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# How Do 6Cs Appearance at Elementary Schools Learning?

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**Abstract**
*21st-century learning must be oriented towards the development of various competencies needed so that students can be successful in this century, especially regarding the 6Cs (character, critical thinking, creativity, citizenship, collaboration, and communication). This study aims to comprehensively analyze the profile of the appearance of 6Cs in learning in elementary schools. The research method used was descriptive quantitative research, involving ten elementary schools, ten teachers, and 50 students with different backgrounds. The results showed that the appearance profile in learning planning was in the high category with a percentage of 62.04%, and in the implementation of learning it was in the high category with a percentage of 62.57%. Based on the analysis of the results of the Pearson Product Moment correlation test using SPSS 26 software, a correlation value of 0.667 was obtained at a significance level of 0.01, this indicates a strong relationship between the appearance of 6Cs in planning and implementation of learning and there is a significant relationship between the occurrence of 6Cs in learning planning with the implementation of learning. Furthermore, based on the analysis of the learning model used, it is known that the emergence of 6Cs both in lesson planning and in the implementation of learning shows varied results.*
***Keywords**: 6Cs, elementary school, 21st century learning*

**Abstrak**
Pembelajaran abad ke-21 harus diselenggarakan dengan berorientasi pada pengembangan berbabagi kompetensi yang diperlukan agar siswa dapat sukses di abad ini, terutama menyangkut 6C (character, critical thinking, creativity, citizenship, collaboration dan communication). Penelitian ini bertujuan untuk menganalisis secara komprehensif mengenai profil kemunculan 6C pada pembelajaran di sekolah dasar. Metode penelitian yang dilakukan menggunakan penelitian deskriptif kuantitatif, dengan melibatkan sepuluh sekolah dasar, sepuluh orang guru dan 50 orang siswa dengan berbagai latar belakang yang berbeda. Hasil penelitian menunjukkan bahwa profil kemunculan pada perencanaan pembelajaran berada pada kategori tinggi dengan persentase sebesar 62.04%, dan pada pelaksanaan pembelajaran berada pada kategori tinggi dengan persentase sebesar 62.57%. Berdasarkan analisis terhadap hasil uji korelasi Pearson Product Momment menggunakan software SPSS 26 diperoleh nilai korelasi sebesar 0,667 pada taraf signifikansi 0,01, hal ini menunjukkan adanya hubungan yang kuat kemunculan 6C pada perencanaan dengan pelaksanaan pembelajaran dan ada hubungan yang signifikan antara kemunculan 6C pada perencanaan pembelajaran dengan pelaksanaan pembelajaran. Selanjutnya berdasarkan analisis terhadap model pembelajaran yang digunakan diketahui kemunculan 6C baik pada perencanaan pembelajaran maupun pada pelaksanaan pembelajaran menunjukkan hasil yang bervariasi.
Kata Kunci: 6C, sekolah dasar, pembelajaran abad ke-21

## INTRODUCTION

21st-century learning is learning that is carried out as a form of adaptation to the development of science and knowledge today. 21st-century learning must be able to develop various components needed by students to be successful in the future. Recent research has shown that students of elementary school need to be introduced to seven essential elements, defined as the 6Cs including character, critical thinking, creativity, citizenship, collaboration, communicating, and ICT literacy which are part of multiliteracy during the implementation of 21st-century education (Anggraeni et al., 2022). All of these components are important to be taught to students with reasons to equip students to face challenges and life in an uncertain future, prepare students to become successful and productive human beings, equip students to face the increasing complexity of life and work, and to equip students to become workers and effective citizens of society in the 21st century (Anggraeni et al., 2023).

Character is the deepest domain of education alongside the intellectual domain. Fullan & Scott (2014) the character is defined by individual qualities essential to human effectiveness in a complex world, which includes grit, stubbornness, perseverance, resilience, reliability, and honesty. It is not only in the classroom that character values can be integrated, but also in the culture of the school (Marini, 2017). The development of character education must be possible within schools using learning methods, habituation, and more curricular activities as well as through collaboration with families and communities (Santa et al., 2023).

Ennis (Nkhoma et al., 2018) Critical thinking is a skill for convincing, analyzing findings and hypotheses, reasoning in an organized manner, solving problems, making decisions, and communicating with metacognitive skills. In line with Alban (2020), Someone with critical thinking skills is very helpful if he analyses information, systematically solves problems, formulates innovative solutions, plans tactically, thinks creatively, and presents work or ideas to others in an easy-to-understand way. However, several research results show that students' critical thinking skills are still low (Aisyiah et al., 2020; Fajari & Meilisa, 2022).

Creativity is one of the most important and well-known skills for success in the 21st century (Henriksen et al., 2016). Newton (2012) being creative is an important thing for students to do because it is very beneficial for students' lives. Teachers must be able to design a learning process that can enable students to become creative individuals (Newton & Beverton, 2012), which is also the core for gaining knowledge advancement in society (Collard & Looney, 2014). Each individual has a different level of creativity (Fazelian & Azimi, 2013). Davies et al., (2013) identified the school's cultural environment and the key to developing creativity, which includes the physical environment, pedagogical environment, and partnerships beyond schools. In addition, according to Fazelian & Azimi (2013), The creation of a creative learning environment is an essential element for all education systems, because it gives students the possibility to develop their creativity in different ways.

Citizenship is the ability to think as a citizen of the world, taking into account global issues based on deep knowledge of divergent values and a genuine interest in cooperating with others to solve complex problems that affect human and environmental sustainability (Fullan & Scott, 2014). In a 21st-century world, students must be prepared not only for their jobs and the sustainability of the economy but also with competencies and values, strong personal development as well and responsible citizenship. (Bell, 2016). Therefore it is very important to equip students with knowledge as world citizens in today's highly diverse global world order.

Collaboration is considered a 21st-century skill because of the increased importance of cooperation and interdisciplinarity skills, which are also more sophisticated than in the previous industrial age (Ontario, 2016). There are many additional important

learning outcomes linked to collaboration, such as critical thinking, metacognition, and motivation (Lai, 2011). Collaboration is defined as cooperation between individuals by involving association activities which include partnerships and teamwork, leadership and assistance, as well as alliances that provide benefits to all individuals involved (Miller, 2015).

Communication involves sharing ideas through spoken, written, or non-verbal media (Alberta Education, 2016). Furthermore, Berger and Starbird (Carlgren, 2013) argue that ideally, the purpose of education should be to develop critical thinking and communication skills as well as other mind-strengthening abilities. If teachers, students, and the environment/community have clarity about the right educational goals, then the everyday student learning experience will change for the better.

To be able to carry out learning by the demands of 21st-century learning, especially in instilling the 6Cs, a learning plan is needed that can facilitate students to develop all the components that are important to learn and possess. According to Ragan (Brown & Green, 2020), learning planning is a systematic and reflective process of applying learning and learning principles to planning for materials, activities, information sources, and learning evaluation. A teacher as a lesson planner must be able to make plans that can enable students or groups of students to learn several learning materials and develop or improve several skills to prepare students for the next level. So that based on the planning that has been prepared, the effectiveness of the implementation of learning is expected to be better. Learning plans are structured to ensure that students can know and do something that is not yet known or cannot be done before learning is carried out, in other words, instruction is the "stimulus" and learning the "response" (Seel et al., 2017).

Previous research has shown that teachers' perceptions of the importance of instilling 6Cs in elementary school students are very high (Anggraeni et al., 2023). However, this high teacher perception needs to be proven by further research, to obtain a comprehensive or real picture of the appearance of 6Cs in learning in elementary schools. In addition, based on an analysis of various previous studies regarding the 6Cs, it is more directed at assessing learning outcomes (knowledge, affective, skills) and more use of assessment of learning, assessment for learning, and assessment as learning approaches (Anggraeni, et al., 2023). Such as research on student character (Marini, 2017; Hidayati et al., 2014), critical thinking (Wartono et al., 2018; Ramandha et al., 2021; Wahyuddin et al., 2022), creativity (Agusta et al., 2018; Natty et al., 2019), civic skills (Pangestu & Wana, 2017), collaboration (Halimah et al., 2019; Hamdani et al., 2019; Wulandari et al., 2021; Wahyuddin et al., 2022), communication (Kodariyati et al., 2016; Wahyuddin et al., 2022). Therefore an assessment of teaching is needed as an effort to assess the learning process carried out (Anggraeni et al., 2023). The results of the assessment of the learning process can provide an overview of whether the learning carried out has facilitated students to develop various important things that must be owned or not, especially those related to 6Cs in learning in elementary schools.

Based on the background explanation above regarding the importance of 6Cs, the importance of planning and implementing learning that must be carried out by the demands of the 21st century, and previous research regarding the perceptions of elementary school teachers regarding the importance of embedding 6Cs in learning and more research which directed at assessing learning outcomes, this research is focused on obtaining a comprehensive picture regarding the appearance of 6Cs in the planning and implementation of learning in elementary schools. This study aims to analyze the appearance of the 6Cs in the planning and implementation of learning in elementary schools as an assessment of teaching.

## METHOD

This study used a quantitative descriptive study, which was carried out from December 2022 to February 2023 in elementary schools in seven sub-districts in Sumedang City. The subjects in this study were chosen by purposive random sampling, which covers ten elementary schools, ten teachers with various backgrounds (gender, age, type of teacher, and teacher certification), and 50 elementary school students.

The research instrument used to measure the appearance of 6Cs in learning planning used document analysis sheets for learning planning. The instrument for measuring the appearance of 6Cs in learning implementation used observation sheets of the learning process, and questionnaire sheets for teachers and students (data triangulation) which had previously been validated (Anggraeni et al., 2023). The 6Cs components and indicators examined in this study can be seen in Table 1.

**Tabel 1. 6Cs Component**

| No. | 6Cs Component | Total Indicator | Indicator |
|---|---|---|---|
| 1. | Character | 6 | Grit; tenacity; persistence; resilience; reliability; honesty. |
| 2. | Critical thinking | 9 | Analyzing; evaluating; synthesizing; interpreting; drawing conclusions; making meaningful judgments; making decisions; applying ideas in real life; and reflecting critically on experiences and learning processes. |
| 3. | Creativity | 8 | Generate new ideas; use imagination to develop new and original ideas; synthesize; analyze and evaluate new ideas; communicate new ideas to others; see failures, obstacles, and difficulties as learning material; be open and responsive to new and diverse perspectives, input, ideas; demonstrate leadership; value every process of producing original work and demonstrating ideas. |
| 4. | Citizenship | 8 | Understand their roles and responsibilities as a society/citizen; understand differences in rights and obligations; respect democratic values; respect equality and diversity; be actively involved in solving problems; act critically towards information provided accepted; show solidarity; interact effectively. |
| 5. | Collaboration | 8 | Build effective and positive interactions; work productively; demonstrate teamwork and leadership; provide assistance and guidance; participate, exchange ideas, and share roles and responsibilities; make substantive decisions together; respect differences of opinion and views; and value individual contributions. |
| 6. | Communication | 8 | Convey thoughts/ideas in writing; oral; present them with media/technology; reading; listening; asking questions, giving or receiving arguments; show empathy and responsibility. |

The data analysis technique used simple statistical techniques by calculating the percentage of occurrence of the 6Cs indicator (Purwanto, 2020) which was then

determined by category based on table 2. In addition, inferential statistical techniques were also used with the help of SPSS 26 software to calculate the relationship between the occurrence of 6Cs in the planning and implementation of learning in elementary schools. The categories for the percentage of 6Cs occurrence based on Akdon (Anggraeni et al., 2021) can be seen in Table 2.

**Table 2. Perceived Percentage Interpretation**

| Percentage (%) | Category |
|---|---|
| 81 - 100 | Very High |
| 61 - 80 | High |
| 41 - 60 | Moderate |
| 21 - 40 | Low |
| 0 - 20 | Very Low |

## RESULT AND DISCUSSION

Based on the research that has been carried out, it is found that the profile of the occurrence of 6Cs in learning planning in elementary schools is in the high category with a percentage of 62.04% and the profile of the appearance of 6Cs in the implementation of learning in elementary schools is in the high category with a percentage of 62.57%. The explanation regarding the percentage and profile categories of the appearance of each component C in learning in elementary schools can be seen in Table 3 and Table 4.

**Table 3. 6Cs Appearance Profile in Learning Planning in Elementary Schools**

| 6Cs Component | Percentage (%) | Category |
|---|---|---|
| Character | 66.67 | High |
| Critical Thinking | 65.56 | High |
| Creativity | 46.25 | Moderate |
| Citizenship | 73.75 | High |
| Collaboration | 46.25 | Moderate |
| Communication | 73.75 | High |
| Average | 62.04 | High |

Based on Table 3 it can be seen that the appearance of 6Cs in learning planning on the components of character, critical thinking, citizenship, and communication is in the high category, while creativity and collaboration are in the sufficient category. The findings of the data above indicate that the plans made are still not optimal in facilitating students to develop creativity and collaboration. Outlined lesson plans only state that learning activities are carried out in groups, and students are given the task of making only certain projects or works. Creativity is very important as a life skill, thus learning must provide a broader space to develop it (Mclellan & Nicholl, 2013), Besides that, learning must also be designed to facilitate creativity and provide challenges for students (Coulson & Burke, 2013). Previous research shows that the majority of teachers (95%) believe creativity is a fundamental skill that must be developed in schools (Cachia & Ferrari, 2010), but it is not easy to facilitate students to develop creativity, because creativity cannot be formed instantly Baron (Beghetto & Kaufman, 2014) however it takes time to be able to develop it, even it takes at least ten years of preparation for someone to be able to reach an expert creative level (Kaufman & Kaufman, 2007; Beghetto & Kaufman, 2014).

Likewise in collaboration, learning plans should be structured to facilitate students in developing their collaboration skills. From the existence of common goals, structural symmetry, high level of negotiation, interactivity, and interdependencies it can be seen that this collaboration takes place (Lai, 2011). Meanwhile, Fullan & Scott (2014) collaboration involves being able to work in an interdependent and synergistic way for teams with interpersonal skills that are part of powerful teams, which include efficient management of team dynamics, the adoption of important decisions as well and learning from and sharing experiences.

**Table 4. 6Cs Appearance Profile in Learning Implementation in Elementary Schools**

| 6Cs Component | Percentage (%) | Category |
|---|---|---|
| Character | 76.67 | High |
| Critical Thinking | 70 | High |
| Creativity | 42.5 | Moderate |
| Citizenship | 65 | High |
| Collaboration | 58.75 | Moderate |
| Communication | 62.5 | High |
| Average | 62.57 | High |

Based on Table 4 it can be seen that the appearance of 6Cs in the implementation of learning on the components of character, critical thinking, citizenship, and communication is in the high category, while creativity and collaboration are in the sufficient category. This is different from the results of previous research which showed that teachers' perceptions of instilling character, critical thinking, creativity, citizenship, collaboration, and communication in elementary school students were in a very high category (Anggraeni, Sunendar, Maftuh, Sopandi, et al., 2023). Thus there is a difference between the teacher's perception of the importance of instilling creativity (88.7%) (Anggraeni, Sunendar, Maftuh, Sopandi, et al., 2023) and the appearance of creativity during learning (42.5%). This is to previous research that the classroom climate is indeed not supportive of developing creativity, students feel that the projects they are working on are less challenging, freedom is limited, and there is not always support to realize the design ideas presented (Mclellan & Nicholl, 2013).

To be able to maintain creativity in the classroom there are at least two things that must be considered, namely that the classroom environment is very decisive in supporting and developing students' creative potential, and the other thing is that the teacher must also understand what is needed to be able to develop a creative learning environment that can support creatively. optimal in developing students' creative potential (Beghetto & Kaufman, 2014). Because, without an understanding of the concept of creativity, learning about student creativity is unlikely to produce the expected results in fostering students to become professional creators (Cho et al., 2013).

As for collaboration, in previous research, the teacher's perception of instilling collaboration was very high (87.9%) (Anggraeni et al., 2023), but in this study the appearance of collaboration (58.75%) was in the sufficient category, meaning that there was a sizable difference between teacher's perception of the implementation of learning. During learning, most schools have facilitated students to work in groups, including working on assignments and student worksheets, but collaborative activities have not been implemented optimally. For example, when working on student worksheets that are only done by a few students, while other students have not shown a contribution in group

activities. Collaboration can have a strong effect on student learning, especially for students who excel (Lai, 2011).

The comparison of the appearance of the 6Cs profile in lesson planning and learning implementation can be seen in Figure 1.

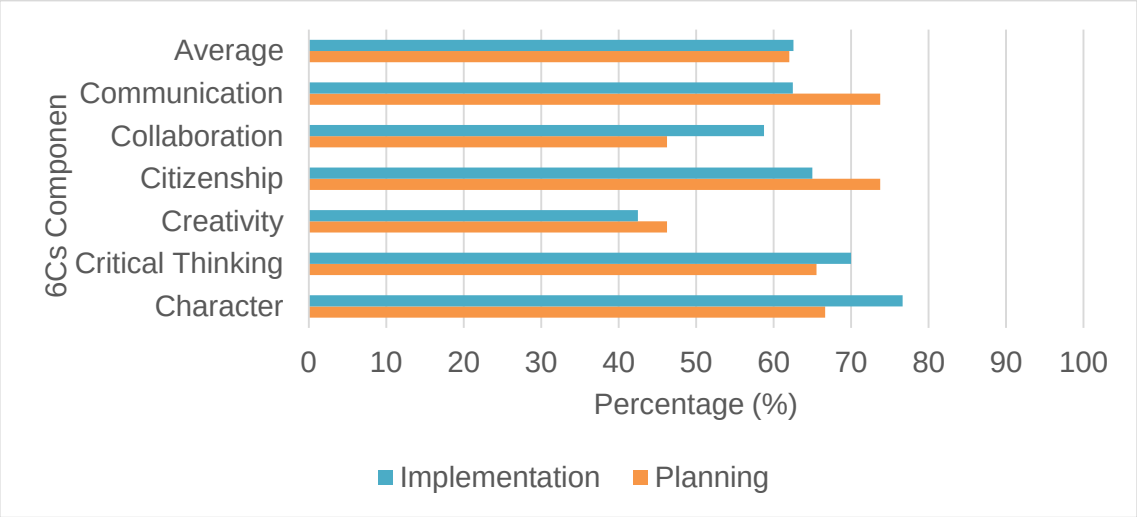


**Figure 1. Graph of 6Cs Occurrence Profile Percentage Comparison on Learning in Elementary Schools**

Based on data analysis on the percentage of occurrence of 6Cs using SPSS 26 software, the mean and standard deviation values are obtained as shown in the table below.

**Table 5. Mean Value and Standard Deviation of 6Cs Appearance on Learning in Elementary Schools**

**Descriptive Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Planning_6Cs | 62.0383 | 12.70215 | 6 |
| Impementation_6Cs | 62.5700 | 11.63892 | 6 |

Furthermore, to find out the relationship between the appearance of 6Cs in planning and learning implementation, the Pearson Product Moment correlation test was used using SPSS 26 software, to obtain the following table.

**Table 6. 6Cs Appearance Correlation Test Results on Learning in Elementary Schools**

**Correlations**

| | | Planning_6Cs | Implementation_6Cs |
|---|---|---|---|
| Planning_6Cs | Pearson Correlation | 1 | .667** |
| | Sig. (2-tailed) | | .000 |
| | N | 47 | 47 |
| Implementation_6Cs | Pearson Correlation | .667** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 47 | 47 |

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the correlation test results table above, it can be seen that the correlation coefficient value is 0.667**, which means that the level of strength of the relationship between the appearance of 6Cs in lesson planning and learning implementation has a strong relationship strength (0.51 – 0.75) in significance level of 1% (0.01). The correlation coefficient number is positive, thus an increase in the occurrence of 6Cs in learning planning will be followed by an increase in the occurrence of 6Cs in learning implementation. The significance value or Sig.(2-tailed) is 0.000 <0.01, meaning that there is a significant relationship between the occurrence of 6Cs in lesson planning and learning implementation.

Thus it can be concluded that the appearance of 6Cs written in the learning planning document has a strong relationship with the appearance of 6Cs in the implementation of learning. This is the finding that if the teacher wants to develop the 6Cs in the implementation of learning, then the learning plan activities that facilitate students to develop the 6Cs must also be written clearly and in detail. For example, creativity means that teachers can influence the learning climate in the classroom so that they can change learning practices so that it is possible to develop the creativity of their students (Mclellan & Nicholl, 2013).

Furthermore, the appearance of 6Cs was also analyzed based on the use of learning models both in planning and in implementing learning, and the results can be seen in Figure 2.

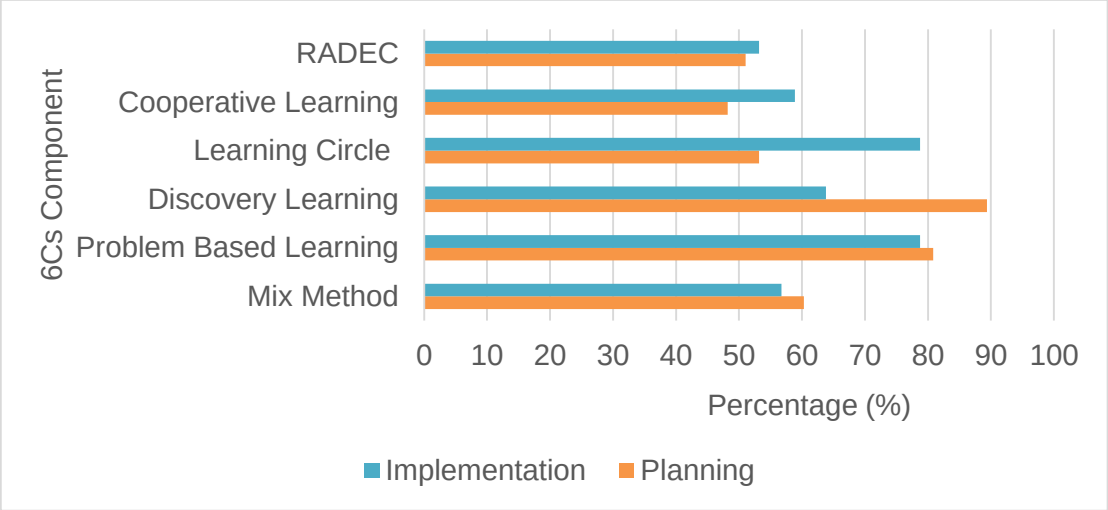


**Figure 2. Graph of 6Cs Occurrence Profile Percentage Comparison Based on the Use of Learning Models in Elementary Schools**

Based on the picture above it can be seen that the use of different learning models can produce different percentages of 6Cs occurrence. In lesson planning, the highest occurrence of 6Cs was found in the learning planning document using the discovery learning model, while the lowest occurrence of 6Cs was found in the learning planning document using the cooperative learning model. Based on the analysis of the learning planning document, it shows that the syntax of the Discovery Learning model which is written in total has a high percentage of occurrences of 6Cs, and conversely, the syntax of the cooperative learning model which is not written has the lowest occurrence of 6Cs. This is because the learning activities that should be arranged based on the syntax of the model used are not explained in detail. The unclear writing of the syntax for the learning model in the planning documents used in the implementation of

this lesson will of course have an impact on the various components that must be instilled in students, especially those related to the optimal planting of 6Cs in elementary schools.

Furthermore, in the implementation of learning, the highest occurrence of 6Cs was found in learning using the learning cycle and problem based learning models, while the lowest occurrence of 6Cs was found in learning using the RADEC learning model. Based on the analysis of the implementation of learning, it turns out that the syntax of the learning cycle and problem based learning models have been written in full in the learning planning document, whereas in the implementation of learning using the RADEC learning model the syntax of the model is not written completely and only in the form of learning activities. Even though it is known that the RADEC learning model is one of the learning models that can develop students' 21st-century skills (Sopandi, et al., 20221). This shows that teachers in the field who plan and implement the RADEC learning model have not been able to optimize the potential of the RADEC learning model to facilitate students' 6Cs.

The results of this study are expected to provide a comprehensive picture of the profile of the appearance of 6Cs in the planning and implementation of learning in elementary schools, so that planning and implementation of learning can be further developed which can facilitate the inculcation of 6Cs at students in elementary schools, as part of efforts to improve quality 21st-century capabilities of elementary school students in Indonesia. The limitations of this research lie in the focus of the analysis of planning and implementation of learning which is only carried out in grades five of elementary schools, however, the strength of this research is that the schools used as samples come from seven sub-districts in Sumedang City and involve teachers with various backgrounds different.

## CONCLUSION

The results showed that the appearance profile in the planning and implementation of learning was in the high category, and there was a strong relationship between the appearance of 6Cs in the planning and implementation of learning, meaning that an increase in the occurrence of 6Cs in learning planning would be followed by an increase in the occurrence of 6Cs in learning implementation and there is a significant relationship between the appearance of 6Cs in learning planning and learning implementation. The teacher as a lesson planner can choose and use certain learning models whose syntax can facilitate students to develop the 6Cs by writing them clearly in the lesson plans so that they can become guidelines for the implementation of learning. Further research is needed to develop learning models that can embed the 6Cs effectively in learning in elementary schools. This shows the need to develop a RADEC learning model that is oriented towards instilling the 6Cs and providing assistance for teachers so that they can optimize the potential of RADEC learning steps in equipping students with the 6Cs.

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