



Implementation of the Merdeka Curriculum in the Planning, Implementation, and Assessment of Pancasila Education Learning in Senior High Schools

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Abstract: This study examines the implementation of the Independent Curriculum in the planning, execution, and assessment of Pancasila Education learning in Senior High Schools throughout Bulungan Regency, identifying key challenges and solutions. The research employs a mixed-methods approach (Concurrent Embedded Design), where qualitative data serves as the primary method, and quantitative data is embedded to support findings. Data were collected from principals and Pancasila Education teachers using interviews and questionnaires, analyzed through both qualitative and quantitative techniques. Results indicate that the implementation of the Independent Curriculum falls into the "fairly good" category, with an overall achievement of 60%. The highest performance was observed in learning planning, whereas assessment had the lowest scores. Key obstacles include difficulties in designing reflective learning, ensuring independent learning tasks align with student workload, and integrating diverse assessment methods. Limited engagement with external experts and lack of consistent feedback also pose challenges. To address these issues, teachers leverage resources such as the *Merdeka Mengajar* Platform and participate in professional training programs. These findings highlight the need for enhanced teacher training and structured assessment strategies to optimize the effectiveness of Pancasila Education learning under the Independent Curriculum.

Keywords: Educational assessment; Independent curriculum; Learning implementation; Pancasila education.

Introduction

The *Merdeka Curriculum* was developed with the aim of creating a more flexible curriculum framework, with a focus on essential materials and the development of students' character and competencies (Eshariyani et al., 2023). Two main characteristics that support learning recovery are project-based learning for the development of soft skills and character in accordance with the Pancasila Student Profile, as well as an emphasis on essential materials to provide sufficient time for in-depth learning on basic competencies such as literacy and

numeracy. This curriculum provides teachers with flexibility to conduct differentiated learning according to students' abilities and adapt to local contexts and content (Hasibuan et al., 2024).

In its implementation, the *Merdeka Curriculum* structure consists of Intracurricular activities, Pancasila Student Profile Strengthening Projects, and Extracurricular activities. The allocation of teaching hours is written in total in one year, accompanied by suggestions for the allocation of teaching hours if delivered regularly or weekly. Although there is no change in the total teaching hours as a whole, this

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curriculum emphasizes learning activities, namely intracurricular learning and Pancasila student profile strengthening projects (Barlian & Solekah, 2022).

Teachers have the freedom to determine the criteria for achieving learning objectives according to competency characteristics. Support from parents is considered the key to the success of implementing the Independent Curriculum. Parents are expected to be friends and learning companions for their children, understand the competencies that need to be achieved, and can study textbooks through sources provided by the Ministry of Education, Culture, Research and Technology (Anggini et al., 2024).

Based on the results of pre-research in 5 Public and Private High Schools throughout Bulungan Regency on December 7, 2023, data was obtained that the implementation of the Independent Curriculum in the planning, implementation, and assessment of Pancasila Education learning encountered various problems including time management, learning management, digital access and lack of resources. Time management, the allocation of two hours for the Pancasila Education subject is not sufficient for the Independent Curriculum which emphasizes student needs, accommodates three levels of student ability effectively and has not been fully able to adapt to the learning styles of students. There are also teachers who see that in one learning achievement the content of the material is too much so that it cannot be completed in one semester. Teachers also have difficulty in dividing time between teaching tasks and additional tasks, while parents are still lacking in their involvement in their children's learning (Cahyono et al., 2024).

Learning management, teachers feel that they are not yet able to teach by implementing differentiated learning optimally, teachers are also constrained in preparing media in one teaching session, in addition, teachers also find it difficult to teach during the day, students are tired and sleepy, even though there is ice breaking, it only lasts for a while then they fall asleep again. Some materials recommend making projects such as posters, videos, etc., but teachers encounter situations where not all students are interested in projects, students prefer to do assignments as usual. Teachers also have difficulty in applying creative and innovative learning methods, because they need more time to learn again in order to be adaptive to the demands of the expected changes.

The implementation of the Independent Curriculum is also constrained by digital access, teachers feel that limited references such as printed books can be overcome by having digital books but encounter problems with digital access, because students do not have internet packages or there are

schools that do not have internet networks. In addition, resources are still limited such as textbooks, this is because the Independent Curriculum is still in the trial stage and continues to receive input from schools that implement it, the books purchased by the school are not yet completely complete. Therefore, the school chose not to buy the complete edition of the Independent Curriculum package book, because the contents and editions can change at any time based on the feedback received. In addition, the nearest bookstore is also not yet available.

In several sources it was also found that the main obstacles in planning and implementing and assessing learning, which often arise are the lack of understanding of the curriculum and the difficulty in implementing creative and innovative learning methods. Teachers also still face difficulties in understanding the concept, implementation, and benefits of the Independent Curriculum for students. The problems of implementing the Independent Curriculum can be overcome by improving teacher training, providing adequate resources, empowering students, and providing evaluation and feedback. Improving teacher training such as independent training on the Merdeka Mengajar Platform (PMM) and training held by learning communities, both offline and online, as well as regular workshops to improve teachers' understanding and skills in implementing the Independent Curriculum. Providing adequate resources is also a solution to the problems of implementing the Independent Curriculum, for example by ensuring the availability of adequate resources, such as reference books, technological devices, and learning facilities to support the implementation of the independent curriculum. Empowering students is also a solution in implementing the Independent Curriculum, namely by encouraging learning independence by giving them more autonomy in choosing and managing the learning process according to their interests, talents, and needs. Another solution is periodic evaluation of the implementation of the independent curriculum and providing feedback to teachers and related stakeholders for continuous improvement.

The fact that the implementation of the independent curriculum, especially in the planning, implementation, and assessment of Pancasila Education learning in high schools throughout Bulungan Regency, is still unknown, encourages discussion on how to implement the Independent Curriculum in the planning, implementation, and assessment of Pancasila Education learning in high schools throughout Bulungan Regency, as well as the obstacles and solutions.

Method

This study employs a Mixed Methods (Concurrent Embedded) Design, where qualitative data serves as the primary approach, and quantitative data is embedded to strengthen the findings. The qualitative component explores the experiences and perceptions of principals and Pancasila Education teachers, while the quantitative component supports the analysis with statistical data. This approach ensures a comprehensive understanding of the implementation of the Independent Curriculum in Senior High Schools.

Sampling Procedure

The study was conducted in Senior High Schools throughout Bulungan Regency, using a random sampling technique to select both public and private schools. A total of [X] schools were included, with [X] principals and [X] Pancasila Education teachers participating in the research.

Instruments & Data Collection

Interviews – Conducted with principals and teachers to gain in-depth insights into curriculum implementation challenges and strategies.

Questionnaires – Used to collect quantitative data, measuring key aspects of curriculum planning, implementation, and assessment.

Document Analysis – Reviewing lesson plans, school reports, and official government guidelines to support data interpretation.

Data Analysis

Qualitative Analysis: Thematic analysis was performed using NVivo to categorize recurring themes and patterns from interviews.

Quantitative Analysis: Survey data were analyzed using descriptive statistics (mean, standard deviation, percentages) to assess curriculum implementation effectiveness.

Result and Discussion

Implementation of the Independent Curriculum in the Planning, Implementation and Assessment of Pancasila Education Learning in High Schools throughout Bulungan Regency.

The results indicate that the implementation of the Independent Curriculum in Pancasila Education learning falls within the "fairly good" category (60%). However, a closer look at each aspect—planning, implementation, and assessment—reveals critical gaps that hinder its optimal execution.

Learning Planning (45% quite good)

The planning of Pancasila Education learning is generally well-structured, with teachers aligning learning objectives to competencies. However, one of the most critical shortcomings is the low score in designing reflective learning (35%). Teachers struggle to guide students in self-reflection, which is essential for personal and moral development. This may be due to limited training on reflective teaching strategies or a lack of assessment models that effectively integrate reflection.

The Dick, Carey & Carey model outlines systematic steps for planning, including developing assessment instruments, designing formative evaluations, and revising learning programs. In this study, the eighth, ninth, and tenth steps—which focus on assessment, revision, and summative evaluation—are the most challenging for teachers. This suggests a need for enhanced teacher training on assessment strategies, particularly in integrating self-reflection into learning objectives.

Learning Implementation (55% quite good)

The implementation of learning received a higher score than planning and assessment, yet it still reflects significant challenges. While teachers successfully apply varied learning models, the use of open-ended questions and student-driven assignments remains limited (only 25%). Why is this happening?: many teachers still rely on traditional lecture-based methods, limiting student engagement; the curriculum requires teachers to integrate project-based learning, but many students prefer conventional tasks, making it difficult to balance both; time constraints force teachers to prioritize content coverage over deeper student exploration.

This highlights a mismatch between curriculum expectations and classroom realities, where teachers need more support in transitioning to student-centered learning. Instead of relying on interest-based learning (Tomlinson et al., 2003), the discussion should focus on how schools can better facilitate active learning methods required by the Independent Curriculum.

Learning Assessment (35% quite good)

Among all aspects, assessment scored the lowest. The biggest issue is the limited use of diverse assessment techniques, as teachers struggle to provide timely feedback and involve parents in student evaluations (only 20%). The challenges include: heavy teacher workload, making it difficult to provide individualized feedback; limited parental involvement, as many parents lack access to assessment tools or clear guidance on how to support their child's progress; and insufficient training on formative assessment models, resulting in teachers relying on standardized tests instead of holistic evaluations.

Discussion

The implementation of the Independent Curriculum in the planning, implementation and assessment of Pancasila Education learning in Senior High Schools throughout Bulungan Regency is in the fairly good category of 60%. Senior High Schools throughout Bulungan Regency have implemented the Independent Curriculum in the planning of Pancasila Education learning in the highest category of fairly good at 45%, the implementation of Pancasila Education learning at 55% and the assessment of Pancasila Education learning at 35%.

Learning Planning

Planning involves decision making and requires the ability to visualize and formulate future action patterns. Thus, planning in the Independent Curriculum is placed as the initial stage of a series of learning management functions (Hidayat & Syam, 2020). Learning planning consists of flexible steps of activities, learning opportunities, or accessibility (Pang, 2016).

The results of the study showed that the implementation of the Independent Curriculum in the planning of Pancasila Education learning in Senior High Schools throughout Bulungan Regency was highest in the "quite good" category, which was 45%, this was indicated by the indicator that in the planning of Pancasila Education learning, Pancasila Education teachers had implemented the independent curriculum, which was marked by the indicator that the teacher had designed learning objectives that were in accordance with learning achievements, measurable verbs, teaching materials that were relevant to real life and in accordance with learning objectives. Active learning based on activities and fun learning with various learning models.

This is in accordance with the opinion of (Glaesser, 2018), that the flexibility of learning outcomes is designed to provide students with the freedom to obtain contextual learning, namely connecting the concepts or theories learned with the environment or life around them. In agreement with (Nelson, 2021), that educators design learning starting with consideration of learning objectives and learner variability, educators consider the knowledge needed to master learning objectives, educators can identify where the potential obstacles are. Based on this analysis, educators can integrate flexible choices and support to address learner variability, including the diversity of needs, preferences, backgrounds and abilities of learners.

As for the achievement of indicators in Pancasila Education learning planning, the lowest is the indicator of teachers designing students to reflect in order to understand their strengths and areas that need to be

developed, with an achievement of 35% or 7 respondents out of 20 respondents who stated that they strongly agreed with the indicator. Referring to the Dick, Carey & Carey learning planning model, it consists of ten steps, namely: First, identifying learning objectives. Second, carrying out instructional analysis to determine the skills and knowledge that are relevant and needed by students. Third, analyzing student characteristics and learning contexts. Fourth, formulating specific learning objectives. Fifth, developing learning assessment instruments. Sixth, developing learning strategies. Seventh, developing and selecting teaching materials. Eighth, designing and developing formative assessments. Ninth, revising reflections on learning programs and Tenth, designing and developing summative assessments after formative assessments (Nirmala et al., 2022; Surur, 2021). In the Dick, Carey & Carey learning planning model, the eighth, ninth and tenth steps are the steps in learning planning that achieved the lowest indicator achievements found in this study.

Implementation of Learning

Implementation learning is a action or curriculum implementation from a plan that has been prepared carefully and in detail. The results of the study show that the implementation of the Independent Curriculum in the implementation of Pancasila Education learning in SMA in Bulungan Regency is highest in the "quite good" category, which is 55%. In the implementation of Pancasila Education learning, Pancasila education teachers have implemented the independent curriculum, which is marked by indicators that teachers implement reflection activities, feedback that refers to the Pancasila student profile, motivate learning participation and understanding that the future belongs to them so they need to take roles and responsibilities. Provide space for initiative, creativity, independence according to talents, interests, and physical and psychological development. Apply a variety of learning methods, according to needs and integrate sustainable life. Involve students in finding solutions to everyday problems. Provide role models and inspiration and utilize Pancasila student profile strengthening projects to build character.

This is in accordance with the opinion of (Tomlinson et al., 2003), that interest-based learning has a positive impact, namely increasing motivation, productivity, and achievement in both the short and long term. Modifying learning, providing interesting questions and assignments for students will increase student engagement with the task. Students feel that the work done is useful. This has an impact on increasing creativity, productivity, independence and higher levels

of intrinsic motivation of students. Experts suggest that students be encouraged to choose their project topics and engage in discussions with parents and teachers about learning that makes them happy. For example, when students are encouraged to choose reading materials that interest them, they are more likely to show substantive involvement, thus increasing reading performance. Also in accordance with the opinion of (Purnawanto, AT, 2023), that the success of implementing differentiated learning by teachers can be achieved through the following steps: first, teachers need to understand student diversity as a basis for developing appropriate learning strategies. Second, teachers must conduct diagnostic and formative assessments at the beginning of learning to identify students' needs and achievement levels. Third, teachers must use a variety of methods, media, and learning resources to be able to adjust learning to different learning styles among students, including visual, auditory, and kinesthetic types.

As for the achievement of indicators in the implementation of Pancasila Education learning, the lowest is 25% in the indicator of teachers using open questions. Meanwhile, the achievement of indicators of 25% was also found in the indicator of teachers giving assignments or homework aimed at encouraging independent learning and exploring science by considering the learning load of students and the achievement of indicators of 25% in the indicator of teachers empowering the surrounding community, communities, organizations, experts from various professions as resource persons.

This is in accordance with the opinion written by Teh & Choy (2017) that learning aims to provide life and career skills, consisting of flexibility and adaptability, initiative and self-direction, social and cultural skills, productivity and accountability, and leadership and openness. Learning also aims for students to be able to adapt to the environment, be able to manage goals and time, work independently, become independent learners, interact effectively with others, work efficiently in diverse teams, manage projects, respect and lead others, and be responsible to others.

Learning Assessment

In general, in educational assessment research, formative assessment is an assessment as or for learning carried out using formal and informal techniques (O'Keeffe et al., 2020). Assessment is used to find out what students know and what they can do (Baird et al., 2017).

The results of the study showed that the implementation of the Independent Curriculum in the Pancasila Education learning assessment in Senior High

Schools in Bulungan Regency was highest in the "quite good" category, which was 35 %. The learning assessment score was lower than the planning and implementation score for Pancasila Education learning. In the Pancasila Education learning planning, Pancasila education teachers have implemented the independent curriculum, which is marked by indicators that teachers carry out initial learning assessments, feedback in the form of supportive sentences, involve students in conducting assessments, provide opportunities for students to reflect. Design assessments with the right level of difficulty and provide sufficient time and determine success criteria and convey them to students. Provide time to read, analyze, and reflect on assessment results and use assessment results as discussion material to determine things that have gone well and areas that need to be improved.

This is in accordance with the opinion of (Anggraena et al., 2022), that the implementation of formative assessment includes various activities, such as questions at the beginning and end of learning, experimental activities with discussion and feedback, self-assessment, peer assessment, providing feedback between friends, and reflection. Educators have the freedom to choose methods that are appropriate to the context and learning needs. Formative assessment is an important instrument in supporting the development of adaptive and responsive learning to the needs of students.

The lowest indicator achievement in the Pancasila Education learning assessment was 20%, namely in the indicator that teachers use various assessment techniques according to the function and purpose of the assessment and in the indicator that teachers provide regular feedback to students and discuss follow-up with parents at 20%.

This is in accordance with the opinion of Black & William (2018), that assessment is divided into two categories, namely formative and summative. Formative assessment provides feedback to students about their strengths and progress in learning, while summative assessment measures the achievement of learning objectives at the end of learning outcomes. The important role of formative assessment is to obtain learning information that is used, overcome students' learning difficulties and help achieve learning objectives. Likewise, various assessments are in accordance with the opinion of Griffin et al. (2016), that generally formal formative assessment techniques consist of written tests, assignments, exercises, and homework, while informal techniques include conversations and dialogues, opinions Muhonen et al. (2020), that both techniques, informal techniques are more effective in instructional modification and lifelong

learning, compared to formal techniques, according to the opinion of (Nieminen et al., 2020). Meanwhile, according to Mzenzi & Simeiane (2019), informal formative assessment techniques are by encouraging classroom dialogue, teachers can use observations, oral questions, presentations, interviews, and video discussions to assess student learning. According to (Wickens & Parker, 2019), other formal formative assessment techniques, for example, with the Vocabulary Box (Frayer Model) are boxes divided into four blocks, which present definitions, facts or characteristics, examples, and non-examples of the given words/phrases. This was developed by Frayer et al. (1969) as a type of concept map.

Thus, Pancasila Education teachers need to use various assessment techniques according to the function and purpose of the assessment so that they can provide information about strengths, things that need to be improved by students, and reveal ways to improve the quality of writing, work, or performance that is given feedback. Teachers should choose various techniques and instruments, not limited to tests alone, but can include observation and performance assessment such as practice, product creation, projects, and portfolio creation.

Obstacles and Solutions to the Implementation of the Independent Curriculum

In the process of implementing the Independent Curriculum, of course, there are problems in the planning, implementation, and assessment of learning because this curriculum has not been implemented for long and there must be many parties, especially Pancasila Education teachers who are still in the adjustment stage in its implementation, so they encounter various obstacles that occur in it. These results are almost the same as the results of Prasetyo (2023) which concluded that the implementation of the Independent Learning Curriculum in PJOK subjects in Public Junior High Schools throughout Sleman Regency is in the sufficient and good category, namely 50%.

The results of qualitative analysis from interview data sources, the obstacles to implementing the Independent Curriculum in the planning, implementation and assessment of Pancasila Education learning in Senior High Schools throughout Bulungan Regency are the difficulty of designing learning reflections. Providing open questions and assignments that encourage independent learning and consider the learning load of students. Empowering the surrounding community, communities, organizations, experts from various professions as resource persons. Using various assessment techniques according to the function and

purpose of the assessment. Providing regular feedback to students and discussing follow-up with parents.

This is in accordance with Brown's opinion, that formative assessment techniques, for example, through the choice of tasks that are in line with learning outcomes and are able to reveal gaps, open conversations between teachers and students, the use of deep thinking questions, the use of wise tests, the quality of feedback and involving students in assessments such as through peer and self-assessment (Brown, 2019). Regarding the obstacles in implementing student-centered learning, in line with the results of Bondie et al. (2019) which analyzed 28 research studies in the US conducted between 2001 and 2015 on differentiated learning, in its implementation encountered several obstacles, including the source of differentiated learning decisions (institutions vs teachers), teachers' views on time, resources, control, and disposition towards student differences and their ambiguity.

The results of qualitative analysis from interview data sources, several solutions for implementing the Independent Curriculum in the planning, implementation and assessment of Pancasila Education learning in Senior High Schools throughout Bulungan Regency, namely by seeking references from various sources, for example on the Merdeka Mengajar Platform (PMM), participating in various training in learning communities and time management. In accordance with the research results (Nisa et al., 2023), it was revealed that the implementation of the Independent Curriculum Implementation (IKM) faced various obstacles originating from four main aspects: facilities and infrastructure, quality of human resources (HR) of teachers and educators, conditions of students, families, and the environment, and inequality in government policies. To overcome these obstacles, several solutions that can be applied are to maximize funding assistance from the government, increase teacher participation in training or workshops related to IKM, strengthen cooperation between all school residents, and implement policies that are in line with the principles of the Independent Curriculum when there is inequality in government policies.

Conclusion

The results of the study showed that the Implementation of the Independent Curriculum in the planning, implementation and assessment of Pancasila Education learning in Senior High Schools throughout Bulungan Regency was in the fairly good category of 60%. The obstacles were the difficulty of designing learning reflections, giving assignments that encourage independent learning and considering the study load.

empowering the surrounding community, communities, expert organizations from various professions as resource persons. Using various assessment techniques. Providing regular feedback and discussing with parents. The solution is to look for references from various sources, such as the Merdeka Mengajar Platform and participating in various training in learning communities and time management. Suggestions related to the results of this study are that the implementation of the Independent Curriculum needs to be strengthened in schools to improve the quality of education. Schools as implementers must continue to strive to create an environment that supports independence for teachers and students. Teachers are also expected to be able to implement the Independent Curriculum optimally, according to their characteristics, to achieve the main goal of improving the quality of education through student-centered learning, by paying attention to the diversity of learning needs.

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Author Contributions

Author contributions include M, and E.K: collecting data, analyzing data, writing original drafts, and so on; M, and E.K: focus on methodology and review writing.

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Conflicts of Interest

The authors declare no conflict of interest.

References

- Anggini, P., Husna, H., Rambe, N. F. S., Nasution, A. K., Lubis, I. H., & Harahap, S. (2024). Independent Curriculum In Improving The Quality Of Education. *Education Achievement: Journal of Science and Research*. <https://doi.org/10.51178/jsr.v5i2.1872>
- Anggraena, Y., Felicia, N., Eprijum, D., Pratiwi, I., Utama, B., Alhapip, L., & Widiaswati, D. (2022). *Kajian akademik kurikulum untuk pemulihan pembelajaran*. Retrieved from <https://repositori.kemdikbud.go.id/24972/>
- Baird, J. A., Andrich, D., Hopfenbeck, T. N., & Stobart, G. (2017). Assessment and learning: fields apart? *Assessment in Education: Principles, Policy & Practice*, 24(3), 317-350. <https://doi.org/10.1080/0969594X.2017.1319337>
- Barlian, U. C., & Solekah, S. (2022). Implementation of the independent curriculum in improving the quality of education. *JOEL: Journal of Educational and Language Research*, 1(12), 2105-2118. <https://doi.org/10.53625/joel.v1i12.3015>
- Black, P., & William, B. (2018). Classroom assessment and pedagogy. *Principles, Policy & Practice*, 25(6), 551-575. <https://doi.org/10.1080/0969594X.2018.1441807>
- Bondie, R. S., Dahnke, C., & Zusho, A. (2019). How does changing "one-size-fits-all" to differentiate instructions affect teaching? *Review of Research in Education*, 43(1), 336-362. <https://doi.org/10.3102/0091732X18821130>
- Brown, G. T. (2019). *Is assessment for learning really assessment?* *Frontiers in Education*. <https://doi.org/10.3389/educ.2019.00064>
- Cahyono, H., Setyawati, E., & Pahrudin, A. (2024). Independent Curriculum Development in Primary and Secondary Education (Schools and Madrasas). *FIKROTUNA: Jurnal Pendidikan Dan Manajemen Islam*. <https://doi.org/10.32806/jf.v13i01.7570>
- Eshariyani, E., Ernawatie, E., Berliani, T., Sumarnie, S., Nugroho, P. J., Limin, D. L., Aprianto, A., Purnomo, W., Winaryo, S., Radiafilsan, C., & Sedek, M. (2023). Pendampingan Guru Sekolah Dasar Dalam Pelaksanaan Pembelajaran Berdiferensiasi pada Komunitas Belajar Kelompok Kerja Guru Di Kota Palangka Raya. *PengabdianMu: Jurnal Ilmiah Pengabdian Kepada Masyarakat*. <https://doi.org/10.33084/pengabdianmu.v8i6.5560>
- Frazer, D. A., Fredrick, W. C., & Klausmeier, H. J. (1969). *A schema for testing the level of concept mastery* (Vol. 13). Wisconsin Univ. Research & Development Center for Cognitive Learning.
- Glaesser, J. (2018). Competence in educational theory and practice: a critical discussion. *Oxford Review of Education*, 45(1), 70-85. <https://doi.org/10.1007/s40593-016-0135->
- Griffin, P., Cagasan, L., Care, E., Vista, A., & Nava, F. (2016). Formative assessment policy and its enforcement in the Philippines. In laveault & allal (Eds.), *In Assessment for learning: Meeting the challenge of implementation* (pp. 75-92). Springer International Publishing. https://doi.org/10.1007/978-3-319-39211-0_5
- Hasibuan, A., Amalia, A., Resky, M., Adelin, N., Muafa, N. F., & Zulfikri, M. A. (2024). Prinsip Pembelajaran Kurikulum Merdeka (Tinjauan Holistik Paradigma Ki Hajar Dewantara Sebagai Pendekatan). *NUSRA : Jurnal Penelitian Dan Ilmu Pendidikan*. <https://doi.org/10.55681/nusra.v5i2.2287>

- Hidayat, M. C., & Syam, A. R. (2020). The urgency of strategic planning and management of madrasah human resources in the 4.0 industrial revolution era. *AL-ASASIYYA: Journal of Basic Education*, 4(1), 1–13. <https://doi.org/10.24269/ajbe.v4i1.2100>
- Muhonen, H., Verma, P., Suchodoletz, A., & Rasku-Puttonen, H. (2020). Exploring types of educational classroom talk in early childhood education centers. In *Research Papers in Education* (pp. 1–22). <https://doi.org/10.1080/02671522.2020.1784259>
- Mzenzi, S. M., & Simeiane, B. B. (2019). Scientific reasoning development within informal formative assessment use in senior secondary physical science lessons. *International Journal of Research-GRANTHAALAYAH*, 7(6), 190–204. <https://doi.org/10.29121/granthaalayah.v7.2019.795>
- Nelson, L. (2021). *Design and Deliver: Planning and Teaching Using Universal Design for Learning* (second). Brookes Publishing.
- Nieminen, P., Hähkiöniemi, M., & Viiri, J. (2020). Forms and functions on-the-fly formative assessment conversations in physics inquiry lessons. *International Journal of Science Education*, 43(3), 362–384. <https://doi.org/10.1080/09500693.2020.1713417>
- Nirmala, B. I., An-Nurdin, M. I., Muttaqin, M. Y. K., Fajriati, N. A., & Surur, A. M. (2022). Learning Media Palang Ajib (Papan Langka Ajaib) To Easy in Understanding the Meterials of Relationship and Functions. *Prima: Jurnal Pendidikan Matematika*, 6(1), 40. <https://doi.org/10.31000/prima.v6i1.5531>
- Nisa, S. K., Yoenanto, N. H., & Nawangsari, N. A. F. (2023). Hambatan dan Solusi dalam Implementasi Kurikulum Merdeka pada Jenjang Sekolah Dasar: Sebuah Kajian Literatur. *Didaktika: Journal of Education*, 12(3), 287–298. <https://doi.org/10.58230/27454312.231>
- O’Keeffe, L., Rosa, A., Vannini, I., & White, B. (2020). Promoting informal formative assessment practices in higher education: The potential of video analysis as a training tool. *Open Journal Per La Formazione in Rete*, 20(1), 43–61. <https://doi.org/10.13128/form-8241>
- Pang, M. (2016). Companion guides for lesson planning: a planning template and the lesson plan pro forma. *ELT Journal*, 70(ue 4), 444–454. <https://doi.org/10.1093/elt/ccw053>
- Prasetyo, F. B. (2023). *Implementasi Kurikulum Merdeka Belajar Pada Mata Pelajaran Pendidikan Jasmani Olahraga Dan Kesehatan (Pjok) di SMP Negeri Se-Kabupaten Sleman* [Thesis: Magister Pendidikan Program Studi Pendidikan Jasmani]. Retrieved from https://eprints.uny.ac.id/78764/1/fulltext_farhan_budi_prasetyo_20733251033.pdf
- Surur, M. (2021). *Learning planning in schools theory and implementation*. Pradina Pustaka Publisher.
- Teh, G. B., & Choy, S. C. (2017). *Empowering 21st Century Learners Through Holistic and Enterprising Learning*. Springer. <https://doi.org/10.1007/978-981-10-4241-6>
- Tomlinson, C. A., Brighton, C., & Hertberg, et al. (2003). Differentiating instruction in response to student readiness, interest, and learning profiles in academically diverse classrooms: a review of literature. *Journal for the Education of the Gifted*. Retrieved from <https://eric.ed.gov/>