

The Dynamics of Pedagogical Transformation of Teachers and Student Learning Experience in the P5 Project: A Thematic Analysis in the Era of Independent Learning

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Abstract : This research aims to explore in depth the pedagogical transformation of teachers and subjective experiences of students in the implementation of the Pancasila Student Profile Strengthening Project (P5) at SMA Muhammadiyah Kota Kendari. Using qualitative approaches and thematic analysis, the research reveals how curriculum flexibility triggers a shift in the role of teachers from conventional teachers to more creative facilitators in designing contextual learning. The findings identified that P5 projects effectively create a "safe to fail" learning environment, which significantly improves agency, active collaboration, as well as student learning independence. Despite facing serious structural obstacles in the form of low input dimensions of digital means and the instability of technological infrastructure in non-metropolitan areas, the school demonstrated outstanding organizational resilience through adaptive pedagogical improvisation strategies. The integration of Islamic values, such as the ethos of *Man Jadda wa Jada*, has proven to be a crucial compensatory factor that strengthens the intrinsic motivation and disciplined character of students in the midst of limited physical facilities. The autonomy of teachers in designing projects that are relevant to local wisdom is the main key to the success of this educational transformation. The research concludes that synchronization between independent curriculum policies and equitable infrastructure support is very urgent to ensure the fairness of the quality of national education.

Keywords : independent curriculum; p5 project; pedagogical transformation; learning independence; Islamic values

Abstrak : Penelitian ini bertujuan untuk mengeksplorasi secara mendalam transformasi pedagogis guru dan pengalaman subjektif siswa dalam pelaksanaan Proyek Penguatan Profil Siswa Pancasila (P5) di SMA Muhammadiyah Kota Kendari. Dengan menggunakan pendekatan kualitatif dan analisis tematik, penelitian ini mengungkap bagaimana fleksibilitas kurikulum memicu pergeseran peran guru dari guru konvensional menjadi fasilitator yang lebih kreatif dalam merancang pembelajaran kontekstual. Temuan tersebut mengidentifikasi bahwa proyek P5 secara efektif menciptakan lingkungan belajar yang "aman untuk gagal", yang secara

signifikan meningkatkan agensi, kolaborasi aktif, serta kemandirian belajar siswa. Meskipun menghadapi hambatan struktural serius berupa masukan yang rendah dari sarana digital dan ketidakstabilan infrastruktur teknologi di wilayah non-metropolitan, sekolah ini menunjukkan ketahanan organisasi yang luar biasa melalui strategi improvisasi pedagogis adaptif. Integrasi nilai-nilai Islam, seperti etos Man Jadda wa Jada, terbukti menjadi faktor kompensasi krusial yang memperkuat motivasi intrinsik dan karakter disiplin siswa di tengah fasilitas fisik yang terbatas. Otonomi guru dalam merancang proyek yang relevan dengan kebijaksanaan lokal adalah kunci utama keberhasilan transformasi pendidikan ini. Penelitian menyimpulkan bahwa sinkronisasi antara kebijakan kurikulum independen dan dukungan infrastruktur yang adil sangat mendesak untuk memastikan keadilan kualitas pendidikan nasional.

Kata kunci : kurikulum mandiri; proyek P5; transformasi pedagogis; belajar kemandirian; nilai-nilai Islam

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INTRODUCTION

Secondary education in the Digital 4.0 era is facing a significant transformation marked by increasing demands on 21st-century competencies, such as learning independence, digital literacy, and global competitiveness (Kumar, 2025; Nerita Setyaningtiyas, 2025). The acceleration of information technology has changed the way individuals access, manage, and produce knowledge collaboratively, so that learners are no longer positioned as passive recipients of information, but rather as active agents through self-regulated learning strategies (Nasihatul Umami & Yasin, 2025a; Xu et al., 2025; Zhang & Derakhshan, 2025). In the Indonesian context, the Independent Learning Policy initiated by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) represents the most fundamental education reform that shifts from a centralistic approach to a more autonomous and student-centered learning system (Sarson et al., 2024; Zhong & Zhao, 2025).

The essence of this reform is to provide flexibility to educational units to determine a learning process that is contextual and adaptive to global disruption (Ho & Dimmock, 2023; Ismail, 2025; Ortega-Alvarez et al., 2025). At the heart of this policy is the most distinctive curricular innovation, namely the Pancasila Student Profile Strengthening Project (P5). P5 allocates 20-30% of learning time for cross-disciplinary project-based activities that explicitly aim to develop students' character and competencies (Amanda & Ndzijia, 2026; Ketut Herya Darma Utami & Novi Kusumawardani, 2025; Ndibalema, 2025; Nurdyansyah et al., 2022). This approach is firmly rooted in the traditions of project-based learning (PjBL) and experiential learning, where hands-on experience in solving authentic problems is considered the foundation of the most meaningful learning (Boss & Larmer, 2018; Prasetyarini et al., 2025; Sánchez-García & Reyes-de-Cózar, 2025).

Theoretically, Freedom of Learning is a policy operationalization of the social constructivism paradigm developed by Vygotsky, which emphasizes the importance of the Zone of Proximal Development (ZPD), as well as the Self-Determination Theory which

identifies autonomy as a basic psychological need to encourage intrinsic motivation (Printer, 2023; Rohimah et al., 2024; Ryan & Deci, 2023). This policy also absorbs Ki Hajar Dewantara's noble philosophy of education that humanizes human beings through the principle of Tut Wuri Handayani, which defines the role of teachers not as a single authority, but as a facilitator who provides structured guidance from behind (Primadianningsih et al., 2023; Rachman et al., 2024; Wen, 2021).

However, despite being conceptually visionary, the implementation of Merdeka Belajar and the P5 project faces the challenge of extreme heterogeneity in the field (Hunaepi & Suharta, 2024a; Prayitno & Mahmudi, 2025; Renny Nur Afida et al., 2024). There is a very wide gap between schools in resource-rich metropolitan areas and schools in non-metropolitan areas, especially disadvantaged, frontier, and outermost (3T) areas (Kristiansen & Pratikno, 2006; van Laar et al., 2019). The main problem lies in the input dimension, specifically the availability of adequate digital infrastructure. Based on national data, although most schools are connected to the internet, the quality of connections and the availability of hardware outside Java are still very concerning (Bo, 2024; Khakim & Kunaepi, 2026; Martínez-Bravo et al., 2022). This digital divide risks making technology an accelerator of inequality, where students without adequate access are increasingly lagging behind in productive digital literacy (Sui et al., 2024a; van Laar et al., 2019; Zheng et al., 2023).

In addition to infrastructure factors, the pedagogical transformation of teachers is a determining factor for the success of this curriculum. Teachers are required to transform from mere conventional teachers to curriculum designers who are able to implement differentiated learning (Pratama et al., 2024; Salimi et al., 2025; Thomas, 2024). However, in many schools, there is often a compliance performance phenomenon, where changes only occur at the administrative level (such as changes in document formats) without touching the substance of the practice in the classroom (Susilowati & Prihatini, 2026). Excessive administrative burden in reporting P5 projects also often creates reform fatigue which actually hinders teachers' creativity (Ketut Herya Darma Utami & Novi Kusumawardani, 2025; Susilowati & Prihatini, 2026; Tobondo, 2024).

In this dynamic, there is an urgent need to understand the subjective reality of the implementation of this policy, especially in schools with unique characteristics such as SMA Muhammadiyah Kota Kendari. As an Islamic value-based school in the Southeast Sulawesi region, this institution faces a dialectic between the idealism of a digital-based national curriculum and the reality of limited local infrastructure support (Said & Nongko, 2026). Muhammadiyah schools have a strong integrative tradition, combining the government curriculum with the values of AIK (Al-Islam, Kemuhammadiyahan) (Shobirin et al., 2025).

The interaction between the flexibility of the Independent Curriculum and Islamic values such as the ethos of Man Jadda wa Jada (who is serious will succeed) becomes an important lens to see how learning independence can grow through internalized religious motivation (Maulidya Nisa et al., 2024; Nasihatul Umami & Yasin, 2025a). The value of discipline and spiritual responsibility has been proven to be a crucial compensation factor

for students in the midst of limited physical facilities (Said & Nongko, 2026; Sui et al., 2024b). This study is focused on comprehensively evaluating the dimensions of Context, Input, Process, and Product (CIPP) at SMA Muhammadiyah Kota Kendari in order to provide an accurate picture of how teacher autonomy and student collaboration in the P5 project are able to increase competitiveness in the era of digital disruption (Stufflebeam & Zhang, 2017; van Laar et al., 2017). Through this study, it is hoped that strategic recommendations will be obtained for the equitable distribution of the quality of national education so that the spirit of "Freedom of Learning" can truly be enjoyed fairly by all children of the nation (Hunaepi & Suharta, 2024; Wang et al., 2024).



Figure 1. Conceptual Framework

LITERATURE REVIEW

Educational transformation in the Digital 4.0 era requires a comprehensive mastery of 21st century competencies, including learning independence, digital literacy, and global competitiveness (Kumar, 2025; Nerita Setiyaningtiyas, 2025). The Freedom of Learning Policy in Indonesia responds to this challenge by shifting the educational paradigm from a centralistic approach to a more autonomous and student-centered system (Sarson et al., 2024; Zhong & Zhao, 2025). In this ecosystem, students are no longer positioned as passive recipients of information, but rather as active agents who are able to manage their own learning through strategies *self-regulated learning* (Nasihatul Umami & Yasin, 2025a; Xu et al., 2025). Curriculum flexibility is the key to creating a contextual and adaptive learning environment for global disruption (Ismail, 2025; Ortega-Alvarez et al., 2025).

The center of this curricular innovation is the Pancasila Student Profile Strengthening Project (P5), which allocates significant time for project-based cross-disciplinary activities to develop students' character and competencies (Khakim & Kunaepi, 2026; Ndibalema, 2025; Nurdyansyah et al., 2022). This approach is rooted in tradition *project-based learning* (PjBL) and experiential learning, where hands-on experience in solving authentic problems becomes the foundation of meaningful learning (Boss & Larmer, 2018; Prasetyarini et al., 2025). Theoretically, autonomy in this project is a basic psychological need that drives students' intrinsic motivation, in line with the principle *Self-Determination Theory* (Ryan & Deci, 2023). The role of teachers is also transformed into facilitators who

provide structured guidance according to philosophy Tut Wuri Handayani (Primadianningsih et al., 2023; Rachman et al., 2024).

However, the implementation of this policy faces a major challenge in the form of an extreme digital infrastructure gap between metropolitan and non-metropolitan areas (Bo, 2024; Martínez-Bravo et al., 2022). Limited access to hardware and stable internet connections risk making technology an accelerator of education quality inequality (Sui et al., 2024; Zheng et al., 2023). In addition to physical constraints, teachers often face heavy administrative burdens in reporting on P5 projects, which can trigger burnout and inhibit pedagogical creativity (Awwawina et al., 2026; Susilowati & Prihatini, 2026; Thomas, 2024a). Without equitable infrastructure support, the vision of learning independence is difficult to achieve fairly for all students (Hunaepi & Suharta, 2024).

On the other hand, the integration of religious values has proven to be a strength factor in dealing with limited physical facilities. The practice of Islamic ethos such as *Man Jadda or Jada* in the school environment is able to strengthen the intrinsic motivation and discipline character of students in learning (Maulidya Nisa et al., 2024; Nasihatul Umami & Yasin, 2025). These values help shape students' digital character effectively through integrated curriculum innovations (Amanda & Ndzijia, 2026; Shobirin et al., 2025). The results of the evaluation show that despite the input barriers, the learning process through P5 remains effective in improving students' communication skills, collaboration, and learning independence as social capital in the 21st century (Dilekçi & Karatay, 2023; Yurchenko, 2025).

METHOD

Research Design This study uses a *concurrent triangulation* design as part of a *mixed methods* approach. Within this framework, qualitative data is positioned as a crucial instrument to explore the depths of narratives that cannot be reached by statistical data, providing a comprehensive picture of the reality of policy implementation on the ground. Paradigmatic, this study applies the CIPP (*Context, Input, Process, Product*) *evaluation model* developed by Stufflebeam to identify the successes and obstacles of systemic pedagogical transformation. This evaluative approach not only focuses on the final outcome, but also assesses the suitability of the background and the quality of the implementation of the learning process.

Informants and Sampling Techniques The subjects of the study were selected using *purposive sampling* techniques to ensure that data was obtained from informants who had authority and direct experience of the phenomenon being studied. Five key informants were determined, consisting of: (1) the Principal as the person in charge of the policy; (2) Deputy Principal for Curriculum as the implementation coordinator; (3) Science teachers; (4) Indonesian language teacher; and (5) student representatives. The criteria for selecting teachers are based on their active participation in the Independent Curriculum training for at least one school year to ensure the maturity of the pedagogical reflections provided.

Research Instruments There are two main qualitative instruments used in this study

Semi-Structured Interview Guidelines: This instrument contains a list of open-ended questions designed based on the dimensions of Process and Product in the CIPP model. The focus of the questions included the transformation of the role of teachers into facilitators, the effectiveness of collaboration in the P5 project, and the subjective impact on students' learning independence. This instrument is designed for key informants (Principals, Vice-Principals for Curriculum, and Teachers) to explore subjective dynamics and pedagogical autonomy.

Table 1. Research Instruments

Dimensions (CIPP)	Evaluation Focus	List of Core Questions
Background	Relevance and Need	1. According to you, to what extent is the Freedom of Learning policy (especially P5) relevant to the characteristics and vision of Islamic-based schools in Kendari?
Input	Resource Readiness	2. What are the main problems that schools want to address through this curriculum flexibility?
Process	Implementation and Adaptation	3. How do you assess the readiness of school digital facilities (computers/internet) to support technology-based projects?
Product	Impacts and Outputs	4. Is the training received enough to equip teachers to become learning facilitators?
Mediation	Islamic Values	5. What are the most significant obstacles experienced by teachers in implementing differentiated learning and P5 projects?
Challenge	Administrative Barriers	6. How do you take advantage of the flexibility of the curriculum to design an original and contextual project?
		7. What real changes have you observed in student learning independence since the implementation of the Independent Curriculum?
		8. To what extent does the P5 project contribute to students' collaboration skills and creativity?
		9. How are Islamic values (such as <i>Man Jadda wa Jada</i>) integrated to strengthen students' independence in learning?
		10. To what extent does the administrative burden of P5 reporting affect the

effectiveness of your time in accompanying students?

Observation Sheet: In the form of a systematic checklist used to capture the dynamics of interaction in the classroom. Observations are focused on the implementation of differentiated learning, active involvement of students in project discussions, and the use of digital facilities in the midst of limited school infrastructure. This sheet is in the form of checklists and narrative notes to objectively capture classroom interactions and facility conditions.

Table 2. Observation of the Learning Process

Yes	Observation Aspect	Success Indicators	Observation Results (Yes/No)	Narrative Notes
1	Differentiated Learning	The teacher adjusts the method or material according to the student's interests/readiness.		
2	Student Agency (P5)	Students take the initiative in the division of roles and the execution of team projects.		
3	Active Collaboration	There is discussion between students without constant dependence on the teacher's instructions.		
4	Technology Utilization	Use of a projector, laptop, or app (Canva/Google) in a session.		
5	Culture of Reflection	Students reflect at the end of the session on what they learned and the difficulties.		

Table 3. Observation of the Readiness of Digital Facilities (Facilities)

Yes	Facilities	Examination Criteria	Real Condition	Category
1	Computer Lab	The number of units that function optimally (feasible).	... units of ... Total	Less/Enough
2	Machine Wi-Fi	Network stability in key learning areas at peak loads.	Stable / Frequent Breakdown	Medium/Low
3	Supporting Devices	Availability of projectors (<i>infocus</i>) that can be accessed by each class.	... Units	Limited

4	Self-Access	Availability of <i>free area hotspots</i> for students in the school environment.	None / None
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Data Collection and Analysis Techniques Field data collection is carried out intensively during an effective two-week period in the even semester of the 2025/2026 school year. In-depth interviews are digitally recorded and transcribed verbatim to maintain the authenticity of the data. Data analysis using the Thematic Analysis of the Braun & Clarke model (2022) went through six systematic phases:



Figure 2. Thematic analysis of the Braum and Clarke model

Research Procedures and Ethics This research adheres to strict research ethical standards, including providing informed *consent* to all informants, ensuring identity confidentiality through the use of codes, and the principle of voluntary participation without coercion. Administrative permits are formally obtained from the relevant educational authorities and the school to ensure the legality and smooth process of data collection within the Muhammadiyah High School in Kendari City.

RESULT AND DISCUSSION

Respondent Characteristics

This study involved 163 students of Muhammadiyah High School in Kendari City as respondents who provided complete data through a questionnaire. The demographic distribution of respondents shows a representative balance of proportions for all levels of education in the school.

Table 4. Distribution of Respondent Characteristics

Features	Category	Quantity (n)	Percentage (%)
Gender	Male	87	53,4
	Women	76	46,6
Class Level	Class X	54	33,1
	Class XI	55	33,7
	Class XII	54	33,1
Device Ownership	Have a personal Smartphone	148	90,8
	Have a Laptop/Computer	42	25,8
	Internet Access at Home	87	53,4

(Source: Primary data processed)

The data shows that although 90.8% of students have smartphones, only 25.8% have laptops and 53.4% have stable internet access at home. This indicates that there are significant technological accessibility obstacles for students in supporting digital-based independent learning.

Evaluation of the Implementation of Independent Learning (CIPP Model)

The evaluation of the implementation of the Independent Learning policy was measured using the four dimensions of the CIPP model. Overall, the implementation was in the High category with an average score of 3.85.

Table 5. Implementation Profile Based on CIPP Model

Yes	Evaluation Dimensions (CIPP)	Red (M)	Category
1	Context (Support & Needs)	3,82	Height
2	Input (Teacher Facilities & Training)	3,54	Medium
3	Process (Implementation & P5 Project)	4,01	Height (Highest)
4	Product (Student Outcomes & Competencies)	3,88	Height
Total Average		3,85	Height

The implementation of the Freedom to Learn policy based on the CIPP model as a whole is in the high category (average total 3.85). The Process dimension obtained the highest score (4.01), showing that the implementation of the P5 project was very effective in the field. The Product Dimension (3.88) and Context (3.82) are also relatively high, indicating that environmental support and student competency results are good. However, the Input dimension is the weakest point (3.54/medium category), especially related to infrastructure and teacher training facilities that still need to be improved. Nevertheless, the advantages in the process dimension are able to compensate for the limited inputs, so that the overall implementation is considered successful and effective in supporting policy objectives.

Table 6. CIPP Interdimensional Connections

Related Dimensions	Connections/Connections	Implications
Context → Input	Context (3.82) is higher than Input (3.54)	Support/needs are good, but teacher facilities and training still need to be improved
Input → Process	Input (3.54) is the lowest dimension, while Process (4.01) is the highest	The implementation of P5 is going very well even though the input of facilities/training is still moderate; Teachers are able to adapt
Process → Product	Process (4,01) > Product (3,88)	Optimal project implementation encourages high student competency outcomes

Context → Product	Context (3.82) and Product (3.88) are relatively balanced	Needs and support that are met contribute to the achievement of positive student outcomes
Input → Product	Lowest input (3.54) but High Product (3.88)	Limited facilities/training do not significantly hinder learning outcomes

The CIPP inter-dimensional connection table reveals the mutually influencing cause-effect relationship in the implementation of the Freedom of Learning policy. The Context dimension (3.82) which is relatively high shows that student support and needs have been well identified, but the capacity is not optimal because the Input dimension (3.54) is actually the lowest point, especially in infrastructure and teacher training. This indicates a gap between the needs that have been identified and the availability of supporting resources.

Interestingly, although the input was still moderate, the Process dimension actually achieved the highest score (4.01), which proves that teachers and schools are able to adapt and optimize the implementation of the P5 project despite the limitations of facilities. The advantages of this process then have a positive impact on the Product dimension (3.88), which reflects the results of good student competence. The most critical connection is seen between Input and Product, where the limitation of inputs does not significantly hinder the achievement of results, indicating the existence of a compensatory factor of teacher creativity and student motivation. Overall, the four dimensions of CIPP form an interconnected chain, with process as the main driver that is able to mask the weaknesses of the inputs, so that the overall policy implementation remains effective and achieves the expected goals.

Impact on Independence and Competitiveness

The results of statistical analysis show that the implementation of the Independent Learning policy has a positive and significant influence on two main dependent variables.

Table 7. Profile of Learning Independence (Y1) and Student Competitiveness (Y2)

Variabel	Indicator	Average Score	Category	Policy Contribution (R ²)	Significance
Learning Independence (Y1)	Self-Monitoring	3,89	Height	45,2%	p < 0.001
	Study Time Management	3,47	Medium		
	Y1 Average	3,72	Height		
	Communication	4,19	Very High		
Student Competitiveness (Y2)	Skills	4,19	High	48,7%	p < 0.001
	Collaboration	3,90	Height		
	Capabilities	3,10	Medium		
	Digital Literacy	3,10	Medium		
	Y2 Average	3,68	Height		

The student learning independence profile showed a high average (3.72), with the self-monitoring indicator as the main strength (3.89) reflecting the student's awareness of their learning comprehension. However, time management (3.47) is a weakness that needs

special attention through learning management assistance. Meanwhile, students' competitiveness is also in the high category (3.68), with communication skills (4.19) and collaboration (3.90) as strong social capital in facing the challenges of the 21st century. Ironically, digital literacy only reached the medium category (3.10) and was the lowest point across all indicators, indicating a significant digital gap. The contribution of the Merdeka Learning policy to both variables is large and significant (R^2 Y1=45.2%, Y2=48.7%; $p<0.001$), proving that this policy is effective in simultaneously encouraging students' independence and competitiveness. These findings confirm the need to strengthen digital literacy and time management training as priorities for future improvement.

Table 8. Connections Between Variable Indicators Y1 and Y2

Related Indicators	Connections/Connections	Implications
Self-Monitoring (3.89) ↔ Time Management (3.47)	There is a gap of 0.42 points	Students are able to monitor their self-understanding but are weak in managing their learning schedules
Digital Literacy (3.10) ↔ Communication (4.19)	The gap is very large (1.09 points)	Students excel in communicating but digital literacy is still low, hindering competitiveness in the digital era
Learning Independence (3.72) ↔ Competitiveness (3.68)	Both variables are equivalent (difference of 0.04)	Increasing learning independence is in line with increasing student competitiveness
R^2 Y1 (45.2%) ↔ R^2 Y2 (48.7%)	Policy contributions are almost equal	The Freedom to Learn policy has a positive and significant effect on both variables
Time Management (3.47) ↔ Digital Literacy (3.10)	Both are the weakest points	Special interventions are needed in time management and digital competency improvement

The table of connections between the indicators reveals a complex pattern of relationships between learning independence and student competitiveness. The largest gap was seen between communication skills (4.19) and digital literacy (3.10) with a difference of 1.09 points, indicating that students excel in social skills but lag behind in technology competence, a worrying finding in the era of digital transformation. Meanwhile, self-monitoring (3.89) and time management (3.47) showed a gap of 0.42 points, which means that students are able to evaluate self-understanding but are not yet skilled in managing their learning schedules in a disciplined manner.

The most strategic connection was seen between learning independence (3.72) and competitiveness (3.68) which had a very thin difference (0.04), proving that the two variables move hand in hand and reinforce each other. Almost equal policy contributions (R^2 45.2%

vs 48.7%) confirm that increased learning independence will be followed by increased competitiveness. Weak points in time management and digital literacy are priorities for interventions, considering that they are both important foundations for students' readiness to face the challenges of the 21st century and the world of work in the future.

Qualitative Findings: Supporting and Inhibiting Factors

Data triangulation through interviews and observations identified the factors that color the implementation of the policy:

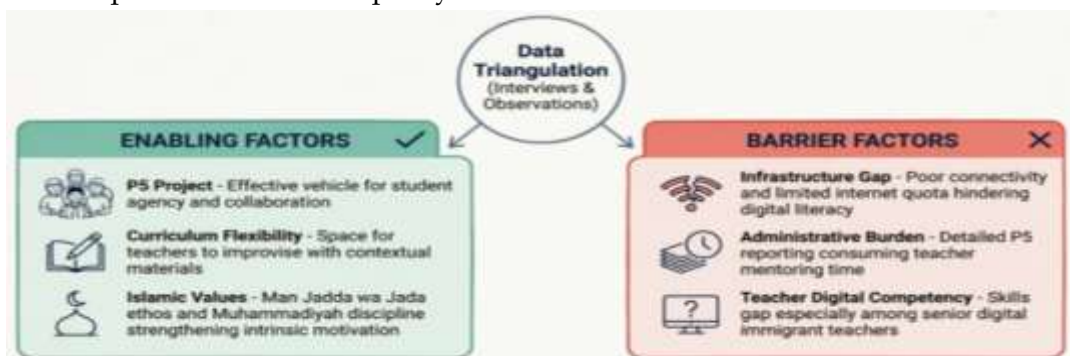


Figure 3. Qualitative Findings: Supporting and Inhibiting Factors

Data shows that the implementation of P5 at SMA Muhammadiyah Kendari is driven by three main supporting factors: the effectiveness of the P5 project in building student agency, the flexibility of the curriculum for contextual improvisation, and the internalization of the Islamic values of *Man Jadda wa Jada* which increases intrinsic motivation. On the contrary, this process is hampered by three critical obstacles, namely digital infrastructure gaps, administrative burdens that take up mentoring time, and digital competency gaps in senior teachers. Overall, the optimization of pedagogical transformation is highly dependent on the mitigation of structural and administrative barriers, so that the full potential of P5 in shaping the character and independence of students can be realized in a sustainable manner.

Discussion

The results of the evaluation using the CIPP model showed a unique phenomenon in SMA Muhammadiyah Kota Kendari, where the Process dimension obtained the highest score (4.01) even though the Input dimension was at the lowest point (3.54/3.62). These findings indicate strong *organizational resilience*. Teachers are able to maximize the implementation of the curriculum through pedagogical creativity even though it is supported by digital infrastructure that is an "emergency". Theoretically, this is in line with the view of (Ortega-Alvarez et al., 2025) that a student-centered learning environment can be created through evidence-based pedagogy even under challenging resource conditions. The effectiveness of this process dimension is greatly influenced by the implementation of the Pancasila Student Profile Strengthening Project (P5) which provides space for students to learn through real experience (*experiential learning*). As stated by (Yurchenko, 2025), the integration of project-based learning is very effective in developing *soft skills* even though technological facilities are inadequate. However, the low input score reminds us of the

warning of (Stufflebeam & Zhang, 2017) that the long-term success of a policy still requires synchronization between the process strategy and the adequacy of physical inputs.



Figure 4. Research Findings Infographic

The effect of the implementation of Merdeka Belajar on student learning independence ($R^2 = 45.2\%$) proves that curricular autonomy is significantly able to encourage *self-regulated learning* (SRL) capacity. The highest score on the self-monitoring indicator (3.89) indicates that students have begun to internalize responsibility for their own learning process. This phenomenon reinforces the Self-Determination Theory (SDT) developed by (Ryan & Deci, 2023), which emphasizes that the fulfillment of the basic need for autonomy is an absolute prerequisite for the growth of intrinsic motivation. When students are given the freedom to choose relevant learning paths and projects, they tend to be more proactive in planning and evaluating their progress (Moser & Zimmermann, 2025). However, qualitative findings regarding low consistency in the planning phase (3.58) due to digital distractions show that learning independence in the 4.0 era requires more explicit metacognitive support. Research by (Xu et al., 2025), emphasizes that in a complex digital environment, the role of teachers must shift to facilitators who provide metacognitive support so that students do not get caught up in undirected social media consumptive activities. This increase in independence is also influenced by the use of adaptive technology that allows for personalization of learning, as discussed by Rizk, (2025), about the creation of a dynamic learning environment to increase student engagement.

The contribution of policies to student competitiveness ($R^2 = 48.7\%$) shows a stronger number than learning independence, which indicates that the Merdeka Belajar ecosystem is very effective in fostering 21st century skills or 4Cs. The highest scores on the communication (4.19) and collaboration (3.90) indicators prove that the P5 project has succeeded in becoming a social laboratory for students. This is in line with the study of Dilekçi & Karatay, (2023), which shows that 21st century skills-based curriculum has a direct impact on students' creative and collaborative thinking abilities.

However, there is a paradox of competitiveness in the research site: the value of digital literacy in the "Medium" category (3.10) is the main *bottleneck*. Students are skilled in the use of social media (TikTok, CapCut), but stutter in the use of productivity software and scientific information evaluation. These findings confirm van Laar et al., (2019), argument that device ownership does not necessarily correlate with the mastery of productive digital skills. This gap reflects what Ndibalema, (2025), calls a structural digital literacy deficit in non-metropolitan areas, where limited internet access is stable creating a "vicious circle" in global competency development. Without qualified digital literacy, students' competitiveness will only touch the social-emotional aspect but weak on the technical-intellectual aspects needed in the future job market (Kumar, 2025).

One important finding that enriches this discussion is the role of Islamic Values as the moral foundation of independence. The integration of the ethos of *Man Jadda wa Jada* in the Muhammadiyah environment has proven to be able to compensate for the limitations of physical facilities through strengthening spiritual motivation. Students view learning not as just an academic obligation, but a form of worship, which creates higher intrinsic motivational stability (Nasihatul Umami & Yasin, 2025a). This phenomenon suggests that Religious Relatedness feelings of connection to transcendental values play a crucial role in the success of the curriculum in faith-based schools. This supports the findings of Shobirin et al., (2025) that students' digital characters can be effectively formed through the integration of religious values into curriculum innovation in the era of Education 5.0.

This study reveals that the excessive administrative burden of P5 reporting risks creating *burnout* in teachers, which can ultimately erode the enthusiasm for pedagogical transformation. (Thomas, 2024b). notes that digital transformation in educational organizations is often hampered by bureaucracies that fail to adapt to the speed of innovation. In addition, the digital competency gap in senior teachers (*digital immigrants*) is an additional obstacle in optimizing the Independent Teaching Platform. Research by (Farisia & Syafi'i, 2024), confirms the need for continuous professional development specific to teachers so that they are able to navigate the demands of digital literacy in this era of transformation.

The infrastructure gap in Southeast Sulawesi reflects a very real Digital Divide between Java and the eastern region of Indonesia. (Zheng et al., 2023) , caution that if technology-based national policies are implemented without equitable distribution of infrastructure, education risks becoming a tool of reproduction of inequality rather than a tool of social mobility. Therefore, the success of Merdeka Belajar in non-metropolitan areas is highly dependent on policy synchronization between the Ministry of Education and Culture and the Ministry of Infrastructure (Hunaepi & Suharta, 2024a).

This research provides evidence that teacher autonomy and curriculum flexibility are the main drivers of student independence. However, to achieve full global competitiveness, strengthening digital literacy can no longer be simply inserted in projects, but must be explicitly integrated into the daily curriculum (Haryaka & Khadijah Razak, 2025), Schools need to develop a *peer coaching* system between young teachers and senior teachers to overcome the digital competency gap. In addition, the wise use of AI in the

learning process, as suggested by Zhang & Derakhshan, (2025), can be a tool for students in strengthening independent learning strategies and engagement in complex tasks. The use of AI virtual assistants can help teachers design differentiated learning more efficiently.

The transformation of education at SMA Muhammadiyah Kota Kendari shows a portrait of optimism in the midst of challenges. The success in the process dimension and the positive impact on learning independence proves that Merdeka Belajar has lit the fire of change. However, the bottleneck of digital literacy due to limited physical input is a "yellow light" that requires real action from the government and foundations. Only through systemic mutual cooperation and serious investment in technological infrastructure can the vision of "Freedom of Learning" truly realize the quality of education justice for all the nation's children (Fuchs et al., 2024).

CONCLUSION

This study concludes that the implementation of the Independent Learning Policy at SMA Muhammadiyah Kota Kendari as a whole is in the High category with an average score of 3.85 on a scale of 1-5. Based on the evaluation framework of the CIPP model, the Process dimension achieved the highest score, which indicates that the implementation of differentiated learning and the Pancasila Student Profile Strengthening Project (P5) has been running effectively in triggering active involvement and student agencies. In contrast, the Input dimension obtained the lowest score reflecting systemic barriers to digital asset readiness, such as outdated computer labs and unstable school Wi-Fi networks. The results of the statistical test show that this policy has a positive and significant effect on student learning independence with a contribution of 45.2%, and on student competitiveness of 48.7%. Another important finding is that learning independence has been proven to play a crucial mediator variable that strengthens the influence of policies on improving competence in the 21st century. Although students' communication and collaboration skills have developed rapidly, the digital literacy indicator is still held in the medium category (3.10) due to limited access to productive devices (laptops) and internet quotas in the home environment. The supporting factors for this transformation include the pedagogical autonomy of teachers and the integration of Islamic values (*Man Jadda wa Jada ethos*) as the moral foundation of independence. However, challenges such as the heavy administrative burden of project reporting and the digital competency gap of senior teachers need to be addressed immediately. This study recommends the need to accelerate the rejuvenation of technological infrastructure in non-metropolitan areas to bridge the *digital divide* and ensure fairness in the quality of national education

This study has limitations due to its cross-sectional quantitative design, which doesn't capture changes over time, focuses on a single school making it hard to generalize, and uses self-reports to measure digital literacy, which can be biased. Future researchers are recommended to use a mixed-methods approach, expand to multiple locations, and develop performance-based instruments. Longitudinal studies are also needed to map the ongoing

impact of policies and explore external factors like parental support and regional policies that also affect the effectiveness of the Merdeka Belajar implementation..

REFERENCE

- Amanda, D. A. S., & Ndizijia, A. N. (2026). Implementation of Problem-Based Learning in Enhancing Student Engagement and Learning Achievement in Islamic Religious Education for Children. *Research Journal on Teacher Professional Development*, 4(1), 19–38. <https://doi.org/https://doi.org/10.21580/rjtpd.v4i01.24904>
- Awwawina, R. U. , Waluya, B. , & Kharisudin, I. (2026). Implementing Differentiated Learning to Enhance Mathematical Reasoning Readiness for University Entrance Assessment: A Classroom Action Research in Madrasah Aliyah. *Research Journal on Teacher Professional Development*, , 4(1), 183–197. <https://doi.org/https://doi.org/10.21580/rjtpd.v4i01.33576>
- Bo, N. S. W. (2024). OECD digital education outlook 2023: Towards an effective education ecosystem. *Hungarian Educational Research Journal*, 15(2), 284–289. <https://doi.org/10.1556/063.2024.00340>
- Boss, S., & Larmer, J. (2018). Project based teaching: How to create rigorous and engaging learning experiences. In *ASCD*.
- Dilekçi, A., & Karatay, H. (2023). The effects of the 21st century skills curriculum on the development of students' creative thinking skills. *Thinking Skills and Creativity*, 47, 101229. <https://doi.org/10.1016/j.tsc.2022.101229>
- Farisia, H., & Syafi'i, I. (2024). Professional Development on Digital Literacy for Teachers in Early Childhood Education in the Digital Era. *Tafkir: Interdisciplinary Journal of Islamic Education*, 5(3), 360–375. <https://doi.org/10.31538/tijie.v5i3.820>
- Fuchs, H., Benkova, E., Fishbein, A., & Fuchs, A. (2024). *The Importance of Psychological and Cognitive Flexibility in Educational Processes to Prepare and Acquire the Skills Required in the Twenty-First Century* (pp. 91–114). https://doi.org/10.1007/978-981-97-0996-0_6
- Haryaka, U., & Khadijah Razak, N. (2025). Integrating Digital Literacy, Critical Thinking, and Collaborative Learning: Addressing Contemporary Challenges in 21st Century Education. *Journal of Hunan University Natural Sciences*, (Volume 52, Issue 3). <https://doi.org/10.55463/issn.1674-2974.52.3.9>
- Ho, L., & Dimmock, C. (2023). Changing teachers' beliefs and practices towards learner-centred education: experiences and lessons from Vietnam's education system reforms. *PRACTICE*, 5(3), 200–219. <https://doi.org/10.1080/25783858.2023.2177191>
- Hunaepi, H., & Suharta, I. G. P. (2024a). Transforming Education in Indonesia: The Impact and Challenges of the Merdeka Belajar Curriculum. *Path of Science*, 10(6), 5026–5039. <https://doi.org/10.22178/pos.105-31>

- Hunaepi, H., & Suharta, I. G. P. (2024b). Transforming Education in Indonesia: The Impact and Challenges of the Merdeka Belajar Curriculum. *Path of Science*, 10(6), 5026–5039. <https://doi.org/10.22178/pos.105-31>
- Ismail, T. (2025). The future of work: Navigating transformations in the global labour market (2025-2030). *I-Manager's Journal on Management*, 19(3), 1. <https://doi.org/10.26634/jmgt.19.3.21582>
- Ketut Herya Darma Utami, & Novi Kusumawardani. (2025). Empowering Teacher Leaders: Implementing Differentiated Instruction in Primary School English Classes with the Merdeka Curriculum. *Indonesian Journal of Instruction*, 6(2), 236–248. <https://doi.org/10.23887/iji.v6i2.87541>
- Khakim, L. , & Kunaepi, A. (2026). Student-Centered Learning in Islamic Education: The Impact of Problem-Based Learning on Engagement and Achievement. *Research Journal on Teacher Professional Development*, 4(1), 93–110. <https://doi.org/https://doi.org/10.21580/rjtpd.v4i01.24880>
- Kristiansen, S., & Pratikno. (2006). Decentralising education in Indonesia. *International Journal of Educational Development*, 26(5), 513–531. <https://doi.org/10.1016/j.ijedudev.2005.12.003>
- Kumar, S. (2025). Education 4.0: Transforming Learning for the Fourth Industrial Revolution. *Higher Education for the Future*, 12(2), 144–162. <https://doi.org/10.1177/23476311251326140>
- Martínez-Bravo, M. C., Sádaba Chalezquer, C., & Serrano-Puche, J. (2022). Dimensions of Digital Literacy in the 21st Century Competency Frameworks. *Sustainability*, 14(3), 1867. <https://doi.org/10.3390/su14031867>
- Maulidya Nisa, Siti Salma Shobihah, Firmansyah, M. I., Fakhruddin, A., & Anwar, S. (2024). An Affective Domain Evaluation in Islamic Education: A Perspective from Self-Determination Theory. *Progresiva : Jurnal Pemikiran Dan Pendidikan Islam*, 13(01), 101–114. <https://doi.org/10.22219/progresiva.v13i01.31509>
- Moser, M., & Zimmermann, M. (2025). Meaning-Making Through Dialogic Classroom Discourse in History Classes: Multi-Perspective Case Studies From a Teacher Professional Development Program. *Journal of Social Studies Research*, 49(1), 51–70. https://doi.org/10.1177/23522798241278284/ASSET/EC4AB0F6-03EB-4280-8BA3-7284BE24EF6E/ASSETS/IMAGES/LARGE/10.1177_23522798241278284-FIG11.JPG
- Nasihatul Umami, I. O., & Yasin, M. (2025a). Integrating Islamic Ethical Values into Human Resource Development: Enhancing Educational Quality in Indonesian Islamic Schools. *Dirosatuna: Journal of Islamic Studies*, 7(2), 99–110. <https://doi.org/10.31538/dirosatuna.v7i2.7683>
- Nasihatul Umami, I. O., & Yasin, M. (2025b). Integrating Islamic Ethical Values into Human Resource Development: Enhancing Educational Quality in Indonesian Islamic

- Schools. *Dirosatuna: Journal of Islamic Studies*, 7(2), 99–110. <https://doi.org/10.31538/dirosatuna.v7i2.7683>
- Ndibalema, P. (2025). Digital literacy gaps in promoting 21 century skills among students in higher education institutions in Sub-Saharan Africa: a systematic review. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2452085>
- Nerita Setiyaningtiyas. (2025). Implementing 21st Century Skills in Indonesian Private High Schools: Challenges, Strategies, and Student Outcomes. *International Journal of Christian Education and Philosophical Inquiry*, 2(1), 61–79. <https://doi.org/10.61132/ijcep.v2i1.431>
- Nurdyansyah, F., Muflihati, I., Muliani Dwi Ujianti, R., Novita, M., Kusumo, H., . M., & Charles Ryan, J. (2022). Indonesian Character Building Strategy: Planning the Pancasila Student Profile Strengthening Project in Kurikulum Merdeka. *KnE Social Sciences*. <https://doi.org/10.18502/kss.v7i19.12456>
- Ortega-Alvarez, J. D., Mohd-Addi, M., Guerra, A., Krishnan, S., & Mohd-Yusof, K. (2025). *Creating Student-Centric Learning Environments Through Evidence-Based Pedagogies and Assessments* (pp. 123–142). https://doi.org/10.1007/978-3-031-68282-7_7
- Prasetyarini, A., Anif, S., Harsono, N. A., Narimo, S., & Nugroho, M. S. (2025). Peer collaboration in P5: students' perspective of project-based learning in multicultural school setting. *International Journal of Innovation and Learning*, 37(1), 104–119. <https://doi.org/10.1504/IJIL.2025.143003>
- Pratama, B. I., Wijaya, A., Hermawan, B., Baharuddin, & Purwoko. (2024). Evaluating academic performance and scholarly impact of rectors of indonesia's public universities: a dual bibliometric and scholastic analysis; *Cogent Education; Taylor & Francis*, 11(1). <https://doi.org/10.1080/2331186X.2024.2317151>
- Prayitno, M., & Mahmudi, M. R. (2025). Effectiveness of the Merdeka Belajar Policy: Challenges and Opportunities in Improving the Quality of Primary and Secondary Education in Indonesia. *MANDALIKA: Journal of Social Science*, 3(1), 16–21. <https://doi.org/10.56566/mandalika.v3i1.290>
- Primadianningsih, C., Sumarni, W., & Sudarmin, S. (2023). Systematic Literature Review: Analysis of Ethno-STEM and Student's Chemistry Literacy Profile in 21st Century. *Jurnal Penelitian Pendidikan IPA*, 9(2), 650–659. <https://doi.org/10.29303/jppipa.v9i2.2559>
- Printer, L. (2023). Positive emotions and intrinsic motivation: A self-determination theory perspective on using co-created stories in the language acquisition classroom. *Language Teaching Research*. https://doi.org/10.1177/13621688231204443/SUPPL_FILE/SJ-DOCX-1-LTR-10.1177_13621688231204443.DOCX
- Rachman, A., Putro, H., Rusandi, M., Heliyon, D. S.-, & 2024, undefined. (2024). The development and validation of the" Kuesioner Tema Proyek Penguatan Profil Pelajar

- Pancasila"(KT P5): A new tool for strengthening the Pancasila Student; Heliyon; *Cell.Com.* [https://www.cell.com/heliyon/fulltext/S2405-8440\(24\)11943-3](https://www.cell.com/heliyon/fulltext/S2405-8440(24)11943-3)
- Renny Nur Afida, Haryono, & Titi Prihatin. (2024). Teachers' Perceptions of Independent Learning in the Merdeka Curriculum: A Phenomenological Study. *Journal of Education Technology*, 8(4), 734–742. <https://doi.org/10.23887/jet.v8i4.86687>
- Rizk, N. (2025). *Dynamic Assignments to Create a Personalized, Engaging, and Adaptive Learning Environment to Enhance student Engagement*. 5799–5804. <https://doi.org/10.21125/inted.2025.1499>
- Rohimah, S. M., Mahmud, M. R., & Fazriyah, N. (2024). Epistemological Review of the Merdeka Curriculum in Elementary Schools: Relevance to the Axiological Values of the SDGs. *Literate: International Journal of Social Science and Humanities*, 3(2), 211–229. <https://doi.org/10.52005/literate.v3i2.40>
- Ryan, R. M., & Deci, E. L. (2023). Self-Determination Theory. In *Encyclopedia of Quality of Life and Well-Being Research* (pp. 6229–6235). Springer International Publishing. https://doi.org/10.1007/978-3-031-17299-1_2630
- Said, H., & Nongko, P. A. (2026). *Evaluation of the Independent Learning policy in the digital era 4.0: Theory, implementation, and its impact on student independence and competitiveness*. CV IAM Publishing.
- Salimi, G., Roodsaz, A., Mohammadi, M., Keshavarzi, F., Mousavi, A., & Zainuddin, Z. (2025). How students' digital literacy promotes knowledge sharing and academic performance in online learning environments. *The International Journal of Information and Learning Technology*, 42(2), 165–184. <https://doi.org/10.1108/IJILT-05-2024-0095>
- Sánchez-García, R., & Reyes-de-Cózar, S. (2025). Enhancing Project-Based Learning: A Framework for Optimizing Structural Design and Implementation—A Systematic Review with a Sustainable Focus;Sustainability; *Search.Ebscohost.Com*, 17(11). <https://doi.org/10.3390/SU17114978>
- Sarson, Moh. T. Z., Dungga, W. A., Ismail, D. E., Towadi, M., Mandjo, J. T., & Kamba, S. N. M. (2024). *Implementation of the Independent Learning Curriculum Policy in the Education World* (pp. 1132–1145). https://doi.org/10.2991/978-2-38476-303-0_100
- Shobirin, M. S., Akhyak, & Nur Efendi. (2025). Integrating Islamic Values Into Digital Character Education: Managing Curriculum Innovation In The Era Of Education 5.0. *International Journal of Education Management and Religion*, 2(2), 141–161. <https://doi.org/10.71305/ijemr.v2i2.352>
- Stufflebeam, D. L., & Zhang, G. (2017). *The CIPP Evaluation Model: How to Evaluate for Improvement and Accountability*. Guilford Publications. <https://books.google.co.id/books?id=Y1LgDQAAQBAJ&dq=Stufflebeam>
- Sui, C.-J., Yen, M.-H., & Chang, C.-Y. (2024a). Investigating effects of perceived technology-enhanced environment on self-regulated learning. *Education and*

- Information Technologies*, 29(1), 161–183. <https://doi.org/10.1007/s10639-023-12270-x>
- Sui, C.-J., Yen, M.-H., & Chang, C.-Y. (2024b). Investigating effects of perceived technology-enhanced environment on self-regulated learning. *Education and Information Technologies*, 29(1), 161–183. <https://doi.org/10.1007/s10639-023-12270-x>
- Susilowati, Y., & Prihatini, A. (2026). Teachers’ Literacy Motivation as A Learning Support in Merdeka Curriculum. *Jurnal Pendidikan Dan Pembelajaran Indonesia (JPPI)*, 6(3), 2205–2218. <https://doi.org/10.53299/jppi.v6i3.4514>
- Thomas, A. (2024a). Digitally transforming the organization through knowledge management: a socio-technical system (STS) perspective. *European Journal of Innovation Management*, 27(9), 437–460. <https://doi.org/10.1108/EJIM-02-2024-0114>
- Thomas, A. (2024b). Digitally transforming the organization through knowledge management: a socio-technical system (STS) perspective. *European Journal of Innovation Management*, 27(9), 437–460. <https://doi.org/10.1108/EJIM-02-2024-0114>
- Tobondo, Y. A. (2024). Challenges and Solutions in the Implementation of Educational Policies in Indonesia: A Literature Analysis of Merdeka Belajar Kampus Merdeka and Teacher Reform. *EDUKASIA: Jurnal Pendidikan Dan Pembelajaran*, 5(1), 1157–1164. <https://doi.org/10.62775/edukasia.v5i1.997>
- van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behavior*, 72, 577–588. <https://doi.org/10.1016/J.CHB.2017.03.010>
- van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2019). Determinants of 21st-century digital skills: A large-scale survey among working professionals. *Computers in Human Behavior*, 100, 93–104. <https://doi.org/10.1016/j.chb.2019.06.017>
- Wang, Y., Wang, H., Wang, S., Wind, S. A., & Gill, C. (2024). A systematic review and meta-analysis of self-determination-theory-based interventions in the education context. *Learning and Motivation*, 87, 102015. <https://doi.org/10.1016/j.lmot.2024.102015>
- Wen, Y. (2021). Augmented reality enhanced cognitive engagement: designing classroom-based collaborative learning activities for young language learners. *Educational Technology Research and Development*, 69(2), 843–860. <https://doi.org/10.1007/S11423-020-09893-Z/METRICS>
- Xu, X., Qiao, L., Cheng, N., Liu, H., & Zhao, W. (2025). Enhancing self-regulated learning and learning experience in generative AI environments: The critical role of metacognitive support. *British Journal of Educational Technology*, 56(5), 1842–1863. <https://doi.org/10.1111/bjet.13599>

- Yurchenko, A. (2025). Integration of Project-Based Learning and Digital Visualization for Developing Soft Skills of Future STEM Teachers. In *STEM Education in Canada and Ukraine: Transformations, Innovations, and Pathways for Sustainable Development* (pp. 135–184). Open Science Initiative. <https://doi.org/10.31110/STEM-CaUk-3.2>
- Zhang, J., & Derakhshan, A. (2025). Integrating as an Tool Into K-12 Contexts: Assessing Its Long-Term Effects on Students' Self-Regulated Learning and Task Engagement Through Latent Growth Curve Modelling. *European Journal of Education*, 60(4). <https://doi.org/10.1111/ejed.70329>
- Zheng, C., Liang, J.-C., Chai, C. S., Chen, X., & Liu, H. (2023). Comparing high school students' online self-regulation and engagement in English language learning. *System*, 115, 103037. <https://doi.org/10.1016/j.system.2023.103037>
- Zhong, R., & Zhao, Y. (2025). Education Paradigm Shifts in the Age of AI: A Spatiotemporal Analysis of Learning. *ECNU Review of Education*, 8(2), 319–342. <https://doi.org/10.1177/20965311251315204>