LEARNING MANAGEMENT MODEL TO ENHANCING THE TEAMWORK: CASE OF TEACHER PROFESSION STUDENTS THROUGH SOCIAL NETWORK IN CONSTRUCTION CONCEPT

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ABSTRACT

This paper is an informative approach to critically understand the importance of an advanced learning management model on developing cognitive learning and team working skills among students. For that purpose, online classroom talk acts as an independent variable, corporative scaffolding act as a mediator, while the class collaborative learning and student individual are studied as dependent variables. In order to collect the relevant data, an online survey is randomly distributed to the students, professors and educationists. Well, its structural equation modeling (SEM) based statistical outcomes depict that there is a significant relationship between the online classroom talk and class collaborative learning as compared to the student individuals because each student has his own intellectual power and learning capability. While cooperative scaffolding act as a significant moderator between the variables' relationship. This paper is, no doubt, an informative source for the latest students, teachers, and school/ collages administration to understand the importance of active learning models, and also the educational policymakers can utilize this data in their decision-making process. But, it has some limitations like lack of consideration on identifying the social media site for the healthy conversation among students and lack of identifying changes required for online learning adoption. If these limitations are covered by upcoming scholars by also conducting a qualitative research method, then more productive outcomes will be generated.

1.   Introduction

In the current era, online learning is growing faster as compared to traditional ones and a large number of college students are taking an interest in the online learning mode (Harasim, 2017; Lee, 2016; Sun & Chen, 2016). Also, the majority of the academic leaders worked on considering online education in order to enhance the learning capabilities of students (Kulakli & Shubina, 2020). Because the current technological era demanded new entrepreneurial ideas in the students' minds and it only occurs when they think differentially and online class talk is an important source to enhance their cognitive learning (Broadbent, 2017). Its yearly-wise growth in the educational sector is shown in the following table;

Year-to-year Growth (%) of Online Learning	
2003	23%
2004	18.2%
2005	36.5%
2006	9.7%
2007	12.9%
2008	16.9%
2009	21.1%
2010	10.1%
2011	9.3%
2012	6.1%
2013	1.4%

Table 1: Year-to-year Growth (%) of Online Learning

The above percentage values show that there is a great fluctuation in its growth rate especially in the developing nations (Crawford & Jenkins, 2017). In addition, the percentage of individuals (teachers and students) who using the internet for education purpose is continuously increasing (Kulakli & Shubina, 2020), and its graphical representation is given below;
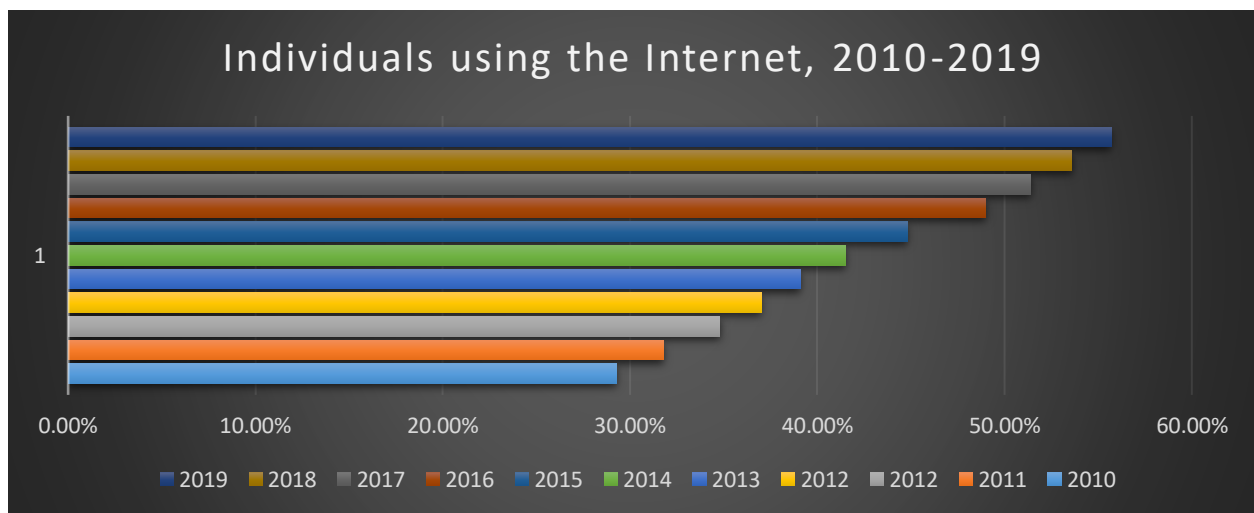
Figure 1: Individuals using the Internet, 2010-2019

The problem statement of this paper is based on critically evaluate how the learning management model effectively enhanced teamwork by specifically considering the teacher profession-oriented students through their social network in the construction concept.

This paper covers the gap of previous researches by specifically worked on the implication of learning management model in the development of teamwork development. In the previous researches, the scholars worked on how online collaborative learning can easily guide teachers and effectively predict the students' performance (Dahri, Hameed, Nawaz, Sami, & Bux Shah, 2019; David, 2020; Dilruba & Anisha, 2020; Dinçer & Kilinç, 2019; Saqr, Fors, & Tedre, 2018). In addition, they also worked on the interactive network, social knowledge construction behavioral patterns, its importance and influence on the students' activeness in lecturing (Dollah, Widjaja, Zabit, & Omar, 2019; Dopico, 2020; Duru & Siyan, 2019; Gunawan, 2018; Manca & Ranieri, 2017; Zhang, Liu, Chen, Wang, & Huang, 2017). The major objectives of this paper are based on;

- Understand the importance of the learning management model to enhancing teamwork.
- Critically evaluate the impact of online classroom talk on class collaboration learning.

- Critically evaluate the impact of online classroom talk on student individuals.
- Critically analyze the mediating role of cooperative scaffolding between online classroom talk and class collaboration learning
- Critically analyze the mediating role of cooperative scaffolding between online classroom talk and student individuals.

This research is an informative approach to critically understand how the advanced learning approach enhanced the learning capabilities of students. Its data will be utilized by the related field scholars, educational institutions, professors, and students to understand their responsibilities towards online classroom talks and their significance to advance the learning capabilities.

2.   Literature Review
2.1   Constructivism Learning Theory
In the series of classroom learning theory, the constructivism learning theory is such a type of philosophy that directly enhanced the logical and conceptual growth of a student (Ele, 2018; Jantakoon & Piriyasurawong, 2018; Kalamas Hedden, Worthy, Akins, Slinger-Friedman, & Paul, 2017; Oliveira & Bittencourt, 2019). This learning concept plays a significant role in creating a connection or experience with the adjoining atmosphere that plays a major role in student education (Suhendi, 2018). Many researchers

utilize this theory in the evaluation mechanism and justify this argument that people learn from their experience. In this situation, teachers play a significant role to portray the students' attitudes and behavior towards a particular behavioral approach (Eneji, Nwbagbara, & Kati, 2020; Honeyfield, 2020; Faruk, Sahni, & Kirchhoff, 2020; Fernando & Marikar, 2017; Jumaat, Tasir, Halim, & Ashari, 2017). This type of learning mechanism in classrooms helps the students to remain more focused on their studies by cogniting new ideas in their minds. There are two major concepts of this theory like the construction of new knowledge through assimilation and accommodation (Aljohani, 2017). Overall, this is a constructive approach to develop new entrepreneurs in the future because this learning approach is completely based on a new advanced teaching style. According to the educationists, if the teachers continuously communicate with the students through discussion and creating their learning experience then it will open to new directions depend on the student's need as learning progress (Clark, 2018).

2.2 Online Classroom Talk and Class Collaboration Learning

In order to investigate the positive influence of the online classroom talk on the development of collaborative learning, different researches have been made on related topics. Like in 2017, Jennifer VanDerHeide stated that most of the time, the classroom talks act as argumentative learning that motivates the students to learn more than just writing something. He stated that instructional learning limits the choice and flexibility of students as a reader, writer and meaning makers. He justifies this point by specifically considering the genre theory and concluded that classroom-based learning is an efficient approach to enhance the cognitive learning of students (VanDerHeide, 2018). In addition to this, Nancy Flanagan Knapp specifically stated that interactive learning is important for schooled learning because it motivates the application and exploration of knowledge among students. These scholars categorized the efficient interactive structure into the whole group discussions, show and tell, break

out groups, virtual poster sessions, virtual poster sessions and online courses. Because through these ways, students can easily emphasize their engagement level towards new entrepreneurial ideas (Knapp, 2018). After evaluating the previous scholars' work, the following hypothesis has been proposed;

H1: There is a significant relationship between the Online Classroom Talk and Class Collaboration Learning

2.3 Online Classroom Talk and Student Individual

In the Journal of Education and Information Technologies, the scholars focused on considering the interaction between classroom dialogue and the digital technology. According to them, within the class students, the active interaction on the constructive topic is favorable for personality development and helps them to enhance their cognitive capabilities. They concluded that online dialogue or class discussion is a key way to broaden the student's learning (Major, Warwick, Rasmussen, Ludvigsen, & Cook, 2018). In addition, Zepeda Cristina and others stated that in the student's learning, teachers have a major contributing factor that supports the metacognition through the productive classroom talks and upgrade the students' conceptual learning. These scholars concluded that the observational protocol is such a type of bride which creates a strong connection between the work testing metacognitive instructional interventions and the teaching practices that result in enhancing the metacognitive support. They examined different features of metacognitive support named as metacognitive skill supported, metacognitive knowledge supported, type of framing and the type of instructional manner (Zepeda, Hlutkowsky, Partika, & Nokes-Malach, 2019). In 2020, Goodwin, Cho, Reynolds, Silverman, & Nunn stated that within the upper elementary classrooms, the online class discussion on some technical issues play a significant role to upgrade the students' understanding of the related topic. They conducted dimensionality analysis on four major factors named as teaching explaining, big-picture

communicating, teacher questioning, and encouraging the student's talk (Goodwin, Cho, Reynolds, Silverman, & Nunn, 2020). In the end, they concluded that observation-based cognitive learning is the best approach for advanced learning skills. Therefore, the following hypothesis has been suggested;

H2: There is a significant relationship between the Online Classroom Talk and Student Individual

2.4 Mediating Role of Cooperative Scaffolding between Online Classroom Talk and Class Collaboration Learning

In the Journal of Language and Education, Ruth Newman (2016) stated that teachers play a significant role in promoting the dialogic pedagogies and the less specific attention, and they also play an important role to shape the behavioral approach of students. In this educational linguistics type research, the role of metatalk played an important in developing collaborative talk of students. According to him, one teacher modeled and facilitated the productive interaction that helps to enhance the scaffolding of students (Newman, 2017). Also, another research is conducted in 2016 which majorly based on considering how the hard scaffolds and soft scaffolds increased the learning performance because they hinder the motivation of students. According to them, the relationship between the soft scaffold and motivation change is moved from negative to positive when the hard scaffolds are involved in this mechanism. They concluded that there is a strong impact of soft scaffold on the learning performance of a student (Chen & Law, 2016). In the Journal of Computer Assisted Learning, the scholars stated that wikis information may fail to support collaborative constructive learning without any careful scaffolding. They conducted a small group project and concluded that the wiki instruction method upgrades the collaborative learning with the most instructional method developed from collaborative learning. Hence, the following hypothesis has been proposed;

H3: Cooperative Scaffolding act as a significant mediating variable between Online Classroom Talk and Class Collaboration Learning

2.5 Mediating Role of Cooperative Scaffolding between Online Classroom Talk and Student Individual

According to Yi Chin Hsieh (2017), collaborative learning is widely applied in education and helps to enhance the student personal learning. They stated that technology's advent and its implication in education is majorly enhanced the learning environment and lead to enhance the research attention on the combination of collaboration and technology. In their collaborating learner-based interactive learning, the face-to-face collaborative setting motivates the students to resolve their misconceptions regarding technical data (Hsieh, 2017). The others also stated that an informal way of cooperative learning is a more efficient way to enhance the students' confidence and their learning capabilities. In their research study, they studied two cooperative learning techniques i.e. Think-Pair-Share and Numbered Heads Together evaluate the scaffolding of students. In the end, they concluded that Think-Pair-Share is more efficient as compared to Numbered Heads Together in terms of satisfaction and learning enhancement (Lange, Costley, & Han, 2016). After considering these researches, the following hypothesis has been suggested;

H4: Cooperative Scaffolding act as a significant mediating variable between Online Classroom Talk and Student Individual
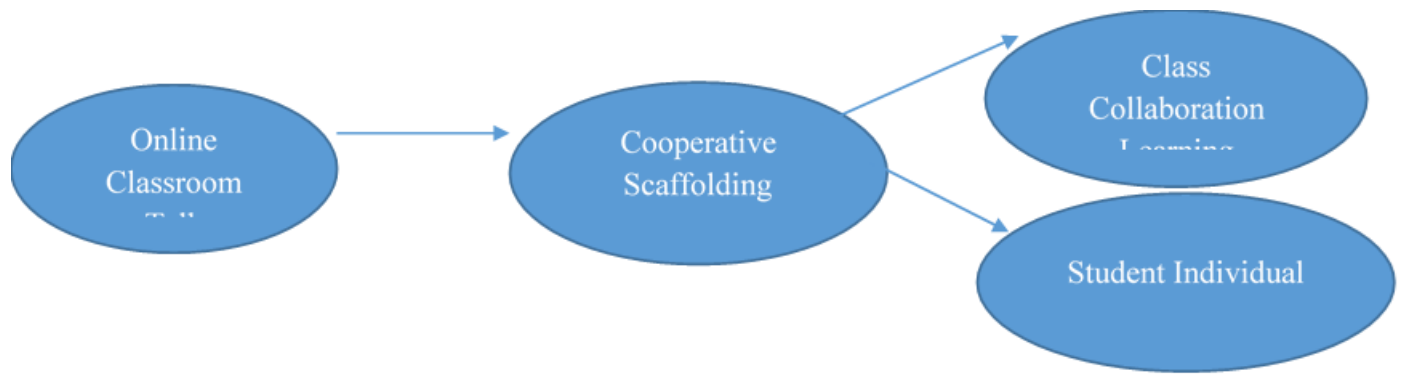
Figure 2: Theoretical Framework

3.   Research Methodology

In order to critically evaluate the significant impact of online classroom talk students' learning, a quantitative analysis based primary research method is considered that helps to make a proper justification of the tested hypothesis. In its data collection mechanism, an online survey-based quantitative research was conducted that helps to gather the relevant information of the selected variables where online classroom talk act as an independent variable, cooperative scaffolding act as a mediator, and student individual and class collaboration are studied as major dependent variables. So, a valid five-point Likert scale (from strongly disagreed = 1 to strongly agreed = 5) was used in the randomly online survey which was firstly distributed to related participants named as professors, students and related educationalists, so that their experience based valid outcome will be generated. After randomly distributed the online questionnaire to the relevant respondent, only 323 of them gave a valid outcome.

In its demographic-based statistical analysis, there are 169 males (52.3%) and 154 (48%) are females. This shows that the majority of active respondents are males. After this, their education based segregation shows that the frequency of graduates is 40 (with 12.4%), the frequency of postgraduates is 140 (with 43.3%), the frequency of masters is

106 (with 11.5%) and the others having only 37 frequency (with 11.5%). It means the majority of active respondents having post-graduation and master degrees who have full understanding regarding the importance of online class discussion. Last, but not the least, in their age-based demographic analysis, 25% respondents are within the age limit of 21-30 years old, 30% are from 31 to 40 years old, 30% are from 41 to 50 years old, while 15% of them are more than 50 years old. After collecting the valid outcome, the structural equation modeling (SEM) based SPSS software test will be implemented that is helpful to understand the relationship between variables (Abrahim, Mir, Suhara, Mohamed, & Sato, 2019; Liébana-Cabanillas, Marinković, & Kalinić, 2017; Singla, Ahuja, & Sethi, 2018).

4.   Results and Analysis

In implementing the SEM-based statistical analysis, the KMO and Bartlett's test, convergent and discriminant validity and confirmatory factor analysis are considered to justify the authenticity of this tested model (Hameed, Nadeem, Azeem, Aljumah, & Adeyemi, 2018; Hayes & Rockwood, 2017; Kundapur & Rodrigues, 2017; Moretti, Conficconi, Natali, & D'Andrea, 2020; Ul-Hameed, Mohammad, & Shahar, 2018).

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
CColLearn	323	1.00	4.90	3.5440	1.10955	-.806	.136
SIndLearn	323	1.00	5.00	3.4799	1.16093	-.656	.136
CoopScaff	323	1.00	5.00	3.5492	1.10937	-.765	.136

OnlineCRT	323	1.00	5.00	3.4430	1.10579	-.611	.136
Valid N (listwise)	323						

Table 2: Descriptive Statistics

According to above mentioned disruptive statistics, it becomes clear that online classroom talk statistics are less deviated from their mean position, so it has a major influence on the dependent variables especially on student individual item which is highly deviated from its mean position.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.946
Bartlett's Test of Sphericity	Approx. Chi-Square	10982.911
	df	378
	Sig.	.000

Table 3: KMO and Bartlett's test

The above table shows that all the KMO values are within their threshold range so this model is a good fit for analysis for conducting a critical analysis.

	Component			
	1	2	3	4
CL1		.699		
CL2		.773		
CL3		.840		
CL4		.864		
CL5		.837		
CL6		.841		
CL7		.829		
IL1				.792
IL2				.831
IL3				.840
IL4				.828
CS1			.834	
CS2			.846	
CS3			.877	
CS4			.829	
CS5			.794	
CR1	.855			
CR2	.871			
CR3	.879			
CR4	.902			
CR5	.897			
CR6	.894			
CR7	.872			
CR8	.847			
CR9	.857			
CR10	.860			
CR11	.829			
CR12	.854			

Table 4: Rotated Component Matrixa

The above statistics depict that all the rotated component matrix are higher than 0.70 based standard value which means all the variables are

effectively uploaded on the model and no more confusion has remained.

	CR	AVE	MSV	MaxR(H)	CS	CL	IL	CR
CS	0.947	0.780	0.371	0.949	0.883			
CL	0.953	0.743	0.359	0.976	0.509	0.862		
IL	0.942	0.802	0.371	0.983	0.609	0.599	0.895	
CR	0.908	0.786	0.232	0.991	0.421	0.482	0.354	0.887

Table 5: Convergent and Discriminant Validity

According to the above-mentioned outcomes, the average variance extracted value is more than 0.5, and also its composite reliability value is also more than standard 0.7, so it becomes clear that no convergent validity occurs within this testing. In

addition, the bold letters based outcomes show that each variable is different from the other one so there is no discriminant validity issue occurred within this mechanism. After this, the model fit indices based informative table is given below;

CFA Indicators	CMIN/DF	GFI	IFI	CFI	RMSEA
Threshold Value	≤ 3	≥ 0.80	≥ 0.90	≥ 0.90	≤ 0.08
Observed Value	2.284	0.856	0.960	0.960	0.063

Table 6: Model Fit Indices

According to the above table, all the observed values of CFA indicators are within their threshold range, like the value of CMIN/DF is 2.284 (lower than 3), the GFI value is 0.856 (greater than 0.80), the RMSEA value is 0.063 (lower than 0.08), well

both values of IFI and CFI is 0.960 (greater than 0.90). It means all the variables are effectively uploaded on the test model, as shown in the following figure;
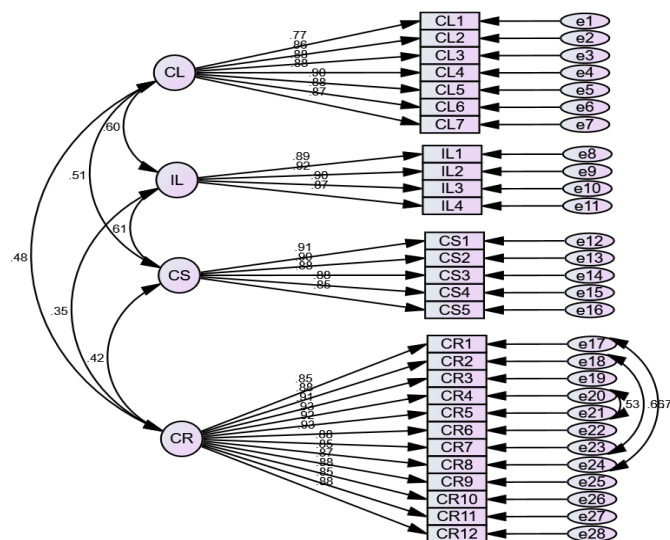

Figure 3: CFA

Total Effect	OnlineCRT	CoopScaff
CoopScaff	.407**	.000
SIndLearn	.339**	.534**
CcolLearn	.478**	.335**
Direct Effect	OnlineCRT	CoopScaff
CoopScaff	.407**	.000
SindLearn	.122**	.534**
CcolLearn	.341**	.335**
Indirect effect	OnlineCRT	CoopScaff
CoopScaff	.000	.000
SindLearn	.217**	.000
CcolLearn	.136**	.000

Table 7: Structural Equation Modeling

Well, the above structural equation modeling based statistical outcomes show there is a significant relationship between tested variables. Like one percent change in online classroom talk result in 41% deviation in cooperative scaffolding, 34% deviation in the student Individual and 48% in class collaborative learning. While, the mediation majorly impact on class collaborative learning by 34% and student Individual by 53.4%. Its graphical representation is given below;
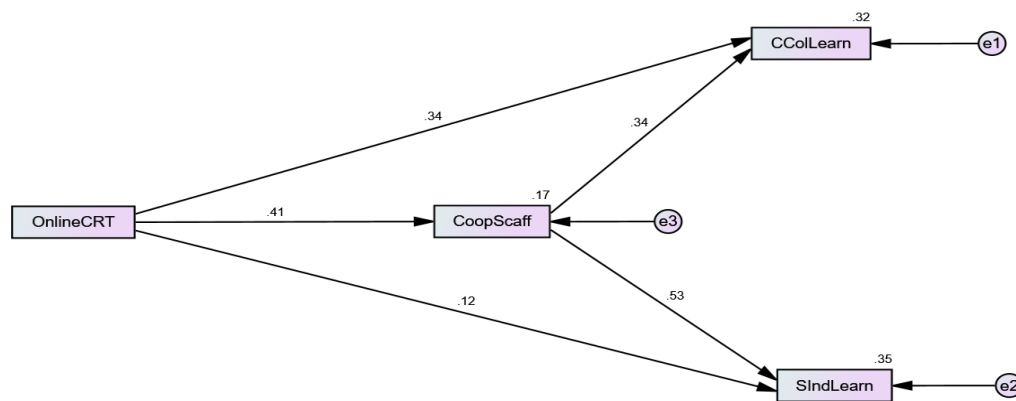

Figure 4: SEM

5.   Discussion and Conclusion

5.1   Discussion

After critically evaluate all the statistical data of SEM, it becomes clear that there is a significant impact of online classroom talk on developing the class collaborative learning and also enhanced the cognitive capabilities of students. This point was also discussed by Melvin Chan in his International Journal of Educational Research, where he stated that explanatory talk among teachers and students or amongst students can promote positive cognitive development and learning experience (Chan, 2020). In addition, the other scholars also stated that online collaborative learning significantly enhanced the critical thinking capability of students because such interactive network constructs their challenge facing behavior in the advanced situation (Saqr et al., 2018; Zhang et al., 2017). Also, in the European Journal of Engineering Education, Elham Fini with others stated that the project-based active learning has a significant result in enhancing the students' learning outcomes because this approach enhances their over cognitive skills, teamwork, self-efficacy and communication skills (Fini, Awadallah, Parast, & Abu-Lebdeh, 2018).

5.2 Conclusion

Thus, it becomes clear that there is a significant relationship between the online classroom talk and class collaborative learning by considering the mediating role of cooperative scaffolding between their relationship. While, in the case of student individual development, there may be some little bit deviation in the outcome because each student has his own personality and learning capability, so the various outcomes will be produced in each student case which may impact the productive influence of online classroom talk. These SEM based statistical outcomes are more productive to justify the above hypothesis, and also derive new ways to evaluate the importance of online discussion among advanced learning mechanism.

5.3 Future Implications

No doubt, this is an informative approach for the current students, teachers, schools/ collages' authorities and also for the other educationists/ policymakers to consider the importance of online class fellows' discussion on some technical and burning issue that result in enhancing the cognitive and learning capabilities of all the bright and average students. Because through friendly conversation, the human mind more efficiently learned. Also, this data can be utilized by the related education field scholars to understand like what is the major need to consider in order to upgrade the education system and compete in the world.

5.4 Limitations and Future Researches

In addition to this, there are also some limitations within this research like there is a lack of consideration on which social media site is more preferable for the healthy conversation among students and what kind of major changes is required in the adoption of this online learning system in the education system. Also, no interview based psychological data is considered in the analysis portion that may impact the authenticity of this paper. Hence, there is a great opportunity in front of future scholars to work on its weakness by covering its research gap in their articles.

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