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Intensive training based on epistemic learning patterns to help students take the police psychometric test selection

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Abstract
Indonesia was a country governed by law, thus requiring law enforcers such as a fair and just police institution. The police selection process was conducted as objectively as possible. Although several learning institutions prepared candidates for this selection, few had received academic attention regarding the learning process involved. Therefore, this community service activity aimed to provide intensive training based on epistemic learning patterns within an institutional context in order to optimise students' success rates in the psychological test.This community service activity was designed in the form of intensive training sessions. The participants were 10 students (9 men and 1 woman, with an age range of 18 to 21 years) enrolled in a police selection programme at one of the learning institutions in Indonesia. The indicator of success for this programme was that 75% of the students would meet the criteria for passing the psychological test. The results showed that 80% of the students successfully passed the test. This outcome was attributed to the intensive training, which gave students the opportunity to construct their own concepts and strategies for solving psychological test questions. Furthermore, the sequence in which the material was presented was carefully considered to align with the cognitive development of the students.Based on the findings, it was recommended that learning institutions develop textbooks that contain strategies and conceptual guidance to support students in answering questions during the police selection process.

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1. Introduction

Indonesia is a beautiful and peaceful country, where people from diverse ethnicities, religions, languages, and traditions unite under a single nation. Indonesian society lives in harmony, grounded in Pancasila as the foundational philosophy of the state. However, there are still legal deviations and violations committed by certain elements within society (Mutiah, 2023; Pratama et al., 2021; Sukarna & Wiyono, 2023). Therefore, the role of law enforcers becomes crucial in ensuring that legal regulations are implemented consistently and fairly across all levels of society (Hermanto & Santiago, 2021; Toule, 2022). One of the primary law enforcement institutions is the police. Given the breadth and complexity of police duties, the recruitment process is rigorous and comprehensive, assessing candidates cognitively, physically, and personally. This process aims to produce objective, competent law enforcers who contribute to building a peaceful and secure Indonesia (Koropanovski et al., 2022; Nasution et al., 2022).

To support this recruitment, various study centres and tutoring institutions—typically run by private entities—emerge to help candidates prepare for police selection. These institutions apply diverse strategies to attract students and enhance their preparation (Isnawan et al., 2025). However, such non-formal learning institutions often receive little attention from the government. As a result, they depend

heavily on support from multiple stakeholders, including academic experts, particularly in implementing effective learning models. These institutions are usually managed independently, with operational strategies tailored to the capacity of each individual owner (Yanda et al., 2022).In general, police preparatory institutions conduct training sessions three times a week. However, this schedule often has limited effectiveness, especially for students who struggle with mathematical skills. Many police entrance exams require a solid foundation in basic mathematics, which becomes a barrier for students with low math competency (Hafis et al., 2024; Syutaridho et al., 2023).

In response, this community service activity is designed to support these preparatory institutions by offering intensive training programmes that run five times a week up to two days before the selection test. The training focuses particularly on the psychological test section and is not delivered in a conventional manner. Instead, it adopts an epistemic learning model, emphasising the institutionalisation situation (Isnawan, 2023; Isnawan, Alsulami, Yanuarto, et al., 2024; Isnawan et al., 2023; Sridana et al., 2025; Sukarma et al., 2024).This model involves tutors encouraging students to engage with challenging problems first, thereby enabling them to construct their own strategies or concepts. Once students build this understanding, they are presented with similar problems to reinforce and institutionalise their learning.To evaluate the success of this community service activity, the team formulates several guiding questions as indicators, including:

1.1 What is the sequence of materials studied by students in preparation for the psychological test?
1.2 How is intensive training implemented based on epistemic learning patterns (institutionalisation situations) in facing psychological tests?
1.3 What is the graduation status of students after participating in intensive training based on epistemic learning patterns (institutionalisation situations)?

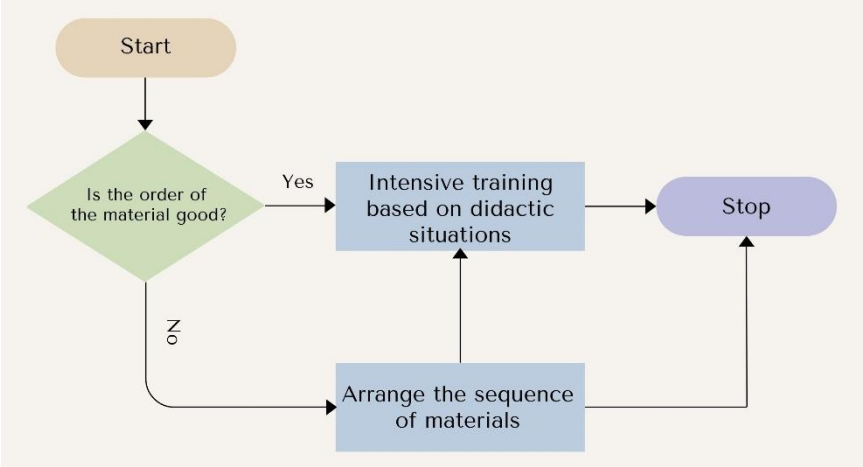
2. Method

This community service activity was designed in the form of intensive training. Intensive training was chosen because prospective non-commissioned police officers were generally found to have poor mathematical competence, low learning motivation, rarely reviewed learning outcomes at home, and required intensive intervention (Dacholfany et al., 2024). The training programme was conducted over a two-month period with five meetings per week, and it ended two days prior to the conclusion of the police selection process.

The activity took place from March to May 2025 at a tutoring institution located in Mataram, Indonesia. This tutoring centre was selected because it had experience in organising preparatory classes specifically for police selection in recent years. The intensive training was implemented based on an epistemic learning pattern known as the institutionalisation situation. This learning model was employed to encourage students to construct their own strategies in solving problems, facilitated through challenging tasks given by tutors to the participants (Isnawan, Alsulami, & Sudirman, 2024).In simple terms, the procedure for implementing this community service activity is illustrated in Figure 1. The training involved 10 students, aged between 19 and 21 years old, consisting of 9 males and 1 female. Among them, 2 students had previously participated in the police selection, while 8 were first-time applicants.

The indicator of success for this community service activity was that 80% of the students were able to pass the psychological test required for police recruitment. The psychological test was selected as the primary success indicator because the police selection process comprises multiple test components, making it less feasible to use overall police recruitment results as a single indicator. Furthermore, the psychological test demands cognitive competence and applies a passing grade criterion for selection. The test result data were obtained from student self-reports and analysed using basic calculations based on pass/fail outcomes in the psychological test.

Figure 1.
Intensive training procedures



3. Results and Discussion

3.1 What is the sequence of materials studied by students in preparation for the psychological test?

Regarding the psychological tests, students must complete three categories of tests: intelligence tests, accuracy tests, and personality tests. Among these, the intelligence test proves to be the most challenging. During the intensive training, approximately 85% of the sessions were allocated to the intelligence test, making it the test with the largest proportion of meeting time. This emphasis is understandable, as the intelligence test contains a variety of complex logical questions that often pose difficulties, especially for students with low mathematical competence (Arum et al., 2018; Song & Su, 2022; Zhou et al., 2022). For this reason, the intelligence test becomes the top priority in the learning sequence of police psychological preparation.The accuracy test is the next component. It includes questions involving missing numbers, letters, symbols, or shape combinations. In this section, students are given 1 minute to complete each column, which typically consists of 40 to 50 missing elements, and 10 minutes in total to finish the test. Although there is no specific formula to solve accuracy questions, one effective approach is consistent and repeated practice, which helps improve both speed and accuracy.

Therefore, in the training sessions, students were asked to complete an accuracy test at the beginning and end of each meeting to build familiarity and sharpen their pattern recognition.In contrast, the personality test focuses on assessing students' personal characteristics. This test usually presents statements requiring choices in the form of yes–no, strongly agree–strongly disagree, or managerial scenarios. Students are advised to answer honestly for self-assessment questions but are also coached to demonstrate ideal behavioural traits in evaluative questions—to portray themselves as trustworthy, disciplined, and emotionally stable individuals. This guidance is essential to help students reflect a positive personality profile, as expected in police recruitment evaluations.Regarding the intelligence test content, students explore several core concepts, including images, verbal analogies, sequences and series, number patterns, syllogisms, analogical reasoning, comparisons, quantitative comparisons, floor plans, story problems, and analytical reasoning. However, students exhibit varying levels of interest and ability. Those with weaker mathematical foundations are often less engaged with mathematically demanding topics like quantitative comparisons and number patterns (Hodgen et al., 2024; Wai & Lakin, 2020).

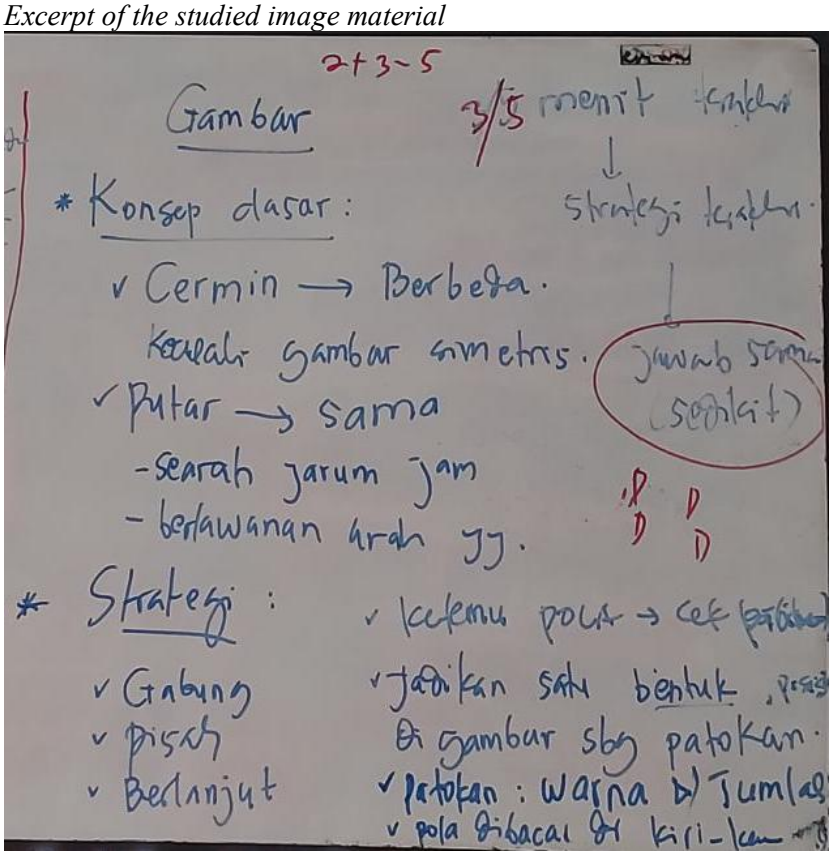
To accommodate these differences, the community service team structured the material progressively, starting with topics that are conceptually easier and involve minimal mathematics, then gradually advancing to more complex content.Based on the team's analysis, the first topic studied was pictures, chosen because it does not involve any numerical calculations and instead emphasises visual reasoning and calm concentration (Cui et al., 2017). This sequencing allows students to build confidence before encountering more abstract or numerical challenges.

3.2 How is intensive training implemented based on epistemic learning patterns (institutionalisation situations) in facing psychological tests?

After the service team sorted the sequence of materials to be studied, intensive training based on didactic situations was implemented in actual learning sessions. The intelligence test training begins with the discussion of image-based questions. This topic is chosen because it does not require any mathematical calculations, making it more accessible and less intimidating for all students, regardless of their math abilities. During the image learning sessions, students are introduced to several key concepts. One fundamental idea is that an image remains the same when rotated clockwise or anticlockwise. However, when the image is mirrored, it usually becomes different—unless the original shape is inherently symmetrical, such as a circle or square (Savaş & Yavuzsoy Köse, 2023).

These two concepts must be reinforced to ensure students can respond accurately to image-based test items.After students understand the conceptual foundation, the discussion then shifts to strategy development. In answering image questions, students are trained to focus on one unique shape as a reference point and then analyse changes relative to that shape. For example, if the image involves colour, students should pay attention to how the colour changes. If it involves the number of shapes, students are guided to observe the quantitative transformation.Figure 2 illustrates a summary of the concepts and strategies related to image-based questions that were studied during the intensive training. The figure also highlights three common image strategies, namely, merging images, separating images, and continuing image patterns, which frequently appear in intelligence tests.

Figure 2.
Excerpt of the studied image material



After discussing the picture material, the tutor continued with verbal analogy. Verbal analogy was chosen because it did not require mathematical calculations, as there were no complex concepts involved in answering the questions. The strategy for answering analogy questions involved creating simple sentences by linking known words, then using these sentences to evaluate each answer choice one by one. A snippet of documentation of student activities during the intensive training sessions is presented

in Figure 3 and Figure 4. Figure 3 showed when students were working on questions given by the tutor, while Figure 4 showed that students answered test questions online.

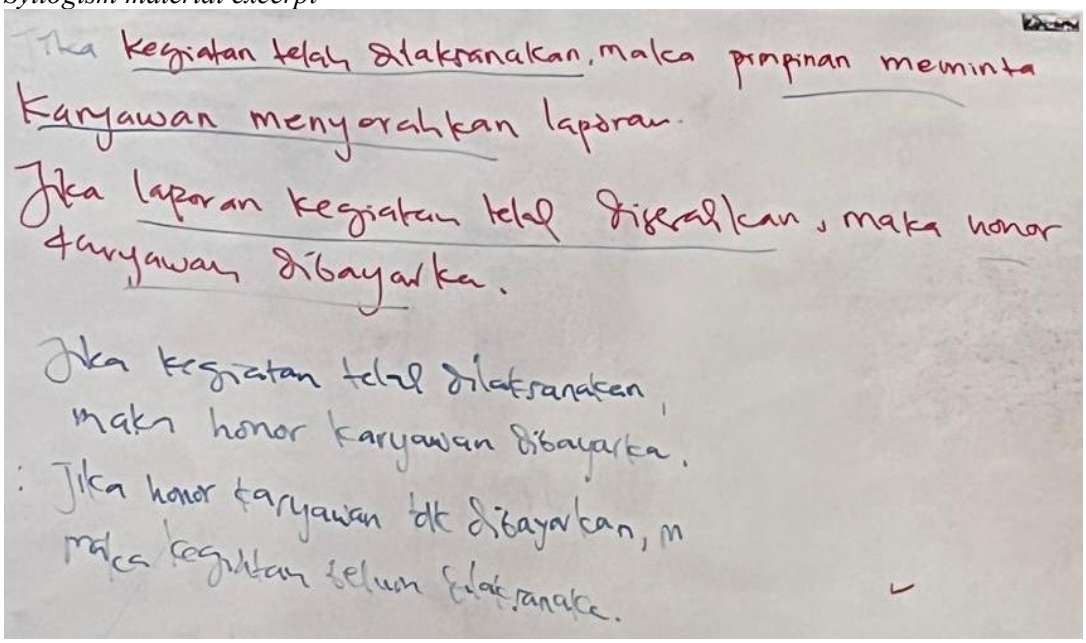
Figure 3.
Documentation of intensive training activities 1

Figure 4.
Documentation of intensive training activities 2

The next material followed the previously described sequence. The material discussed was syllogism. Syllogism was chosen because it did not require mathematical calculations but only simple logical reasoning. One strategy for answering syllogism questions involved paying attention to the end of the first sentence and the beginning of the second sentence. If the wording was the same, then the question was identified as a syllogism. If the question was already in the form of a syllogism, the

conclusion was drawn by combining the beginning of the first sentence with the end of the second sentence. Another strategy was to avoid repeating the same wording in the conclusion if it appeared in both sentences. An excerpt of the answer can be seen in Figure 5.

Figure 5.
Syllogism material excerpt



3.3 What is the graduation status of students after participating in intensive training based on epistemic learning patterns (institutionalisation situations)?

Based on the test results, only 9 students took the psychological test selection because 1 student failed the health test. Of the 9 students, 7 passed the psychological test, while 2 did not. Upon deeper analysis, it was found that these two students had low mathematical abilities and showed less agility in answering questions. One possible explanation is that these students encountered significant difficulties with the accuracy test. During the intensive training, 8 students were able to answer between 15 and 24 accuracy questions per column, while the two students only managed a maximum of 12 questions. Based on this analysis, 80% of the students met the passing grade for the psychological test questions. This indicates that the community service activity, through intensive training based on epistemic learning patterns (optimisation of institutionalisation situations), successfully optimised students' abilities in answering psychological test questions. These findings align with previous studies that demonstrated how epistemic learning patterns can enhance students' mathematical competence (Isnawan, Alsulami, & Sudirman, 2024; Sridana et al., 2025; Sukarma et al., 2024).

4. Conclusion

Based on the previous description, several conclusions can be drawn. First, the order of psychological test materials studied is as follows: pictures, verbal analogies, sequences and series, number patterns, syllogisms, analogical reasoning, comparisons, quantitative comparisons, floor plans, story problems, and analytical reasoning. Second, the implementation of intensive training involves providing concepts and strategies tailored for each type of intelligence test. Third, intensive training based on epistemic learning patterns (optimisation of institutionalisation situations) effectively helps students pass the psychological test. This is evident as 80% of students surpass the passing grade.

One limitation of this activity is that tutors still rely on a combination of textbooks for teaching police selection materials. As a result, only tutors with sufficient teaching experience can competently select the most appropriate textbooks. Therefore, this community service activity recommends developing specialised textbooks focused on preparing students for police selection, particularly for

psychological and academic tests. This study also recommends conducting research that quantitatively measures the impact of prior learning on student graduation.

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