



# Independent Learning through a PjBL: a Study of the Presisi program in Magelang Regency

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**Abstract.** Mainstreaming independent and contextual learning in formal schools made the Directorate General of Culture (DitJen Kebudayaan) and the Civil Education Movement collaborate to create the Presisi Program (Strengthening the Character of Independent Students through Art Creations/Penguatan Karakter Siswa Mandiri Melalui Karya Seni) which implemented from Aceh to Papua. The purpose of this study is to understand and analyze how the process of implementing the Presisi program in Magelang Regency is seen from the perspective of independent learning. Thus, we can see the gap between the theory and practice of self-learning. This study used a qualitative method with a case study approach to see how the Presisi program is implemented to see the position of the program in the dynamics of the growth of independent learning theory. Data collection was carried out in April-June 2022 at SMA Marsudirini Muntilan and SMA Negeri 1 Ngluwar. Data collection techniques using interviews, observations, and documents. Participants consist of students, teachers, and facilitators of the Presisi program. The results of the study indicate that independent learning is found in Presisi Program. In the planning process, independence is seen when students plan their projects and independently carry out self-reflection. In the implementation process, independence is seen in students who conduct experiments and look for their learning resources. In the evaluation process, independence can be seen in the presentation of processes and projects and in organizing exhibitions. The Presisi Program can be a medium for mainstreaming independent learning. It can be seen in planning, implementing, and evaluating the program

**Keywords:** Independent Learning, Self Regulated Learning, Presisi Program, Transformative Learning

## 1 Introduction

Recent evidence suggests that most of the teachers in the regions responded to the application of the Independent Curriculum with a look of pressure; one of the reasons is that many teachers have the minimum capability to change a revolutionary paradigm

(Baiq Farida, 2022). The learning circumstances, which were previously teacher-centered, must switch direction into student-centered suddenly, leaving one mission that was never achieved long ago: inadequate human resource capacity (Listyani, 2012). It has been previously observed that the teacher-centered educational paradigm where learning is required to train material and collaboration is considered cheating has been proven to stress students, and many of them find learning increasingly monotonous and demanding. (Illeris, 2018, p. 230).

Existing research conducted by the Educational Standards, Curriculum and Assessment Agency of the Ministry of Education, Culture, Research, and Technology and INOVASI (Inovasi Untuk Anak Sekolah Indonesia) Innovation for Indonesian School Children during the leadership period of Nadiem Makarim as minister of the Ministry of Research and Technology also remarked that the dense learning material is one of the reasons of teachers having difficulty in innovating the learning process. Discussion, projects, simulations, and other learning methods that encourage students' reasoning power are considerably challenging to implement since the teacher operates an old lecturing method to meet the learning objectives faster (Aditmo, 2022).

Students experience a learning process that is oriented to acquiring knowledge. They are used to remaining for knowledge, not actively looking for it. Consequently, students turned to static learning objects, not active learning subjects. The direct consequence of the ongoing 'banking style' education is the loss of students' independence; learning takes place like information. Students sit and receive the material presented by the teacher, so students' intuitions to pursue knowledge independently are not appropriately trained. It has conclusively been demonstrated that learning should not just sharing knowledge; learning is a modification of experience into knowledge, skills, and attitudes (Jarvis, 1987 as cited in Illeris, 2018). In supporting the ideas, Lave J. (1988) researched students' understanding of the material presented in lectures and learned from the surroundings. As a result, those who were given lectures only understood 59%, while those who learned from the environment could get 98% of the targeted material (Lave, 1988). Independent learning is important to learn as a provision to face the availability of abundant but also rapidly changing information resources (Morris, 2019). When students have an independent learning mentality, they become more adaptable to the needs of the environment.

In realizing changes in the aspect of learning independence, the government, through the Directorate of Cultural Development and Utilization (Directorate of PPK), collaborated with the education community Erudio, Sanggar Anak Akar, and Gudskul (Collective Studies and Ecosystems of Contemporary Fine Arts) to initiate a joint program with Presisi (Strengthening the Character of Independent Students through Art Creations) in 12 districts/cities and 101 schools, both public and private (Module Team, 2021) to transform the role of teachers from 'to control' to 'to facilitate'. This study aims to contribute to this growing area of research by exploring how the practical application of this program in the field, especially how independent learning, can be involved.

## 2 Methodology

This study uses a qualitative case study approach to investigate selected issues, cases, or events in depth without burdening the data collection process with pre-determined categories (Patton, 2009). In addition, the case study approach is used to evaluate; to see how the program is implemented so that its position is seen in the dynamics of the growth of the concept of independent learning and contextual, instead of finding new theories (Creswell, 2019). Data collection was carried out in April-June 2022 at SMA Marsudirini Muntilan and SMA Negeri 1 Ngluwar. Data collection techniques using interviews, observations, and documents. Participants consist of 8 students, 4 teachers, and 1 facilitator of the Presisi program.

## 3 Data Analysis

Data analysis is assisted by using Nvivo software to find what keywords appear in the data obtained. Furthermore, keywords that appear are categorized based on the planning, implementation, and evaluation of the research.

## 4 Result and Discussion

The praxis of independent learning extracted from the implementation process of the Precision Program as a learning program can be seen through at least 3 stages of implementation: 1) Planning or Design, 2) Implementation, and 3) Evaluation or Assessment (Oemar Hamalik, 2013, p. 249; Widodo Winarso, 2015, p. 51):

### 4.1 Planning

There are two big things found in the planning process; first, students organize their study plans, which of course, involves the second aspect, self-reflection. When selecting a project theme, the idea came from the students, not the teacher. "The idea comes from the students according to what we want to learn. So, the teacher does not offer ideas but only provides suggestions for solutions," said Syifa, a student of SMAN 1 Ngluwar (Syifa D., interview, 13 April 2022). In addition, the same thing happened at SMA Marsudirini, "Those discussions determine what to do next, then continue to the source of learning." Said Alvin (Alvin D.P, interview, 22 April 2022). It is corroborated by a statement from Lilis, a teacher at SMAN 1 Ngluwar:

*"Initially, the problem of the project is not coming from us (the teacher). The students were asked to find out what they liked, what their anxiety was, what problems were found in the surrounding environment, then what if it's currently trending. I asked them to write one by one. I have encountered various problems from 8 students that I have to manage. So, from those problems, I said to them "Which one do you want to take?" Finally, they had a discussion to decide it" (interview, 13 April 2022)*

Students are trained to reflect on what they want and what they need to do to master a learning plan. Budi Gemak, Presisi's facilitator, elaborated, "Students reflect on their interests, what they enjoy learning, and their potential. They are invited to notice their surroundings and conduct interviews, surveys, and mapping. Lastly, they conclude to share their experiences" (Budi Gemak S., interview, 7 April 2022). They start to investigate the conditions around them. Fera, a student from SMAN 1 Ngluwar, decided to process organic waste into liquid fertilizer, "Every family there must have organic waste that will be removed every day, and that is also what we study from the surrounding and environment, moreover in the traditional market. We can see plenty of organic waste on the market. From there, we also complete various interviews with sellers and waste collectors. To support that, we also collect daily organic waste data from our homes" (Fera A., interview, 13 April 2022).

Through the process of reflection, students' critical thinking skills are prepared and get better since they have to react to the problems found with offered solutions, "If I have to choose, I prefer to change the way of my thinking to be critical thinking, like, if there is this problem, what should we do to solve it?" (Aisyah Y., interview, 13 April 2022). This is also about how students contemplate the surrounding conditions related to their condition, "From me, I must have the attention of the environment. Then, after observing the sanitary landfill, we realized how difficult it was for parents to make money. I saw someone sorting out the trash, like this and that, sorting it out one by one. Then, I told myself, it must be tough to make money" (Fera A., interview, 13 April 2022).

Awareness will not only talk about something that happens outside the students but also within the students. Aisyah Y., a student of SMAN 1 Ngluwar, found a new perspective through Presisi. Initially, she underrated farmers, but now she respects them. She said:

*"One of the parents from our friends is a farmer. We usually underestimate a farmer and think that a farmer does not work in science like this. Surprisingly, the answer lies in him all. Not only that, but another friend's parents also are a breeder. Now it is also considered unimportant, 'Ups, only breeders, who usually take care of animals, take care of this and that.' Again, it turns out that the key point is there; the answer is there." (Aisyah Y., interview, 13 April 2022)*

Sources of knowledge that used to be considered only from teachers and books, now students can acknowledge that they can learn and achieve knowledge from various references, including parents. The determination of learning resources is also in line with what was agreed by the Association of Education Communication Technology (AECT) that learning resources come from messages, people, materials, tools, techniques, and the environment so that students can independently gain knowledge from various learning sources. (Alan Januszewski et al., 2008).

Independent planning and reflection here are intensely tied, as Gerald Grow (1991) says that independent learners are those who are able to examine themselves, their culture, and their environment to comprehend what they feel and what they should feel, what they value and what should value, and what they want and what should want. Independent learners formulate critical thinking, individual initiative, and responsibil-

ity for the culture that shapes them (Illeris, 2018). In independent planning and reflection, students process three essential aspects of the independent learning process: personal, behavioral, and environmental, by the social cognitive theory developed by Bandura (1986). It is stated that these three aspects play an interrelated role, where students personally strain to reflect on themselves with consequences in the form of behavior which will then have an influence on environmental changes. From the phenomena above, it can be understood that students can determine learning resources according to what they need, and they can look for these sources from independent planning and reflection results. Meanwhile, it is stated in Dinata et al. (2016), according to the North Central Regional Educational Laboratory (NCRL) that the initial planning stage carried out by students includes planning a timeline of activities, setting priorities, organizing subject matter, and choosing steps of learning strategies that will be used based on needs (Dinata et al., 2016).

## 4.2 Implementation

There are two big things found in the planning process; first, students organize their study plans, which of course, involves the second aspect, self-reflection. When selecting a project theme, the idea came from the students, not the teacher. "The idea comes from the students according to what we want to learn. So, the teacher does not offer ideas but only provides suggestions for solutions," said Syifa, a student of SMAN 1 Ngluwar (Syifa D., interview, 13 April 2022). In addition, the same thing happened at SMA Marsudirini, "Those discussions determine what to do next, then continue to the source of learning." Said Alvin (Alvin D.P, interview, 22 April 2022). It is corroborated by a statement from Lilis, a teacher at SMAN 1 Ngluwar:

In implementing Presisi process, students do the practice independently. This can be seen from the process of students looking for sources and conducting experiments by themselves.

Retno, a Marsudirini High School student who researches waste processing, must be willing to go in and out of the cage, "the interview was with the chicken farmer, and the observation took place in the cage" (Theresia Retno W., interview, 22 April 2022). Fera, a student of SMAN 1 Ngluwar who had to go in and out of the landfill, experienced a similar fate. "Then, we go to the garbage collectors, cycle, to the TPA (landfill) to see the waste sorting. We went to TPA twice to conduct interviews and observations then continue to DLH (Environmental Service)" (Fera A., interview, 13 April 2022).

Students' effort in looking and finding data did not only stop at documenting locations considered soiled and gross, but they also had to struggle to find appropriate sources. Della, a Marsudirini High School student, needs to ask many people to find the right resource, "I asked many people there. Initially, it was famous (Durian) in Mantenan and Munung Village. I lived in Tegalsari Village, near Mantenan, so I went there first and then asked the roadside stall. "What was famous in Mantenan Village?" The stall answered, "Oh, you can ask Pak RT (the head of the residents association). When I went there, he suggested going to Munung Village. It turns out that Munung Village

was famous with Durian; my mother knew that she had a durian that is already well-known" (Dela A.W.H, interview, 22 April 2022).

This learning approach changes the way students view learning. Learning is not only copying but also analyzing, "The first time I opened a book, the answer was there, it is like recreating the answer in a book for me. For example, in Presisi, it is like connecting, like analysis" (Alvin D.P, interview, 22 April 2022). Books alone are not sufficient, "like subjects, we learned only from there and there (the books). It seemed like the knowledge was only in the textbooks. In contrast, with Presisi, we learn the material more widespread. The more people we ask, the more we know about something" (Zoe Utama. RB, interview, 22 April 2022)

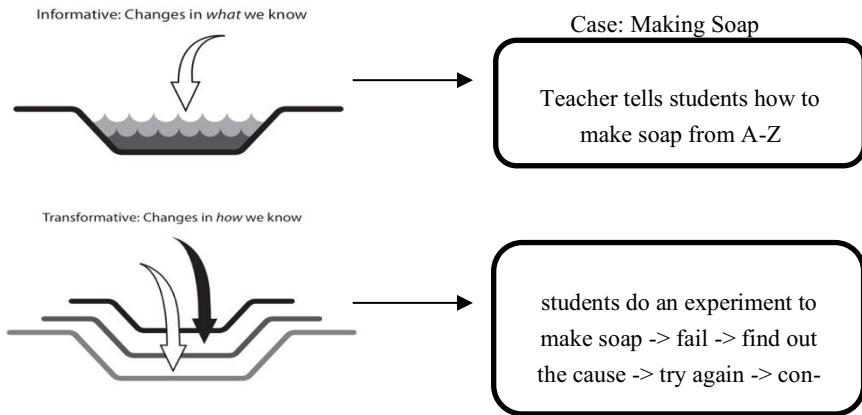
After looking for resources, students practice completing their work or project ideas. The practice of completing this is different for each project; those who carry the idea of document work (photos, videos, or writings) do not go through an experimental process; however, for those who carry the idea of a physical form of work, usually through an experimental process.

Alvin from Marsudirini High School, for example, failed four to five times before he succeeded in experimenting with a tomato jam. He learned various lessons from his failures, "So it looks like some are roasted, some are too sugary, or too hard like a candy. It does not successfully become jam" (Alvin D.P, interview, 22 April 2022). Alvin's colleague, who researches eco enzymes, it took him twice to succeed, "I used to be at home experiment twice. My first trial was failed because it did not release the gas in question" (Zoe Utama. RB, interview, 22 April 2022).

Fera and Ais, students of SMAN 1 Ngluwar, also have personal experience doing the project. Fera has a project to transform organic waste into POC, Liquid Organic Fertilizer; she experimented with her friend. With the assistance of one of the parents, they successfully succeeded in one attempt. "Once done. My friend's mother had already tested to make it before this project". Ais and her group tried to use rice waste, bran, into Brownies and Sempol (a local snack) "our project is to make Brownies bran and Sempol bran" (Fera A. Aisyah Y., interview, 13 April 2022)

We can encounter many reports about 'failure' when we talk with the accompanying teacher. One is the report from Mrs. Mawar, the assistant teacher at Marsudirini High School, "My student was boiling the pot yesterday until it had a little burnt at the bottom of it when he made soap. There was an acid that could make the pot perforated. I already knew it would occur, but I let them experience then he reported, 'Mom, we got a class accident. The pot has a hole". They continued to analyze and find the 'aha' that if the aluminum is exposed to soap, it can leave a hole" (Mawarti P. interview, 9 April 2022).

This phenomenon, when students reach conclusions through a series of failures - fail to make recipes for jam, eco-enzymes, fertilizers, soaps, etc., instead of being immediately given a conclusion by the teacher, in Robert Kegan's language (2018) is referred to as learning to be transformative. The purpose of learning is not only to transform what we know but also to change how we know. (Robert Kegan in Illeris, 2018). There are two types of learning in Kegan's concept; learning to be informative and learning to be transformative. The scheme is as follows:



**Fig. 1.** Transformative Learning (Robert Kegan in Illeris, 2018)

Transformative learning places the shape (in this case, the student) not only as a container (which must be filled) but puts the container at risk of change. So not only supplying the container but also transforming the shape of the container and not filling information to students, but changing the way students. In short, informative learning is when we memorize facts, while transformative learning is to see and understand patterns of facts. Learning from typical subjects is an informative learning process. Meanwhile, a learning process where students can change the way they think, how to find out, and how to solve problems is a characteristic of transformative learning through field projects that require students to complete various learning resources. Students automatically finally understand 'different' ways of learning than those commonly encountered in class. They are active actors who independently determine how and to whom the knowledge should be obtained.

This learning process phenomenon coincides with social cognitive theory for self-regulated learning, which states that in the conscious learning process, students practice arranging learning goals and determining learning resources. After selecting the right learning resources and easy to access, students specify how the best performance should be done. At this stage, students maximize their learning motivation to solve the difficulties they meet (Dinata et al., 2016).

### 4.3 Evaluation

Evaluation that is in accordance with the concept of independent learning is an evaluation that can activate students' independence in learning. Evaluation is defined as the process of seeing changes in the students or the process that the student has gone through. At Marsudirini High School, students conduct presentations to report on the progress of the projects that they are working on. As Alvin did, "We presented our progress, step by step," for example, after a student completes a resource person, as

described by Retno, "After every interview, a presentation will be conducted.". In addition to completing presentations, Marsudirini High School students also organized Gelar Karya (student exhibition) activities where their products were depicted in public. Zou, "We displayed our product in public through Gelar Karya, and we presented the product, which is Ecoenzym, to them." Excel of his group mates replied, "We also explained the advantages and how to make it" (Alvin D.P, Theresia Retno W., Zoe Utama. RB, Geraldo Excel L., interview, 22 April 2022).



**Fig. 2.** Student Exhibition. Photograph by Ubaidillah Fatawi,

Self-evaluation using reports and presentations has a positive influence on student's development; as stated by Andy, a teacher at SMA Marsudirini, "I like that students have started to dare to stand out, dare to compete even they ask by themselves, "Later, if we have PTS (mid-semester assessment test), please just use a presentation to assess, Mr. We enjoyed it." For students, as said again by Mawar, Andy's colleague, the evaluation process using presentations creates a sense of pride in them, "We feel so proud when we have successfully done the presentations, she said" (Paulus Andy S. & Mawarti P, interview, 9 April 2022). In the view of Mrs. Lilis from SMAN 1 Ngluwar, project evaluation using presentations increases students' capability, "They are trained to speak and give opinions, and other friends are trained to ask questions" (Lilis Endah W., interview, 13 April 2022). The assessment is not only to assess the product but also the process of doing the project, "At this school, students will be assessed through their presentation about their process, not just the final result," said Kiki, a facilitator at SMAN 1 Ngluwar (Fransisca Kiki F., interview, 7 April 2022).

Self-Regulated Learning (SRL) is the study of how a learner selects goals and then systematically controls his own knowledge, attitudes, and skills to achieve the goals (Zimmerman & Schunk, 2011); it seems compatible with FA as an evaluation that provides information to teachers and students regarding student improvement, and then make it a consideration for adjusting and revising the way of learning (Black and William, 1998; CCSSO, 2012 in Panadero et al., 2018). Since FA provides feedback to



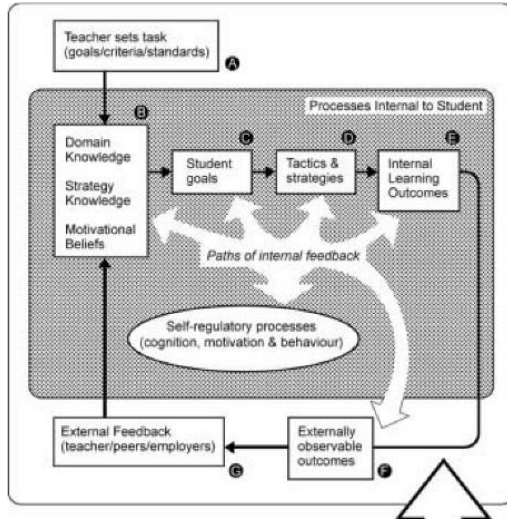
students that they can use during learning to monitor and regulate their learning, research on the relationship between SRL and evaluation is almost always FA-oriented (Panadero et al., 2018).

Through these weekly meetings, the teacher obtains lots of reports on student development which are then taken into consideration for revising the lesson plan, which is carried out with the children. On the other hand, SRL, as a study of how a learner sets goals and then systematically manages his knowledge, attitudes, and skills to achieve goals (Zimmerman & Schunk, 2011), gets its place as students organize themselves to achieve their learning goals.

The main goal of FA is to help students to learn and teachers to guide them (William, 2011 Panadero et al., 2018), which is how to formulate the next step in learning better (Panadero et al., 2018). United States Council of Chief State School (CCSSO) Formative Assessment for students and teachers state collaborative on Assessment and Student Standards (2012) in Panadero et al., (2018) formulated that there are six main features in FA: 1) Learning Progressions, 2) Learning goals and criteria for success, 3) Evidence of learning, 4) Descriptive feedback, 5) Self- and peer assessments, 6) Collaboration.

The aim of learning Progressing is to preserve learning progress (1). In this learning, learning objectives and criteria are displayed (2), which in the process of the journey is proven by evidence of learning (3) where students are given feedback based on findings (4) and between students can provide feedback to each other (5) so that the culture that occurs in the classroom is a culture of collaboration (6), between teachers with students and students with students (Panadero et al., 2018).

The evaluation used by Presisi has an impact on students, such as they are learning to evaluate themselves, being brave and confident in expressing opinions, and being proud of the occurrence of dialogue between teachers and peers. Benefits that are in line with the results of research by Nicol & Macfarlane-dick (2006) in their paper entitled Formative assessment and self-regulated learning: A model and seven principles of good feedback practice, which include: 1) helping to clarify the extent to which learning performance has improved 2 ) facilitate the development of self-assessment (reflection) in learning, 3) provide information to students about their learning, 4) encourage dialogue between teachers and peers around learning, 5) encourage positive motivational beliefs and self-esteem, 6) provide opportunities to close gaps between current and desired performance, 7) provide teachers with a report that can be used to help designing learning process (Nicol & Macfarlane-Dick, 2006).



**Fig. 3.** SRL and Formative Assessment by Nicol & Macfarlane-Dick (2006)

Nicol & Macfarlane-Dick (2006) illustrate the process of the relationship between formative evaluation and independent learning in an evaluation scheme that gives children much space to explore themselves. First, what the teachers do is communicate the learning objectives (the teacher organizes Presisi socialization so that students know the learning scheme), then the students are invited to select their study plan (what theme will be discussed). After an agreement is reached, the students decide how they gain an understanding of their chosen theme (observations/interviews). Lastly, they find the form of project work ideas based on their findings in the field. In this process, the teacher delivers feedback according to the condition of the students and the project, then the student's projects will be evaluated together.

## 5 Conclusion

Through the Presisi Program, the mainstreaming of independent learning in students can be carried out. This can be seen in the process of planning, implementing, and evaluating the program. In the planning process, independence is illustrated when students plan their own projects and independently carry out self-reflection. In the implementation process, independence can be noticed in students who conduct experiments and look for their own learning resources. In the evaluation process, independence is appeared in the presentation of processes and projects and, in some instances, organizing exhibitions. Consequently, the Indonesian learning model with a positivistic paradigm which is characterized by being teacher-centered is no longer relevant to answer the digital era where information is abundant from anywhere, not only transferred from the teacher. For this reason, the mainstreaming of independent learning must be carried out in Indonesia. This study proves that students in Indonesia are able to adapt to the independent learning system.

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