Study Analysis of Social Collaborative Base Learning Participatory in the Society Era 5.0: A Systematic Literature Review

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Abstract. The issue of the 21st century transformative education paradigm as adaptive learning in the process of technological transformation through social collaboration according to the challenges of the digital era. The purposes of this study are: 1) To identify various findings from various scientific articles that discuss *social collaborative learning* in elementary school issues, 2) To describe the significance data from social collaborative learning in elementary school, 3) To explore the impact of social collaborative learning at elementary School. The research procedure of *Systematic Literature Review* from the period 2017 to 2022 is based on the limitation of the keywords "social" "collaborative" "learning" "primary school" in the Scopus source metadata. The data sample used 142 articles with the highest index score. The article data were identified and classified based on types of collaborative learning research, adaptive learning, and learning styles at Elementary School. The results of identified data lead to the role of education that has a positive impact, interacting in the system, individual responsibility to the group and the existence of social skills. The analysis of the article emphasizes quantitative data collection related to the influence of technology on learning outcomes in formal learning. Meanwhile, qualitative data collection leads to case study based on social and cultural learning in the surrounding community. Learning technology is used as a media of communication, information, and learning representation. The results showed that 1) research findings based on literature review was obtained several collaborative learning outcomes such as *e-learning, social interaction, thematic analysis, student engagement, curricula, learning during covid 19, human relations,* 2) major findings of collaborative research related to methods, media, learning styles, social interaction, effective learning outcomes through collaborative learning, while minor findings in collaborative learning regarding to local learning resources and problem solving, 3) the impact of collaborative learning as an adaptive culture for students at elementary school related to controlling features in learning system, independent pedagogical construction, and the effectiveness of the learning process and experience.

1   Introduction

Students' needs in learning skills are influenced by internal factors such as motivation and their known talents. External factors that can make an individual's basic understanding is the role of the environment as a source of learning. The three basic concepts learning competency in 21st century include the spirit of learning, literacy, and life skills. It cannot be grown and developed without the role of technology. The era society 5.0 in education must be supported by the community and the environment to realize superior of human resources. Component human literacy of digitalization has implications for intercultural issues and environmental sustainability [1], [2].

The development of education with new social paradigm is directed at critical thinking skills, communicative and collaborative to solve the problems. During the COVID-19 pandemic, learning was done by hybrid learning. The blended method is an effective approach to maximize students' presence during the phenomenon of spreading Corona virus. It needs useful learning quality to grow good education in preparing society generation 5.0. [3], [4]. To improve learning quality in preparing globally competitive generation, be competitive and expert in technology requires the involvement of learning elements humanistically and inclusively in learning community.

Environment is a learning resource related to students' need to develop their knowledge directly. As stated [5], [6] as a natural phenomenon based on norms that bind closely in students' life. Environment offers a series of possible collaborative processes where students have knowledge, ideas and point of view from the responses and reactions of others. Collaborative learning is characterized by the activeness of educators as facilitators in teaching and stimulating the students' experiences. The attitude of students' responsibility in teaching learning process as an effort to improve cognitive abilities and social skills in a learning community. Collaborative learning becomes a trend in the 21st century towards the importance of critical education, independence and collaboration [7], [8].

The direction of collaborative learning focuses on deep understanding and systematic thinking to develop aspects of communication, appreciation and social interaction to the lesson. By active role in collaborative learning, the process of understanding has various abilities to explain, to define, and to evaluate the concept of reality [9]. The learning process is close to the related material with the students' basic needs. Learning resources in the community easy, real and practical for students' learning. The existence of community participation to enrich learning material sources can make collaborative learning between students, educators and the environment.

Students' behavior is also very close with the role of parents, teachers, and peers who contribute in developing skills and attitudes related to search for an adaptive help. The issue's impact has occurred in using social media which is transmitted between virtual and real life. Digital media is used to connect interactions through technological devices in the learning process [10], [11]. Elementary school students need mobile devices as social adaptation to get global information. The use of mobile devices as a

media has become a necessity to visualize and communicate learning activities indirectly. Adaptive collaborative learning for Elementary Students uses simple social problem solving through creative, critical thinking, and applying computational thinking concepts. The use of adaptations technology strengthens non-verbal, verbal, social, and emotional interactions indirectly in the process of solving social problems [12], [13].

Adaptive learning is related to technological innovation and the learning process. Adaptive learning as a technological innovation aims to produce automatic, dynamic and interactive content. Adaptive learning as a dynamic adaptive process to make instructional content based on understanding and responding to present visual presentations. Adaptive learning produces a unique learning experience by considering the uniqueness of student responses. Implementation of learning by adapting the e-learning system used requires the ability to control the system so that learning becomes more effective and meaningful. The study of adaptive learning is still focused on features in the system, learning styles, individual differences, learning models, pedagogical content and the effectiveness of the learning process [14]–[16]. The integration of adaptive learning strategies to give a collective framework for learner roles, learning content and instructional instruction still needs to be studied from all perspectives to develop adaptive interventions.

Based on finding of research related to social collaborative learning through adaptive learning in Elementary School by visual is stronger than reading or memorizing. Technological adaptations of augmented and virtual reality have visual power that involves combined interactions in the virtual world and the real world. Adaptive learning collaboration motivates teaching learning process, visualizes and involves students' interactions with the environment [17], [18]. Collaborative learning involves the participation of individual and computer in a community to create an innovative strategy to provide practical learning experiences [19]. The learning environment in a complex dual structure with adaptive learning will clarify the influence of the environment in real and virtual classrooms [20]. Collaborative learning combined to adaptive learning is more efficient if it combined in a learning community.

The purpose of this study is to analyze and understand the trend of social collaborative learning in era society 5.0. The implication of continuous learning is the gap between the phenomena of the industrial paradigm and the global economy which is obtained through education. The research findings have extended impact to do future research. This article is arranged methodological review section, a section on presenting the results of the analysis and academic dialectical procedures, a section on the discussion of findings, a section for conclusions, and the implications of finding research.

Generally, the literature review in this research is divided into three parts, they are (1) Planning the concept to identify the up to date literature topics about global issues, (2) Conducting to find and to manage digital sources for the new discussed problems, (3) Reporting to disseminate the results of the literature review from the researcher's interpretation process towards the research objectives. Each step of systematic literature review procedure focuses to research problem.

2   Method

2.1   Collection Data Literature

Social collaborative learning research is studied based on multidisciplinary sciences with various different approaches. Based on the Systematic Literature Review study from 2017 to 2022 in the Scopus source metadata with the keywords (1) social participatory; (2) students learning; (3) society 5.0. Based on the search, it was obtained 142 document articles with keywords:

TITLE-ABS-
KEY (student   AND social   AND collaborative   AND learning) AND (LIMIT-
TO (PUBSTAGE , "final")) AND (LIMIT-TO (OA , "all")) AND (LIMIT-
TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-
TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT--
TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017)) AND (LIMIT-
TO (DOCTYPE , "ar")) AND (LIMIT-
TO (SUBJAREA , "SOCI") OR LIMIT-
TO (SUBJAREA , "ARTS")) AND (LIMIT-
TO (EXACTKEYWORD , "Students") OR LIMIT-
TO (EXACTKEYWORD , "Collaborative   Learning") OR LIMIT-
TO (EXACTKEYWORD , "Teaching")) AND (LIMIT-
TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j"))

Researcher uses a literature review procedure with a systematic method (systematic literature review) by collecting data and the latest research findings from the point of view in scientific approach and methods that have been used. The useful of research literature review is to discuss the research gap regarding to research topic to build theory in depth.

2.2   Systematic of Procedure Literature Review

The stages of literature review in this study are described in chart 1 below.
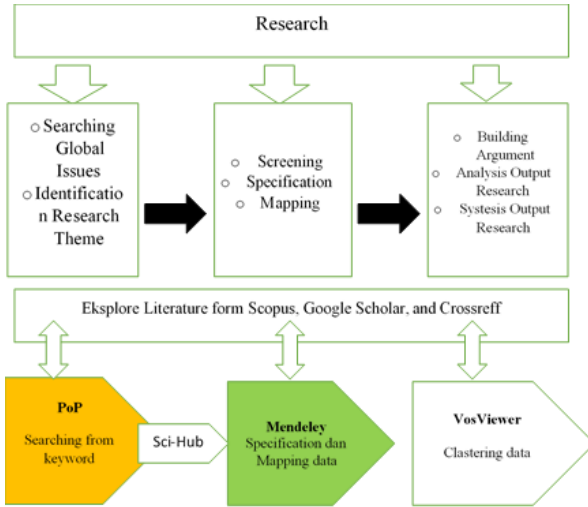
Fig. 1. Chart of Systemic Procedure Literature Review

The steps to arrange systemic literature review in this study are described systematically through the researcher's action as an effort to clarify the framework of the literature review. The research stages include (1) Planning stage. It is to identify research topic on global issues about collaborative social learning in era society 5.0; (2) Conducting stage. is the process of sorting, specifying and mapping literature in bibliometric studies so that it produced classification of findings based on research objectives, collaborative learning construction, adaptive learning, and the impact of collaborative learning in era society 5.0; (3) Reporting stage. it is used to build arguments, analyze and synthesize findings to reveal the conceptual meaning of collaborative learning research in era society 5.0. References that match the data were needed, then it was continued by analyzing the theory and describing according to the research objectives [21].

2.3   Data Analysis of Systematic Literature Review

The process of data analysis was carried out after all data was reduced and analyzed for the complete text that fulfill the criteria for the research objectives. An examination of content the research text is carried out to ensure the extent finding research correspond to the research that was conducted by the researcher. The data extraction process was done by detailing the title, author, method, research objectives, social collaborative learning construction, adaptive learning construction, society 5.0 and the impact of technology-based learning in the 5.0 era. The extraction process is carried out to obtain the relevance of each finding to the conducted research. The extracted data is analyzed by adopting a synthesis of findings so that it can be done flexibility in the orientation analysis. Identification in findings of social collaborative learning research in era 5.0 was carried out deductively and minimized inductive sensitivity to avoid new

interpretations to reult of the research that had been found [22]. The process identification of finding various research will be given code or label in thematic analysis to reveal the conceptual meaning. Coding uses thematic analysis to find the pattern of relationships between several collaborative social learning data in era 5.0, both the majority and the minority of finding research [23], [24]. Thematic analysis of finding research helps to identify the significance of findings data and it will be useful for future research. The conclusions on the relevance of collaborative learning research and its impact in era 5.0 were carried out during the process of reviewing the findings, identification of scope, objectives research, process extraction data and process analysis data.

3   Result And Discussion

3.1   Identify the findings of various scientific articles that discuss *social collaborative learning* at Elementary School issue

The results were obtained from the analysis literature review through a Scopus-based data with the keywords students, social, collaborative, learning. The identification data from articles that have been found can be seen in appendix 1. Meanwhile, the results of bibliometric analysis used the Vosviewer 1.16.18 application that display network visualizations (Visualitation Networks) which can be seen in Figure 2 as follows.
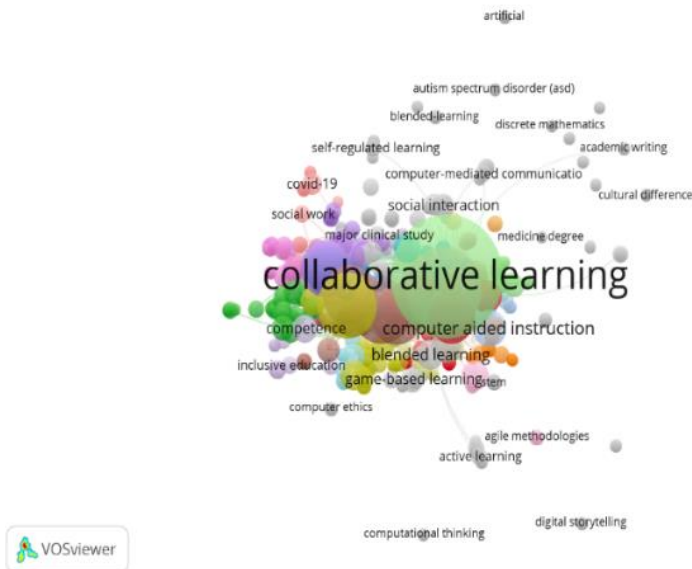

Fig. 2. Visualization of Collaborative Learning Network in Bibliometric Studies

The number of publications that have been done for six years showed a graph of finding research total of 142 articles from 2017 to 2022. The article documents are spread from 46 publisher journals that examine the theme of articles about Collaborative Learning. The number of publications data in every year can be seen in Figure 2 as follows.
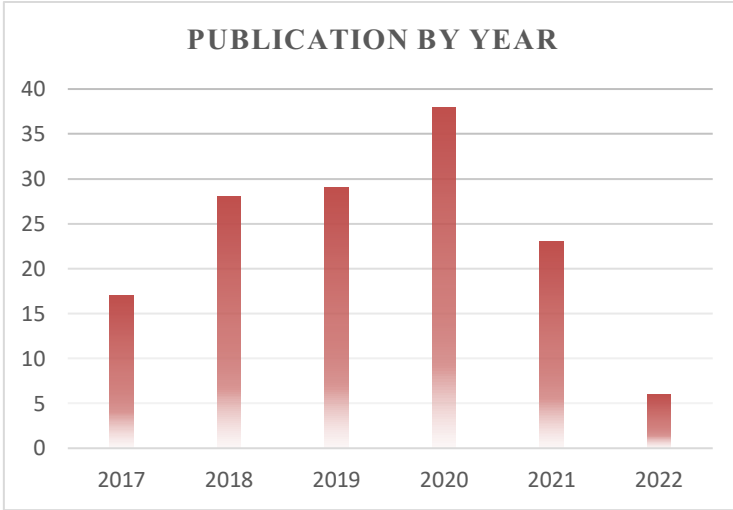

Fig. 3. Chart of The Number of Publications in every year

The discussion of results article from concept of identifying the need in literature topics on global issues that were developing at that time has finding clusterization that consist of the dominant strengths of research such as e-learning, social interaction, thematic analysis, student engagement, curricula, Learning during covid 19 and human relations. Use e-learning to support the implementation of students social collaborative learning with various learning applications. Collaborative learning has been analyzed changed participatory in the community toward metacognitive development and approaching students to study social interaction.The results of students' interest through collaborative learning can involve social and cognitive behavior in the process of teacher intervention in learning resources in the surrounding environment [25], [26].

Meanwhile, explain the implementation of collaborative learning has been used teaching learning process during the Covid-19 pandemic as an alternative platforms approach in social media.. Likewise, functions of social media can be utilized by applying a confirmatory social collaborative model [27], [28]. Digital technology is applied in virtual and online learning for students who take advantage of the limitations of learning space and time. According to [29] stated that social collaboration is able to make project learning for distance learning.

Collaborative learning is a 21st century trend that is needed in the educational community by directing collaboration on current issues. The collaborative concept here is the philosophical meaning of interaction and the pattern of each individual who is responsible for actions including the learning process in mutual respect and contributing to the environment. Three aspects of collaborative action to others in learning outcomes

are working cooperatively, act individually competitively, and having individual goals that are not the same as others [30].

Productive collaborative learning efforts have five interrelated components about positive dependence, mutually interactive and supportive, responsible individually and in groups, social skills and community processes. Educational studies, collaborative is to promote effective learning in study groups[31], [32]. The collaborative learning model is an important choice in the current era of disruption. The role of technology becomes part of the learning process that directs social collaboration by giving assignments (project based learning) to improve the cognitive abilities of students who adapt to the surrounding environment.

3.2   Description of the significance data from social collaborative learning at Elementary School

The stages of sorting, specification and mapping literature process are findings from various researches that have been analyzed leading to the use of technology and learning approaches to cope issues policy and importance health as well as regulatory protocols as a result of learning during the Covid-19 pandemic. On the other hand [33], examine collaborative learning to analyze the relationship between learning styles from learning preferences, and the presence of social interactions on learning outcomes. The research was conducted before the occurrence of social distancing and lockdown of the pandemic event. Before the viral phenomenon, several studies analyzed the collaborative learning model through the application of learning method and media to produce the value of the effectiveness of the product.

Minor findings that have not been seen in the scientific method approach for six years from several Scopus source-based research are community-based collaborative learning goals that have local learning resources. Learning materials from local sources is the community with local cultural characteristics are very interesting to study using the application of social collaborative learning at Elementyary School. Likewise, students' ability can be seen from problem solving (problem based learning). The researcher hopes that concept of community-based social collaborative learning to local students can improve problem solving skills becomes a research (state of the art) in educational studies in the 21st century era and can be valuable contribution. Learning with learning resources in the community environment by directing a problem in daily life can stimulate high-level thinking and problem-oriented to be analyzed in depth.

The social phenomena faced require an applicative commitment that can be used as a student learning experience to prepare students for their social life. Social learning requires a broad understanding of the elements of knowledge, attitudes, values, skills and actions as a learning dimension that must be mastered by students to participate in solving social problems [34], [35]. The dimension of social learning familiarizes students with working together in their social environment, collaborating with the community through intense communication, analyzing social problems critically, producing decisions and social actions that have an impact on future lives.

The dimension of knowledge in social learning includes an understanding of facts, concepts and generalizations about events, objects, people, and things related to phenomena that occur in society [36][37]. Mastery of skills in social learning requires students to be good at observing problems and think critically to analyze a social phenomenon. Social participation skills and social communication skills are forms of student participation in conveying ideas and implementing collaborative social interactions. The learning process in a social environment is a process of inculcating values and forming social attitudes which are internalized in students' personalities and appear when communicating ideas and acting. This social action is a tangible manifestation of the process of mastering knowledge, skills and believing in social values to become an action in solving problems comprehensively.

3.3 The impact of social collaborative learning at Elementary School

The trend of collaborative research showed several studies that have an impact on the adaptive students' ability at Elementary School. The impact of collaborative learning is related to research trends: computer based learning, hybrid learning, game-based learning, project learning, and social interaction. Collaborative learning through e-learning as a learning concept that used in the community is a learning approach which applied during the COVID-19 pandemic. The dynamic and multidisciplinary nature of learning by utilizing application systems, artificial intelligence, and electronic learning devices is a 21st century learning direction that continues to be developed [38], [39]. The learning environment utilize an adapted computer that focuses on teaching learning process around the concept of creating, sharing, discussing and reusing learning objects as constructive knowledge. Collaborative learning utilize computer based learning provides space and time learning efficiency to students with the dominance of visualization information at Elementary School

The use of hybrid learning methods in social collaborative learning was done during the COVID-19 pandemic. Education at Elementary School is forced to adopt online method as a learning technique that facilitates 21st century competencies. The face-to-face method is given in practical learning sessions that involve the participation of the learning environment in order to obtain a meaningful learning experience.

The online learning method is done by discussion and publication of finding research so that social interaction occurs to answer global communication skills [40], [41]. Access to support online learning resources can take advantage of the self-directed learning method with teacher and parent as facilitators. Social collaborative learning can be done according to the nature of Elementary School students, such as learning while playing. Game based learning becomes popular by presenting specific strategies in achieving creativity targets, fun activities, practical problem solving [42]–[44] [45], [46]. Collaborative learning facilitates teachers' ability to design digital games by constructing learning spaces and activities through an application system that is suitable for learning objectives. Educators involve practitioners to design, to implement, and to practice innovative technology that bring students to interpret learning as a fun activity.

Changing independence on the development of science and technology need a stimulus that equips students with digital skills and interactive communication from an early

age. Collaborative active learning with transverse skills through learning environments to grow awareness learning community towards complex cognitive constructions. Teaching learning process collaborates environment to be designed with social projects according to the experience and involvement of students. Social projects help to express ideas, to solve the problem, to make decision, and to have skills to solve the problem as simple findings. Collaborative projects motivate students to improve their critical thinking skills responsibly and independently so that it can produce innovative findings for their environment. Collaboration in projects trains collaboration management, task organization, socio-emotional management of project completion.

4   Conclusion

Collaborative learning in era society 5.0 combines traditional learning in learning practices and modern learning in the exploration of ideas, sources, processes publication and results of social projects. Collaborative learning that adapts to technology examines learning methods, learning styles, student characteristics, and social interactions at Elementary School. Environmental involvement, students' competence and teachers' competence determine the success of adaptive collaborative learning in accordance with learning objectives and characteristics at Elementary School. The implication of collaborative social learning is the gap between the phenomena of the industrial paradigm and the global economy to what has been obtained through education. The research findings have far-reaching implications for education research based on community participation.

Acknowledgments

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