Beyond the Curriculum: Cultivating Meaningful Learning Through Teacher Development in Independent Schools

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Abstract. The Ministry of Elementary and Secondary Education of Indonesia promotes the vision of "Quality Education for All" through eight strategic pillars, including adaptive and meaningful learning. This study focuses on addressing the challenges of implementing meaningful learning in independent schools—institutions that voluntarily adopt the national curriculum without centralized assistance. In Central Java, over 43,000 schools have independently implemented the curriculum. However, monitoring results reveal that a large proportion of these schools still struggle with contextualizing instructional materials, designing school-based curricula (KSP), and integrating formative assessment into learning processes. These gaps suggest that the goals of adaptive and meaningful learning are often underachieved in many contexts. The research aims to support schools in identifying instructional issues, providing professional development, and facilitating mentoring to enhance the practice of meaningful learning. This study aligns with Sustainable Development Goal 4, which focuses on Quality Education. Employing a qualitative descriptive approach, data were gathered through observations, interviews, questionnaires, documentation, and focus group discussions. The findings demonstrate that professional development utilizing the In–On–In model—comprising initial training, on-site implementation, and reflective follow-up—enabled teachers to gain a deeper understanding of principles related to meaningful learning and integrate them into their classroom practice. Teachers reported increased awareness of student voice, prior knowledge, collaborative learning, and the effective use of digital tools. However, some participants faced challenges in translating theory into practice, particularly in lesson planning and assessment design. These insights underscore the importance of ongoing professional support, school-wide collaboration, and leadership involvement. The study concludes that meaningful learning can be cultivated in independent schools through sustained training, curriculum contextualization, and holistic learning environments that support interaction, exploration, and student agency.

Keywords: character; learning experiences; meaningful learning

INTRODUCTION

The Ministry of Elementary and Secondary Education, through its national policy commitment, aims to deliver quality education for all. Among the eight key focus areas for achieving this goal are: Adequate Facilities and Infrastructure; Competent and Prosperous Educators and Staff; Supportive Socio-Cultural Environment; Adaptive and Meaningful Learning; Equitable Access to Services; Affirmative Education Financing; Inclusive Education Services; and the Development of Talents. This study focuses on the element of adaptive and meaningful learning, which remains a significant challenge, particularly in the province of Central Java—the region with the highest number of Independent Curriculum (IKM Mandiri) schools in Indonesia. In the latest cycle, a total of 43,117 schools across all levels (PAUD, SD, SMP, SMA, and SMK) registered as Independent Curriculum implementers.

Independent schools do not enjoy the same privileges as government-assisted schools. They do not receive direct intervention from the Ministry, such as human resource capacity building, additional BOS performance-based funding, or regular mentoring. These schools are expected to independently develop their curriculum, plan and implement lessons, and conduct assessments. This autonomy, while intended to promote innovation and contextualization, has created a substantial gap between independent schools and those supported by the National Curriculum. The analogy often used is that of a "stepchild" and a "biological child": while assisted schools benefit from funding, training, and ongoing guidance, independent schools must navigate implementation challenges with minimal support.

After several years of curriculum implementation, only 26.4% of schools have implemented it very well, 34.5% have implemented it well, 27.4% have implemented it adequately, 10.2% have implemented it poorly, and the remainder have implemented it very poorly. Monitoring and evaluation results further reveal key obstacles affecting schools' capacity to implement the curriculum effectively. Among the most pressing challenges are the development of teaching materials, as many teachers still rely on generic templates or examples and are unable to create customized materials that respond to the specific needs of their learners. Another significant issue lies in the Educational Unit Curriculum Design (KSP), which serves as the backbone of curriculum implementation, containing contextual analysis, vision, mission, and the structure of the learning program. Many schools do not develop their own KSP but instead adopt example versions that fail to function as practical operational guides. Furthermore, the integration of assessment in learning remains problematic, particularly regarding initial and formative assessment. The formative assessment framework in the National Curriculum is unfamiliar to many teachers, and assessment is still often viewed as a separate or summative task to be completed at the end of a semester.

These issues directly hinder the realization of adaptive and meaningful learning. In this study, meaningful learning refers to the process in which students connect new knowledge with prior understanding through authentic, reflective, and collaborative experiences—a pedagogical orientation grounded in Michael Fullan's (2018) New Pedagogies for Deep Learning framework. Fullan et al. (2018) define deep learning as the ability to create and apply new knowledge in the world, emphasizing the development of six global competencies: character, citizenship, collaboration, communication, creativity, and critical thinking. These competencies emerge from intentionally designed learning environments that integrate real-world contexts, foster student agency, and utilize effective assessment for learning.

However, meaningful learning is not merely a matter of curriculum design; it requires continuous professional learning for teachers. Many educators in independent schools face limitations in their pedagogical content knowledge and confidence to apply deep learning principles. To address this, the current study introduces a structured professional development intervention using the in–on–in model—a widely adopted approach in Indonesian teacher development programs. This model involves an initial workshop (In), followed by classroom implementation (On), and a follow-up reflective session (In), promoting experiential learning, coaching, and collaborative reflection (Ministry of Education and Culture, 2020).

The concept of meaningful learning is rooted in constructivist theory, which posits that learners construct new knowledge by connecting it with prior experiences (Bransford et al., 2000; Vygotsky, 1978). Novak and Cañas (2008) further emphasized that meaningful learning arises when learners engage with new content through conceptual frameworks that promote retention and application. Building upon these foundations, Fullan et al. (2018) introduced the Deep Learning framework, which highlights six global competencies essential for 21st-century learners.

Recent studies have reinforced the applicability of deep learning strategies in various contexts. Barros (2024) demonstrated how collaborative concept map activities foster deep conceptual understanding among programming students. Cristea et al. (2025) also found that self-regulated learning strategies contribute to deeper comprehension across all phases of online learning. These findings underscore the cognitive, social, and reflective aspects essential for meaningful engagement. Independent Curriculum schools in Indonesia are encouraged to contextualize learning design, yet many struggle with limited capacity. According to J. Biggs (2003) and J. Biggs & Tang (2011), without constructive alignment between learning outcomes, teaching methods, and assessment, schools risk implementing curricula superficially. Saeful Anwar and Umam (2023) reported that many Indonesian teachers still adopt surface teaching approaches due to a lack of pedagogical confidence.

Moreover, María (2024) highlighted the challenge of collaborative evaluation in Latin American schools with similar reform contexts, emphasizing the importance of instructional coherence. Tomlinson (2014) advocated for differentiated instruction to address the diverse needs of learners, emphasizing that meaningful learning should be flexible and student-centered. Effective professional development is essential for sustainable instructional reform. Darling- Hammond et al. (2016) asserted that high-impact PD is sustained, collaborative, and classroom-connected. Desimone (2009) and Dudley (2013) further emphasized the importance of reflection, feedback, and lesson study in driving instructional improvement.

In Indonesia, the In–On–In model is used widely for teacher development (Ministry of Education and Culture, 2020). Prenger et al. (2018) found that networked professional learning communities enhance knowledge sharing and teacher confidence. Vescio et al. (2008) similarly concluded that collaborative learning among teachers has a significant impact on both instructional practice and student achievement. Meaningful learning today also requires the integration of technology. Mayer (2009) emphasized that multimedia learning enhances retention when aligned with cognitive processing principles. Dede (2012) and Johnson et al. (2016) advocated for personalized digital environments that promote agency and reflection. Zhao et al. (2019) and Zhang et al. (2025) revealed that peer assessment in digital platforms enhances students' knowledge construction processes. UNESCO (2021) emphasized that education in the digital era must be equitable, learner-centered, and grounded in collaborative innovation.

This research seeks to diagnose the current conditions and explore the potential of the In–On–In model in enhancing teachers' capacity to design and implement meaningful learning. Independent schools, which operate without direct state support, serve as the primary research context due to their urgent need for effective capacity-building strategies aligned with deep learning pedagogy.

Based on the background and initial research findings, this study addresses the following research questions:

RQ1: What are the prevailing learning approaches used by teachers and principals in independent schools in Central Java prior to the meaningful learning intervention?

RQ2: How effective is the In-On-In professional development model in improving teachers' understanding and skills in designing meaningful learning experiences?

RQ3: What challenges and new insights did participants experience during the intervention, particularly in designing and implementing lesson plans based on meaningful learning principles?

METHOD

Research Design

This study employed a mixed-methods approach with a sequential explanatory design. This approach was chosen to gain a comprehensive understanding (Subedi, 2016) of the meaningful learning strategies that independent schools in Surakarta have designed and implemented. The research process began with the collection of quantitative data through a questionnaire aimed at identifying general trends and contextual needs, followed by an intervention phase consisting of training or mentoring sessions, and concluded with the collection of qualitative data through interviews and document analysis, particularly of the teachers' lesson plans.

Participants

The participants of this study included 198 school principals and teachers from independent schools in Surakarta. Independent schools are institutions that voluntarily develop their own curricula, conduct instructional activities, and establish assessment systems independently, without direct reliance on the national curriculum. The sampling technique used was purposive sampling, based on the criteria that the schools had declared their curricular independence and were willing to participate in all phases of the study, including the training and its follow-up activities.

Research Instruments

This study employed three primary instruments for data collection: a questionnaire, an interview guide, and instructional documents (lesson plans) created by participants following the intervention. The quantitative instrument, a questionnaire, was developed based on the Study Process Questionnaire (SPQ) for Elementary School Teachers. This questionnaire aims to evaluate participants' learning approaches, particularly their engagement in professional development, instructional strategies, and overall attitudes toward learning and teaching. The questionnaire consisted of two sections: demographic information (age, educational level, and years of teaching experience) and statements related to learning approaches.

Items were measured using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) and covered indicators of surface learning. A qualitative instrument, in the form of a semi-structured interview guide, was used in the final stage of the research to delve deeper into the participants' experiences after participating in the training program. The interviews focused on two main questions: (1) what new insights or understandings participants gained from the process, and (2) what aspects they still found unclear or confusing. In addition, participants were asked to submit a Lesson Plan or equivalent instructional documents as artifacts of the training outcomes. These documents were used to assess how well the training content was internalized and translated into meaningful, contextually relevant instructional design.

Data Collection

Data collection for this study was carried out in three main stages. In the initial quantitative stage, researchers distributed a questionnaire to 198 principals and teachers, who were the primary participants. The goal was to assess their initial perceptions, understanding, and practices regarding meaningful learning approaches. Before the questionnaire was widely administered, its validity and reliability were tested with 50 respondents who shared similar characteristics with the main sample.

During the intervention stage, findings from the initial questionnaire informed the design of a meaningful learning facilitation program, which was implemented through the In-On-In model—comprising In-service Learning 1, On-the-job Learning, and In-service Learning 2—within a professional learning community. The first phase (ISL 1) consisted of five thematic sessions, focusing on meaningful learning paradigms, pedagogical practices, learning partnerships, learning environments, and the integration of digital technology. In the On-the-job Learning (OJL) phase, teachers applied the meaningful learning approach in their classrooms by following a lesson study (plan-do-see) methodology. The final phase (ISL 2) involved teachers sharing effective practices and reflecting within the learning community, supporting their ongoing professional development.

The final qualitative stage occurred after the intervention, when participants submitted lesson plans as evidence of their training implementation. Additionally, brief semi-structured interviews were conducted with several participants to explore new insights or understandings they gained during the training, as well as any remaining areas of uncertainty or confusion.

Data Analysis

Quantitative data from the questionnaires were analyzed using descriptive statistics, including means, percentages, and frequency distributions to map initial trends and needs. Qualitative data from the interviews were analyzed using thematic analysis, which included data coding, identifying key themes, and interpreting narratives to understand the participants' subjective experiences. The submitted lesson plans (RPPs) were analyzed through content analysis techniques, focusing on the alignment of the lesson plans with the principles of a meaningful learning approach. Triangulation between data sources (questionnaires, interviews, and lesson plan documents) was used to ensure the validity of the findings and enrich the interpretation of the research results (Creswell & Plano Clark, 2011). This triangulation strategy allowed for a more comprehensive understanding of how participants' conceptions and practices evolved throughout the research process.

RESULT AND DISCUSSION

Result

In the initial phase, 198 teachers and principals from independent schools in Surakarta completed a questionnaire to map their learning approaches, particularly in relation to meaningful learning. Descriptive analysis revealed that the majority of respondents tended to employ a surface learning approach, characterized by content-heavy instruction and reliance on familiar, routine methods. Specifically, 63.7% of respondents stated that they focused more on content delivery rather than fostering students' meaningful understanding. Furthermore, 38% of respondents admitted to using teaching methods based on personal comfort, rather than on the needs and characteristics of the students. These findings reveal a significant disparity between current learning practices and the fundamental principles of meaningful learning, which should prioritize student-centered and reflective learning experiences.

In response to the initial findings, a structured facilitation program was conducted using the In-On-In model, consisting of three stages: ISL 1 (In-service Learning 1), OJL (On-the-job Learning), and ISL 2 (In-service Learning 2). During the OJL phase, participants developed and implemented a lesson plan that integrated meaningful learning principles. The lesson plan consisted of four main components: identification, learning design, learning steps, and assessment. Among these, the learning activity design (introduction, core activities, and closing) was the most challenging component for many participants, particularly in designing activities that facilitate learning awareness and meaningful experiences. Additionally, some teachers struggled to differentiate between applied knowledge and experiential application.

Following the training, participants were asked to complete a reflection on the new insights they had learned. The results showed that most participants experienced an increased understanding of meaningful learning concepts. For example, 73% of participants understood that the application of meaningful learning principles and frameworks does not have to be completed in a single session, but can be flexibly integrated across learning designs. Table 1 below summarizes key insights participants reported during the reflection stage.

TABLE 1. Key insights during the reflection stage

No	Key Insight Gained	Percentage
1	Teachers should value students' prior knowledge, questions, and opinions as part of the learning process	37%
2	Pedagogical practices should integrate contemporary, technology-based methods beyond conventional models	26%
3	Learning becomes richer and more inspiring through collaboration with peers and external partners	39%
4	Learning environments go beyond physical space to include virtual and cultural dimensions	45%
5	Technology should support deeper learning, not merely serve as a display of sophistication	31%
6	Deep learning principles and frameworks should be applied flexibly, not necessarily within a single session	73%

Discussion

This study reveals several important findings about current teaching practices in independent schools and the effectiveness of professional development in strengthening meaningful learning approaches. Employing a sequential explanatory mixed-methods approach, the quantitative results provide an initial overview of the tendencies in teachers' instructional approaches, followed by a qualitative deepening of participants' experiences after a structured intervention. Initial findings from the questionnaire distribution indicate that most teachers tend to employ a surface learning approach. This is evident in the high proportion of respondents (63.7%) who admitted that they focused more on delivering content rather than fostering students' deep understanding. Furthermore, 38% of participants reported using teaching strategies based on personal comfort, regardless of the students' needs.

These findings highlight a significant gap between current teaching practices and the principles of meaningful learning, in the context of independent schools, which should emphasize student-centered, inquiry-based, and reflective experiences. Surface-based learning practices are often characterized by teaching strategies oriented toward memorization, instant mastery of material, and an emphasis on administrative requirements (Biggs, 1987). While such elements may sometimes be necessary, over-reliance on them can hinder the development of students' higher-order thinking skills (Biggs, 1987). In this context, independent schools, which are expected to be models of innovation, are at risk of stagnation if not facilitated by systematic teacher capacity building.

To address the findings, a professional development program was implemented, which has been proven to be an effective strategy for improving teachers' understanding and skills in designing meaningful learning experiences (Darling-Hammond et al., 2017). The professional development program in this study was conducted using the In-On-In model, consisting of three stages. ISL 1 stage provides a strong conceptual foundation, which was then actualized through direct practice in the OJL stage and reflected back in ISL 2 stage through good practices and discussions within the learning community. One of the strengths of this model lies in the cyclical structure, which integrates theory, practice, and reflection within a collaborative professional learning cycle. Data from participant reflections indicate that their understanding has shifted significantly, particularly in six key aspects: the importance of valuing students' prior knowledge, the integration of contemporary technology-based pedagogy, cross-role collaboration, the design of holistic learning environments, the effectiveness of digital utilization, and the flexibility of implementing deep learning principles. Notably, 73% of participants realized that deep learning principles do not need to be fully implemented within a single session but can be meaningfully integrated over time.

Despite these positive developments, the results show that some teachers still experience difficulties when designing lesson plans, particularly in developing learning steps that truly reflect the principles of meaningful learning. This included challenges in creating activities that foster students' learning awareness and experiential engagement. Some also had difficulty distinguishing between applied knowledge and the act of applying knowledge in meaningful contexts. This situation highlights the importance of more intensive follow-up mentoring, particularly in aspects of pedagogical practice and learning activity design (Desimone, 2009). Because transforming teaching practices requires more than conceptual understanding, it also demands extended time, ongoing facilitation, and opportunities to test and refine instructional designs in real-world settings. The lesson study approach used in the OJL phase provides a potential tool to support this cycle of continuous improvement, providing teachers with a structured yet flexible space to experiment, collaborate, and reflect (Dudley, 2013). However, sustained support and follow-up remain essential to help teachers move beyond surface-level changes and internalize deeper pedagogical shifts.

These findings have important implications for education policymakers, particularly in designing strategies to strengthen teacher capacity in independent schools. The support for independent schools should move beyond one-time training sessions. A collaborative approach within a learning community, which combines theory and practice with a space for reflection, has proven more effective in fostering pedagogical awareness and tangible changes in lesson design (Prenger et al., 2018; Vescio et al., 2008). The In-On-In model demonstrates that meaningful change in teaching practice is more likely when teachers are given space to engage in theory, apply it in practice, and critically reflect with peers. Furthermore, these results suggest that teacher training should not only target content delivery or technical skills but also aim to transform teachers' mindset about learning itself. Teachers need to be supported in

positioning themselves not merely as content transmitters, but as learning designers who empower students to become active learners capable of constructing knowledge in diverse and dynamic contexts.

This research also has limitations. This study was conducted within a specific geographic and policy context (Surakarta and independent schools in Central Java), so the results cannot be generalized to all contexts. Furthermore, although data triangulation was performed, this study is still limited by the relatively short duration of the intervention. Further research is needed to examine the long-term impact of the changes, both on teacher practices and student learning outcomes. Further studies should also explore the interactions between the dimensions of the learning environment (physical, virtual, and cultural), and how teachers orchestrate all three to build immersive learning experiences. Integration with technology, which has begun to be adopted by some participants in this study, also deserves further exploration, including the challenges of implementation in the field. Overall, the results of this study confirm that meaningful learning cannot be built solely through conceptual approaches or curriculum changes. It requires a transformation of teacher thinking, continuous professional learning, and systemic support that enables teachers to innovate according to their contexts. The In-On-In model demonstrates strong potential as a training framework focused on changing practices, rather than merely increasing knowledge.

CONCLUSION

This study reveals critical insights into how teacher professional development, when designed using the In–On–In model, can significantly support the implementation of meaningful learning in independent schools. The findings show that participating teachers demonstrated a deeper understanding of the principles of adaptive and student-centered pedagogy. They gained awareness of the importance of valuing students' prior knowledge, integrating student feedback, and fostering reflective and experiential learning. These shifts in perspective mark a substantial departure from surface-oriented teaching, suggesting an increasing alignment with the goals of the national curriculum reform and the global call for quality education (SDG 4).

Throughout the intervention, participants emphasized the importance of integrating technology meaningfully into the learning process—not merely as a symbol of modernity, but as a tool for enhancing student comprehension and engagement. They also recognized the role of collaboration, both among teachers and with external institutions, in enriching instructional design through the exchange of ideas and exposure to real-world contexts. Furthermore, participants acknowledged the need to design learning environments that extend beyond the physical classroom, incorporating virtual and cultural dimensions that shape how students interact with content and one another. Despite these advances, the study also found that some teachers continued to face difficulties in designing lesson plans that translate deep learning principles into practice. These findings underscore the need for sustained support, iterative reflection, and institutional commitment to transformative teaching.

To improve and expand future training programs, this study recommends that local education authorities initiate professional development focused on helping teachers appreciate students' prior knowledge and integrate their feedback meaningfully into instruction. This approach can deepen student engagement and intrinsic motivation. Additionally, curriculum developers and school leadership should prioritize the integration of digital tools that genuinely support active and collaborative learning, ensuring that technology serves as an enabler of understanding rather than a source of instructional complexity. School principals are also encouraged to foster structured collaboration between teachers, students, and external partners through cross-grade projects and community-linked activities, thereby creating more dynamic and contextually relevant learning environments. Finally, schools should invest in the design of holistic learning spaces that incorporate physical, digital, and cultural dimensions. These environments must be intentionally crafted to support interaction, exploration, and a sense of belonging. Such systemic efforts will help institutionalize meaningful learning as a core instructional philosophy in independent schools, making teaching more adaptive, inclusive, and responsive to student needs.

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