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# Local Instructional Trajectory: Research-Based Hybrid Learning Assisted by Sevima Edlink in Improving Student Learning Independence

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**Abstract**

Penelitian ini bertujuan untuk mendesain lintasan PHBP berbantuan Sevima Edlink untuk meningkatkan kemandirian belajar mahasiswa. Penelitian ini merupakan penelitian desain yang terdiri dari tiga tahapan, yaitu: desain pendahuluan, percobaan desain, dan analisis retrospektif. Subjek penelitian ini sebanyak 27 mahasiswa. Selanjutnya, angket dan pedoman observasi menjadi instrumen pengumpulan data. Setelah data terkumpul, selanjutnya dianalisis. Temuan penelitian ini adalah lintasan PHBP berbantuan Sevima Edlink melalui 5 tahapan yaitu fokus penelitian, perencanaan penelitian, pencarian data, pengolahan data, penulisan hasil penelitian, dan presentasi yang dilaksanakan secara daring dan luring. Temuan selanjutnya adalah lintasan pembelajaran ini dapat meningkatkan kemandirian belajar mahasiswa yang dilihat dari peningkatan rata-rata kemandirian belajar sebelum dan sesudah perlakuan, yakni dari 2,40 menjadi 4,28. Penelitian ini dapat menjadi salah satu tawaran untuk memecahkan masalah kemandirian belajar peserta didik di tengah keterbatasan pembelajaran luring

Keywords: hybrid learning; independent learning; research-based learning; Sevima Edlink

**Abstrak**

**Local Instructional Trajectory: Research-Based Hybrid Learning Assisted by Sevima Edlink in Improving Student Learning Independence.** This study aims to design a local instructional trajectory of Research-Based Hybrid Learning (RBHL) assisted by Sevima Edlink to increase student learning independence. This research is design research consisting of three stages, namely: preliminary design, experimental design, and retrospective analysis. The subjects of this study were 27 students. Furthermore, questionnaires and observation guidelines became data collection instruments. After the data is collected, it is then analyzed. The findings of this study are the PHBP path assisted by Sevima Edlink through 5 stages, namely research focus, research planning, data searching, data processing, research results writing, and presentations carried out online and offline. The following finding is that local instructional trajectory of RBHL can increase student learning independence as seen from the increase in the average learning independence before and after treatment, from 2.40 to 4.28. The findings of this study can be an offer to solve the problem of learning independence of students in the midst of the limitations of offline learning.

Kata kunci: pembelajaran hibrida; kemandirian belajar; pembelajaran berbasis riset; Sevima Edlink.

## Introduction

The implementation of online learning policies in Indonesia has faced various challenges. These challenges are experienced by educators, students, and parents (Asmuni, 2020; Zahrawati & Nurhayati, 2021; Zahrawati & Ramadani, 2021). Among students, the challenges faced during online learning are internet connection problems, difficulty in focusing in the learning process, limited internet quota, online learning media, related to learning assignments, and students having difficulty in managing learning schedules (Widodo & Nursaptini, 2020).

The online learning policy was set by the Indonesian government as an effort to minimize the spread of Covid-19 (Rusmiati et al., 2020). The policy is faced with acceptance and rejection in various circles because of several problems that arise due to unpreparedness in implementing the policy. One of the problems among educators is the failure to achieve learning objectives due to constraints during the implementation of learning. Online learning with all its advantages, of course, also has disadvantages if it is carried out in full in one semester. The implementation of online learning requires an internet connection. Based on interviews with several students of the Social Science Education Study Program, IAIN Parepare, information was obtained that the main obstacle in participating in online learning activities was

the internet connection, which sometimes did not support it. In addition, students feel they have not been able to manage their learning process independently. This means that student learning independence has not been developed. Therefore, we need a local instructional trajectory that can solve this problem (Prahmana, 2017).

Online learning can be maximized if it is accompanied by offline learning. In this regard, hybrid learning as a learning model that combines online learning with offline learning can be a solution that answers the problems of implementing learning during the Covid-19 pandemic (Chen & Chiou, 2014; Raes, Detienne, Windey, & Depaepe, 2020; Goodyear, 2020). Furthermore, research conducted by Lin (2008) found that the majority of students had a positive perception of hybrid learning. However, during the Covid-19 pandemic, offline learning must be carried out with due regard to health protocols to prevent the spread of the virus.

In addition, in its implementation, a local instructional trajectory is needed that can build students' learning independence so that learning outcomes can be realized even within the limitations of the implementation of the learning process. In this case, Firmadani (2017) stated that research-based learning encourages students to become active learners in solving problems and getting closer to social reality. Through research-based learning, students will be independent in learning because of the development of understanding of the material studied by learning by doing. Research-based learning is a learning model that is able to build a culture of research and writing among students (Zahrawati & Aras, 2020).

In the implementation of hybrid learning, one of which is carried out online, it requires learning applications. Sevima Edlink is an application that facilitates educators and students in carrying out virtual classes. This application makes it easier for educators to provide materials, assignments, quizzes, live conferences, and conduct surveys.

Research related to the learning process during the Covid-19 pandemic has been carried out as an effort to overcome problems in the learning process, so that learning outcomes can be realized (Yustina, Syafii, & Vebrianto, 2020; Ilmi, Darma, & Azis, 2020; Zahrawati & Nurhayati, 2021). However, there is no research that attempts to design a local instructional trajectory of research-based hybrid learning assisted by Sevima Edlink as an effort to increase students' learning independence. Based on this, this study intends to design a local instructional trajectory through research-based hybrid learning assisted by Sevima Edlink to increase the learning

independence of students of the Social Sciences Education Study Program IAIN Parepare. The practical benefit of this research is that the findings of this study can be used in an effort to increase the learning independence of students, especially during the Covid-19 pandemic.

## Theoritical Review

### *Hybrid Learning*

Hybrid learning or commonly called blended learning is a learning model that combines face-to-face learning and online learning. Hybrid learning was formed with the aim of combining various face-to-face and online learning activities, so that the two learning activities can reinforce each other (Indra A, 2010). Hybrid learning is carried out by combining various things, namely combining face-to-face learning with online, combining learning methods, and also combining learning models (Curtis & R, 2006).

Hybrid learning can be realized in a combination of different formats and mate; for, for example the first meeting is held face-to-face in class, then the second meeting is held online by utilizing learning technology (Margaret & Saul, 2005). Hybrid learning is different from online learning. Online learning is carried out at least 80% of the program implementation is carried out online (materials are provided online as much as 80% and above). While hybrid learning is learning in which content/materials are sent online and face-to-face with a range of 30-79% of learning materials given through virtual classes (Allen et al., 2007).

### *Research-Based Learning*

Research-based learning is a learning model that integrates research in its implementation process. This learning model has been proven in Zahrawati and Aras' research to increase students' interest in learning. This is because students are given unlimited space and learning resources in constructing their knowledge. Not only that, research-based learning also trains students' abilities in identifying problems that are around them and also trains the ability to analyze and solve problems (Zahrawati & Aras, 2020).

Research-based learning can change the focus of the learning process which previously emphasized the aspect of memorizing material into a process that emphasizes aspects of understanding and problem solving. This learning method is based on the philosophy of constructivism which seeks to build students'

understandings by linking the newly acquired understandings of students with the understandings they have previously. Learning based on the research process makes students as active learners in constructing their knowledge (Chrysti, 2017).

In practice, the research-based learning model directs students to formulate general questions through activities to identify various problems. Furthermore, they conduct a study of various theories and research results to obtain a broader picture related to the research problem to be studied. After that, students define questions so that there are clear boundaries regarding the things to be studied. Then plan research activities, clarify methods/methodology. The research method used must be in accordance with the research objectives. Therefore, in research-based learning, students must be equipped with an understanding of research methods. The next stage is for students to investigate, analyze data, interpret data, consider results, compile reports and present results (Tremp, 2010).

## *Independent Learning*

Learning independence is one of the important things for a student to have. Technological advances and unpredictable changes in social conditions, such as the presence of the Covid-19 pandemic, are one of the reasons for students to have independence in learning (Ismail et al., 2021). Since the establishment of the online learning policy, various problems related to the independence of students in managing their learning process have become problematic in achieving learning objectives. In this regard, learning independence is a series of student activities that are carried out independently as an effort to achieve learning objectives by seeking to explore various information related to the material being or to be studied and utilizing various learning resources without feeling dependent on others (Suhendri, 2011).

In the context of learning, an independent person can be seen from his ability to make decisions and be responsible for his choices in an effort to meet learning needs, determine learning goals, choose learning resources that are right for him, choose suitable learning strategies, and strive to be better at school by evaluating the process and learning outcomes (Tahar & Enceng, 2006).

Furthermore, Zimmerman stated that there are three aspects of independent learning, namely: metacognition, motivation, and behavior. Metacognition is an understanding of cognitive processes that lead to one's knowledge of one's cognition. While motivation is the ability to control behavior in an effort to achieve goals. And finally, behavior is a person's efforts to organize and

select and utilize to create conditions and environments that support their activities (Ghufron & Risnawita, 2010).

## Method

This research is a design research consisting of 3 research stages, namely: preliminary design, experimental design, and retrospective analysis. The subjects of this study were students of the Social Sciences Study Program, Faculty of Tarbiyah, IAIN Parepare, in the sixth semester of the 2020-2021 academic year who took the subject of Gender Studies in Education as many as 27 students. The data collection techniques are observation and distribution of questionnaires. The instrument of data collection when carrying out the observation of the learning process is the observation guide that has been prepared by the researcher. While the instrument used to measure student learning independence is a questionnaire. Indicators of student learning independence, namely: (1) positive attitude in the learning process and the desire to achieve success; (2) diligent and have the desire to try; (3) concentration and attention on academic tasks; (4) managing time in doing academic assignments; (5) self-reflection, reviewing learning, and preparing to take part in learning; (6) selecting ideas and information that are considered important; and (7) dare to make decisions and be responsible for those decisions. After the data is collected, then the data is analyzed. Research-based hybrid learning trajectory data were analyzed retrospectively to obtain answers to research questions. Then the learning independence data was analyzed descriptively to calculate the size of the data concentration.

## Result and Discussion

### *Local Instructional Trajectory: Research-Based Hybrid Learning Assisted by Sevima Edlink*

This research is divided into three parts, namely preliminary design, teaching experiment, and retrospective analysis. Furthermore, a local instruction theory will be generated.

***The first stage*** is preliminary design. At this stage, the researcher expressed the initial idea about developing a research-based hybrid learning syntax assisted by Sevima Edlink to increase student learning independence. After that, researchers and lecturers made observations on students of the Social Sciences Study Program who took the Gender Studies in Education course to determine the initial abilities of

students which became the basis for designing a prototype of a hypothetical learning trajectory (HLT). Student learning activities are carried out in hybrid learning by combining offline and online meetings. Overall, there were 16 sessions consisting of 4 offline sessions and 12 online sessions with the assistance of Sevima Edlink.

***The second stage*** is experimental design. At this stage, the lecturer tests the learning activities that have been designed at the preliminary design stage on research-based hybrid learning syntax assisted by Sevima Edlink.

Session 1, the learning process begins with class orientation. In this activity, the lecturer conveys a plan for student learning activities for the next semester and the rules that must be mutually agreed upon. In addition, students were divided into 9 groups. This group division process is carried out by considering the location of the student's domicile during the lecture. In each group, there is at least one student who lives in Parepare or its surroundings. This is to make it easier when Lecturers want to deliver material directly or facilitate the offline consultation process. Students who represent their groups when consulting offline with lecturers have the responsibility to convey suggestions related to research projects that will be carried out with each group. This limited meeting was conducted as an effort to break the chain of the spread of the Covid-19 pandemic and to achieve learning objectives. In this session, the Sevima Edlink features used are video conferencing, materials, and assignments. The material feature is used to distribute materials in the form of class contracts and materials related to how to identify research problems. The task feature is used to assign tasks to each group to carry out problem identification activities. While the video conference feature is used to discuss the material that has been distributed, divide groups, and explain the tasks given.

Session 2, students together with each group presented the problems identified related to the Study of Gender in Education. The Sevima Edlink feature used is video conference. After hearing various problems found by students in the field, the lecturer again explained the concept of the problem in research.

Session 3 of the Gender Studies in Education course is literature study. Students are directed to explore various relevant and up-to-date literature. By utilizing the video conference feature, lecturer conduct tutorials on browsing digital

literature in the form of e-books and articles on Library Genesis, DOAJ, Google Scholar, Science Direct, and others.

Session 4, students make research boundaries. This is done so that the research to be carried out has a clear focus. By conducting video conference, students together with each group accompanied by lecturer set research boundaries. The research titles in each group can be seen in Table 4.2.

Table 1. Research Title of Each Group

| Group | Research Title |
|---|---|
| 1 | Teacher's Role in Gender Equality in the Education Sector |
| 2 | Gender Inequality in Access to Higher Education: A Case Study in Baranti District, Sidrap |
| 3 | Implementation of Gender Equality in Early Childhood Education at RA DDI Kanang |
| 4 | The Dynamics of Gender Equality for Women in Education |
| 5 | The Role of Teachers in Overcoming Gender Bias in Children's Teaching Patterns at SD Negeri 33 Parepare |
| 6 | The Challenge of Realizing Gender Equality in a Patriarchal Culture |
| 7 | Obstacles faced by Teachers in Implementing Gender Equitable Education |
| 8 | Portrait of Gender Equality: A Case Study of Farmer Families in Batetangnga Village |
| 9 | The Relationship of Gender Equality with Students' Interest in Learning at MTs Darul Ilmi Sampoang, Mamuju Regency |

Session 5, students enter the stage of making research planning. The first activity at this stage is to conduct a literature review of relevant theories and previous relevant and current research. This activity is intended so that students can get a gap between previous research and research that will be carried out. The features used in this meeting are video conference and assignments.

In session 6, the student's activity is to determine the research method. This activity was carried out offline by sending a representative from each group to consult with the lecturer regarding the research method used. In this activity, students have determined the type of research, research location, research informants/respondents, data collection techniques, data collection instruments, instrument validity, and data analysis techniques. Furthermore, the lecturer provides suggestions regarding the research method that is tailored to the research objectives.

Session 7, students together with each group made a research design. The research design contains a research flow that integrates each component in the research. After the research design was completed, the representatives of each

group consulted offline with the lecturer to obtain suggestions which were then submitted to each group member for discussion.

Session 8, students have entered the third stage of research-based hybrid learning assisted by Sevima Edlink, namely the data finding stage. The first activity at this stage is that students together with each group make observations at the research location. This activity aims to conduct an assessment and obtain initial information before taking data. The Sevima Edlink feature that is utilized is a task. Assignment aims to monitor the progress of research carried out by students.

Session 9, students together with each group compiled the research instruments used and then consulted with the lecturer. This activity is carried out online by utilizing the video conference feature. Lecturer provide explanations related to how to develop research instruments.

The activity in session 10 is testing the instrument to be used. Each group representative consults with the lecturer to review the instrument to be used. The aspects that will be studied are construct, content, and grammar. This activity is carried out offline.

Sessions 11 and 12, students and each group carried out data collection activities. Before students go to the field, the lecturer provides material related to ethics in collecting data, both observations, questionnaires, and interviews. The Sevima Edlink feature used is the task of monitoring the progress of research carried out by students.

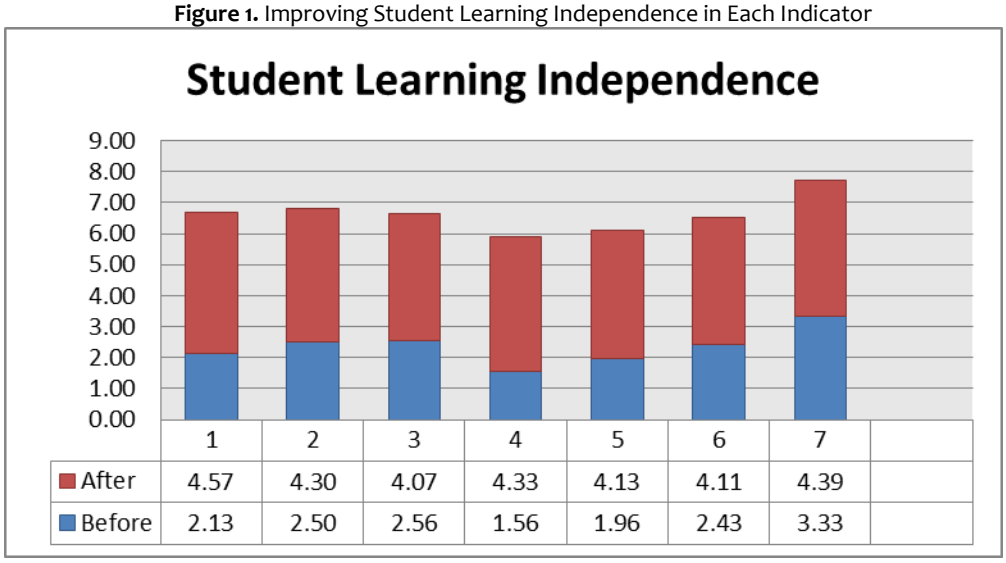
Session 13, students have entered the fourth stage, namely processing the data that has been obtained. After processing the data, each group representative consults with the lecturer which is carried out offline to show the data that has been obtained. Suggestions given by the lecturer are then conveyed to group members.

In sessions 14 and 15, students enter the fifth stage, which is interpretation and writing of research results in the form of 10-15 pages of articles. The article consists of several components, namely: title, author identity, abstract, introduction, research methods, results and discussion, conclusion, and bibliography. The Sevima Edlink features used are video conference and assignments. In addition, to train students' writing skills, lecturers also use Turnitin to see the percentage of similiarity in articles made by students.

At the end of the course on Gender Studies in Education, students together with each group presented their findings. The features used are video conference and assignments. In this session, other groups provided feedback regarding these findings. In this series of activities, lecturer act as facilitators and student validators who provide advice in implementing research-based hybrid learning assisted by Sevima Edlink.

***The last stage*** is retrospective analysis. Based on retrospective analysis, it was concluded that research-based hybrid learning assisted by Sevima Edlink could increase student learning independence. This can be seen from improving the quality of the student learning process, such as: positive attitude in attending lectures, being diligent and having the desire to try to complete research projects, paying attention to every material and direction given by lecturer, being able to manage time in completing research projects, reflecting on the learning process as a material for further learning, able to select important ideas and dare to make decisions and be responsible. The following is Figure 1 improving student learning independence in each indicator.

**Figure 1.** Improving Student Learning Independence in Each Indicator




| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| After | 4.57 | 4.30 | 4.07 | 4.33 | 4.13 | 4.11 | 4.39 |
| Before | 2.13 | 2.50 | 2.56 | 1.56 | 1.96 | 2.43 | 3.33 |

Explanation:

1. Positive attitude in the learning process and the desire to achieve success
2. Diligent and have the desire to try
3. Concentration and attention to academic tasks
4. Manage time in doing academic assignments
5. Self-reflection, reviewing learning, and preparing to take part in learning

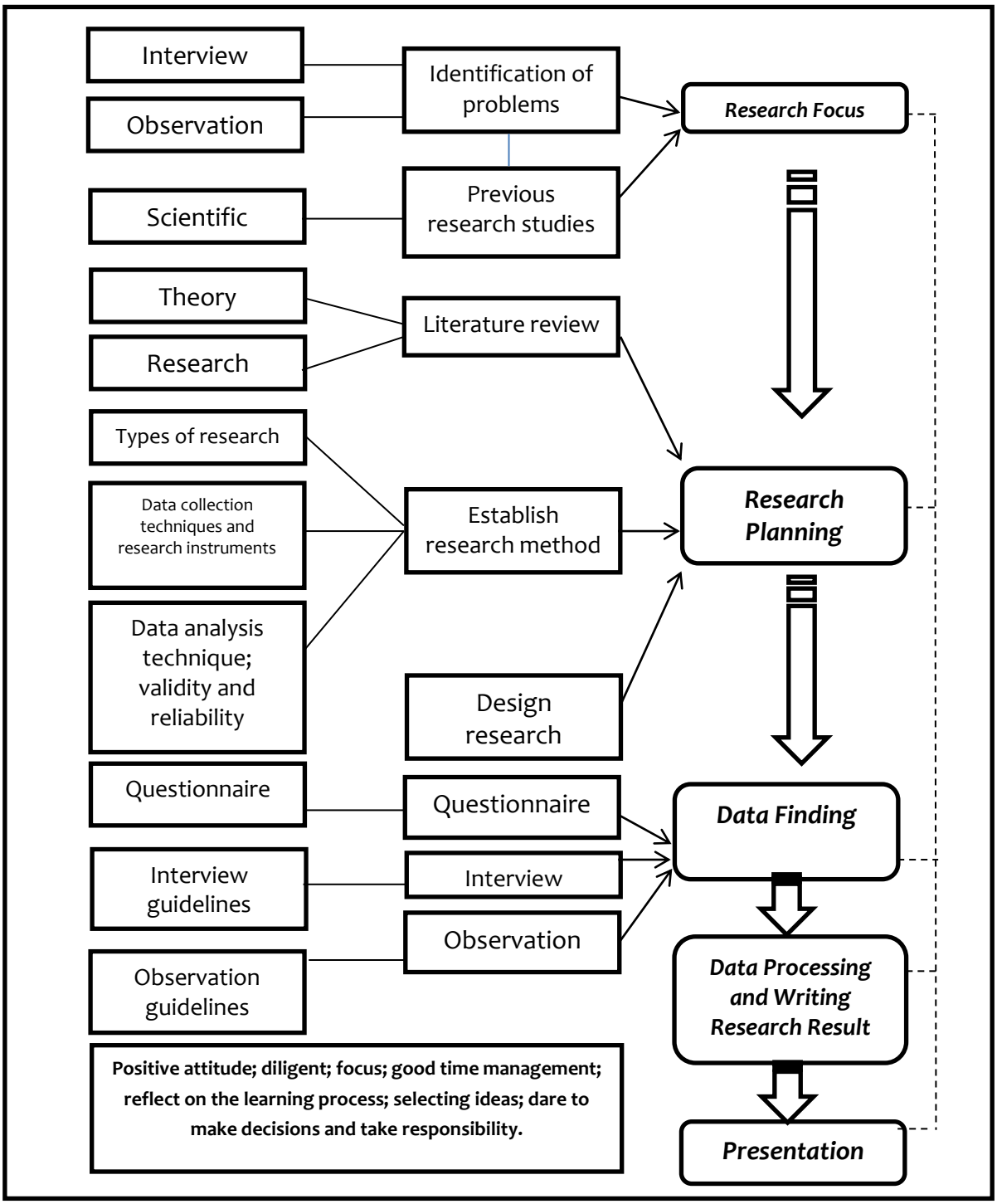
6. Selecting ideas and information that are considered important
7. Dare to make decisions and be responsible for those decisions

The increase in student learning independence is due to the research learning process providing opportunities for each student to be active in discovering and building a knowledge framework. In addition, Sevima Edlink as a platform facilitates the student learning process during the Covid-19 pandemic. Supported by offline meetings, this research-based learning process is more focused and student activities can be well controlled.

***Local Instructional Trajectory.*** After conducting a retrospective analysis of the data obtained during the teaching experiment, a local instructional trajectory of research-based hybrid learning was obtained with the assistance of Sevima Edlink in increasing student learning independence. In general, there are 5 stages of the learning trajectory through which they are: research focus, research planning, data finding, data processing, writing research results, and presentation.

The learning process is carried out online and offline. Online classes are held through Sevima Edlink by utilizing various available features, such as: video conference, assignments, and materials. While offline classes are carried out in a limited manner by sending each group representative to consult regarding the research process carried out. The group delegate has the responsibility to convey to the group members regarding the suggestions given by the lecturer. The following is figure a local instructional trajectory of research-based hybrid learning assisted by Sevima Edlink to increase student learning independence.

**Figure 2.** Local Instructional Trajectory: Research-Based Hybrid Learning Assisted by Sevima Edlink in Improving Students' Independent Learning



*Independent Learning*

Data on student learning independence was obtained through a questionnaire given before and after the implementation of research-based hybrid learning assisted by Sevima Edlink. The data obtained were analyzed descriptively using categories made by weighting statement items in the form of a Likert scale.

Table 2. Description of Student Learning Independence

| Statistics | Before Research-Based Hybrid Learning Assisted by Sevima Edlink | After Research-Based Hybrid Learning Assisted by Sevima Edlink |
|---|---|---|
| Sample Size | 27 | 27 |
| Average value | 2.40 | 4.28 |
| Middle value | 2.42 | 4.42 |
| Mode | 2.33 | 4.42 |
| Standard Deviation | 0.14 | 0.30 |
| Variance | 0.02 | 0.09 |
| Minimum | 2.08 | 3.42 |
| Maximum | 2.75 | 4.75 |

Student learning independence before research-based hybrid learning assisted by Sevima Edlink showed an average score of 2.40; mean 2.42; mode 2.33; standard deviation 0.14; and 0.14 variance. Meanwhile, independent learning after research-based hybrid learning assisted by Sevima Edlink showed an average score of 4.28; mean 4.42; mode 4.42; standard deviation 0.30; and a variance of 0.09. The average value after research-based hybrid learning assisted by Sevima Edlink is 4.28, which is greater than the average value before research-based hybrid learning assisted by Sevima Edlink, which is 2.40. This is the basis for concluding that descriptively research-based hybrid learning assisted by Sevima Edlink can increase student learning independence. Furthermore, the categories of student learning independence before and after research-based hybrid learning assisted by Sevima Edlink are grouped into 5 categories.

Table 3. Distribution of Frequency and Percentage of Student Learning Independence Scores

| Interval | Independent Learning Category | Before Research-Based Hybrid Learning Assisted by Sevima Edlink | | After Research-Based Hybrid Learning Assisted by Sevima Edlink | |
|---|---|---|---|---|---|
| | | Frequency | Percentage (%) | Frequency | Percentage (%) |
| $1.0 \leq X < 1.5$ | Very low | 0 | 0 | 0 | 0 |
| $1.5 \leq X < 2.5$ | Low | 20 | 74.07 | 0 | 0 |
| $2.5 \leq X < 3.5$ | Medium | 7 | 25.93 | 1 | 3.70 |
| $3.5 \leq X < 4.5$ | High | 0 | 0 | 19 | 70.37 |
| $4.5 \leq X \leq 50$ | Very high | 0 | 0 | 7 | 25.93 |
| **Total** | | 27 | 100.00 | 27 | 100.00 |

Before the research-based hybrid learning assisted by Sevima Edlink was carried out, from 27 students, 20 students obtained independent learning scores in the low category and 7 students in the medium category. Meanwhile, after the research-based hybrid learning assisted by Sevima Edlink was implemented, of the 27 students who were the research subjects, there were 25.93% in the very high category, 70.37 in the high category, and only 3.70 in the medium category. Descriptively, it can be said that student learning independence has increased and is getting better after research-based hybrid learning was carried out with the help of Sevima Edlink.

Furthermore, student learning independence data obtained before and after treatment were analyzed to obtain information related to increasing learning independence. The amount of increase before and after treatment was calculated using the normalized gain formula. Increasing student learning independence is grouped into 3 categories to obtain the distribution of frequency and percentage.

Table 4. Distribution of Frequency and Percentage of Increase in Student Learning Independence Gain Recapitulation

| Gain Normalization Coefficient | Frequency | Percentage (%) | Category |
|---|---|---|---|
| $g < 0.3$ | 0 | 0 | Low |
| $0.3 \leq g < 0.7$ | 7 | 25.93 | Medium |
| $g \geq 0.7$ | 20 | 74.07 | High |

Information obtained that 7 students are in the medium category (0.3 g < 0.7) and 20 students are in the high category (g 0.7). The average normalized gain of 27 students is 0.7, so the increase in learning independence of students of the Social

Sciences Education Study Program IAIN Parepare after research-based hybrid learning assisted by Sevima Edlink is in the high category and meets the effectiveness criteria. Thus, it can be concluded that there is an increase in learning independence during the application of research-based hybrid learning assisted by Sevima Edlink with a high category.

In this regard, research-based learning has the potential to prepare students more effectively for future learning (Ling, 2007) because it is based on four modern insights into learning, namely: constructive, independent, collaborative and contextual. Learning is initiated by authentic and structured problems. In the classroom, students face problems before learning, as opposed to centuries of formal education practice, where students are expected to master the content before they encounter problems and try to apply the content. This learning model makes students as individuals who are active in discovering and constructing their knowledge.

Research-based hybrid learning assisted by Sevima Edlink is effective in increasing student learning independence because the learning process is student-centered. Therefore, they must collaborate to assume responsibility for finding research problems, determining appropriate research methods, collecting data, analyzing data, presenting data, and discussing the findings. In the learning process, they are encouraged to do self-reflection, so that students monitor their understanding and learn to adapt strategies for learning.

In addition, in the implementation of this learning there are tutors, namely group leaders who support and model the reasoning process, facilitate group learning processes and interpersonal dynamics. Furthermore, through this local instructional trajectory, students are trained to be sensitive to problems, skilled in problem solving, have higher order thinking skills, and have independent learning.

Another thing that facilitates the implementation of this learning is because it combines online and offline learning, which is known as hybrid learning. As the research findings of state that hybrid learning has a significant effect on students' learning independence (Ilmi et al., 2020; Fitriyana, Wiyarsi, Ikhsan, & Sugiyarto, 2018). In line with the research findings of Zakiah & Fajriadi (2020) which stated that the creativity of students who took part in Hybrid-PjBL learning activities had a very high category, students' creative thinking abilities were in the high category, and independent learning of students had a positive attitude. The creative thinking

ability of the students in this study was due to the fact that they had the opportunity to collaborate and communicate with each other. So that it will improve the ability to think creatively and independently in learning.

## Conclusion

This study found that the research-based hybrid learning trajectory assisted by Sevima Edlink to increase student learning independence through 5 stages of learning, namely: research focus, research planning, data finding, data processing, writing research results, and presentation. Furthermore, this local instructional trajectory can increase student learning independence as seen from the increase in the average value of learning independence before and after implementation. This learning trajectory is effective in increasing student learning independence because the learning process is student-centered. Therefore, they are encouraged to collaborate in finding research problems, determining appropriate research methods, collecting data, analyzing data, presenting data, and discussing the findings. In addition, they are also encouraged to do self-reflection, so that students monitor their understanding and learn to adapt strategies for learning. Furthermore, through this learning trajectory, students are trained to be sensitive to problems, skilled in problem solving, have higher order thinking skills, and have independent learning. From the findings of this study, there are suggestions for educators and researchers. It is recommended for educators to use research-based hybrid learning trajectories in the implementation of learning in an effort to increase students' learning independence. As for researchers, it is recommended to carry out research-based hybrid learning research that is associated with student procrastination. In addition, further researchers can carry out research-based hybrid learning research with this type of experimental research in classes where students are indicated to have low learning independence.

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