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ABSTRACT
Objectives: This research aims to analyze the profile of students' critical thinking abilities regarding the implementation of STEAM-oriented science and science learning development in elementary schools.
Method: This research is a preliminary study with a data collection technique in the form of a written test by analyzing the data results descriptively and qualitatively. This research was conducted on 7 students consisting of 3 female and 4 male students in elementary school.
Results: This research can be concluded that: It was found that the criteria for students' critical thinking abilities were still very low with an average score of 51.76 or a completion percentage of around 36%. In this research, it is hoped that the application of STEAM-oriented learning can improve students' thinking abilities. So, the conclusion is that if students' critical thinking skills are still low, it is necessary to improve students' critical thinking skills, namely by implementing STEAM-oriented learning.
Novelty: Development of learning tools oriented to the STEAM approach to improve the science and science critical thinking abilities of elementary school students in the independent curriculum, so that it will improve students' critical thinking skills in line with the demands of the 21st century.

INTRODUCTION
Indonesian education is faced with curriculum changes - the Merdeka Belajar Curriculum. The curriculum, which will be actively implemented nationally in 2024 (Firmansyah & Adji, 2023) aims to improve the quality of learning (Purnama & Katriana, 2023). The curriculum is the heart of education because the curriculum is about what must be taught and the curriculum combines thinking, action and goals (Null, 2011). The curriculum is defined as a teaching and learning program that takes place in a formal atmosphere where the curriculum contains four dimensions, including: aims or objectives, content or subject matter, methods or procedures, and evaluation or assessment (Scott, 2001). Curriculum is also seen as a product because it contains a body of knowledge, as a process because it explains what actually happens in the classroom, as a praxis because it focuses on teachers exploring and criticizing their own practices, and as a context because it reflects the perpetuation of dominant knowledge and values (Moore, 2015). The curriculum is emphasized not only as a product but also a process that addresses and raises individual awareness through the learning that (Firmansyah & Adji, 2023) provides (Blair, 2018).

Curriculum implementation and evaluation is a curriculum development cycle (Dang et al., 2023) both inductive development models such as the Taba model and deductive ones such as the Tyler and Oliva model (Tariq Mehmood Bhuttah et al., 2019). Curriculum implementation is a process where students, through the guidance of a teacher, interact with learning activities so that they can maximize learning which will be
seen in students’ new behavior/new approaches to a problem (Mafugu & Abel, 2022). Curriculum implementation refers to how teachers deliver instruction and assessment through the use of specific resources provided in the curriculum to achieve a set of goals (Nevenglosky et al., 2019). Curriculum design generally provides learning suggestions, scripts, lesson plans, and assessment options linked to a set of objectives. As with curriculum implementation, curriculum evaluation is an important part of curriculum development. Curriculum evaluation is a process of collecting information, analyzing and interpreting data (Chanpradit, 2022) to ascertain whether curriculum objectives are being, or have been, achieved (White, 1971). Referring to several objectives of curriculum evaluation outlined by (Yaz & Ta, 2021), curriculum evaluation of the learning process can be evidence to support the new curriculum or vice versa.

Implementation of merdeka belajar curriculum according to the Decree of the Minister of Education, Culture, Research and Technology of the Republic of Indonesia takes the form of differentiated learning (differentiated instruction) (Kepmendikbudristekdikti, 2022). Differentiated learning is a series of all teacher interventions to respond to academic differences between students, such as gender, age, developmental stage, interests, motivation, intellectual abilities, learning preferences, learning speed, socio-economic status, background and family situation (Struyven et al., 2019). Differentiated learning is one that suits students’ talents and different student learning styles (Morgan, 2014). Differentiated learning is learning that provides different ways to obtain content, process or understand ideas, and develop products so that each student can learn effectively based on their readiness (i.e. the student's closeness to a particular learning goal), interests (i.e. interests, interests that motivate learning) and learning profile (i.e. preferred approach to learning) (Tomlinson, 2017). The implementation of differentiated learning is then evaluated and becomes the focus of this research. Regarding the quality of education, students’ perceptions of satisfaction with learning are one of the dimensions of educational quality (Rodríguez et al., 2022) important to evaluate. (Chandra Handa, 2020) groups three important components that reflect the quality of differentiated learning, namely problem-based learning, creative learning and personalized learning. These three things are also used as measurements in evaluating the implementation of learning in the merdeka belajar curriculum by researchers.

Students’ perspectives ultimately contribute to improving learning carried out by teachers. Students are not curriculum developers in various development models. However, recent studies (Tsui et al., 2023) actually opens up the perspective that students play a role in curriculum development. Students’ perspectives are material that is worth discussing and play a role in opening up opportunities for teachers to improve their teaching (Wisniewski & Zierer, 2021) (Chen & Chin, 2014). The results showed that feedback from students becomes a valuable improvement tool and a powerful stimulus for teacher reflection (Mandouit, 2018). Hence, students’ perspectives in this research are important in assessing the extent to which the teacher’s role has implemented differentiated learning well.
The role of teachers in the era of merdeka belajar curriculum can also be illustrated from the results of curriculum evaluation. Teachers in the merdeka belajar curriculum play a role in designing the learning process effectively and implementing it (Retnaningrum et al., 2023). Teachers play a role in creating meaningful and enjoyable learning through differentiated learning (Hadi et al., 2023). In a systems theory perspective, learning carried out by teachers will influence learning output (Deissler, 2008). Differentiated learning which is characterized by problem based learning provides opportunities for the growth of students' independent learning abilities, comprehensive practical abilities and social cooperation abilities (Liu & Liu, 2022). Creative learning which is part of differentiated learning has the potential to help students become more creative, learn better, because it has a real and positive impact on students' personal development, increasing student achievement; and other positive things (Nela & Supriatna, 2021). Personalized learning which is part of the application of differentiated learning provides benefits in increasing students' interest and motivation levels in subjects which leads to academic performance (Sharma et al., 2016).

The description above has described the implementation of differentiated learning as a consequence of the existence of a new curriculum, namely merdeka belajar curriculum. Hence, this curriculum evaluation research from students’ perspective was conducted. The focus of the research is on the implementation of learning in the classroom thus describing how the teacher's role is carried out to realize a number of learning benefits.

RESEARCH METHOD
This research is survey research where researchers collect data through distributing questionnaires online. The research sample was taken using a purposive sampling technique with criteria that had to be met, namely: students were in public schools and implemented the independent learning curriculum, and were in the East Java region. Public schools were taken with the consideration that they would respond more quickly to curriculum changes. Based on data, East Java is one of the province with the best educational performance in Indonesia. The research questionnaire was adapted from research findings by Handa (2020) referred three identified factors which associated with 12 pedagogical strategies. They are 6 items about problem-based learning, 3 items about creative learning, and 3 items about Personalized Learning. Respondents' responses were made on one to five Likert scales: always, usually, sometimes, rarely, and never. The population is limited to high school students studying economics in East Java province. The convenience sampling technique used succeeded in collecting 150 respondents.

Furthermore, the data analysis technique used is descriptive statistics to compare the mean and frequencies. Respondents' answers regarding their perception on quality of learning which were calculated and categorized into three data categories, namely good, moderate, and bad. The respondent's answer score regarding problem-based learning has a minimum score of 6, a maximum score of 30, so the range is 25 (obtained from (30-6) + 1)) and the interval length is 8.33. Meanwhile, the respondent's answer score regarding creative learning and personalized learning has a minimum score of 3, a maximum score of 15, so the data range is 13 (obtained from (15-3) + 1)) and the interval length is 4.33.
For this reason, the data categories are as follows: 1) Problem based-learning component data categories: 6.00 – 13.33 (bad), 13.34 – 21.66 (fair/moderate), and 21.67 – 30.00 (good); 2) Data categories for creative learning and personalized learning components: 3.00 – 6.33 (poor), 6.34 – 10.66 (moderate), 10.67 – 15.00 (good). Furthermore, with a 5-point likeness scale, the categories for each statement item are categorized into: 1.00 – 2.33 (bad), 2.34 – 3.66 (moderate), 3.67 – 5.00 (good).

RESULTS AND DISCUSSION

Results
Student response data shows the frequency with which students receive problem-based learning, creative learning and personalized learning components. This can be observed from Figure 1 that shows Students' Responses to the Differentiated Learning Components. The detail explanations that:

1) For problem based-learning experience, the majority of students (70.67%) felt they could always show their best effort in learning, most and most of them felt they were usually even able to learn key ideas through structured activities (40.67% of students said "usually" and 40.67% students say "always"). Likewise, their experiences in the other four problem based-learning items. Most of them also stated that they always and usually experience the other 4 PBL items, namely do challenging tasks, evaluate situations and problems, do brainstorming, and gain a deep understanding.

2) For the creative learning experience, the majority of students felt that they were usually and always able to offer imaginative and creative solutions (30.00% of students said "always" and 32.67% of students said "always"). Most of them also said that they always and usually experienced the other 2 creative learning items, namely exploring different ways to think, and collecting information from various research sources.

3) For the personalized learning experience, the majority of students felt that they were usually and always able to do tasks of their own choosing (33.33% of students said "usually" and 55.33% of students said "always"). Most of them also said that they always and usually felt the experience of 2 items of personalized learning others, namely work on assignments/projects in pairs or groups and evaluate their own work.

Figure 1. Students’ responses on differentiated learning

Students report that most of them often receive problem-based learning experiences, including opportunities to demonstrate their best performance, work on challenging assignments, and evaluate situations and problems. Most students also admitted that they often received creative and personalized learning experiences. This overall experiences showed the quality of differentiated learning in the era of the independent learning curriculum. Furthermore, Table 1 explains the average students perception of differentiated learning in each statement item. The table also explains the total differentiated learning score for each differentiated learning aspect, including problem-based learning, creative learning, and personalized learning.

Table 1. The average of students perceptions in differentiated learning in economic subject

<table>
<thead>
<tr>
<th>No.</th>
<th>Differentiated Learning Aspects</th>
<th>Skor</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td><strong>Problem Based-Learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>show best efforts</td>
<td>4.64</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>learn key ideas through structured activities or questions developed by the teacher/student</td>
<td>4.16</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>do challenging tasks</td>
<td>3.82</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>evaluate situations, problems, or problems in one's own work</td>
<td>4.35</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>do brainstorming/exchanging ideas and defining problems</td>
<td>4.08</td>
<td>Good</td>
</tr>
<tr>
<td>6</td>
<td>gain a deep understanding of ideas and concepts from learning texts</td>
<td>4.06</td>
<td>Good</td>
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<table>
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<th>Skor</th>
<th>Interpretation</th>
</tr>
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<tbody>
<tr>
<td>B.</td>
<td>Creative Learning</td>
<td>12.05</td>
<td>Good</td>
</tr>
<tr>
<td>1</td>
<td>offer imaginative and creative solutions to problems</td>
<td>3.97</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>explore different ways to think about a situation/object/event</td>
<td>4.23</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>collect information from various research sources (e.g. print media, surveys, interviews, and studies)</td>
<td>3.84</td>
<td>Good</td>
</tr>
<tr>
<td>C.</td>
<td>Personalized learning</td>
<td>12.60</td>
<td>Good</td>
</tr>
<tr>
<td>1</td>
<td>do tasks of your own choosing</td>
<td>4.38</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>work on assignments/projects in pairs or groups</td>
<td>4.02</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>evaluate my own work</td>
<td>4.20</td>
<td>Good</td>
</tr>
</tbody>
</table>

The results of the research show that according to students' perceptions, economic differentiated learning has been implemented well. The problem based-learning score is 25.12 so it can be interpreted that problem based-learning in differentiated learning has been implemented well. Likewise with creative learning and personalized learning. The creative learning score is 12.05 and is in the good category and the personalized learning score is 12.60 and is in the good category. Apart from that, the score for each item is more than 3.67 so everything is categorized as good.

Discussion

The results show that differentiated learning has been implemented well. This emphasizes that the curriculum is not only a product but also a process (Firmansyah & Adjji, 2023). This also emphasizes that the development of merdeka belajar curriculum is ongoing because implementation is a curriculum development cycle (Dang et al., 2023). The results of this evaluation also provide sufficient evidence that merdeka belajar curriculum is worth continuing. (Yaz & Ta, 2021) stated that the results of curriculum evaluation regarding the learning process can be evidence to support the new curriculum. However, the results of this study have limitations in that the research sample only came from state schools.

Differentiated learning economics learning in high school setting proves that teachers play a good role in curriculum development. Curriculum implementation explains the teacher's role in delivering teaching through the use of certain resources provided in the curriculum (Neveglosky et al., 2019). Teachers in this new curriculum play the role of designing and implementing the learning process effectively (Retnaningrum et al., 2023), creating meaningful and enjoyable learning (Hadi et al., 2023). This role in a systems theory perspective will influence learning output (Deissler, 2008). Differentiated learning has been going well, providing opportunities for the growth of students' independent learning abilities, comprehensive practical abilities and social cooperation abilities (Liu & Liu, 2022), encouraging students to be more creative, learning better, increasing student achievement; and other positive things (Nela & Supriatna, 2021), increasing interest, and increasing student motivation (Sharma et al., 2016). However, further studies are still needed to confirm the significance of the influence of learning quality on these positive things.

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CONCLUSION

Fundamental Finding: this research concludes that the implementation of differentiated learning for high school economics learning has gone well. Both from implementing problem-based learning, creative learning, and personalized learning. All three have gone well. Implication: merdeka belajar curriculum policy can continue to be implemented to create fun and meaningful learning as is the learning principle in this curriculum. Limitation: this research is limited to respondents from state schools and measures the quality of learning. Future Research: future research is expected to expand the scope of respondents to private schools and link the quality of learning with learning outputs such as learning outcomes, motivation and student creativity.

REFERENCES

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