. Future research should address the technological gaps identified in this evaluation through design research to develop a more interactive and reflective LMS that supports asynchronous feedback and pedagogical discussions among student tutees, tutor teachers, and supervisors. This advancement is critical to ensuring that digital platforms transcend administrative functions and serve as a medium for 'visible thinking' within the Cognitive Apprenticeship framework.

Furthermore, longitudinal studies are needed to track the long-term impact of the Teaching Assistance program on pre-service teachers' professional identity and resilience as they transition into the workforce. Developing specialised training modules for field supervisors that focus on emotional and metacognitive coaching strategies is also recommended to mitigate the initial culture shock that student tutees experience in diverse classroom environments. Finally, expanding the scope of this evaluation through comparative studies across different school cultures and regions would provide broader validation of Cognivite Apprenticeship's role in mediating mastery of 21st-century skills across various educational contexts.

D. Conclusion

This evaluation concludes that the MBKM Teaching Assistance program at the Islamic elementary school in Sidoarjo is highly effective when analysed through the integrated lens of the CIPP model and Cognitive Apprenticeship theory. Systematically, the evaluation reveals the following: 1) Context: The program successfully addresses the persistent theory-practice gap by immersing preservice teachers in an authentic dual-curriculum educational ecosystem. 2) Input: The readiness of human resources—specifically committed tutor teachers and field supervisors acting as 'expert practitioners'—provided a robust foundation for the cognitive mentorship, although the digital infrastructure (LMS) lacked the necessary features to fully support pedagogical reflection. 3) Process: The organic application of Cognitive Apprenticeship pillars (modelling, coaching, scaffolding, and fading) effectively guided preservice teachers in overcoming initial culture shock, managing classroom dynamics, and achieving independent instructional mastery. 4) Product: Ultimately, this structured cognitive apprenticeship culminated in the successful formation of a robust professional identity, equipping preservice teachers with advanced pedagogical reasoning, practical instructional decision-making abilities, and 21st-century skills integrated with religious values.

This study concludes that the MBKM Teaching Assistance program in partner Islamic elementary schools runs very effectively through the synthesis of the CIPP evaluation model and the theory of Cognitive Apprenticeship. The program effectively transfers expert pedagogical reasoning to students by organically integrating the pillars

of modeling, coaching, and scaffolding into daily school activities. The guidance structure has been proven to help students overcome initial adaptation obstacles (culture shock) and ultimately achieve independence in classroom management. Still, it remains constrained at the reflection and articulation stage due to a lack of media that connect student reflection with the field supervisor in the LMS.

The practical implications of these findings provide recommendations for higher education institutions to transform their digital infrastructure, especially by improving the LMS's functionality so that it is not only administrative-summative but also an asynchronous reflective space that supports continuous articulation and reflection. In addition, LPTK needs to develop specialized training modules for field supervisors to enhance the effectiveness of metacognitive guidance and emotional support for students facing challenges in the field.

Although it yielded positive results, this study has methodological limitations: it is a qualitative case study of one school over one semester, so the observed dynamics are heavily influenced by the school's culture and the supervisor's individual characteristics. Therefore, further research is recommended, including longitudinal studies to monitor graduates' professional resilience over time and comparative studies across diverse school contexts to validate this cognitive internship model further.

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