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21st Century Learning: 4c Skills In Case Method And Team Based Project Learning

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Abstract

The life of the 21st century presents its own challenges in the world of education, namely how in the learning process students are provided with skills to survive in the global world of the 21st century. The purpose of this study is to describe how well the 2nd century (4C) skills possessed by Early Childhood Education Teacher students are in case-based lectures and team based projects. The approach used in this research is quantitative and the method used is descriptive. The sample in this study were 2nd, 4th, and 6th semester students, totaling 450 students. The data collection technique is through filling out questionnaires about 4C skills which are carried out by self and peer assessment online by students. The results show that students' critical thinking and creativity are in the good category with an average critical thinking score of 83.7 and creativity of 85.4. Meanwhile, the communication (87.4) and cooperation skills (89.7) of students are in the very good category. Case-Method and team-based projects learning can help develop 4C skills as 21st century skills.

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INTRODUCTION

The people of the 21st century live in an era of globalization where science and technology are developing very rapidly, social life is very diverse and multicultural, as well as digitalization in various fields of life, including in the field of education. According to Zubaidah (Zubaidah, 2019) 21st century life brings several impacts on the field of education, including students have technology-based expectations, education is becoming more personal and personal, and IoT (internet of things) is taking over. The Partnership for 21st Century Skills (P21) a national organization developed a framework for 21st century skills which includes the 4Cs, namely Critical thinking, Creativity, Communication, and Collaborative (Yulianda Putri Rahmawati & Mohammad Salehudin, 2021). The ability of 4C (Critical thinking, Creativity, Communication Skill, and Collaboratively) is very important for students, students, teachers and education staff to face competition in the current era of the industrial revolution 4.0 (Zubaidah, 2019).

The Director General of Teachers and Education Personnel of the Indonesian Ministry of Education and Culture (Kemendikbud) stated that "teachers and education personnel must make a lot of changes, innovation and creativity. We are required to face the 21st century, revolution 4.0 of course there are several things. The first is how to produce these future children

to think critically. Second, children will be able to compete in the 21st century if they have good communication competence. Next, cooperation and next, children who compete in the 21st century are children who have innovation and creativity" (GKT Secretariat, 2019). If these 21st century skills are truly honed, developed, and trained during the learning process, both from the basic education level to the higher education level, it will have a great influence on the next generation of the nation, because they will become human beings who think, are skilled, have the ability cooperation in a group to solve problems, able to communicate effectively, have tolerance for differences of opinion, and aware of information, knowledge, and technology (Aliftika & PurwantoUtari, 2019; Junedi et al., 2020; Septikasari, 2018; Zubaidah, 2019).

Quality and superior human resources are of course formed from the learning process with educators who are ready to teach and educate through 21st century learning which of course is required to be relevant to the era of the industrial revolution 4.0 (Rifa, 2021). Learning with the case method and team based project is one method that can be used and is in accordance with the challenges of the 21st century.

The application of case based learning in lectures has an impact on better understanding of students and their higher motivation in lectures. In addition, case-solving learning (case method) brings real and relevant cases that have an impact on changing student attitudes for the better (Sari, 2022). The results of research by Jamaludin & S Alanur (2021) stated that through the case method, students who previously rarely read became very interested in the case method. Students' critical attitude also develops when reading and looking for solutions to the problems presented. In addition to case based learning, based on research results (Situmorang, 2017) the application of team based learning in lectures can improve student learning outcomes. Meanwhile, Nursulistyo (Nursulistyo et al., 2021) revealed that team based learning has an effect on students' critical thinking skills.

Several studies show that there is a relationship between 21st century skills with case methods and team based projects. Problem based learning has a significant impact on improving students' 21st century skills (Bani-Hamad & Abdullah, 2019; Hadkaew & Liewkongsthaporn, 2016). In an effort to optimize 21st century skills, namely 4C skills (Critical thinking, Creativity, Communication Skill, and Collaboratively), case methods and team based projects are considered as alternative ways to improve them.

METHOD

The approach used in this research is quantitative and the method used is descriptive. Descriptive method is used to obtain an empirical picture of the 21st century skills (4C) of PG PAUD students in the case method and team based project PG PAUD Study Program courses. The implementation of the descriptive method is not only limited to data collection and data compilation, but also includes analysis and interpretation of the meaning of the data.

This research was carried out in the Early Childhood Education Teacher Education Study Program (PG-PAUD) with data collection carried out on several case method-based courses in semesters 2, 4, and 6. The population in this study were all students of the Early Childhood Education Teacher Education Study Program. The samples in this study were 2nd, 4th, and 6th

semester students who contracted case method- and team-based projects courses.

Data collection techniques in this study used document study techniques, filling out questionnaires, and observation. Document study techniques will be used to analyze and identify 21st century skills in the case method-based learning process and team-based project carried out at the PG PAUD FIP UNIMED Study Program to be later developed into self-assessment and peer assessment instruments related to skills. 21st century students in the learning process. The questionnaire for students' 21st century skills is carried out using self-assessment and peer assessment to identify 21st century skills in students. Observation techniques will be used by lecturers to observe 21st century skills that appear in students during the learning process in case method-based courses and team-based projects. The instrument in this study was developed based on aspects of 21st century skills based on The Partnership for 21st Century Skills (P21) (Partnership for 21st Century learning, 2015) and adapted to the steps in case-based learning and team-based projects. The rating scale used to measure 21st century skills in PG PAUD students uses the Likert skala scale.

The next step after the data is collected, the research data is processed and analyzed using descriptive analysis techniques. The thing to do is to calculate the scores that have been chosen by students for all items using the following formula :

P=AS/MS x100%

Information:

P = Percentage

AS = Achievement score

MS = Maximum score

(Sugiyono, 2018)

Then interpret the answers to the questionnaire:

Table 1. Categorization of Questionnaire Percentage Results

Percentage	Category
86 – 100%	Very Good
76 – 85%	Good
60 – 75%	Adequate
55 – 59%	Poor
≤ 54%	Very Poor

Source: (Edy Purwanto, 2016)

RESULT AND DISCUSSION

Result

21st century skills consist of critical thinking, creativity, collaboration and communication which is abbreviated as 4C. In this study, students conducted a self-assessment and peer assessment on 21st century or 4C skills and then averaged them, resulting in several groups of data, namely critical thinking skills, creativity, collaboration, and student communication.

1. Critical Thinking

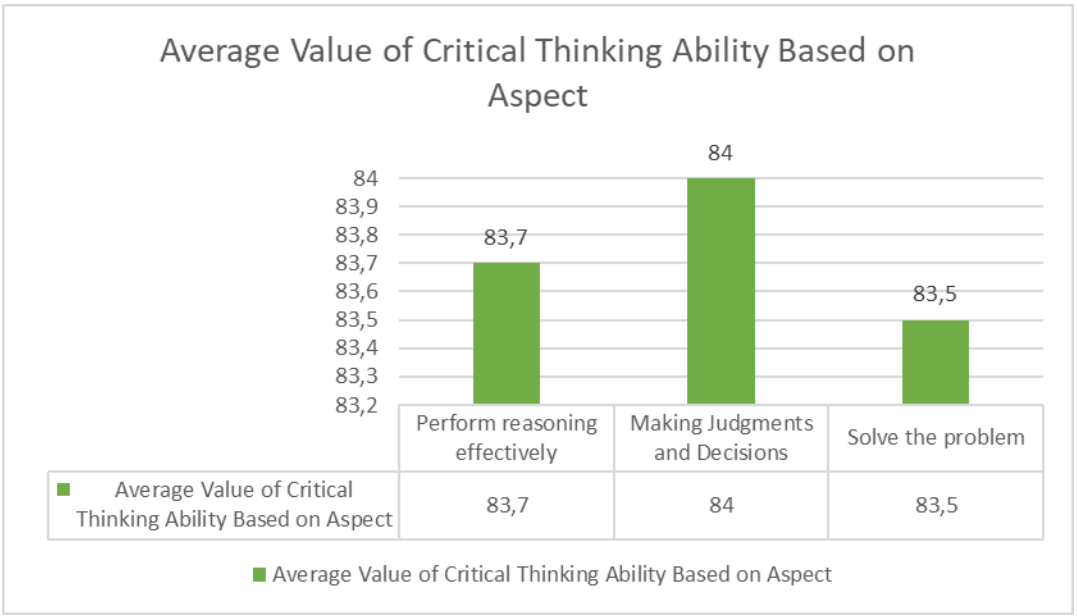
Critical thinking measured in this study refers to critical thinking aspects and indicators developed by The Partnership for 21st Century Skills (P21), a national organization that develops a framework for 21st century skills. Students conduct self-assessment and they also assessed by their friends (peer assessment). The following are the results of self-assessment and peer assessment on critical thinking skills of PG PAUD FIP UNIMED students.

Table 2. Recapitulation of Self Assessment and Peer Assessment on Critical Thinking of PG PAUD FIP UNIMED Students

No	Aspects of Critical Thinking Ability	Average Self-Assessment Score	Average Peer-Assessment Score	Average
1	Perform reasoning effectively	84.6	82.8	83.7
2	Making Judgments and Decisions	84.4	83.6	84
3	Solve the problem	83.4	83.6	83.5
Average Critical Thinking Ability of PG PAUD FIP UNIMED Students				83.7

Source: Student questionnare

The critical thinking ability of PG PAUD FIP UNIMED students shows an average score of 83.7 which belongs to the good category. Aspects of critical thinking skills assessed are (1) reasoning effectively, (2) making judgments and decisions, and (3) solving problems. The following is a graph that shows the average value of critical thinking skills in each aspect based on self-assessment and peer assessment. The critical thinking ability of PG PAUD FIP UNIMED students shows an average score of 83.7 which belongs to the good category. Aspects of critical thinking skills assessed are (1) reasoning effectively, (2) making judgments and decisions, and (3) solving problems. Based on the results of self-assessment and peer assessment, the aspect of problem solving is the aspect of critical thinking ability that has the lowest average, while the aspect of making judgments and decisions is the aspect of critical thinking ability that has the highest average among the others. The following is a graph that shows the average value of aspects of critical thinking skills for PG PAUD FIP UNIMED students.



Picture 1. Graph of the average value of critical thinking skills in each aspect

2. Creativity

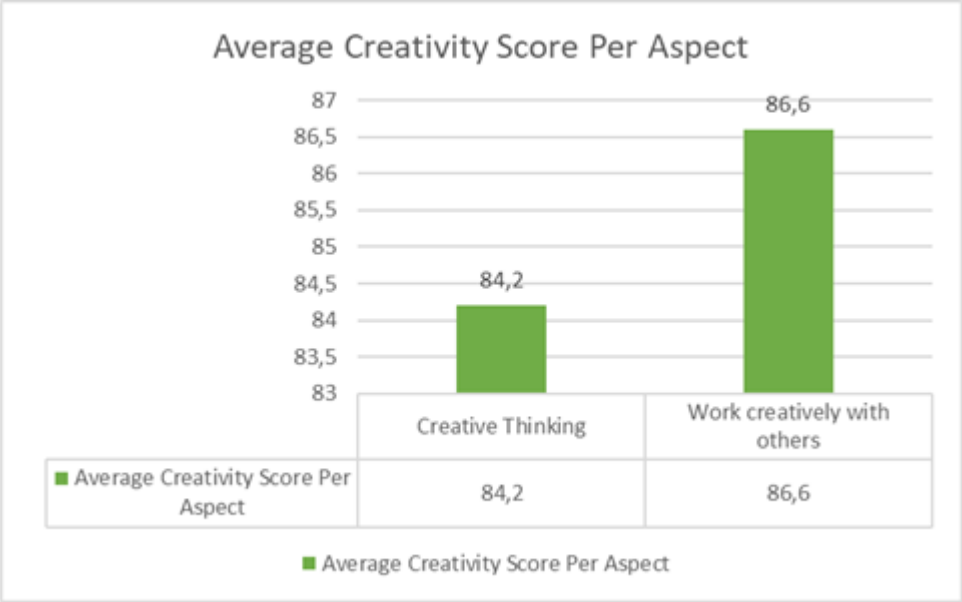
Creativity measured in this study refers to aspects and indicators of critical thinking developed by The Partnership for 21st Century Skills (P21). Students do a self-assessment (self-assessment) and they are also assessed by their friends (peer assessment). The following are the results of self-assessment and peer assessment on the creativity of the Early Childhood Education (ECE) Teacher Education Study Program, Faculty of Education, Medan State University (PG PAUD FIP UNIMED) students.

Tabel 3. Recapitulation of Self Assessment and Peer Assessment on Student Creativity PG PAUD FIP UNIMED

No	Aspect of Creativity	Average Self-Assessment Score	Average Peer-Assessment Score	Average
1	Creative Thinking	84.5	83.9	84.2
2	Work creatively with others	88.3	84.8	86.6
Average Student Creativity PG PAUD FIP UNIMED				85.4

Source: Student questionnare

The creativity of PG PAUD FIP UNIMED students shows an average score of 85.4 which belongs to the good category. Aspects of creative ability assessed based on The Partnership for 21st Century Skills (P21) are (1) creative thinking and (2) working creatively with others. Based on the results of the self-assessment and peer-assessment creativity assessment, the creative thinking aspect has the lowest average creativity aspect, while other aspects, namely working creatively with others, have the highest average creativity aspect. The following is a graph that shows the average value of the creativity aspect of PG PAUD FIP UNIMED students.



Picture 2. Graph of the average value of student creativity in each aspect

3. Communication

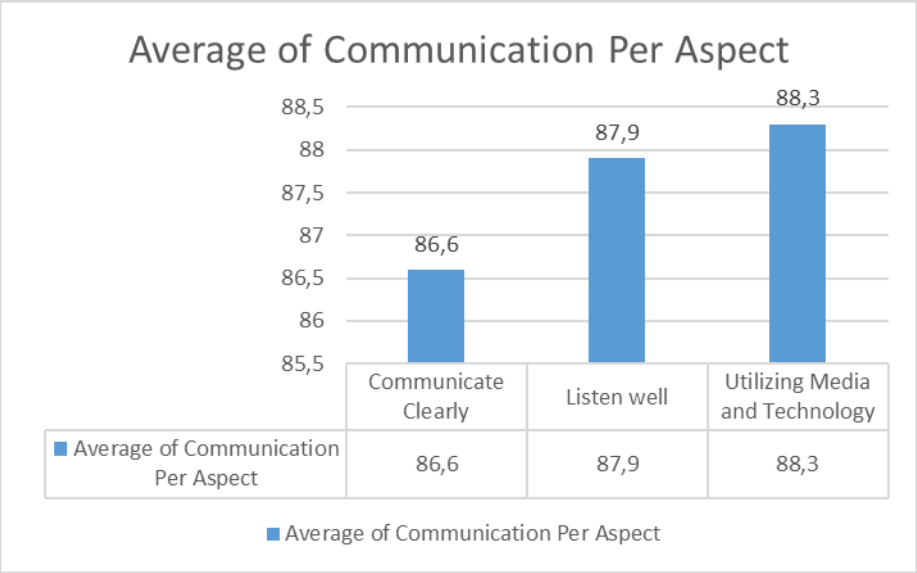
The communication skills measured in this study refer to the aspects and indicators of cooperation developed by The Partnership for 21st Century Skills (P21). Students do self-assessment and they are also assessed by their friends (peer assessment). The following are the results of the self-assessment and peer assessment on the communication skills of PG PAUD FIP UNIMED students.

Table 4. Recapitulation of Self Assessment and Peer Assessment on Communication of PG PAUD FIP UNIMED Students

No	Aspects of Communication	Average Self-Assessment Score	Average Peer-Assessment Score	Average
1	Communicate clearly	87.2	85.9	86.6
2	Listen well	88.6	87.2	87.9
3	Utilizing Media and technology	90	86.5	88.3
Average Critical Thinking Ability of PG PAUD FIP UNIMED Students				87.6

Source: Student questionnare

The communication skills of PG PAUD FIP UNIMED students showed an average score of 87.6 which was classified in the very good category. Aspects of communication skills assessed based on The Partnership for 21st Century Skills (P21) are (1) communicating effectively, (2) listening well, and (3) utilizing media and technology. Based on the results of self-assessment and peer-assessment of communication skills, the aspect of communicating clearly is the aspect of communication ability that has the lowest average, while other aspects, namely utilizing media and technology, have the highest average communication aspect. The following is a graph that shows the average value of the creativity aspect of PG PAUD FIP UNIMED students.



Picture 3. Graph of the average value of student communication in each aspect

4. Collaboration

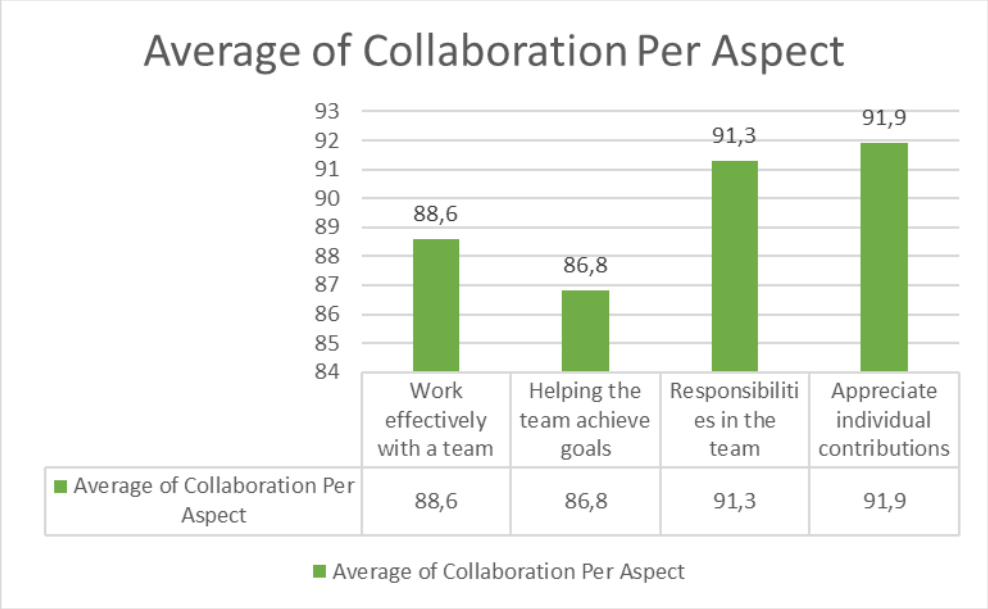
The cooperation ability measured in this study refers to the aspects and indicators of cooperation developed by The Partnership for 21st Century Skills (P21). Students do self-assessment and they are also assessed by their friends (peer assessment). The following are the results of the self-assessment and peer-assessment assessment of the cooperative abilities of PG PAUD FIP UNIMED students.

Table 5. Recapitulation of Self Assessment and Peer Assessment on Collaboration of PG PAUD FIP UNIMED Students

No	Aspects of Collaboration	Average Self-Assessment Score	Average Peer-Assessment Score	Average
1	Work effectively with a team	89.7	87.5	86.8
2	Helping the team achieve goals	88.4	85.2	88.6
3	Responsibilities in the team	93.8	88.7	91.3
4.	Appreciate individual contributions	94.6	89.1	91.9
Average Critical Thinking Ability of PG PAUD FIP UNIMED Students				89,7

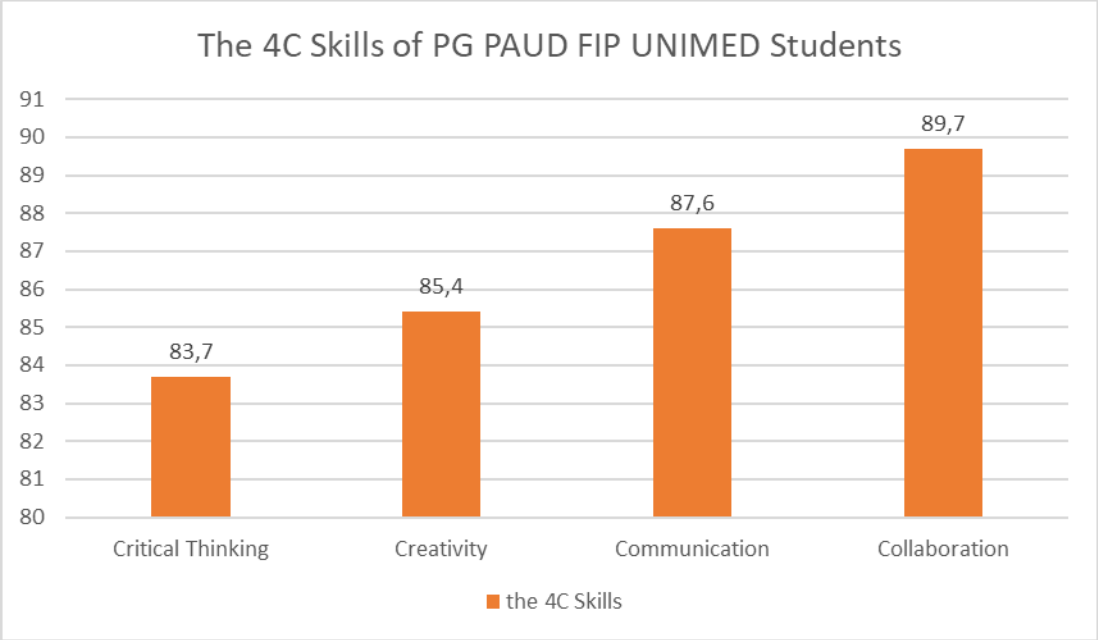
Source: Student questionnare

Based on the results of self-assessment and peer-assessment of cooperative abilities, indicators that help the team achieve goals (flexible and willing) are the indicators of the lowest average cooperation, while other indicators, namely respecting individual contributions, are the indicators of the highest cooperation ability. the average. The following is a graph that shows the average value of the cooperation indicators for PG PAUD FIP UNIMED students.



Picture 4. Graph of the average value of student collaboration in each aspect

21st century skills which include critical thinking, creativity, communication, and collaboration (4C) PG PAUD FIP UNIMED students show good categories with various average scores. The following is a recapitulation of the average 21st century skills (4C) of PG PAUD FIP UNIMED students who attend lectures using case methods and team based projects:



Picture 5. Graph of The 4C Skills of PG PAUD FIP UNIMED Students

Based on the graph above, cooperation is the highest aspect of 21st century skills and is in the very good category for PG PAUD FIP UNIMED students. Next is the aspect of communication and creativity which are both in the very good category. The lowest aspect shown by PG PAUD FIP UNIMED students is critical thinking. However, even though the average critical thinking is the lowest compared to other aspects, this aspect is still in the good category.

Discussion

Lectures conducted at the PG PAUD FIP UNIMED Study Program using case methods and team based projects help develop students' critical thinking skills, creativity, communication, and collaboration. Case Method is a discussion-based participatory learning method to solve cases or problems. The application of this method will help students hone and improve critical thinking skills for problem solving, communication skills, collaboration, and creativity. Meanwhile, Team Based Project is a method that is built on learning activities and project-based real tasks that provide challenges for students related to everyday life to be solved in groups.

Learning with the case method helps students gain meaningful knowledge and improve student learning outcomes (Sari, 2022). Research conducted by (Nursulistyo et al. 2021) shows that learning with team-based learning will improve students' critical thinking skills. Meanwhile, research

conducted by (Bani-Hamad & Abdullah, 2019) found that project-based learning will help build students' critical thinking skills, creativity, communication, and collaboration.

The development of 21st century skills which include critical thinking, creativity, communication, and cooperation requires the selection of the right learning model. It is better to prioritize learning that activates students. Learning in the 21st century should train students' critical thinking skills through media, methods, and student-centered learning strategies by providing real cases related to everyday life (Lestari et al., 2016; Marchellina & Qomariyah, 2022; Zain & Jumadi, 2018; Zhang et al., 2020). Learning activities with discussion and critical thinking will build students' creative activities, cooperation and collaboration (Marchellina & Qomariyah, 2022;Situmeang et al., 2022) .

Learning that provides a problem to solve will help develop students' critical and creative thinking skills because students are challenged to acquire knowledge and concepts related to these problems (Qalbi & Putera, 2022). Providing real problems that occur in life or the surrounding environment can improve critical thinking skills and help students achieve life skills (Nurzaman, 2017; Rajagukguk et al., 2022). In other words, 21st century learning emphasizes that students become the center of the learning process who have critical thinking skills, can solve problems appropriately, communicate well, have innovation and creativity, metacognition, information literacy and collaborate well (Yulianda Putri Rahmawati & Mohammad Salehudin, 2021).

Based on the results of this study, it was found that critical thinking is the lowest aspect of 21st century skills in PG PAUD FIP UNIMED students, but still in the good category. They are given the opportunity and challenged to solve problems, reason effectively, and conduct assessments and make decisions in case-based learning methods. Some lecturers give assignments to find problems, observe directly in the real environment, analyze to make a decision in determining the best solution to the problem. There are also lecturers who raise a particular case and students are given the task of analyzing the problem based on existing concepts and real conditions in the surrounding environment and then ending with determining the best solution. Students still have difficulty in analyzing, reasoning and creating the best solutions, so that critical thinking skills are the lowest aspect compared to other aspects. PG PAUD FIP UNIMED students are better in terms of creativity, communication and cooperation. These three aspects of 21st century skills have often been stimulated in every subject in the Early Childhood Education Study Program.

Creativity is synonymous with children's world, so PG PAUD students are accustomed and challenged to think creatively and work creatively with others. Communication aspects which include elements of clear communication, listening well, and utilizing media and technology have become part of the life of PG PAUD students. The aspect of cooperation is the 21st century skill that appears most highly in PG PAUD FIP UNIMED students. The element of eastern culture that upholds mutual cooperation is a very strong factor influencing student collaboration skills.

Cultivating 21st century skills, including critical thinking, creativity, communication, and collaboration (collaboration) takes time and effort (Aslamiah et al., 2021; Bani-Hamad &

Abdullah, 2019; Hadkaew & Liewkongsthaporn, 2016; Idris, 2018; Kusuma et al., 2018; Partono et al., 2021; M. D. R. Simanjuntak, 2019) The ability to think creatively is not born but formed (Husna Handayani, 2017). According to Ng (2001) in (Changwong et al., 2018) states that critical and creative thinking skills for Asians are still low because Asian cultures tend to obey and follow group expectations and feel ashamed if they are different from others. However, learning in the 21st century has opened these boundaries and has begun to develop critical thinking skills and creativity of students from early childhood education to higher education with various methods, approaches and strategies.

Based on the results of the research, the students' collaboration and communication skills are in very good category. Cooperation and communication are very important to be able to live in the 21st century, because good cooperation and communication will help them to establish partners and build working relationships which are very challenging in this century. These skills are also related to children's learning outcomes (S. S. Simanjuntak, 2022).

CONCLUSION

Learning in PG PAUD Study Program courses based on case methods and team based projects has tried to stimulate the 21st century skills of PG PAUD students. Based on the results of the study, it can be seen that aspects of 21st century skills in PAUD PG students, namely critical thinking skills, creativity, communication, and cooperation are in the good and very good categories. Among the four aspects, critical thinking skills have the lowest average score compared to other skills, which is 83.7. This is a finding and is expected to be input for PG PAUD Study Program lecturers to further stimulate the thinking skills of PG PAUD students. The 21st century skill, namely cooperation, shows the highest average score among other skills, which is 89.7. This is also a finding and it is hoped that the PG PAUD Study Program lecturers can take advantage of the student's potential for useful activities in the PG PAUD Study Program FIP Unimed.

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