QUALITY OF CRITICAL THINKING, COMMUNICATION, COLLABORATION AND CREATIVITY SKILLS: SURVEY OF HIGH SCHOOL STUDENTS IN BIOLOGY LEARNING

KUALITAS KETERAMPILAN BERPIKIR KRITIS, KOMUNIKASI, KOLABORASI, DAN KREATIVITAS: SURVEI PADA SISWA SMA DALAM PEMBELAJARAN BIOLOGI

Tasya Novian Indah Sari[1*)], Anna Rakhmawati[2)], Dwi Ratnawati[3)] , Nunuk Purwanti[4)], Yulianti[5)]
[1*,2)] Biology Education Department, Faculty of Mathematics and Natural Sciences, Universitas Negeri Yogyakarta, Special Region of Yogyakarta, Indonesia, email: [1*)]tasyanovian.2022@student.uny.ac.id (correspondence author), [2)] anna_rakhmawati@uny.ac.id
[3)]SMA Negeri 1 Sukomoro, Magetan, Jawa Timur, Indonesia
[4)]SMA Negeri 1 Barat, Magetan, Jawa Timur, Indonesia
[5)]SMA Negeri 1 Karas, Magetan, Jawa Timur, Indonesia

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Abstract

Students need critical thinking, creativity, communication and collaboration skills to face and adapt to social change, so that students can survive and compete well in social life. The aim of the research is to describe the critical thinking, collaboration, communication and creativity skills of high school students in biology learning. The research was carried out in August-September 2023. The research population was high school students in Magetan Regency. The research sampling technique was cluster sampling and the research sample was 539 high school class students. Data collection techniques used questionnaires on critical thinking skills, communication, collaboration and creativity. This research instrument is a questionnaire in the form of a questionnaire with 5 Likert scales. Quantitative descriptive research data analysis techniques. The research results show that high school students' critical thinking and creativity skills are in the medium and low categories compared to communication and collaboration skills. The results of the research can be used as a reflection for teachers or future researchers as a follow-up to empower students' critical thinking, communication, collaboration and creativity skills in implementing the Merdeka Curriculum.

Keywords: 21st Century Learning, 4C Skills, Merdeka Curriculum, Industrial Revolution 4.0

Abstrak

Siswa membutuhkan keterampilan berpikir kritis, kreativitas, komunikasi, dan kolaborasi untuk menghadapi serta beradaptasi dengan perubahan sosial, sehingga mereka dapat bertahan dan bersaing dengan baik dalam kehidupan sosial. Penelitian ini bertujuan untuk mendeskripsikan keterampilan berpikir kritis, kolaborasi, komunikasi, dan kreativitas siswa SMA dalam pembelajaran biologi. Penelitian dilakukan pada bulan Agustus–September 2023 dengan populasi penelitian yaitu siswa SMA di Kabupaten Magetan. Teknik pengambilan sampel menggunakan cluster sampling dengan jumlah sampel penelitian sebanyak 539 siswa SMA. Teknik pengumpulan data menggunakan kuesioner tentang keterampilan berpikir kritis, komunikasi, kolaborasi, dan kreativitas. Instrumen penelitian ini berupa kuesioner dengan 5 skala Likert. Analisis data penelitian menggunakan teknik deskriptif kuantitatif. Hasil penelitian menunjukkan bahwa keterampilan berpikir kritis dan kreativitas siswa SMA berada pada kategori sedang dan rendah dibandingkan dengan keterampilan komunikasi dan kolaborasi. Hasil penelitian ini dapat digunakan sebagai refleksi bagi guru atau peneliti selanjutnya dalam upaya memberdayakan keterampilan berpikir kritis, komunikasi, kolaborasi, dan kreativitas siswa dalam implementasi Kurikulum Merdeka.

Kata kunci: *Pembelajaran Abad 21, Keterampilan 4C, Kurikulum Merdeka, Revolusi Industri 4.0*

Introduction

The Industrial Revolution 4.0 brings a change in the educational paradigm that focuses on knowledge and the application of innovation in learning (Satriani, 2022). Facing the Industrial Revolution 4.0 is not an easy thing, so preparing everything related to this is a must (Daulay et al., 2021). In facing the Industrial Revolution 4.0 and global competition in the 21st century, the quality of education must continue to be improved. One of the efforts to improve the quality of education in Indonesia, is by empowering students' skills in accordance with the needs of the 21st century in the Industrial Revolution 4.0 so that students can compete globally. Kasih et al. (2019) If today's students want to compete globally, then students must have critical thinking, communication, collaboration, and creativity skills known as 4C skills.

Critical thinking skills are generally seen as very important skills in equipping individuals to participate in society (Zanden et al., 2020). Critical thinking skills enable students to process the information they receive logically. Through critical thinking skills students can determine which information is important, irrelevant or useless (Amin et al., 2020). Students who have good critical thinking skills are able to solve problems more effectively (Wahidin & Romli, 2020). Apart from that, critical thinking skills are an important component of learning, because critical thinking skills are one of the things that determine students' academic success in learning (Amin et al., 2020), so it is important for teachers to equip students with these skills (Ramdani et al., 2021). Zanden et al. (2020) conveyed that critical thinking skills are important for students for the transition from high school to university.

Supporting critical thinking skills requires skills related to the transfer of information between humans, known as communication skills (Jalinus et al., 2023). Communication skills are one of the basic skills that a person must master during physical development and mental growth (Oktavia & Ridlo, 2020). In line with opinion Laar et al. (2020) that communication skills are important for all sectors of life, these skills relate to a person's ability to process and convey information to a wide audience. According to Khan et al. (2017) in the process communication skills involve the ability to listen, speak, read, and write. The communication process is successful if the message is conveyed clearly and easily understood. In addition, communication skills also determine students' success in their future careers (Fadli & Irwanto, 2020). According to Rudianto et al. (2022) communication skills can be combined with collaboration skills so that students communicate well, orally and in writing, thereby improving teamwork skills and effective communication skills between groups.

Collaboration skills relate to the skills of working effectively in a team in solving problems and making decisions for a common goal (Zubaidah, 2018). Collaboration skills are needed to elaborate students' skills, knowledge and attitudes (Pardede, 2020). Collaboration skills consist of working productively, respect, compromise, and responsibility (Greenstein, 2012). Furthermore, productive work in collaboration is related to using time efficiently with all group members in solving a problem. Showing respect is related to students' ability to respect each other among members in achieving common goals. Compromise relates to student involvement to achieve common goals, while responsibility relates to doing the best job and completing all tasks together and on time (Ilma et al., 2022). Collaboration also teaches students to interact with peers, developing cognitive knowledge abilities (Y. Hidayati & Sinaga, 2019), thinking and problem solving skills (Boholano, 2017), negotiation to achieve common goals (Hao et al., 2016) and performance (Brandt, 2021; Cheruvelil et al., 2020).

Apart from the three skills above, one of the important 4C components is creativity. Through creativity, someone can create a new innovation (Jalinus et al., 2023). This ability includes problem-solving, new ways of thinking, providing new ideas and solutions, asking different questions, and giving different answers as a form of innovation and creativity (R. K. Putri et al., 2021). Creativity is related to discovering something and producing something new by using

something that already exists (Daulay et al., 2021). Students who have good creativity are able to implement and create new ideas (Suyitno, 2020). Rudianto et al. (2022) Through creativity skills, students are expected to be able to develop, apply, and convey new ideas to others and be open and responsive.

4C skills are important skills for students, these skills equip students to face various opportunities and challenges in the era of rapid information technology (Nuriza & Faizah, 2023). Students need these skills to face and adapt to social changes, so that students can survive and compete well in social life (Suminar et al., 2021). 4C skills enable students to solve problems, think flexibly, innovate, sort information, apply new ideas, be productive, socialize, and adapt to society (Daulay et al., 2021; Hao et al., 2016; Ilma et al., 2022; Kasih et al., 2019; Wahidin & Romli, 2020). Therefore, by mastering the 4C skills, students are expected to be ready for a competitive work life, self-development, and carrying out their social functions by their areas of interest (Aulia, 2022).

However, in fact, the application of critical thinking, communication, collaboration, and creativity skills in the learning process in the classroom is not very visible. This is in line with several previous research findings that students' critical thinking, collaboration, creativity, and communication skills in Indonesia are still relatively low and need to be empowered (Susetyarini & Fauzi, 2020). This finding is in line with the facts found in the biology learning process at Magaten Regency High School. Surveys conducted in several schools show that in biology learning, learning tends to be teacher-centered. Centered on the teacher, such as the teacher explaining then the students listen and the teacher asks the students to ask if there is something they don't understand. During the question and answer session, students in class tend to be passive in asking questions. If you passively ask, do you already understand or is it the opposite? The teacher must repeat it again so that students are really active in asking questions.

4C skills are one of the basic skills as well as provisions for students to be ready to compete globally and are important. However, so far secondary schools have made efforts to prepare students to become a generation ready to face the 21st century. However, this cannot yet be measured optimally to find out the extent of the development of student's critical thinking, collaboration, communication, and creativity skills, especially in implementation *Merdeka Curriculum*. It is known that the elements of critical thinking, collaboration, communication, and creativity skills have several indicators. These indicators play an important role in supporting student skills such as critical thinking indicators, creativity indicators, collaboration, and communication indicators. Based on the explanation given, the aim of this research is to describe the critical thinking, collaboration, communication, and creativity skills of high school students in biology learning.

Method

This research method is descriptive survey research conducted from 20 August 2023 to 30 September 2023. This research aims to determine the level of critical thinking communication, collaboration and creativity skills of high school students in the Magetan Regency area in biology learning for each indicator.The population of this study were high school students in the Magetan Regency area. The sample for this research was 539 high school students in the Magetan Regency area. The sampling technique used in this research is cluster sampling.

Table 1. Demographics of Research Respondents

Gender	Gender	Percentage
Woman	359	67%
Man	180	33%
Total	539	100%

Data collection techniques use questionnaires on critical thinking skills, communication, collaboration and creativity. The research questionnaire is presented online via Google Form. The Google form link was sent to the biology teachers of each class in each different school. This research instrument is a critical thinking, communication, collaboration and creativity questionnaire sheet totaling 43 questions. The questionnaire was adopted from Destarina (2021) dan R. Kelley et al. (2019). The

assessment on the questionnaire with a Likert scale on positive questions is (1) strongly disagree, (2) disagree, (3) neutral, (4) agree and (5) strongly agree. Meanwhile, in negative questions (1) strongly agree, (2) agree, (3) neutral, (4) disagree and (5) strongly disagree.The data analysis technique in this research is quantitative descriptive. The qualitative descriptive formula used to calculate student scores indicators in each skill is presented as follows.

$$\text{Score indicators} = \frac{\text{Score obtained}}{\text{maximum score}} \times 100\%$$

The indicator scores obtained are categorized using Bloom's cut points for each indicator. The data was interpreted using bar charts and tables to determine the quality of critical thinking, creative, communication and collaboration skills for each indicator (Table 2).

Table 2. 4C Results Criteria Bloom's cut point

Score Range	Criteria
80%-100%	High level
60%-79%	Medium Level
<60%	Low level

Source: Alzahrani et al. (2022)

Results and Discussion

The results of a survey of critical thinking skills in biology learning which was attended by 539 students showed that 50% (268 students) were in the medium category, 50% (270 students) were in the low category and 0% (1 student) were in the high category. Second, the survey results on communication skills in 43% (231 students) were in the low category, 57% (308 students) were in the medium category and there were no students in the high category. Third, the survey results on collaboration skills were 77% (414 students) in the medium category, 23% (125 students) in the low category, and no students in the high category out of 539 students. Finally, creativity skills were 64% (344 students) in the low category, 36% (195 students) in the medium category, and none in the high category out of 539 students. Overall, it can be drawn that of the 4 skills, critical thinking skills and creativity are the skills with the highest low percentage compared to collaboration and communication skills (Figure 1).

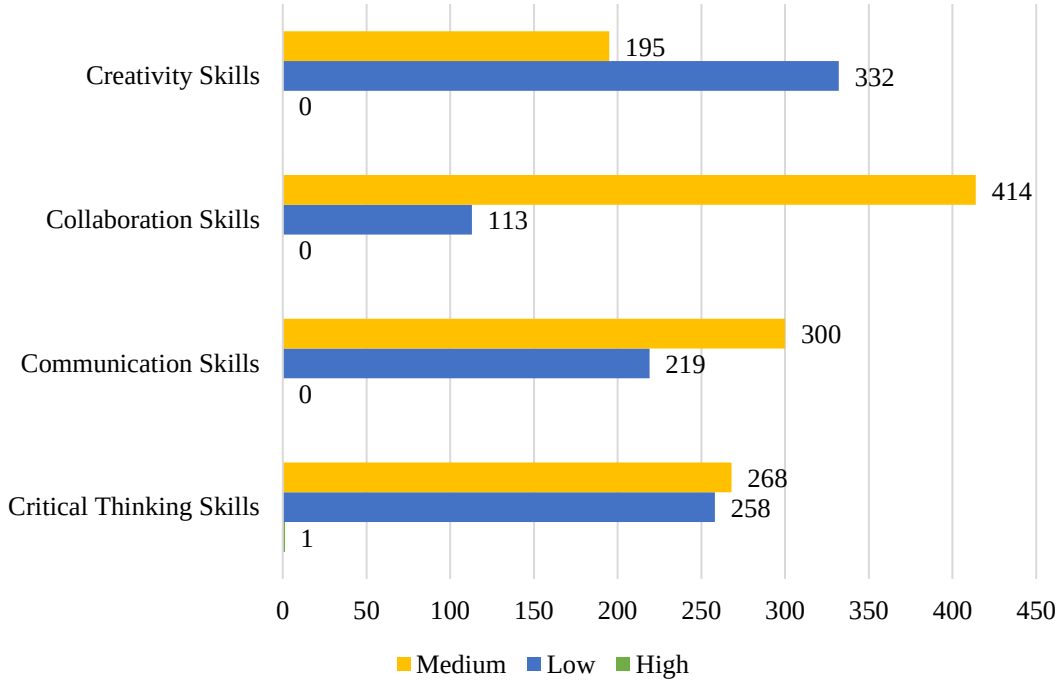

Figure 1. Survey Results on Critical Thinking, Communication, Collaboration and Creativity Skills

The communication skills indicators in this survey consist of 5 indicators. In detail, the score obtained indicators of communication skills in indicators 1) the

indicator of communicating results obtained an average percentage of 66%, 2) the indicator of listening obtained an average percentage of 61%, 3) the indicator of expressing opinions obtained an average percentage of 62%, 4) the answering indicator gets an average percentage of 60% and 5) the asking indicator gets an average percentage of 49%. Based on the results obtained, it can be concluded that of the 5 indicators of communication skills, the indicator with the highest average is the indicator of communicating results and the indicator with the lowest average is the indicator of asking (Table 4).

Table 3. Percentage of Communication Skills Indicators

No	Indicator	Percentage	Category
1.	Communicate results	66%	Medium
2.	Listen	61%	Medium
3.	Expressing opinions	62%	Medium
4.	Answer	60%	Medium
5.	Ask	49%	Low

The collaboration skills indicators in this survey consist of 5 indicators. In detail, the score obtained indicators of collaboration skills in indicators 1) the positive interdependence indicator obtained an average percentage of 67%, 2) the communication skills indicator obtained an average percentage of 67%, 3) the face-to-face interaction indicator obtained an average percentage of 67 %, 4) indicators of working skills in groups obtained an average percentage of 67%, and 5) accountability and personal responsibility obtained an average percentage of 67%. In general, the average percentage indicators for collaboration skills is in the medium category.

Table 4. Percentage of Collaboration Skills Indicator

No	Indicator	Percentage	Category
1.	Positive interdependence	67%	Medium
2.	Communication skills	67%	Medium
3.	Face to face interaction	67%	Medium
4.	Skills working in groups	67%	Medium
5.	Accountability and personal responsibility	67%	Medium

The creativity skills indicators in this survey consist of 4 indicators. In detail, the score obtained indicators of creativity skills in indicators is 1) the fluency indicator gets an average percentage of 57%, 2) the flexibility indicator gets an average percentage of 53%, 3) the originality indicator gets an average percentage of 68% and 4) the elaboration indicator obtained an average percentage of 58% (Table 6). In general, almost all indicators of creativity skills are in the low category, except for the originality indicator. The indicator with the lowest average percentage is flexibility. This result is in line with the overall average results in Figure 1 that creativity skills include the 4C skills which have the lowest average percentage.

Table 5. Percentage of Creativity Skills Indicator

No	Indicator	Percentage	Category
1.	Fluency	57%	Low
2.	Flexibility	53%	Low
3.	Originality	68%	Currently
4.	Elaboration	58%	Low

Creativity Skills in Biology Learning

The results of measuring critical thinking, communication, collaboration, and creativity skills in high school biology learning showed that creativity skills and critical thinking skills were the skills with the highest percentage of students in the low category among other skills (Figure 1). The results of measurements on creativity skills were 64% of students had low creativity skills and 35% were in the medium category from 539 research respondents (Figure 1). These results are in line with the study results (Rosidah et al., 2021; Sari et al., 2016) that the creativity skills of secondary school students are still in the low category. According to Qomariyah et al. (2021) there are several things that influence students' creativity skills. This includes choosing a learning model, this learning strategy prioritizes student work rather than teacher work, such as carrying out practicum activities, field studies, discussions, etc. This type of learning that relates to life or the

surrounding environment can sharpen students' creative thinking abilities because students are required to be able to solve problems that arise (Armandita et al., 2017). An environment that is appropriate to the content of the subject matter can expand and clarify the material, concepts and principles of the subject matter (Febrianti et al., 2016).

In detail, of the 4 indicators of creativity skills, almost all indicators are in the low category (Table 6). The first indicator is fluency, the measurement results show that the average fluency indicator is 57% or low category. The results of the research show that students are still lacking in fluency indicators (Suripah & Sthephani, 2017). According to Sari et al. (2016) Fluency ability is related to students' skills in producing valid, relevant, and meaningful responses and ideas. The indicator in this dimension is that students are able to express many ideas and thoughts that are valid, relevant, and meaningful. Students who have good fluency skills are able to produce ideas, and answers, solve problems or questions fluently (Hanipah et al., 2018).

The second indicator is flexibility, the results of measuring the flexibility indicator are 53% or in the low category. Similar research results show that the flexibility indicator is included in the indicators with poor results Effendi & Farlina (2017). Flexibility ability is related to the ability to generate varied questions and answers, identify problems from different perspectives, look for various alternatives or varied methods, and be able to change approaches or ways of thinking (Kadir et al., 2022). Students who have good flexibility abilities are able to build diverse ideas by trying various ways of solving problems so that the ideas offered do not tend to be the same.

Next is the originality indicator, if previously students were still low in fluency and flexibility indicators with an average of below 60% in this indicator students were in the medium category. Originality appears to be mastered by students if students are able to produce ideas that are not common so that students' answers are not tied to the material explained by the teacher and the student handbook (Effendi & Farlina, 2017). The ability criteria in question are that students can produce new or different final answers in solving the given problem (Ismara et al., 2017).

Lastly is the elaboration indicator, the results of measuring creativity skills get an average score for the elaboration indicator of 58% or the low category. The research results of elaboration skills indicators have the lowest percentage, namely 46%. This indicates that students experience little difficulty in explaining an idea or describing in detail an experiment to test the borax content in food. This skill can be identified from the way students answer a question in detail and can expand an idea (Qomariyah et al., 2021). Elaboration ability is the ability to develop and improve an idea by adding or detailing a subject, idea, or situation to make it more interesting (Kadir et al., 2022). According to Suripah & Sthephani (2017) students who have good elaboration skills are able to describe in detail the steps used to solve the problem.

The survey results on student creativity in biology learning in Magetan Regency are generally lacking. The results of research by Primadoni & Muslim (2023) One of the causes of students' low creative thinking skills is in learning design. Learning still uses a one-way lecture method, so students only listen and take notes. Therefore, students become less active in learning because they cannot express their opinions. Research by Putra et al. (2018) students' lack of learning experience results in low creative thinking skills. Efforts that can be made to help develop students' thinking skills include designing teaching materials appropriate to the students' cognitive stage. Similar findings by Siregar et al. (2022) that the use of teaching materials that do not facilitate students' creative thinking skills is one of the causes of low abilities.

Critical Thinking Skills in Biology Learning

The results of measuring critical thinking skills indicators in Table 3 show that the interpretation indicators have an average percentage of 72% or the medium category. In line with research conducted by A. R. Hidayati et al. (2021) of the critical thinking indicators, the interpretation indicator is in the good category. According to Hidayanti et al. (2016) interpretation indicators relate to

students' ability to interpret and understand the meaning of a problem. Interpretation indicators relate to students' ability to interpret and describe the objects observed (Agnafia, 2019). Interpretation indicators train students to explain and understand the meaning of an event, data, procedure, or rule. Students provide feedback and express their observations of an object. This is in accordance with the theoretical explanation that interpretation indicators are related to students' ability to understand and express the meaning of the problem (Hayudiyani et al., 2017).

The second critical thinking indicator is self-regulation. The measurement results show that the average percentage for this indicator is 72% or the medium category. According to Phan (2010) Self-regulation can serve as a platform for the development of critical thinking and analytical thinking skills and developing students' self-regulation skills results in increased critical thinking. Students who have good self-regulation are able to carry out tasks purposefully and strategically, set goals, choose strategies, actively apply these strategies when involved in learning, and consistently evaluate and reflect on the quality and strategic efforts of their learning (Kitsantas et al., 2019). In line with that opinion Budiwiguna et al. (2022) self-regulation will help students to learn in a disciplined manner and improve students' critical thinking and learning outcomes.

The third critical thinking indicator is analysis. The results of measuring analytical indicators on critical thinking skills show an average percentage of 69% or the medium category. In line with the research results Wiyoko (2019) that this indicator ranks highest compared to other indicators at 66.30%. According to Rahmawati & Masykuri (2019) This is supported by the habits and experiences that students already have. The process that occurs in analyzing is that students can explain relevant information, link relationships with relevant elements, and determine ideas for the purpose of the information obtained.

The fourth indicator of explanation, the results of measuring the explanation indicator obtained an average of 48% or students' explanation ability was in a low category. The results of this study are in line with the research Maslakhatunni'mah et al. (2019) that the explanatory indicator is included in the indicators with low results, namely 16.47% or the poor category. Explanation indicators are indicators related to students' ability to state results and present arguments supported by appropriate reasons and make statements regarding cause and effect (Agnafia, 2019). Students who have good explanation skills are able to convey arguments correctly according to the conclusion (Suriati et al., 2021). According to Hayudiyani et al. (2017) the theoretical explanation that has been put forward, explanation is related to students' ability to determine and provide reasons logically based on the results obtained. Through explanation, students can be trained to develop reasoning and critical thinking (Pujiono, 2012).

The fourth indicator of critical thinking is inference. The results of measuring inference indicators obtained an average of 49% or students' inference abilities were still low. This result is in line with research results A. Putri (2018) that students' inference indicators are still relatively low. According to Purwati & Fatahillah (2016) students' inference abilities are in the low category because students who are less able to analyze and evaluate influence writing conclusions. Students who have good inference skills are able to make appropriate conclusions, that is, draw reasonable conclusions by providing all the important and reasonable reasons (Hidayanti et al., 2016).

Lastly is the evaluation indicator with an average percentage of 70% or the medium category. Students with a high level of learning independence can fulfill all indicators of critical mathematical thinking skills well, namely indicators of interpretation, analysis, evaluation, and inference (Ardiyanto et al., 2021). In carrying out evaluations, reflective thinking is very necessary, and in inferences logical thinking is needed. Students who have good evaluation skills are able to assess the credibility of statements and assess the logical strength of the problem-solving carried out (Hidayanti et al., 2016). This stage is carried out critically in order to obtain information that is accurate and precise. This is intended so that when taking further action

towards a solution to the problem there is no mistake. Students are required to be able to recognize if there are errors in the problem-solving process. Furthermore, after finding an error, you must immediately make improvements to get a more effective solution (Susilowati & Sumaji, 2020).

The survey results on the critical thinking skills of high school students in Magetan Regency obtained results in the medium and low categories. Although there is a medium category, this ability needs to be empowered because it is an important skill for students. Efforts that can be made are to improve the quality of learning. According to the use of learning models, students tend to be passive recipients of information from teachers without much opportunity to think critically (Kafiar et al., 2023). Research results by Mulyanti et al. (2023) teacher-centered learning activities result in students being unable to develop critical thinking skills properly due to limited opportunities to interact and actively participate in the learning process. In addition to learning design, using media and teaching materials that do not involve students actively in learning can result in students' thinking skills being less than optimal (Nur et al., 2017).

Communication Skills in Biology Learning

The next skill is communication skills, the results of measuring communication skills show that almost all of the 5 indicators of communication skills are in the medium category except for the asking indicator which is 49% (Table 4). These results are in line with the research results Angganing et al. (2022) students' communication skills in science learning. Students' communication skills are not good, because students lack the initiative to ask questions in learning. According to Haqiqi & Mariani (2017) regarding communication skills, communication skills are very important in science learning. Through communication skills students can share ideas and clarify their understanding. Students can write down or convey back things they have understood.

In addition to creativity and critical thinking, the 4C skills that still need to be empowered are communication skills. This skill is one of the most important skills, students will find it easier to communicate about various things related to learning materials (Rosa Putri & Darussyamsu, 2022). According to Wahyuni et al. (2016) one of the causes of low student communication skills is the learning design that is still centered on the teacher. The learning design that is centered on the teacher results in students being less confident in communicating their ideas. In addition, when the teacher explains, students do not pay attention properly, students also often misinterpret the questions given. Research by A. A. R. Putri & Darussyamsu (2022) that students who have good communication skills are influenced by the selection of appropriate and suitable learning strategies and methods by teachers so that students can easily understand and be encouraged to be skilled in communicating.

Collaboration Skills in Biology Learning

Lastly is collaboration skills, the results of measuring collaboration skills on 5 indicators show that all collaboration indicators are in the medium category (Table 5). This result is in line with the overall survey results that collaboration skills are the skills that have the highest percentage compared to critical thinking, creativity and communication. This finding is in line with the research results N. Hidayati (2019) in general, students' collaboration skills are in a good category. Biology students collaboration skills are very good in all three indicators, namely contribution, responsibility, and respect for other people's opinions. However, these findings conflict with qualitative data which shows that students make little contribution to the completion of group assignments (Sholihah et al., 2023), Therefore, follow-up efforts are still needed to improve students' collaboration skills (N. Hidayati, 2019; Sholihah et al., 2023).

The last survey result is collaboration skills. In general, the results of collaboration skills are medium and low. Although dominated by medium results, this skill needs to be empowered. Collaboration skills are important for students to have in conducting dialogue to exchange thoughts or ideas. The results of the study by Hamdani & Wardani (2019) and Octaviana et al. (2022) that low

collaboration skills are due to students' lack of confidence in their abilities. According to Mei et al. (2015) and Octaviana et al. (2022) one of the factors that causes students' collaboration skills to be still low is that many teachers still apply monotonous learning methods and use teaching materials that are still conventional or still in the form of printed media and are not interactive so that students' active participation in learning is still very low.

Apart from the results of the study, it has several limitations that have not been achieved by researchers. This study was only conducted through a survey followed by class students. Further efforts need to be made to determine the causes or factors that influence the acquisition of critical thinking, communication, collaboration, and creativity skills of students. However, there are several studies from previous research results regarding the causes of low critical thinking, communication, collaboration, and creativity skills of students in Indonesia. The results of this study are relevant to support the follow-up of the current learning process, especially because Magetan Regency has never measured students' critical thinking, communication, collaboration, and creativity skills. In addition, the results of this study are also relevant to the need for further follow-up research.

Conclusion

Survey results of critical thinking, communication, collaboration, and creativity skills of high school students in Magetan Regency in Biology learning in the medium and low categories. Critical thinking skills and creativity have a low category with a high percentage. The results show that high school students in Magetan Regency experience difficulties in high-level thinking skills because critical thinking skills and creativity are included in high-level thinking skills.

Apart from the survey results, further research can reach further into the causes of low critical thinking, communication, collaboration, and creativity skills by conducting sampling interviews with students who fall into the low, medium, and high categories. Finally, further efforts are needed to empower students' critical thinking, communication, collaboration, and creativity skills in an effort to prepare students who are ready to compete globally.

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