EXPLORING EFL PRE-SERVICE TEACHERS PERCEPTION OF INTERACTION: A CASE OF INDONESIAN CREATIVE PROBLEM-SOLVING IMPLEMENTATION

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Article Info	Abstract
Article History Received: July 2024 Revised: August 2024 Published: October 2024 **Keywords** Creative problem-solving; EFL Pre-service teachers; IRF Model;	*Student-student interaction is often overlooked, yet it plays a crucial role in the learning process. Teachers' guidance in facilitating these interactions can significantly influence students' attitudes toward the subject and their perceptions. This study investigates pre-service teachers' perceptions of student interactions within a creative problem-solving (CPS) framework using the Initiation-Response-Feedback (IRF) model. Qualitative data were collected through in-depth interviews, artifacts, and voice recordngs, The study involved 46 pre-service teachers, 6 males and 40 females, they are undergraduate students enrolled in the Curriculum and Material Development course. The results indicate that the CPS and IRF models effectively enhanced interaction, collaboration, and critical thinking among pre-service teachers. The dynamic classroom environment fostered by these models encouraged students to engage actively with their peers, respond positively to challenges, and generate innovative ideas. Peer feedback was particularly valuable, allowing for the maturation of concepts and deeper exploration of project content and learning media. Overall, the integration of the IRF model with CPS not only improved student interaction but also facilitated a collaborative atmosphere conducive to intellectual growth in an English as a Foreign Language (EFL) classroom. This study highlights the importance of structured student interactions and provides insights into effective teaching strategies that can enrich the learning experience.*

INTRODUCTION

Student-student interaction is a global concern in English language teaching classrooms. A study investigated how students in UK EFL environments perceive such interactions and the underlying reasons. Kuo (2011) found that three factors, self-dependence, other dependence, and context dependence, impact students' performance in interactive tasks and shape their perceptions of classroom interaction. Self-dependent factors involve physical health during speaking, while other-dependent factors encompass discussion partners' personalities and contribution levels. Context-dependent factors include aspects in the classroom unrelated to self or others, such as the discussion topic.

In Indonesia, several studies have shown that English language teaching is difficult because the emphasis is more on grammar than functional communication skills (Dardjowidjojo, 1996; Nur, 2004). In addition, Nur (2004) stated that grammar is emphasized more than the use of language itself, hence why many high school graduates find it challenging to communicate effectively in everyday situations. In English language teaching, the emphasis must be shifted to real classroom interaction to improve students' communicative ability. English is not widely used in daily conversation language and interaction play an essential role

in the classroom as a subject of study and as a medium of instruction. In addition to learning the language, students who actively participate in speaking, listening, expressing opinion responding to questions, and completing tasks will also excel in communicating. Therefore, in-class interaction becomes significant when there is little or no use of language outside the classroom.

However, English is not a language used in daily communication. Therefore, language and interaction in the classroom become more critical because English is both the subject and medium of learning. Students learn about the language and use it when they actively participate in class discussions, answer questions, complete activities and tasks, and pay attention to what the teacher says. In cases where the target language is not widely used outside of school and students only hear it at school, the type of input and interaction available is crucial.

Even though, education plays an essential role in shaping a sustainable future by offering opportunities for a high quality of life. Curriculum is a key factor influencing the quality of Education, and Indonesia is pursuing innovation through the Merdeka Curriculum. As Wiguna & Tristaningrat (2022) highlighted, the Merdeka Curriculum prioritizes essential content, character development, and competency development based on students' interests and talents. Yamin & Syahrir (2020) aim to emphasize innovative and creative critical thinking and foster collaborative and communicative abilities.

More specifically, Indarta et al. (2022) underlined that the Merdeka Curriculum is aligned with the demands of the 21st century and addresses the skills needed in a dynamic society. Thus, the learning process aims to foster higher-order skills such as creativity, critical thinking, communication, and collaboration (4Cs) while instilling character and encouraging lifelong learning habits. In particular, Calacar (2020) emphasizes the importance of freedom in learning, including freedom to achieve learning goals, choose methods and materials, and participate in evaluation for teachers and students. In conclusion, the Merdeka Belajar Curriculum is a shift towards a more student-centred approach, leaving the previous teacher-centred model.

Another point to consider is student-centred learning is an educational approach that focuses on students' needs rather than the needs of other parties, such as teachers and administrators. In addition, Weimer (2002) said that this approach focuses on how students learn and their learning conditions. Students participate actively in class, while the teacher is a guide, facilitator, and learning experience designer. According to Shindler (2010), in a student-centered classroom, the teacher acts as a student guide, giving students decision-making responsibility, which can help them solve problems and make the right choices. In conclusion, student-centred learning emphasizes that students are the main focus in the classroom, where they study in groups and discuss how to overcome difficulties or problems. Here, the teacher is a facilitator who directs and guides students to find the right solution.

In addition, one way to get students to interact with each other is by using teaching methods that incorporate creativity. One such method is the Creative Problem-Solving learning model. In addition to academic ability, students must solve problems creatively to perform better in school (Hu et al., 2017; Sa & Tatiana, 2015). Also, some experts say that creative problem-solving ability is a skill that can fix problems by producing original and thoughtful solutions (Halizah & Ramly, 2008; Bolandifar & Nordin, 2013). However, some experts say that Creative Problem solving (CPS) is usually only an effort to produce something new and different and has nothing to do with fixing problems. In particular, to solve a problem we must be good at using different methods (Barutcu, 2017; Dolgun & Erdoğan, 2012). This learning model is expected to help students solve complex problems creatively and encourage them to work together in class.

Student-to-student interaction is often marginalized and requires more attention from most teachers. There is a common perception that students are just distractions in the classroom, and teachers often assume that a successful classroom is quiet and independent. Therefore, this

study focuses on the importance of student interactions, especially in the context of EFL classroom learning, which has not received much attention in research. This study aims to describe how students interact in the classroom using the Creative Problem-Solving learning model and to explore students' perceptions of these interactions.

RESEARCH METHOD
Research Design

This research used descriptive qualitative research types. The qualitative method was chosen because this research aims to provide a case description of how the exploration of EFL Pre-service teachers perceptions in the classroom with creative problem-solving in Indonesia. This study was conducted at the Faculty of Teacher Training and Education of a Central Java, Indonesia, state of university. Four pre-service English teachers shared their perceptions of student-student interactions in an EFL classroom using creative problem-solving pedagogy in a curriculum study class by designing lesson plans and poster designs by implementing elements of CPS. The study was conducted over eight meetings with 100 minutes of classroom learning each.

All participants are aged between 20 and 24 years old. Teachers use Creative Problem-Solving pedagogy to teach students, so this class is suitable for this study to obtain data relating to pre-service teachers' perceptions of student-student interactions in the classroom with Creative Problem-Solving pedagogy. The students will participate in interviews to better understand the phenomenon being studied in the qualitative phase. In this research, the researcher will employ a case study method. Yin (2018) points out that a case study is a social science research method generally used to investigate a contemporary phenomenon in depth and its real-world context. Yin (2018) further explains that a case study is an empirical method that delves deeply into a specific case within a real-world context, and this research also uses observation and interviews as the data collection technique.

Data Analysis

The researchers used interactive model of analysis proposed by Miles, Huberman, Saldana (2014) with data analysis components consisting of: data collection, data condensation, data display, and conclusions. The data collection from interview and artefact. the researcher interviewed four pre-service teachers' in EFL classes who had implemented the CPS learning model in their class projects at one of the coffee shops in Central Java. The selected participants were those who were willing to be interviewed further. In this interview session, I asked questions based on the research instrument: *"How did you start interacting with your friends to complete your final project?"* This interview aimed to answer the research question and strengthen the data from the research question. And also, Artefact itself is data sourced from archives and documents both inside and outside, which have something to do with research. as for the supporting data from this study in the form of lesson plans and lesson designs that have been made by pre-service teachers.

Data condensation involved selecting, focusing, simplifying, abstracting, and transforming the data from all written field notes, interview transcripts, papers, and other empirical materials. Data condensation strengthened the results (Miles et al., 2014). First, the initial step was to condense the data from the written interviews. Each category was assigned a specific code; in this study, colour coding was used, such as red for cognitive, blue for affective, orange for conative, grey for challenges, and black for main usage methods. After coding, the data were grouped according to their categories, and summaries were written for each group. The second step was to condense the data from the interviews. All recorded interviews were transcribed into written form and returned to the participants for verification. After confirmation, the data were coded using letters and numbers, such as "S" for the participant,

"R" for the researcher, and numerical codes for the sequence of questions asked by the researcher. The final step was the condensation of data from artefacts. All artefacts were sourced from student assignments, and the researcher wrote descriptions of each assignment.

The display was an organized data collection that enabled users to make decisions and take action (Miles et al., 2014). At that stage, I organized and displayed data from students collected using consent forms and in-depth interviews logically and systematically. Data from the consent forms were presented as descriptive text. The first step was displaying the data from the written interviews. After classifying all the data from the written interviews into groups, the data were displayed using a table. The table presented three categories: categories, statements in the questionnaire, and interview answer.

Drawing conclusions and verifying them was the last stage in analyzing data. Before the researcher began the research, they had to define what things meant by noting patterns, explanations, causal flows, and propositions (Miles et al., 2014). With a clear definition, they could conclude clearly. Additionally, the conclusions had to be valid and to achieve these criteria, verification was required. Verification could be as brief as a fleeting thought that crossed the researcher's mind during writing. The researcher tested the conclusions to determine their appropriateness and validity. In this study, the researcher verified the data with theory and related research. This study also used triangulation to test the consistency of data from multiple sources.

RESULT AND DISSCUSSION
Pre-service teachers perception of interaction in understanding the challange

Understanding the challenge is an essential stage in the Creative Problem-Solving (CPS) process, especially for pre-service teachers who are still developing their pedagogical and problem-solving skills. Based on the data obtained, pre-service teachers exhibited varied perceptions of how to apply creative problem-solving pedagogy in the classroom learning process. At this stage, the primary focus for pre-service teachers was identifying and defining the problem, which proved to be a challenging task. Participants reported difficulties in determining the topics they would address in their assignments because they were concerned about the feasibility of finding a concrete solution.

For instance, one participant shared, "Initially, we decided that the problem was related to the situation of students in Indonesia. Initially, we determined the culture globally/generally/broadly, but after that, when we interacted and decided, it seemed that if we determined the topic broadly, it was too difficult" (S1-Interview). This statement reflects a common difficulty in problem-solving: narrowing down broad, abstract ideas into manageable, specific issues that can be addressed effectively. The challenge of defining a clear and focused problem can create anxiety about whether a viable solution emerges later in the process (Khonamri et al., 2021; Ikawati & Pohan, 2023). Pre-service teachers often experience this apprehension, as they grapple with balancing the scope of their topics against the constraints of the assignment. This aligns with Hall's (2011) perspective, which emphasizes the importance of classroom interaction in understanding what occurs between individuals when tackling problems involving language and communication. Here, the struggle to focus on a specific problem indicates the complexity of decision-making in collaborative learning environments.

As pre-service teachers initiated discussions with their group mates, they transitioned into the next phase of the CPS process, where responses and interactions began to shape the direction of their problem-solving efforts. The interviews revealed that pre-service teachers generally responded positively to their peers' proposals, indicating a supportive learning environment that encouraged idea exchange. The positive atmosphere of collaboration is essential in group problem-solving as it fosters open communication and a willingness to explore different viewpoints (Haerazi, Vikasari, & Prayati, 2019). According to one participant,

"All responded positively because they also agreed with those who initiated it earlier that in vocational, there is rarely anything that teaches about leadership skills, especially for future provision accompanied by English education skills" (S2-Interview). This reflects how group members valued contributions related to topics they found relevant and significant, such as leadership skills in vocational education.

However, despite this general positivity, the interactions were not always uniform. Some group members responded quickly and engaged actively in the discussion, while others hesitated or disagreed with their peers' suggestions. These variations in response times and opinions illustrate the complexities of group dynamics in the classroom (Haerazi, Vikasari, & Prayati, 2019). While some students immediately aligned with the proposed ideas, others took more time to reflect or critically assess the topic, which is a natural part of collaborative learning. The diversity in responses highlights how individual differences in cognitive and communicative styles can influence the problem-solving process. Dayag et al. (2008) (Rustandi & Mubarok, 2008) noted that the response is the student's way of reacting to the teacher's initiation, which can also be extended to peer interactions in this context. These dynamics of initiation and response are crucial in shaping the collective decision-making process within the group.

Once group members had responded to the initial ideas, feedback emerged as a crucial component that influenced the development of the final problem to be tackled. Feedback, whether affirming or critical, played a pivotal role in refining the ideas presented by the group (Fadli, Irawan, & Haerazi, 2022). In many cases, feedback led to further clarification and alignment among group members, helping to streamline the focus of their assignment. As one participant explained, "We usually ask to confirm with our friends. For example, I propose that we discuss this issue. Confirm so that we have the same perception" (S3-Interview). This indicates the importance of feedback in ensuring that all group members are working towards a common understanding and that potential misunderstandings are addressed early in the process.

The interview results suggest that feedback often led to differences of opinion, which can be both constructive and challenging in group work. Disagreements over the topics or proposed solutions pushed pre-service teachers to critically engage with their peers' ideas, promoting deeper reflection and consideration of alternative perspectives. These interactions are central to the collaborative problem-solving process, where differing viewpoints can stimulate more creative and effective solutions. However, the potential for conflict also underscores the importance of strong communication skills in navigating these differences and arriving at a consensus. The interviews revealed key insights into the challenges and dynamics of creative problem-solving among pre-service teachers. The difficulty in determining specific, manageable problems highlights the importance of clear problem definition in the early stages of the CPS process. Furthermore, the supportive yet varied responses from group members reflect the complex nature of classroom interactions, where positive engagement is balanced with critical thinking and occasional disagreement. Feedback, as the final step in the cycle, serves as a critical tool for refining ideas and ensuring alignment within the group. Overall, these findings illustrate the multifaceted nature of group-based problem-solving and the need for pre-service teachers to develop skills in both defining problems and collaborating effectively with their peers.

Pre-service teachers perception of interaction in generating ideas

Generating ideas is a critical stage in the creative problem-solving process, especially for pre-service teachers who are still refining their pedagogical skills and learning how to address real-world problems. In creative problem-solving, the dynamic balance between generating ideas and focusing on solutions is essential for clarifying complex situations and building original concepts that can lead to practical, innovative outcomes (Isaksen, 2023). Pre-

service teachers in the study began initiating discussions with their peers to explore various problems related to their projects. These discussions typically involved brainstorming ideas, seeking out current trends, and leveraging technology, such as ChatGPT, to gather a broader range of potential solutions. This process reflects a foundational step in creative problem-solving, where gathering data from multiple sources and perspectives is necessary to shape a more focused and informed topic.

One participant described the initial phase of idea generation: "The ideas were initially just what would be suitable for culture. There were ideas from two people like that, from the two people then looking for ChatGPT then websites that are like if lately what has become a hype and then what problems, then like the fading of culture, especially festivals and traditions, it's like the top highlights on the website" (S1-Interview). This statement shows that the pre-service teachers employed a collaborative approach to gathering and refining their ideas, using technological tools like ChatGPT to help focus their discussions on trending and culturally relevant issues. By actively engaging with each other and consulting external sources, the teachers navigated the broad landscape of cultural problems and began zeroing in on more specific issues, such as the decline of cultural festivals and traditions. This process of focusing their ideas reflects the transition from broad brainstorming to a more targeted exploration of topics, an essential step in making creative problem-solving manageable and actionable (Lee & Song, 2020).

Another key aspect of the idea-generation process was the interaction and exchange of ideas among group members. For instance, one pre-service teacher explained, "The problem during the discussion yesterday was that we might be confused about the topic, like rarely about leadership. Then there was another discussion related to the importance of English skills in vocational. We also thought about it because, really, from the experience of one of our group members yesterday, English is not too crucial in the group for vocational, so that might be a second consideration for us on how to engage them" (S2-Interview). This reflection highlights the challenge of narrowing down and prioritizing ideas within a group setting. The group's discussions reveal that they considered multiple angles—leadership skills and English proficiency in vocational education—before settling on a more specific issue. This interaction illustrates the iterative nature of idea generation, where multiple ideas are proposed, tested, and refined based on group feedback and the relevance of the topic to the problem at hand.

However, pre-service teachers faced challenges in the idea-generation process, particularly when it came to engaging students in discussions and problem-solving. One of the most significant challenges was ensuring that the ideas developed were not only innovative but also applicable on a global scale. As one participant noted, "The problem is that some of us have proposed that later the idea would be made related to human rights; some have proposed that schoolchildren must have bullying; then there are those who discuss that it's okay to relate it to human rights at school, and then later we would make it international or global" (S4-Interview). This statement reflects the group's ambition to frame their ideas within an international context, particularly focusing on issues like human rights and bullying in schools. The challenge here lies in making these broad, global issues relatable and actionable within their local educational context. This kind of thinking is crucial in creative problem-solving, where ideas must be adaptable to different scales—local, national, and global—depending on the scope and relevance of the project.

The group dynamics further revealed how peer responses and feedback shaped the development of ideas. Responses from group members were often grounded in their personal experiences or in the cultural context they were familiar with. One participant shared, "The response of friends is by what is happening now. Like in Bali, there are only one or two that are raised. For example, in Bali, it is famous that many people watch it, but in Java, which is specific to villages, no one watches it. So we want to solve the problem of traditions in Indonesia" (S1-

Interview). This response illustrates how group members contextualized their discussions by comparing cultural traditions in different regions of Indonesia, such as Bali and Java. By focusing on these regional differences, the group members demonstrated their ability to identify culturally specific problems and propose solutions that could address the decline of traditions in certain areas. This localized approach to problem-solving is crucial for ensuring that the solutions developed are both culturally relevant and practical.

However, despite the active exchange of ideas, some group members encountered difficulties in developing their concepts further. As one participant explained, "Yes, most of it comes from the experience of one of our members, and it turns out that it would be quite difficult for us to develop this in the future, and then we are also confused when exploring the problem, there are still difficulties and then we look for it on the internet too. Maybe later the application would be good so that it can engage them like how to continue to look for it from AI and ChatGPT" (S2-Interview). This statement reflects the ongoing challenge of turning ideas into actionable solutions. While the group had generated a variety of ideas, they struggled to develop them into concrete, implementable plans. The confusion and difficulty in further exploring their ideas highlight the importance of clear guidance and structure in the creative problem-solving process, particularly when using technology like AI and ChatGPT. Although these tools can assist in generating ideas, they do not automatically provide solutions, and pre-service teachers must still engage in critical thinking and deep reflection to effectively implement their ideas.

The interaction between group members also produced peer-to-peer feedback, a crucial part of refining ideas (Widhi, Jupri, & Jumadil, 2023). This feedback loop, in which one peer provides input and another follows up or evaluates the suggestion, is fundamental to the creative process. One participant observed, "The feedback is that they agree. Like looking at the surrounding conditions, my friends agreed to it like there was no rejection. Personally, if my friends agree, it's like they even support it, so we would be specific to regional cultures that are not exposed" (S1-Interview). The positive feedback from group members strengthened the group's commitment to focusing on regional cultures that have not received much attention. This kind of agreement and support is vital in group projects, as it fosters a sense of collective ownership and motivation to develop ideas further. However, it is also important to note that constructive disagreement can be just as valuable in the creative process, as it encourages deeper exploration of ideas and can lead to more innovative outcomes.

The process of generating ideas in creative problem-solving for pre-service teachers involves several key stages: initiating discussions, exchanging ideas, facing challenges in idea development, and receiving feedback (Kharade & Peese, 2014; Ikawati & Pohan, 2023). Each of these stages plays a critical role in shaping the final outcome of the project. The interviews reveal that pre-service teachers actively engaged with each other and used technology to support their idea generation, but they also encountered challenges in turning those ideas into actionable solutions. The feedback from group members further helped refine their ideas, allowing them to focus on culturally relevant and meaningful topics. Ultimately, the collaborative nature of this process highlights the importance of interaction, critical thinking, and adaptability in creative problem-solving, especially in educational contexts where pre-service teachers are learning to navigate complex issues.

Pre-service teachers perception of interaction in preparing for action

In the *Preparing for Action* phase, pre-service teachers focused on making decisions, refining viable alternatives, and organizing the necessary steps for effective implementation of their ideas (Isaksen, 2023). This stage is critical as it transitions from ideation to practical application. From the data obtained, it became evident that the pre-service teachers actively engaged in finding solutions to the problems they had identified. Their approach involved using various technologies, including AI tools, to generate innovative and "out-of-the-box" ideas,

ensuring the solutions were not only creative but also appropriate for their educational context. One participant emphasized this approach, stating, "A solution that is really out of the box. The solution is other than posting on social media, but because when looking for this solution the level is for high school, of course, technology is familiar to them" (S1-Interview).

This insight reflects the pre-service teachers' awareness of their students' familiarity with technology and their desire to create solutions that resonate with their learners' realities. By leveraging AI and online resources, the pre-service teachers were able to navigate beyond conventional methods and propose solutions that were tailored to high school students' needs and experiences. This demonstrates a clear understanding of how technology can serve as a tool for enhancing problem-solving and idea development in modern educational contexts. Additionally, the collaborative process of proposing individual solutions, discussing them in groups, and selecting the best option through voting ensured that the chosen solutions were both innovative and practical for the classroom.

The response from peers during the solution-selection process also highlighted varying levels of engagement. While some pre-service teachers immediately agreed with the proposed solutions because they found them logical and feasible, others were less responsive or hesitant. One participant shared, "In choosing a solution, the response of my friends varied. Some agreed immediately because the solution made sense to them, and some didn't respond at all. When it was class day and they didn't respond in the group, they finally agreed because there were no other options" (S3-Interview). This response indicates that while group discussions were generally productive, not all members were equally engaged throughout the process (Syafitri, 2023; Hidayatullah & Haerazi, 2022). Some participants were passive, only agreeing to solutions when faced with a lack of alternatives. This highlights a common challenge in collaborative settings where not all group members contribute equally, yet decisions must still be made in order to move forward. Despite this variation in participation, the pre-service teachers were able to finalize a solution, demonstrating their ability to work through group dynamics and reach a consensus when necessary.

Following the selection of a solution, the group engaged in further discussions to refine and enhance their chosen approach. The feedback provided by peers played a vital role in this phase, often reflecting constructive criticism and support. One participant explained, "I agree, yes, directly like if the Microsoft one was like me, I myself don't agree and then my friends are like convincing while TikTok, some of my friends don't agree, actually the two of them because the two of them are anti-TikTok because TikTok is universal and the content is a variety of random ones. Actually, there is a debate in it but we are trying to convince our friends, for example, using Instagram the agency is lacking. Use TikTok but later you guys would provide a solution. It's the same as Microsoft, I don't know but they know so they provide help, so they give feedback and offer solutions" (S1-Interview).

This feedback exchange reveals a deeper layer of collaboration where group members not only share their preferences but also work to persuade one another by offering reasons and alternative solutions. The debate over using platforms like TikTok and Microsoft reflects differing levels of familiarity and comfort with various technologies. Some group members were hesitant to use TikTok due to concerns about its random and sometimes irrelevant content, while others saw potential in utilizing it for educational purposes. This ongoing negotiation and persuasion highlight the importance of dialogue in the problem-solving process, as pre-service teachers learn to balance different perspectives and make informed decisions about which tools and strategies to implement. The group discussions were not limited to selecting platforms; they also focused on larger themes such as leadership, communication skills, and English language proficiency (Syafitri, 2023; Hidayatullah & Haerazi, 2022). One participant described how their group moved from broad topics to more specific areas: "Yesterday, we started with big topics such as self-awareness, communication skills of leaders, and someone suggested going into

those topics. Previously, we hadn't covered the topics, so we went deeper into English language skills and leadership concepts. Our friends were active in their roles, both online and offline, especially in the discussion and revision of the topics" (S2-Interview).

This process of narrowing down broad topics into more focused and actionable ideas demonstrates the group's ability to collaboratively refine their ideas. By concentrating on English language skills and leadership, the pre-service teachers targeted key areas relevant to both their educational goals and the needs of their students. The active participation of group members, both online and offline, further strengthened their ability to explore these topics in depth, resulting in more coherent and targeted solutions. Another significant aspect of the solution development process was the appreciation of diverse perspectives within the group. As one participant noted, "When we look for solutions, we look at it from our own perspective, but sometimes the perspective of our friends is broader. They can see the solution from a different perspective so they realize that the solution we propose may not be quite right for the problem at hand. So, we discuss in the group chat to understand each other's views. Usually, in the end, we reach an agreement and start looking for solutions related to this idea, we use ChatGPT or AI to develop our ideas, so that we can choose a more comprehensive solution" (S3-Interview).

Pre-service teachers perception of interaction in planning your approach

In the *Planning Your Approach* phase of the Creative Problem Solving (CPS) process, pre-service teachers worked to bring together their ideas and strategies in a cohesive manner, ensuring that their plans remained practical and suited to their intended outcomes. This phase required careful consideration of the project's needs, as well as adjustments to both the activities and materials. The approach used in this phase involved utilizing the IRF (Initiation-Response-Feedback) interaction pattern to guide their discussions and decisions, allowing them to refine their work collaboratively as they prepared for implementation. One participant described their experience with this process: "There are opinions that are not quite right, including from myself and from my friend. The issue is in terms of activities because the activities tend to be afraid of being monotonous and not creative, so we adjust the activities and materials. Our material is descriptive and procedure text, so we match the topic per week that relates to this text. We chose the topic about types of festivals and traditions and how we revive festivals and traditions creatively" (S1-Interview).

This reflection illustrates the importance of flexibility in planning, as the pre-service teachers had to adjust their activities to avoid repetition and lack of creativity. By selecting topics like festivals and traditions, they aimed to connect their lessons to real-world cultural elements that would engage students while maintaining relevance to the curriculum. The interview also shows the participants' awareness of the need to balance creative activities with structured content, ensuring that each week's lessons aligned with broader educational goals. This ability to adjust and refine their approach demonstrates a practical application of CPS, where problem-solving requires ongoing adaptation to fit the needs of both the students and the subject matter. After initiating ideas within the group, the response phase became crucial in determining how the group would move forward with their decisions. While initial disagreements arose, group members ultimately reached a consensus. One participant noted, "There were differences of opinion before, but when we made the decision, everyone agreed. Only one or two people voiced their opinions, while others agreed and participated. In the end, my friends were quite satisfied with the results of our creative and solutive design to determine the problem and its solution" (S1-Interview).

This statement emphasizes the collaborative nature of the group's process, where despite initial disagreements, the group was able to work through differing viewpoints to reach a collective decision. The fact that only a few members actively voiced their opinions while others silently agreed highlights a common dynamic in group work, where not all members are equally vocal. However, the satisfaction expressed at the end reflects that the group valued the

process and felt ownership of the final result. This dynamic reinforces the importance of fostering open communication in group work, as it ensures that all members are aligned, even if not everyone actively contributes at every stage. The feedback phase played an instrumental role in refining the pre-service teachers' work, with feedback coming from both peers and group members. Feedback helped identify areas for improvement and provided opportunities for iterative changes. One participant mentioned, "The feedback, I feel like it's enough, if the same task is like, oh yes, this is what we can do first, then from here, for example, there would be a reaction later, we can do something else" (S2-Interview). This comment highlights the ongoing nature of feedback, where the group continued to adjust their work based on the reactions and suggestions they received. This flexibility in responding to feedback allowed them to improve their project progressively, ensuring that each step built upon the previous one.

Another participant reflected on the constructive and appreciative nature of the feedback they received, stating, "Feedback from my groupmates was very appreciative. They said, 'Wow, this is good. If there is anything you want to add, how about moving this item here?' We thought, 'Oh yes, that's right. If you add it here, it would be even better.' Before, we felt that it was a good fit, but after hearing that, we found it helpful. In the end, everyone was relieved and satisfied with the result" (S3-Interview). This deep interpretation of feedback shows the collaborative and positive interaction among group members, where even minor adjustments were seen as opportunities for improvement. The group's willingness to embrace suggestions and apply them constructively speaks to their openness to refinement and collective ownership of the project. The feedback not only improved the final outcome but also enhanced the group's sense of accomplishment, as they all contributed to the enhanced product.

The feedback process in this phase was not limited to verbal suggestions; it also involved tangible changes to the group's work, such as enhancing visual materials. One group received feedback that their project lacked media and clear timing, which they used to make improvements through collaborative tools like Canva. By addressing these detailed criticisms, the group ensured that their final product was more visually engaging and better organized. This level of iteration based on feedback aligns with Mulnix's (2012) perspective, which emphasizes the value of applying critical discussions to real situations. Instead of merely theoretical discussions, the pre-service teachers engaged in practical adjustments that had a direct impact on their project's quality and applicability. The feedback across different groups was constructive and played an essential role in refining their work. Minor suggestions were aimed at improving the coherence and presentation of their projects, demonstrating the effectiveness of a collaborative approach where each member's input contributed to a better final product. This iterative process of initiation, response, and feedback allowed the pre-service teachers to adapt their ideas and methods continuously, ensuring that their projects were well-developed and ready for implementation. By valuing the feedback they received and making adjustments accordingly, the groups were able to achieve more satisfying and polished results.

CONCLUSION

This study concluded that the Creative Problem Solving (CPS) learning model and the Initiation-Response-Feedback (IRF) model successfully improved pre-service students' interaction, collaboration, and creative problem-solving. In the initiation stage, pre-service students discussed offline and online project topics and used a voting system to determine the most suitable topic. AI, such as ChatGPT, assisted them in finding useful data and generating creative ideas. The interactions during the initiation process and the responses that emerged, such as negotiation and feedback between group members, showed that the IRF method made students more active and engaged in class discussions. Positive responses included choosing the most plausible solution and applying constructive feedback to improve the project. The use of IRF as a mediator of interaction between students also proved to increase opportunities for

learning language and cultural ideas. The group effectively used critical and detailed feedback to correct flaws and improve project outcomes, highlighting the importance of flexible and adaptive working methods and collaborative tools like Canva. Overall, the use of CPS and IRF encouraged teamwork and resulted in better and more satisfying projects. The limitation of this research was that it was conducted in one small class. Suggestions for future researchers could include examining interactions between students not only from the perspective of students but also from the perspective of teachers when teaching in larger classes or exploring student-student interactions at public and private university levels

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