Computer-Supported Collaborative Learning-Based Instruction in Teaching Speaking EFL in Indonesian Context

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Abstract. The use of small groups of two or more learners to accomplish shared learning objectives, often known as computer-supported collaborative learning (CSCL), has grown in popularity over the last several decades in several educational contexts including Indonesia. The purpose of the research is to determine how much speaking abilities among learners are improved via collaborative learning. For data collection, the researchers used a quasi-experiment and a quantitative technique. To get the required intervention, pre-test, and post-test, 20 subjects participated. They were required to complete a standardized questionnaire for the evaluation of support after the intervention. The research concluded that CSCL greatly aids in the development of learners' speaking abilities in the following areas: fluency, accuracy, critical thinking, socio-cultural awareness, and social psychology. This suggests that the ideal approach to be discussed for creating and constructing English language instructional resources is CSCL. The instructor, curriculum designer, educator, or practitioner are suggested in this line. The study's tiny sample size means that the actual experiment will differ, and more research on various speaking competence levels is anticipated.

Keywords: Collaborative · CSCL · Speaking · technology

1 Introduction

Computer-supported collaborative learning (hence CSCL) defines as a pedagogical approach wherein learning takes place via social interaction using a computer or through the Internet. This kind of learning is characterized by the sharing and construction of knowledge among participants using technology as their primary means of communication or as a common resource [1] CSCL can be implemented in online and classroom learning environments and can take place synchronously or asynchronously.

Similarly, [2] mentioned a variety of learning theories that place a strong emphasis on how learners interact with one another, share information, and develop knowledge

collectively are extensively cited in the area of CSCL. Constructivist and social cogni-tivist learning theories are heavily influenced by the field's emphasis on collaborative engagement and collaborative learning. [3] advise researchers to go back and inquire about what themes, viewpoints, and voices are not completely covered in addition to looking at what is included in theirs, to the best of our intelligence experience.

Some omissions are pointed out explicitly; for instance, the chapter on "Interrogating the Role of CSCL in diversity, equity and inclusion" stresses the importance of paying closer attention to learner background and identity issues on a general level, including intersectional issues of race, gender, and privilege, among others. We may also take into account the many school settings and circumstances that affect how probable it is for learners to be encouraged to engage in collaborative learning. Ideas that often emerge in passing but are never brought to the front might be used to identify other omissions. For instance, while the transformational and emancipatory potential of CSCL is often cited as being essential to the field's foundation, its precise shape and significance in the context of the present-day educational, social, and political environment have not yet been clarified. The last sort of absence that is the hardest to identify is when something is completely absent, which may be a representation of our collective blind spots. Examples here can include what learners believe and feel about working together as well as the individual experiences that motivated each of us to pursue this line of study as researchers. We need to intentionally work together to find out how to make room for these, or other, missing aspects, to the degree that we value them. This calls for more than just people working on certain projects; it also has to do with the institutions and procedures we establish to guide our academic effort and favor some types of scholarly work over others.

For further investigation, [3–5] welcome scholars to participate in the discussions and research that will collaboratively influence how the field grows moving forward. There are numerous opportunities, both large and little, to influence this trajectory. Together, the community shapes the future of CSCL by posing queries, creating agendas, providing terminology, and validating research.

Besides, only a few researchers at this time have shown experimentally how CSCL might enhance learners' speaking abilities. For example, [6] asserted that CSCL can lessen learners' nervousness via classroom interventions in public speaking exercises. Additionally, [7] suggested that Smart U English helps foster dialogue among learners. They observed learners' contextually effective experimental statistical practice. A prior study [8] examined the beneficial technology Vocaroo's influence on improving speak-ing skills as it relates to learners, instructors, and researchers. Her research expands on recent works that are helpful for teaching speaking English as a foreign language (EFL). The benefits of CSCL for improving learners' speaking skills in the areas of fluency, accuracy, critical thinking, socio-cultural awareness, and social psychology have, how-ever, received little research. Overall, two requests for perceptive knowledge made by [3] and a small number of empirical studies, as indicated earlier, are what we claim to be the current investigation's theoretical and practical deficiencies. The goal of the current

study is to close these gaps. The current study is structured around the following research question: Does CSCL affect learners' speaking performance?

A. An overview of Social Psychology, socio-cultural Awareness Fluency, and Accuracy

Social psychology is the academic study of how social interaction and the internalized social standards that people experience even when they alone affect people's ideas, emotions, and actions [9]. Social psychologists examine the social settings in which thoughts, emotions, and actions take place as well as how these elements form social connections to comprehend human behavior as a consequence of the interaction between mental state and social environment. While learners are reliant on socially supportive situations, social psychology may influence their boldness and confidence when expressing a range of viewpoints, according to CSCL. Learner psychology factors are useful when the lecturer promotes a comfortable environment. Similarly, social psychology is the study of how people's ideas, feelings, and actions are affected by one another and the social contexts in which they occur [10].

This kind of research, which includes symbolic interactionism, examines how an individual respond to stimuli that originate from response of another individual or from a group of individuals. Some of the ideas and studies in this article may date back to the early 1900s when collaborative learning methodologies were first developed [11, 12]. They have been modified in some way to accommodate the needs of classrooms and deal with the difficulties posed by CSCL. Social psychology is the scientific study of human interaction, perception, and impact. This area of research examines topics including socioeconomic inequality, racism, aggressiveness, and other social persuasion strategies in addition to group identification and symbols. It implies that sociological research, which is mostly based on experiments, is influenced by psychological issues generally.

A brand-new psychological theory called sociocultural theory was introduced to us [13] to help us better comprehend sociocultural awareness by examining how culture affects human development. The 1990s saw a rise in the popularity of this idea, which may be used in both educational and social contexts. The significance of social contact in psychological development is emphasized by sociocultural theory. According to this view (Social Vygotsky's theory, mentioned in [14], learning is primarily a social process in humans, and our cognitive capacities develop via interactions with others who are "more adept" than we are or who know more about us than we do.

The sociocultural perspective states that individuals who serve in mentor-like positions in our lives, such as teachers and parents, contribute to influencing our psychological development, which is consistent with teaching speaking in the classroom. Other times, our interactions with members of social groups or our involvement in cultural pursuits influence our beliefs and worldview. Socio-cultural theory explores how social values and attitudes affect the process of learning, in addition to how mentors and peers influence individual learning. Placing sociocultural issues in the classroom activities is the solution for CSCL integration. This can include putting learners in groups with classmates who are more advanced academically, or it might entail promoting group learning rather than making them do their coursework alone. Because of this, the zone
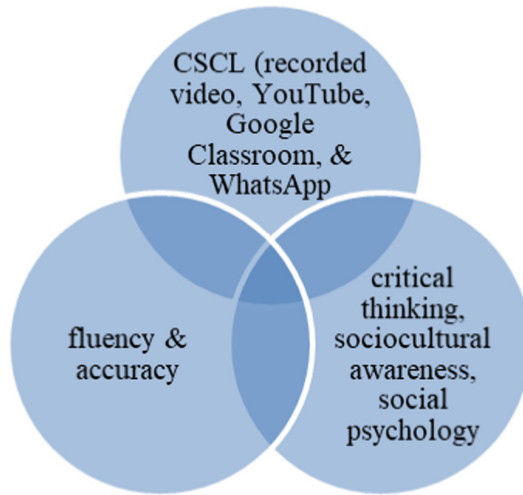
Fig. 1. Conceptual framework

of proximal development can also help teachers help learners reach their learning goals, especially in an online learning environment [15].

While speaking, accuracy and fluency are two important factors to consider. Accuracy is defined as being "free of errors or inaccuracy" in the online Merriam-Webster dictionary. There are other choices for accuracy measures, solely for complexity [16] The proportion of sentences. Without mistakes and the quantity of errors per (number) 100 words are two of the most obvious. The newly proposed erroneous gravity can be justified both theoretically and practically [17]. One might have trust in the first since it may contain the most results of any research that has already been done. The second option provides a more suitable (Mehnert, 1998). The third is that fluency is more important since it's bad to regard all errors equally because some have a far bigger effect on communication than others [17]. Additionally, speaking accuracy [18] measures how well the language produced adheres to the standards of the target language, including improper vocabulary, syntax, and pronunciation. The capacity to speak "without undue halting or hesitation" is known as "speaking fluency." Too many pauses and hesitations in speaking might reduce fluency and demoralize the speaker [19]. Figure 1 shows, as best we can tell, how the current study was set up.

## 2 Method

A. *Research Design*

Through the use of a quasi-class experimental design, the current research was examined. Due to the limited sample size, it was unable to compare the intervention class to the

control class [20]. Twenty participants then took part in the necessary intervention, pre-test, and post-test. To assess the level of assistance received following the intervention, they were requested to complete a standardized questionnaire.

B. *Characteristics of Participants*

Learners (N = 20) attending the state's higher education institutions were the subject of the study. They made their decision on purpose, namely to enroll in the English education department's third semester. Their speaking ability during pre-observation is rated as poor level. Since none of them have ever spoken English at home, this is probably the root of the problem. In addition, they utilized both the Indonesian language and the regional language, or Bahasa Daerah, to communicate with their family and society. Speaking the native tongue is thus really necessary for folks who are not very comfortable speaking English (Fig. 2).

Additionally, only five of them had ever attended an extracurricular English course whereas the others learned the language exclusively via curriculum-required classroom activities. Every participant has a smartphone. They haven't, however, ever utilized it to improve their speaking ability. They were mostly used for entertainment, social networking, and video games. Their profiles also attest to the fact that their desire to study English is to eventually work as an English lecturer after graduation, which will aid the searcher in determining the learners' level of spoken English. In these circumstances, their attention is primarily on accurately comprehending the syntax. Being proficient in
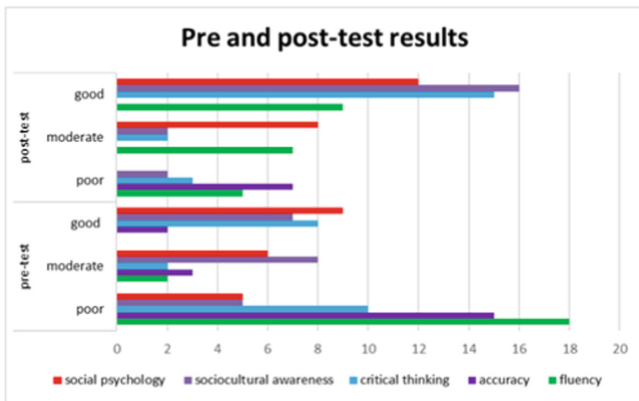
Fig. 2. Pre and Post-test results

English is also not necessary since English is taught in schools. On the Test of English as a Foreign Language (TOEFL), their overall level of English competence is below 450.

C. *Research Setting*

In the precise academic year 2021, the current study was conducted in the Department of English Education, Faculty of Lecturer Training and Education, University of Musamus Merauke, South of Papua, Indonesia.

D. *Techniques for Gathering and Analyzing Data*

Deal with collecting data, learners were split into four groups, each with five students, and then a project partnership was created in six meetings. First, a pre-test was administered to establish the category of the learner's speaking proficiency (poor, moderate, or good). Second, the instructor gave a link to a WhatsApp group and encouraged the students to join. After then, students were free to choose a pre-selected subject for the subsequent session. Third, students in the classroom collaborate in group pairs while seated face to face. It required each group to produce a poster presentation on "cultural diversity." During this session, they had 10 min of warming, 10 min of affective, 50 min to work on the project, and 20 min of rest to evaluate. Fourth, the outcomes from each group were documented and posted on YouTube, and their URLs were shared in WhatsApp and Google Classroom groups for pair evaluation. As a result, the assessments from the written and spoken couples were sent to the WhatsApp group for contemplation or revision. Fifthly, each group changed their project during this session in light of the couples' assessment. Each group came back to present their project modification at the conclusion of the sixth session. As a result, groups were divided into presenters and evaluators, with one group acting as each. Additionally, they received a post-test and a questionnaire.

The study used an experimental descriptive design and a questionnaire as its instrument. They help us make sure that instruments are really used [21]. In a similar vein, according to our premise, every question in their book has been given the go-ahead by the appropriate authorities, making it potentially exploitable. A four-point Likert scale with the following alternatives used as the measurement tool: (1) strongly disagree, (2) disagree, and (4) strongly agree. The current study also had a Cronbach Alpha Coefficient of 0.78, which is a measure of how consistently the research phases were conducted. Consequently, $p > 0.05$ is used to determine the validity's viability.

3   Results

In response to the question, "Does CSCL affect learners' speaking performance?" Fig. 1 and Table 1 display an example of the learners' speaking performance provided by the presenter. Three types of results were identified: poor, moderate, and good. CSCL was useful for comparing learners' intellectual experiences and sociocultural awareness points of view when comparing pre-and post-test outcomes (Fig. 1 and Table 1).

Table 1. Questionnaire Results

		Critical thinking	Sociocultural awareness	Social psychology	Fluency	Accuracy
Critical thinking	Pearson Correlatiozn	1	.154	514	.167	088
	Sig. (2-tailed)		.518	.020	.481	.713
	N	20	20	20	20	20
Sociocultural awareness	Pearson Correlation	.154	1	034	.169	377
	Sig. (2-tailed)	.518		.887	.477	.101
	N	20	20	20	20	20
Social psychology	Pearson Correlation	514*	.034	1	.214	.275
	Sig. (2-tailed)	.020	.887		.365	.240
	N	20	20	20	20	20
Fluency	Pearson Correlation	.167	.169	.214	1	.096
	Sig. (2-tailed)	.481	.477	.365		.686
	N	20	20	20	20	20
Accuracy	Pearson Correlation	.088	377	.275	.096	1
	Sig. (2-tailed)	.713	.101	.240	.686	
	N	20	20	20	20	20

*. Correlation is significant at the 0.05 level (2-tailed).
Learner's results in Table 2 illustrated that using CSCL was significantly at the 0.05 level. Regarding Pearson's correlation coefficient is p > 0.05; two-tailed test of significance (F-count > F-table).

Table 2. Significance Correlation CSCL during Speaking EFL

	N	Minimum	Maximum	Mean	Std. Deviation
Critical thinking	20	1	4	2.10	.788
Sociocultural awareness	20	1	4	3.05	.826
Social psychology	20	1	4	3.40	.754
Fluency	20	1	4	3.10	.718
Accuracy	20	1	4	3.50	.761
Valid N (list-wise)	20				

4   Discussion and Conclusion

The learners' results demonstrated to us via experimental means that CSCL helped them develop their speaking abilities and critical thinking skills. Speaking skills were indicated when the learner explained the topic presentation more fluently and accurately. It was logical because they work collaboratively. On the other hand, all the results encountered all of the group members. Interdependence of success and failure; swimming or sinking together. Presented more confidently because analyzing, elaborating, and evaluating discussed topics, are called critical thinking. He (s) can be criticized when he (s) has a better comprehension of the discussion. We now agree with [22]'s study, which has long emphasized that video is one of many audiovisual inputs used in language schools. The usage of this beneficial tool in teaching and learning benefits both learners and English-speaking instructors. Learners often watch videos inertly in order to absorb the concepts being taught. The use of video as a teaching tool or as a collaborative learning activity made feasible by computers to help learners improve their speaking and listening abilities in English hasn't been the subject of much research, however. They were told to form aggressively small groups and work together to create their own video projects, watch other people's videos online, interact with peers to comment on videos and participate in forum discussions. The replies of the initiative's participants are reflected in the data on technical assistance as well as the survey's quantitative data on technological help. The research's conclusions showed that seeing the movies online and participating in the discussion digitally enabled the learners to consider and comprehend their own educational experiences. The descriptive statistics assessments demonstrated this. Their research demonstrates how the substitute for English instructors promotes group learning among learners while using technology like forums and videos.

In line with sociocultural awareness, three significant elements come up in discussions on sociocultural norms as shown in the class presentation, which was posted on YouTube: (1) being polite, (2) paying attention to facial expressions, recognizing sociocultural differences, and (3) establishing conversational expectations. Similarly, we have a school of thought with [7] when they developed teaching strategies for EFL learners. To understand learners' roles in constructing argumentative dialogues, spoken argumentation explores a visual portrayal of collaborative arguments. Argumentation mapping must be employed to preserve learners' online social connections. The current study examined how disparities in age, gender, cultural background, and learning style were exposed in the learner's video presentation based on sociocultural awareness. Along with their speaking EFL experiences, their understanding of the social and cultural settings in which the target language is spoken grew. Through the way they behave and engage with their learners, teachers subtly educate their learners about culture and society [23].

Social psychology approval, however, was a further crucial element. It was supported by [24] who emphasized that assisting in the resolution of issues such as social psychology, particularly small group dynamics, may have a significant influence on CSCL research and practice by illuminating the differences between formal and informal groups. How do we handle fictitious groups whose members are required to work together even if they don't want to? How can we benefit from organizations with a lengthy history and heritage, as well as tried-and-true methods of cooperation? What role does status play in collaboration and how does it relate to equality? It is important to note that

the Jigsaw strategy was first created by social psychologists to reduce prejudice towards minorities in schools, with the improvement in minority learners' academic achievement serving as a beneficial by-product [9].

Because remote access is feasible, CSCL improves speaking class performance in terms of social psychology by making it more dynamic and adaptable. The five stages of group growth, orientation, conflict, cohesiveness, performance, and disintegration might be utilized to investigate temporal correlations in interaction in terms of the progression of stages [25]. The investigation of collaborative behaviour involves the same technical and analytical difficulties that many CSCL researchers face. For example, a learner's assessment of group cooperation (as shown by their replies to a questionnaire) relies on the actions of the other group members, according to research on the issue of non-independence in the context of small group behaviour [26]. This lack of independence significantly affects how analytical techniques are used [27, 28]. The study identified three insights into social psychology in speaking CSCL, namely (1) social cognition, higher problem-solving tasks, increased members' awareness that the group has the resources needed to succeed, and thereby increase collective efficacy (2) relationship, promotive interaction, building more positive relationships among group members, quality of interpersonal relationships (3) social behaviour, praising, supporting, and other positive social behaviours. Speaking fluency improved as a result, and the student experienced a pleasant psychological state.

In summarizing the findings of this research, we show how the inclusion of speaking class exercises in the CSCL was instructive from the viewpoints of both cognitive and social psychology. For a long time, the English instructor only paid attention to the learners' intellectual efforts. However, as every learner is different, this technique could not be applied to all learners. Disfluency in speaking English as a foreign language is not necessarily related to cognition; instead, one should take into account inner motivation, social culture, and psychology. However, CSCL also encourages fluency and precision in performance in addition to great group dynamics. This shows that CSCL is the best method to discuss when building tools for English language training. This line suggests the teacher, curriculum designer, educator, or practitioner.

In addition to the advantages of CSCL, we are aware of the limits of our research. Because of the limited sample size in our study, it is likely that the outcomes of the actual trial will change, and more research on various speaking proficiency levels is being considered. Therefore, it is claimed by academics that the more learners engage with CSCL and social psychology concepts, the less inaccurate and disfluent their speaking becomes. Future research is advised to include spontaneous or impromptu speaking exams and peer review [30, 31]. A major consideration for the next investigation is the effect of CSCL on speaking abilities impacted by heterogeneous or homogeneous group collaboration, such as female and male, age, and gender equality. After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

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