RESEARCHES ON COLLABORATIVE LEARNING STRATEGIES - WHERE ARE WE?

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ABSTRACT

Teachers and educational professionals will have long careers in education that will require them to keep abreast of the changes and improvements in the field. In order to do this, teachers need to be knowledgeable consumers of the research process and shall participate in new research in the educational field. Educational research is such an area of research which is to be promoted keeping in view of the benefits it may produce. The analysis on review of literature enables the researchers to have an idea of what has already been covered in the area under investigation and what needs to be done in the area.

The present study deals with the present situation in the researches on collaborative learning strategies. Reviews of Related Studies on collaborative learning strategies were analyzed on the context of identifying the scope of computer supported collaborative learning. Reviews show that reasoning and communication were enhanced in low achievers significantly. But the effect of collaborative learning on achievement, problem solving and higher order thinking skills in both low and high achievers are yet to be proved. Emerging researches try to study about the effect and benefit of computer supported collaborative learning.

Key Words: Collaborative Learning, Co-operative Learning, Computer Supported Collaborative Learning, Higher Order Thinking Skills and Problem Solving.

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Introduction

The review of related literature involves the systematic identification, location and analysis of documents containing information related to research problem. It can be considered as a very important part in research. A review of the related studies would serve as a suitable frame of reference for the study. A literature review is a text of a scholarly paper, which include the current knowledge, including substantive findings as well as theoretical and methodological contribution to a particular topic. Literature reviews are basis for research in nearly every academic field (David, 2014). Studies of related literatures implies locating, reading and evaluating reports as well as of casual observation and opinion that are related to the individual planned research prospects (Aggarwal, 1996). Best points out that "practically all that man knows can be found in books and literature". Best (1992) further opinioned that 'a brief summary of previous research and the writings of recognized experts provide evidence that the researcher is familiar with what is already known and with what is still unknown and untested'. Mouly (1964) observed that, the time spent in such a survey invariably is a wise investment.

Literature Review: Definition

A literature review is an evaluative report of information found in the literature related to the selected area of study. The review should describe, summarize, evaluate and clarify study. The review should describe, summarize, evaluate and clarify this literature. It should give a theoretical base for the research and help the author determine the nature of his/her research.

Type of Reviews

There are different types of reviews. They are evaluative, exploratory and instrumental. A fourth type, the systematic review, is often classified separately, but is essentially a literature review which is focused on a research question, trying to identify, appraise, select and synthesize all high-quality research evidence and arguments relevant to that question. A meta-analysis is typically a systematic review using statistical methods to effectively combine the data used on all selected studies to produce more reliable results (Bolderston, 2008).

Collaborative Learning Strategies

The present article deals with certain studies and pertinent literature related to the collaborative learning strategies. The purposes of this literature review is to i) explore how researchers have defined collaborative learning ii) investigate how collaboration skill develop iii) learn how teachers can encourage development of collaboration skills in their students and iv) review best practices in assessing collaboration skills.

Historical Perspectives

Much of the research on collaborative and co - operative learning is rooted in the work of Piaget and Vygotsky (Dillenbourg et al., 1996). Piaget's system of developmental strategies describes children's cognitive process as well as cognitive conflict, which is a dissonance experienced when one become, aware of a discrepancy between one's existing cognitive framework and new information or experiences. According to socio-constructivist approach, cognitive conflict triggers cognitive growth. Social interactions help to facilitate such conflicts and in turn trigger cognitive growth.

Vygotsky's work placed more emphasis on the value of social interaction itself for causing individual cognitive change, as opposed to being merely stimulated by it. In this way, social interaction is internationalized, which causes conceptual changes as participants appropriate new understandings, like Piaget, Vygotsky also emphasizes on the importance of heterogeneous grouping of collaborators. According to Vygotsky the zone of proximal development is the distance between what a student can accomplish individually and what he / she can accomplish with the help of a more capable other. Whereas Piagetian studies typically pair children join different developmental stages to facilitate cognitive conflict, studies in the Vygotskian tradition frequently pair children with adults. Rather than joining in cognitive conflict as a trigger for conceptual change, socio-culturists view collaborative learning as learning that occurs within the zone of proximal development (Dillenbourg et al, 1996).

Collaborative Learning Strategies: An Analysis on the Review of Related Studies

Many studies point out that collaboration has a positive effect on cognitive growth. Educators in a variety of educational settings – from K 12 to the university classroom – have long used collaborative approaches to teaching and assessing students. Collaborative learning is broadly defined as a situation in which two or more people learn and or attempt to learn something together, and more specifically as joint problem solving (Dillenburg, 1999).

Jenson and Lawson in their study compare the effectiveness of collaborative group composition and instructional method on reasoning gains and check whether they impact achievement in college biology. Based on initial students' reasoning ability (low, medium, high) students were assigned to either inquiry or didactic instruction. Achievement and reasoning gains were assessed at the end of the semester. Inquiry instruction, led to significantly greater gains in reasoning ability and achievement.

Cheng *et al* (2021) made a study on collaborative learning along with personality in order to assess the satisfaction while an innovative teaching context. The study utilized a survey method with the sample of 171 students to evaluate the potential factors affecting learning satisfaction. Result of the study indicated that collaborative learning influenced learner engagement and there by increased discussions and efficiency and personality aspects such as innovative ability and empathy.

Ramll *et al* (2021) conducted a study on improving the Arabic speech skills using collaborative learning at the university level. The study thoroughly checks the issues faced by the learners in learning Arabic Language, as well as the impact of collaborative learning in Arabic speech skills. The study is quantitative in nature with the sample of 29 university students. The findings of the study indicate that collaborative learning improves the Arabic language proficiency in learners.

Jarvenoja *et al* (2020) tried to analyze the effect of a collaborative learning design in order to understand whether the adaptive motivation as well as emotion regulation enhances learning in science classrooms. The study focuses on the motivation and emotion regulation

perspectives of the collaborative learning. The study utilized technological tools for supporting the regulated learning in science collaborative classrooms.

Ansari & Khan (2020) made a study to check whether the social media impacts collaborative learning. The study used an empirical method with a sample of 360 university students. The study aimed to analyze the utilization of social media and mobile devices initiates and enhance interaction and transfer of knowledge among academics. The result of the study indicates that the social media usage in fact impacts the academic performance.

Ajayi & Ajayi (2020) tried to assess the learning outcomes in science through the online collaborative learning at the post graduate level. The study utilized quasi-experimental research using pre-test posttest control group design with the sample size of 38. The findings of the study proved that the learning outcomes and retention in science have indeed improved using online collaborative learning.

Okwelle *et al* (2019) investigated whether the academic achievement is enhanced by collaborative learning in technical drawing at university level. The study was quasi-experimental in nature using a pretest posttest control group design with the sample of 28 technical students. The result of the study indicated that the collaborative learning impacted academic achievement in technical drawing. The study recommends collaborative learning improving student's social interaction in classrooms.

Rodphotong (2018) made a study to assess whether English Communicative Competence is impacted by collaborative learning at university level. The study utilized a case-study method, with pretest – posttest design in 1471 first semester students. The result of the study indicated that using collaborative learning in English; the communicative competence was affected positively.

Janssen & Wubbels (2018) in their study on collaborative learning practices four common obstacles to collaboration were identified based on theory analysis. They were student's lack of collaborative skills, free-riding, competence status, and friendship. Furthermore, the results showed that interrelated antecedents that contribute to these obstacles. Central to the antecedent is the strong focus of the teachers on the cognitive aspects of Collaborative learning. These antecedents were demonstrated in the ways teachers set collaborative goals, provided instruction, and assessed student collaboration. This study may be useful for educators, designers, and researchers to foster the quality of student collaboration.

Chatila & Husseiny (2017) found that cooperative learning improves students thinking skills as it allows them communicative actively with each other. Therefore, cooperative learning has been proposed by many educators to be implemented in classrooms to produce lifelong learners and critical thinkers (Lunerburg, 2011). This study investigated the effect of cooperative learning in Biology classroom on students learning and achievement of scientific skills. Result of the study shows that cooperative learning and practicing scientific skills in grade ten, however no significant effect was shown in the acquisition of new scientific skills for grade seven students.

Triyanto (2016) studied about structuring collaborative learning in the classrooms. The study aimed to assess the lesson study in the perspective of collaborative learning and to find out how these innovative teaching methods can enhance the learning quality. The study adopted an action research method with a sample of 3 teachers and 3 students' internships. The findings of the study indicate that quality of learning is improved using collaborative learning. The study also observed that communication plays a vital role in problem solving.

Burton (2015) made a study to examine whether the collaboration of teachers have any impact on teacher learning. The study focuses on how teachers develop their distinctive pedagogies. The sample of the study consisted of 22 teachers at elementary level. Study's results exhibit that teacher collaboration requires monitoring and leadership to be effective.

Daugherty (2014) conducted a study to examine how the collaborative learning acts for the welfare of students at elementary level. The study was action research using the sample of two elementary classes. The study also focused on attitude of students. The findings of the study show that, in a positive reflective collaborative environment enhances learning outcomes and task behaviors.

Phoebe (2013) carried out a study related to the relation of collaborative learning and better understanding. The study recommends for the evaluation of student performance and to utilize multiple learning styles for the improvement of learners. The findings of the study show that the collaborative learning strategies influence the better understanding beneficially at the higher level of learning.

Hernandez (2012) conducted a study with the objective to examine the possibilities of collaborative learning in improving student engagement outside the classroom. The study was action research using five modules in second semester university students. The study also focused on the hindrances faced by the students in learning Spanish Language. They were the attitude, satisfaction in learning, team building etc. Findings of the study revealed that highly motivated learners were succeeding in collaborative learning.

Bannert (2011) conducted a study to assess whether motivation has any role in the acquisition of knowledge in computer supported collaborative learning scenario. 200 university students were participated in this study and according to the main results only goal orientations were associated with knowledge acquisition respectively observed learning activities during Collaborative phase. Expectancy and values components of current motivation related neither to observed learning activities nor to knowledge acquisition during collaborative learning but were in part associated with learning activities and knowledge acquisition during individual learning.

Michele (2011) studied about a collaborative e-learning university module. Results of the study indicated that the module increased the didactic potential of participants as primary school teachers. Aspects of the students learning experiences include more collaboration between students since some students engaged differently with more co-ordination and organisation for the workload management in group activities.

Burke (2011) in her article tries to assess the role of group work in education. The paper focuses on how the group works induce active learning. The paper stresses on the importance of group dynamics, communication and discussions in collaborating group's chance learning and are more beneficial to learner than individual learning.

Janssen et al (2010) in their article assess the different approaches of collaborative learning. The article explains about the black-box approach which hinders a deeper understanding of the dynamics of collaborative learning. The objectives of the study were to overview two approaches namely process -oriented and cognitive-load and highlight their positive and negative aspects. The study suggests how both approaches can be mixed to address new researchers.

Computer Supported Collaborative Learning: An Analysis on Review of Related Literature.

Computer Supported Collaborative Learning (CSCL) is a major method for bringing the benefits of collaborative learning and cooperative learning. The purpose of CSCL is to support students in learning together effectively. CSCL supports the communication of ideas and information among learners, collaborative information gathering, documentation and providing feedback on learning activities. It also supports and facilitates group process and group dynamics in ways that are not achievable by face-to-face communication.

The most resilient features of the evolving field of CSCL include an attention on collaborative as well as individual aspects of learning, a recognition of social interactions as an important constituent of knowledge construction, a focus on the learners and their activities, a move towards technological environments that promote authentic group learning and an increasing role for all technological artifacts that form a global network. Instructional designs employing CSCL generally target the acquisition of higher order thinking skills, problems solving abilities, epistemic fluency and the collaborative improvement of knowledge within a field of practice.

Emerging research try to study the effect of computer supported collaborative learning's benefits. Curtis and Lawson (2001) in their studies found that in the online medium, there were fewer exchanges in which students challenged one another and more exchanges related to planning. The investigators assure that because students did not know one another prior to interacting, they may have felt less comfortable challenging the ideas of others.

Recommendations to Researchers

The present study recommends that since there are a very few effective teaching strategies which evoke the higher order thinking skills, problem solving skills, critical thinking and thereby enhancing academic achievement of the learner, it is essential that new innovative approaches should be evolved through educational research in this regard. One such approach is the collaborative learning strategy. Findings of the present study also recommends that more

innovative learning strategies based on the collaborative learning aspect especially technology supported collaborative learning strategies must be evolved through educational research.

Conclusion

Roschelle and Teasley define collaboration as the mutual engagement of participants in a coordinated effort to solve a problem together. Collaboration can be seen as "coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem" (Roschelle & Teasley, 1994). Researches on collaborative learning suggest that collaborative interactions are characterized by shared goals, symmetry of structure, interactivity and independence. Collaboration can have powerful effects on student learning, particularly for low achieving students. There effects are seen in the form of higher scores on work completed collaboratively, even when students turn in separate products. In addition, there appears to be a carryover effect, such that individual performance on successive measures of achievement tends to be higher for students exposed to collaborative learning. Yet there are certain aspects related to technology supported collaborative learning to be studied in detail. More research on this regard will bring out a clear picture of the effect of collaborative learning strategies especially the technology supported collaborative learning strategies.

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