The Teachers’ Perception and Attitude on Curriculum Changes in Indonesia toward High School Biology Learning in Lamongan Regency

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Abstract. The purpose of this study is to describe the perception and attitude of teachers on curriculum changes in Indonesia because of high school Biology learning in Lamongan Regency. The research applied a descriptive quantitative research design. Research subjects number 40 high school biology teachers in Lamongan. Data was collected by online questionnaire with Google Form. Data were analyzed by percentage statistics. The results of this study showed that the perception and attitude of the teachers on curriculum changes related to the planning of learning implementation was 55% in the high category. Meanwhile, the teachers’ perception of curriculum changes related to the learning process of Biology was 100% in the moderate category. The perception of the teachers on curriculum changes related to the assessment of Biology learning was 87.5% in the very high category. It can be concluded that the perception and attitude of teachers on curriculum changes were considered positive. However, it is suggested that the policymakers and the practitioners of education improve the quality of the Biology learning process by following the applicable curriculum. For other researchers to focus more on the perceptions and attitudes of teachers on curriculum changes in terms of the implementation of the biology learning process.

Keywords: Teacher Perception; Curriculum changes; Biology Learning

Introduction

The field of education has an important role in shaping the history of human life, especially in the formation of human resources who have 21st-century skills, independence, willpower, and mastery of digital abilities (Cintamulya, 2015). Education is one of the efforts to improve and create a quality of human, to develop the country and uphold the country from other countries. The parameter of quality of the nations can be seen from the education side (Apriani, 2017). When people come into contact with education, the development and progress of life will be implemented in various areas of their lives, including the field of technology (Nurkholis, 2013). Technological advances are one aspect that affects human behavior, actions, and activities, and can change the pattern of human relationships (Ngafifi, 2014). Even the advancement of education is one of the important things in influencing the formation of human personality (Samsudin, 2019), student character (Ningsih, 2019), and character of the nation (Amiruddin, 2016). Advances in science and technology resulting from education can influence the progress of the development of human civilization (Adhi & Ariyanto, 2018).

Meanwhile, the face of the world of education that has a very important role in the advancement of human life is depicted in the education curriculum. The curriculum is one of the important things and indicators of education. It should be recognized that the program curriculum still needs to be operationalized by using teachers' creativity in the learning process (Rimadanti, 2018). The education curriculum includes vision and mission, objectives, material content, learning strategies and methods, and learning evaluations (Masykur, 2019). Therefore, if there is a change in the educational curriculum, it can change the face of education either partially or completely. Curriculum change is an effort to develop the curriculum. Changes in the education curriculum are inevitable, due to internal challenges and external challenges (Machali,
Internal challenges to education are attributed to education demands that refer to eight National Standards of Education (SNP) which include graduation standard, content standard, process standard, educator and education staff standard, cost standard, infrastructure standard, management standard, and assessment standard. External challenges facing education are associated with future challenges, future-needed competencies, people's perceptions, and future knowledge (Slameto, 2015).

Education is one of the important points in Indonesia, so the government always makes it better over time. One way to make it better is by improving the quality of education (Rimadanti, 2018). In the history of educational development in Indonesia from the era of independence until now, the education curriculum in Indonesia has undergone thirteen changes in the curriculum, namely the curriculum in 1947, 1952, 1964, 1968, 1973, 1975, 1984, 1994, 1999, 2004, 2006, 2013, 2013 revision (Insani, 2019). Curriculum changes in Indonesia in addition to answering the demands of the times (Asri, 2017), are also very closely influenced by geopolitical conditions in Indonesia (Hadiansyah et al., 2019), the constellation of power in Indonesia (Abong, 2015), and the responses to socio-cultural developments (Sulthon, 2014). Paying attention to the curriculum changes in Indonesia, two main characteristics change, namely the characteristics of curriculum model design and learning model design. There is a change in the design of the curriculum model from a centralistic (administrative model) to a decentralized model (Grassroot model). There was a change in the direction of the learning model from teacher-centered learning to student-centered learning (Nurhalim, 2011).

The success of curriculum changes depends on the synergy of the supporting elements of education. In addition to the elements of educational actors, namely educational institutions (schools), it takes synergist and synchronization of the three elements of family support, community elements, and state elements (Yusanto et al., 2014). The successful implementation of curriculum changes also depends on the educator (teacher). Teachers have two strategic positions in education. Firstly, they are subjects of education directly in the learning process to achieve national educational goals. Secondly, they are agents of direct educational change in schools (Mahmud, 2013). Therefore, the improvement of teacher quality should not be neglected in achieving successful curriculum changes. The quality of the teacher's view of curriculum changes has an important role in the implementation of the curriculum itself (Sutjipto, 2018). Teachers who understand curriculum changes will be able to choose and determine the direction of goals, materials, strategies, methods, media, and assessments that match the curriculum and real situations in life (Syam, 2019).

Curriculum changes require teachers to be more creative, innovative, critical, and practical in carrying out the learning and assessment process to achieve curriculum targets. Therefore, it is necessary to make efforts to change the mindset (perception) and behavior (attitude) of teachers in carrying out learning by curriculum demands (Rais, 2019). As stated by Andrew in Mayasari, Anshori, & Apriani (2019), Perception plays an important part in the learning process since it influences someone’s behavior or attitudes and motivation to learn. Several researchers have conducted research on teacher perception of curriculum changes, among the results show that teacher perceptions in the preparation, implementation, and evaluation of curriculum changes from 2006 to 2013 are very diverse (Abidin, 2018). While the teacher's response to the curriculum change was split into two groups, the group that rejected and who supported it, although some teachers realized that the curriculum change was for the better (Efferi, 2017). Other research results show that the teacher’s perception of curriculum changes has a direct influence on the attitude and readiness of teachers in carrying out the curriculum. Others point out that teachers’ perceptions of curriculum change indirectly affect teachers’ attitudes and readiness in implementing the curriculum (Prabowo, 2016).

This research focuses more on the issue of the perception and attitude of teachers on curriculum changes in Indonesia toward high school Biology learning in Lamongan Regency.
Material and Method

The purpose of this study is to describe the perception and attitude of teachers on curriculum changes in Indonesia toward high school Biology learning in Lamongan Regency. This research applied a descriptive quantitative research design, which involves words and numbers to describe the findings (Hermawan & Yusran, 2017)(Rukajat, 2018).

The subjects of this study were biology teachers from 40 public/private high schools in Lamongan Regency. The data collection technique used a Likert-scale questionnaire with options for perception and attitude answer choices as many as five options, including strongly agree (SS), agree (S), doubt (R), disagree (TS), and strongly disagree (STS). This questionnaire was distributed online to Biology teachers using a google form application shared with the Biology teacher group in Lamongan Regency in their Whatsapp group. This study was conducted in June-July 2021, with the following time division: June 12-30, 2021 preparation and revision of the Likert scale questionnaire instrument, July 1-8, 2021 online data collection process, and July 15-20, 2021 processing and analysis of research data, and July 21-24, 2021 drafting research report.

The data were collected and analyzed descriptively using percentages. The descriptive percentage is processed by the frequency of respondents’ answers divided by the number of respondents multiplied by 100 percent with the formula stated by Sudjana (Sudjana, 1982)

\[ P = \frac{F}{N} \times 100\% \]

\( P \) = Percentage
\( F \) = Frequency
\( N \) = Number of respondents

The descriptive analysis of percentages is done with the following steps 1) checking the questionnaire's answers from the respondents, 2) calculating the frequency of the respondents' answers, 3) calculating the percentages by using the formula, and 5) deciding the intervals of perception and teacher attitude on curriculum changes in Indonesia toward Biology learning showed in Table 1, Table 2, and Table 3.

Table 1.
Teachers' perceptions and attitudes on curriculum change as many as 10 statement items

<table>
<thead>
<tr>
<th>Category</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>40 – 50</td>
</tr>
<tr>
<td>High</td>
<td>30 - 39</td>
</tr>
<tr>
<td>Medium</td>
<td>20 – 29</td>
</tr>
<tr>
<td>Low</td>
<td>10 - 19</td>
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</tbody>
</table>

Table 2.
Teachers' perception and attitude on curriculum changes toward the planning and assessment of learning as many as 7 statement items.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>28 – 35</td>
</tr>
<tr>
<td>High</td>
<td>21 - 27</td>
</tr>
<tr>
<td>Medium</td>
<td>14 – 20</td>
</tr>
<tr>
<td>Low</td>
<td>7 - 13</td>
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</tbody>
</table>

Table 3.
Perception and attitude of teachers on curriculum changes toward the learning process as many as 6 items of statement

<table>
<thead>
<tr>
<th>Category</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>24 – 30</td>
</tr>
</tbody>
</table>
Results and Discussion

Results

The results of research on teacher perception and attitude on curriculum changes reviewed from high school biology learning in Lamongan Regency can be seen in the following sections.

Teacher Perceptions and Attitudes on Curriculum Changes

The curriculum change policy has implications for regulatory changes in the field of education, both regulation of content, process, and assessment standards. Curriculum changes can also lead to policies, perceptions, and attitudes of education actors and stakeholders in schools. The results of research on perceptions and attitudes of biology teachers on curriculum changes that have occurred in Indonesia since the independence of the Republic of Indonesia until the present era can be seen in Table 4.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interval</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>40 - 50</td>
<td>35</td>
<td>87.5</td>
</tr>
<tr>
<td>High</td>
<td>30 - 39</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>Medium</td>
<td>20 – 29</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Low</td>
<td>10 - 19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 4 shows that the perception and attitude of biology teachers toward curriculum changes in Indonesia are very high. It is shown that there are 35 respondents or 87.5% in the category is very high.

Teachers’ Perception and Attitude on Curriculum Changes Related to The Planning of Biology Learning

The results of research on teacher perception of curriculum changes in the presence of changes in the planning of Biology learning implementation can be seen in Table 5.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interval</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>28 – 35</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td>High</td>
<td>21 - 27</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>Keep</td>
<td>14 – 20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Low</td>
<td>7 - 13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 5, the perception and attitude of biology teachers on curriculum changes in Indonesia concerning the planning of learning implementation (RPP) are high. It is shown that there are 22 respondents or 55% in the high category.

Perception and Attitude of Teachers on Curriculum Changes Related to the Process of Biological Learning Implementation
The results of research on teacher perception of curriculum changes in the presence of changes in the learning process can be seen in Table 6.

**Table 6.**
Perception and attitude of Biology teachers on curriculum changes in Indonesia are reviewed from the process of Biology learning.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interval</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>24 – 30</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High</td>
<td>18 - 23</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Keep</td>
<td>12 – 17</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Low</td>
<td>6 - 11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 6, the perception and attitude of Biology teachers on curriculum changes in Indonesia concerning the learning implementation process are all in the moderate category. There are 40 respondents or 100% in the moderate category. This data shows that the perception and attitude of high school biology teachers in Lamongan Regency in the process of learning implementation is still needed to increase efforts even higher.

**Teacher's Perceptions and Attitudes on Curriculum Changes Related to Biology Learning Assessment**

The results of research on teacher perception of curriculum changes related to learning assessment can be seen in Table 7.

**Table 7.**
Perception and attitude of biology teachers on curriculum changes in Indonesia related to the assessment of Biology learning.

<table>
<thead>
<tr>
<th>Category</th>
<th>Interval</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
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<td>35</td>
<td>87.5</td>
</tr>
<tr>
<td>High</td>
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<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>Keep</td>
<td>14 – 20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Low</td>
<td>7 - 13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on Table 7, the perception and attitude of Biology teachers on curriculum changes in Indonesia regarding the assessment of learning were in the very high category. It is shown that there are 35 respondents or 87.5%. The data shows that high school Biology teachers in Lamongan Regency have very high perceptions and attitudes toward learning assessments according to the curriculum.

When compared to the four components of teacher perceptions of curriculum change, it turns out that teachers' perceptions of curriculum changes in terms of the learning implementation process are lower than the other three components, which are categorized as moderate. This can be seen in Figure 1.
Figure 1. Comparison of Teacher Perceptions of Curriculum Change

Based on Figure 1. This shows that the perception of teachers who need to get attention when a curriculum change occurs is in the process of implementing learning. When compared between the perceptions of biology teachers on curriculum changes in terms of the components of learning planning, learning processes, and learning assessments, all components of the learning process are categorized as moderate. So, biology teachers must make changes in carrying out the learning process under the demands of curriculum changes.

Discussion

Table 4. shows that high school biology teachers in Lamongan Regency have a very good perception regarding the educational curriculum that is dynamic, adaptive, flexible, and can answer the challenges of life's progress. This is in line with research on the perception of biology teachers towards the application of the 2013 curriculum, where there are 60% of biology teachers have a high perception of the application of the 2013 curriculum, because most teachers believe that the application of the 2013 curriculum will provide benefits for the development of skills and competencies of learners (Isthofiyani et al., 2014). Similarly, per the results of biology teacher perception research on the application of the 2013 curriculum at the public school level in Pekanbaru City including the good category (Natalina et al., 2014).

Therefore, high school biology teachers in Lamongan Regency have the right perception and attitude in understanding curriculum changes for the advancement of education and the improvement of the competence of achievement of learners who can be the provision of challenging times. Because the curriculum changes answer the challenges and demands of the evolving times, and the preparation of quality and current educational outputs. The perception of teachers is very high as the capital of teacher readiness in implementing the curriculum.

Educational stakeholders must realize the importance of curriculum dynamics in preparing reliable human resources. Curriculum change is a necessity in education. Curriculum changes are manifested by curriculum development from both conceptual and structural aspects. Curriculum development can occur as a whole and in part. Overall change, is when the curriculum changes in all components of the conceptual, structural, content, objectives, methods, and assessment systems. Partial changes are when the curriculum changes from some components of the content, objectives, methods, and assessment system (Ritonga, 2018).

Curriculum changes in responding to the challenges and needs of the times must pay attention to several principles. First, centered on the potential, development, and needs of students and society. The second is diverse integration. Curriculum changes must take into account the diversity of potential and character of students and the environment. Third, is the response to the development of science, technology, art, and political change. Fourth, it is oriented towards preparing the necessities of life and the world of work, so that the curriculum can print the human resources needed in life and the world of work appropriately. Fifth, oriented to the principle of lifelong learning (Long Life Education), so that there is a process of education,
cultivating values and character education that accommodates local, national, regional, and international potentials (Muhammedi, 2016).

Table 5. shows that more than 50% of high school Biology teachers in Lamongan Regency can design the implementation of Biology learning by analyzing basic competencies, choosing learning strategies and methods to be implemented, as well as the assessment plan through adoption, adaptation, and independence. The correct perception of teachers in planning learning means that teachers strive to plan active, creative, innovative, and fun learning. This means that teachers must choose the appropriate approach, methods, and models of learning, as well as appropriate assessments per the demands of the applicable curriculum or demand by basic competencies (KD)(Saprianto et al., 2020). The perception of teachers in designing learning is relatively good. It shows that the teachers have a good mastery of the design of RPP according to the curriculum (Mahmuda, 2015).

However, education policymakers (Government) and implementers of education (Schools) still strive to improve the quality of learning implementation planning for teachers. Improving the quality of teacher planning is not enough just to do socialization or webinars. Moreover, it takes mentoring and mentoring activities in planning learning which include the ability to describe basic competencies (KD) to be indicators of achievement of competence, choosing learning strategies and models, choosing media that are following competence, preparing learning steps, and planning linear assessment instruments with basic competency demands and the planned learning process. Through MGMP, KKG, workshop, and qualified technical guidance activities.

Table 6. shows the perception and understanding of the teacher of the curriculum and the ability of teachers in designing high learning or whether it is not automatic that teachers can carry out the learning process that has been designed before. This is in line with the results of research on PJOK teachers that PJOK teachers have a high ability to understand the curriculum and plan it, but not optimally in the implementation of the learning process (Yulianto et al., 2017). The learning process of curriculum change in Indonesia is student-centered which is close to the scientific learning approach. The perception of teachers in the field of natural sciences of the scientific learning process is quite sufficient (Sudirman & Rahmi, 2018). So, the perception of teachers in scientific approaches is still relatively positive, This is also under the results of research on the perception of physics teachers in the implementation of scientific approaches in the study of physics (Suluh & Jumadi, 2019), but it still needs more improvement efforts by the government, schools, and teachers themselves.

Improving the perception and attitude of teachers in the learning process means that there is an awareness of how important the teacher’s position as an educational facilitator is that is irreplaceable with technology so that teachers are not ignorant in accompanying student learning. Teachers need to increase awareness that the learning process is the core of the curriculum in achieving national education goals. Improving the perception and attitude of teachers in the learning process can be done through the optimization of school supervision programs, problem-solving learning in school-level MGMP, optimization of team teaching programs, and lesson study of teachers.

In addition to two important components in determining educational progress, namely planning and the process of implementing learning. So no less important is the success of the learning assessment component. The learning assessment component is a measure of the success of the planning and implementation stages of learning. Therefore, when there is a change in the educational curriculum, the teacher’s perception in terms of learning assessment must also adjust. Table 7. shows the perception of biology teachers on curriculum changes in terms of learning assessments is very high.

This is in line with the results of other studies related to teacher attitudes towards assessment standards in the curriculum in 2013. Their attitude showed 75% of them agreed that the standard of assessment of regulation number 23 of 2016 was good (Eliawati et al., 2013), and
the perception of classroom teachers to the assessment of the curriculum 2013 on aspects of attitude and skills is also good (Kuntarto & Susanti, 2016).

Figure 1. shows that the perception of biology teachers on curriculum changes in terms of the learning process needs to be taken seriously. Because the learning process is a core part of efforts to print educational outcomes. Because four factors influence the learning process, namely 1) student activities, 2) teacher’s ability to manage the classroom, 3) teaching strategy factors, 4) lesson planning. According to Sardiyanah (2018), the learning process is influenced by internal and external factors. Internal factors include physiological and psychological states (interest and effort, intelligence, talent, motivation, concentration, readiness, fatigue, and saturation). External factors include the family, school, and community environment (Sardiyanah, 2018).

Among the components that affect the learning process is the teacher. Therefore, the perception and understanding of teachers in implementing learning need to be an important concern for education policymakers. Teachers have a strategic role in the success of learning (Anisa & Yuliyanto, 2007).

**Conclusion**

From the results of research and discussion, it can be concluded that the perception and attitude of Biology teachers on curriculum changes in Indonesia in terms of the preparation of learning implementation planning (RPP), and the assessment of high school Biology learning in Lamongan Regency were in a very high category. While the perception and attitude of biology teachers on curriculum changes concerning the process of implementing Biology learning in Lamongan Regency were all in the moderate category.

Therefore, for education policymakers (government) and implementers of education, it is necessary to improve the quality of the learning process per the demands of the curriculum that is imposed. Last but not least, other researchers can conduct research that focused more on the perception and attitude of teachers on curriculum changes in the process of implementation of Biology learning at senior high school levels.

**Acknowledgments**

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