



كلية التربية

كلية معتمدة من الهيئة القومية لضمان جودة التعليم  
إدارة: البحوث والنشر العلمي ( المجلة العلمية )

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# **The impact of a peer leader on students' interactions through WhatsApp at Umm Al-Qura University in Saudi Arabia**

**By**

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## المخلص

هذا العمل عبارة عن دراسة شبه تجريبية تبحث في نتيجة تعيين طالب لقيادة الآخرين وتشجيعهم على المشاركة في (SLTs (WhatsApp). تم جمع المعلومات الكمية والنوعية من أجل تقييم أسلوب وموضوع مناقشات الطلاب. أجريت الدراسة على مدى أربعة أسابيع ، وخلال هذه الفترة كان على الطلاب الإجابة بشكل جماعي على مشكلة وضعها معلمهم. تم تقسيم مجموعة مختارة من الطلاب بشكل عشوائي إلى مجموعتين ، A و B. ضمن المجموعة A ، تم تعيين قائد من الأقران ، بينما بقيت المجموعة B بدون واحدة. تم فحص كل مجموعة من الطلاب ، بعد تجميع المعلومات والبيانات من المقابلات والمناقشات عبر الإنترنت ، لتحديد مدى مساهمة الفرد داخل المجموعة. هذا من شأنه أن يكشف إلى أي مدى تكون القيادة من الأقران مفيدة.

علاوة على ذلك ، تم النظر في كيفية تشكيل المحتوى المختلف للرسائل وتحسين التفاهم والعلاقات بين المنتسبين للمجموعة. أثبتت الدراسة أن زميلاً له في دور الوسيط كان له أثر مشجع على الخطاب. في ختام الدراسة ، يتم النظر في العواقب المحتملة لاستخدام هذا النوع من الوساطة في الواقع وكمنصة للبحث الإضافي.

**الكلمات الرئيسية:** زعيم الأقران ، والتفاعل ، وأدوات التعلم الاجتماعي (SLTs)

## Abstract

This piece of work is a quasi-experimental study investigating the result of appointing a student to lead and encourage others to partake in SLTs (WhatsApp). In this experiment, quantitative and qualitative information was gathered in order to evaluate the style and subject matter of the students' discussions. The study was conducted over four weeks, during which time students were to collectively answer a problem set by their tutor. A selection of students was randomly separated into two groups, A and B. Within Group A, a peer leader was appointed, while Group B remained without one. Each group of students was scrutinised, after information and data from the interviews and online discussions had been compiled, to determine the extent of an individual's contribution within the group. This would disclose the extent to which leadership from a peer is advantageous.

Furthermore, it was considered how the various content of the messages shaped and improved the understanding and relationships between the group affiliates. The study proved that a fellow student, in the role of mediator, had an encouraging effect on the discourse. In the conclusion of the study, the possible consequences for using this type of mediation in reality and as a platform for additional research are considered.

**Keywords:** Peer-leader, Interaction, Social Learning Tools(SLTs)

## Introduction

An increasingly popular subject in research on education is the use of Social Learning Tools (SLTs) as a means to promote and enable collaborative learning. According to extensive research (e.g. Alavi, Yoo and Vogel, 1997; Williams, Duray and Reddy 2006), it has been shown that student learning can be enhanced by team interaction, with team members using educational technology and collaborative learning. However, previous studies indicate that the low rate of student participation in online discussions appears to be a remarkable and prevalent issue (Hewitt, 2005). For instance, Wan and Johnson (1994) found that university students contributed less than one post per week in online discussion forums, suggesting that some students participate by posting only occasionally.

In spite of the importance of students' participation in online discussions in terms of supporting group interaction and communication, this process may not essentially meet any learning outcomes. It is possible for social learning to take place through peer interaction and social presence; however, this does not necessarily ensure the co-production of sense and mediated learning.

In fact, teaching presence is not obstructed by peer facilitation; rather, it offers the teacher an approach to raise his or her level of contribution during interaction by dealing with misunderstandings and helping learners overcome any difficulties (ibid), in addition to taking part in the debate. In a study by Correia and Davis (2007), it was concluded that peer facilitation, unlike instructor facilitation, in online discussions stood as the most prevalent collaboration method favoured by online participants. For several students, peer-facilitated discussions made more sense and provided more interaction. In fact, this appears in keeping with Poole's examination (2000) of length and number of posts in an online discussion setting, where he found substantially longer and more postings when students led the topic discussions.

As such, this study seeks to explore what social interactions are exhibited by learners in the process of collaborative learning in various group organisations (peer-led, non-peer-led). With most of the research efforts focusing on instructor facilitation methods, only a limited number of studies have examined the employment of facilitation methods in peer-facilitation settings.

### **Significance of the Study**

In virtual teams, social interaction between team members has been investigated as the key element influencing students' learning and performance since allocating students to groups does not necessarily raise their collaboration levels. As such, this study will aim to shed light on whether a peer leader's presence can in fact impact on students' interaction within virtual teams. It is hoped that the findings from this study will provide educators, as well as learners, some valuable insights into making sense of the process of collaborative work in virtual teams.

In the case of Saudi Arabia, it offers an interesting context of research as SLTs have only been recently promoted in higher education (Khawaji, 2016). In addition, despite the important role assumed by collaborative learning practices in the national curriculum, the more conventional teacher-focused methods have prevailed for many decades and still continue to exist to a great extent. As such, the Saudi case can be an interesting one in terms of giving new insights into the practice, and offering an understanding about the contribution of SLTs in collaborative learning within the specific social, cultural and political Saudi setting.

### **Research Questions**

- 1- Does assigning a peer leader affect the students' collaboration in SLTs (WhatsApp) in a Saudi higher education context?
- 2- What contributes to the formation of a positive relationship that promotes successful interaction and encourages students to work collaboratively within the SLTs (WhatsApp)?

## Methodology

### 1. Research Design and Procedure

This study employed a quasi-experimental approach, designed to investigate how the assignment of a peer leader affects student collaboration in WhatsApp. In this model the presence of the peer leader was the intervention, meaning that student interaction and collaboration was the dependent variable and the peer leader's status the independent variable. The study gathered quantitative and qualitative information, evaluating the style and subject matter of the students' discussion and also conducting interviews with individual students.

The study was conducted over four weeks, during which time students were to collectively answer a problem set by their tutor. A selection of students was randomly separated into two sets. Within Group A, a peer leader was appointed, while Group B remained without one.

### 2. Participants

Thirty participants were recruited for the study from the graduate student of Umm Al-Qura University's Early Childhood Department in Education College. The university academic conducting the experiment was female, therefore all participants involved in the study were also female. After the four weeks were up, three students from each group with different degrees of involvement and contribution (high, average and low) were picked for interview.

### 3. Data Collection Methods

This study incorporated both qualitative and quantitative methods of data collection and analysis, with the WhatsApp discussion examined using both. We later conducted semi-structured interviews, which form a qualitative method.

## 4. Analysis

### 4.1 Analysis of the Students' Posts

Information collected on the WhatsApp discussion was examined through the application of both quantitative and qualitative techniques, the former looking at the frequency and volume of student interaction and the latter analysing the tone, style and content of these interactions.

#### 4.1.1 Content Analysis Method

According to Cohen, Manion and Morrison (2011), content analysis method has become a common means of examining a variety of interaction-based data, whether structured or not. In this case, student posts on the WhatsApp discussion were divided into three classes: (1) group regulation behaviour, (2) socio-emotional behaviour, and others. These were then further categorised into fourteen subsets.

Group regulatory behaviours denote interactions that harness the efforts of all individuals in the group to attain collective goals. Socio-emotional behaviours denote interactions that communicate an individual's emotional state, as well as messages that convey encouragement to other group members, such as appreciation, compassion, anxiety, congratulations and enthusiasm. These are all forms of communication that help build a strong sense of team spirit.

This coding schema, established by Kwon, Liu and Johnson (2014), was used to best highlight the style of participant interactions. In this model, the two key classes of data are further divided into fourteen subsets. Group regulatory behaviour interactions fall under the labels of scheduling, dividing labour, tasks, strategies, monitoring of group processes, group agreement and evaluation. Socio-emotional behaviour interactions include subsets of emotional expression, encouragement and sense of community.

### **4.1.2 Unit of Analysis**

The unit of analysis used in this study was therefore nominated to be the message, partly due to the fact that each singular post could in fact be made up of more than a single unit. This provides the researcher with a reasonable dataset, with each message sender defining the parameters (Creswell, 2003).

### **4.1.3 Analysis Procedures**

Quantity of posts was calculated for each group, forming the quantitative analysis and giving an insight into the comparative levels of participant involvement and enthusiasm in A and B. Kwon, Liu and Johnson's (2014) content analysis model was then applied to both groups' posts to uncover the modes of communication used by the participants in their posts. The researcher then applied qualitative analysis to determine what factors impacted upon the degree of participant involvement and what this reveals about the effects of a peer leader upon student collaboration and communication.

## **4.2 Analysis of Interviews**

The interviews with participants were examined through thematic analysis. Braun and Clarke (2006) explain the process of thematic analysis as a six-step system: (1) the researcher must familiarise him/herself completely with the data through repeated readings; (2) the researcher calls attention to all data that has a bearing on the research question; (3) the researcher separates the data into its central themes and (4) matches information that falls under the same theme; (5) each themed category is defined and corroborated with detailed discourse; (6) the researcher produces a report of the findings, addressing the various aspects of each thematic category and supplementing the results with participants' quotations. The interviews in this study were designed to verify the results of the experimental WhatsApp discussions and so the researcher naturally focused on interview responses that corroborated the initial findings.



## Findings and Discussions

### 1. Assigning Peer Leader and the Level of Students' Interaction

#### 1.1 An Overview of the Level of Students' Interaction

Table 1 shows the number of student posts in each group, as in Group A which had a peer leader there was a higher number of student posts in comparison to Group B which did not have one. A detailed analysis of the type of online discussion for collaborative work between the students will be provided later in this chapter.

Groups	Number of student posts
Group A	320
Group B	180

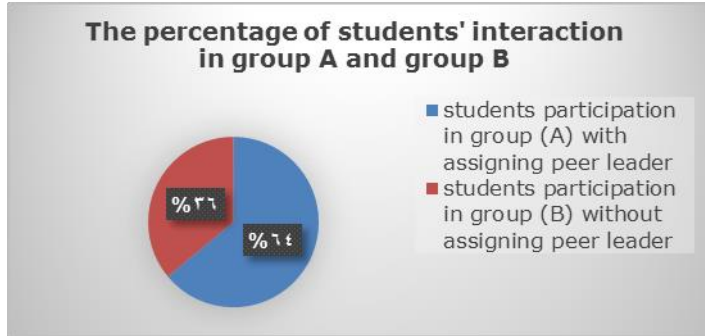
**Table 1: The number of student posts in each group**

In addition, based on the data in Table 2, there are statistical differences between the two groups ( $\alpha \leq 0.05$ ) in favour of group (A) ( $M=21.40$ ). What can be concluded, therefore, is that the students in Group A generated a considerably higher number of posts in their discussion, whilst Group B conversed less as they did not have a peer leader.

	Groups	Mean	SD	DF	T	Sig
Students' Posts	A	21.40	13.13	28	2.208	0.03
	B	12.00	9.97	26.11		

**Table 2: The independent samples t-test outcomes of the students' posts in group A and B.**

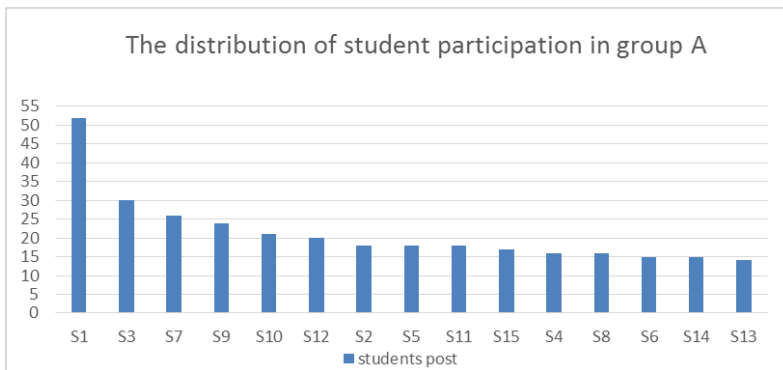
The differences between the two groups in the number of students' posts can be clearly noticed by looking to the percentages of students' posts for both groups in Figure 1. Group A had 64% participation, whilst on the other hand, Group B had only 36%.



**Figure 1: The percentage of students’ interactions in Group A and Group B.**

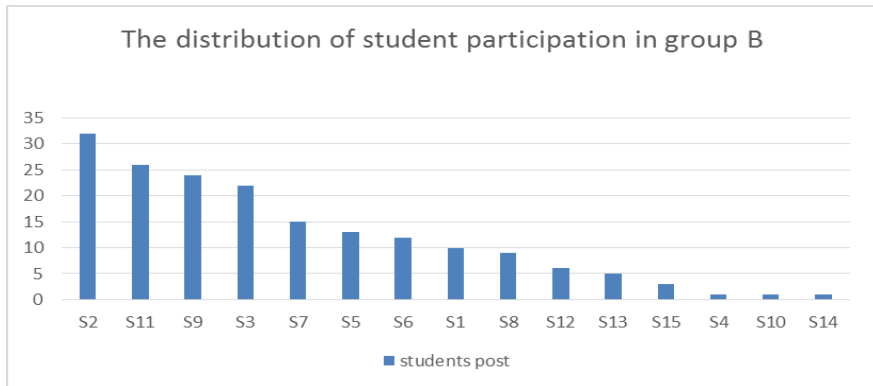
### 1.2 Levels of Student Interaction within Group A and Group B

Students with the peer leader in Group A produced 320 messages throughout the period of four weeks as mentioned above. The peer leader produced fifty-two messages which was the highest number of posts. In comparison the lowest number of messages sent by a student was fourteen. This difference in number can be equated to the peer leader’s obligation to their occupation. As can be seen in Figure 3, the students in Group A, excluding their leader, were participating equally in their discussions which proves that they were working collaboratively.



**Figure 2: A breakdown of Group A’s student participation over a four-week period.**

In comparison, 180 messages were sent between the students in Group B, which was not assigned a peer leader, and in Figure 4 it can be seen that there is a vast imbalance in student involvement. One student contributed one message to the discussion, on the other hand, the highest number of messages sent by a student was thirty-two. In this instance all students held equal responsibility because no leadership was provided for this group. As can be concluded, the students in Group B did not work collaboratively.



**Figure 3: A breakdown of Group B’s student participation over a four-week period.**

The deduction can be made, by comparing Group A and Group B, that a peer leader’s guidance can affect the amount of student communication. In order to fully appreciate the peer leader’s position, an analysis of the causes which impact on the students’ collaboration must be observed.

The study conveyed two interesting reasons as to why the peer-led groups functioned so productively, with an increased level of input by the students. One of these reasons is that during the discussions, the group leader would motivate the group and produce an exciting and welcoming atmosphere. Also, the leader would encourage individuals to contribute

while monitoring group process. The other factor is the leader would promote students to reflect and contribute their own thoughts to other ideas. Salmon (2002, 2013) introduces similar methods in the e-tivities model, where an e-moderator is urged to create a feeling of ease among contributors, allowing continued online conversation, where posts are remarked on, and less prominent individuals are invited to participate, with confidence.

### **2. The Factors Impacting the Amount of Student Interaction in Group A and Group B**

The study proved that the participation of the peer leader was substantial in regards to Group A's WhatsApp discussion. The peer leader, as an example, singled out one female student who had not previously contributed to the discussion by scaffolding her responses in order to provide her opinion. The following extract shows that the peer leader helped to involve a particular student in the group discussion by enquiring how, from the student's own experience, they would solve the issue.

#### **Extract:**

1. Peer leader: "S4 we did not see your opinion. Can you please give us your thoughts on how we can design a classroom for elementary students that helps them to learn collaboratively as you always have great ideas?"
2. S4: "Thank you for the compliment, I am humbled. In my opinion it is better if we have only four students per table. We also need to find a table layout that helps them communicate and interact comfortably."
3. Peer leader: "Yes, I agree with you. Girls what do you think about that?"
4. S8: "I think that S4's idea is worthwhile. We also need to take into account the number of students in a class because if there are too many that means we will need to provide more tables. Am I right?"

In order to engage all students, the peer leader provided them with many opportunities. On line 1 the peer leader asked S4 a direct question in order to make her more active in the conversation. On line 3 the other students were asked to remark on S4's response, therefore, elevating the discussion. When two students were asked their opinion of factors that motivated them to collaborate, their answers proved that the peer leader has a positive role to engage them to participate:

“The peer leader of our group had the authority to allow and encourage other students to participate, which created an engaging environment and effective collaborative.”

“I liked when the leadership of our group asked me specifically to contribute to the discussion as I am shy and I need someone encourage me to talk. So I think the leadership clearly play an important role in engaging and facilitate the collaboration among team members.”

The peer leader was important in establishing an agreeable environment for the members of Group A. This ensured that they were able to work together because they were inspired to think as a team by contributing to the group discussion. The students' accounts, therefore, prove that the peer leader was able to involve Group A.

Analysis of Group B's communication proved that specific students were depended on to carry the conversation. In comparison to Group A, Group B's conversation did not compare. For example, the following extract will show how the work was not divided equally between team members:

**Extract:**

1. S2: ‘Hello everyone.’
2. S2: ‘To provide a suitable environment for primary students to learn collaboratively we have to follow the following: ensure the equipment is comfortable for the students' bodies, give students the opportunity to choose their team members for the first time (they will engage better this way), after this they can be divided randomly.’

3. S9: "In addition to your suggestion I would prefer to let two students work together."
4. S2: "Can you justify why you would not want more than two students working together?"
5. S9: "To make sure that every student understands the lesson and gets to benefit from learning collaboratively. If we make the number of students more than two then some students might not be able to engage with other students and will rely on others to finish the task. Whereas if there is only two of them they will be forced to engage with each other and the teacher will notice if one of the students does not participate."
6. S3: "Yeah, I agree with S9."
7. S2: "Yes that is convincing, but it depends on the number of students in the class. If I have too many students, then it will be difficult to manage and time consuming."
8. S11: "OK, now we have to clearly set the final points we have discussed to implement collaborative learning."
9. S2: "Sorry girls, it seems like we are a group of 4 not 15 because we didn't see any of the other students' contributions."

It can be seen that the majority of students depended on only four of their peers (S2, S3, S9, S11) to complete the task. The extract is similar to two answers given by students interviewed:

"I did not enjoy working with this team as just me and few members from my group work collaboratively while others just rely on us to solve the task."

"I worked with group on another module but we were more collaborative and equivalent in dividing the work between us as we had a leadership, while in this group we did not have leadership and if I try to take the responsibility of managing the group not every student accepted that."

The lack of a peer leader, as can be seen in the extract, in Group B, meant that there was an imbalance in collaboration between the students and a shortage of commitment towards the project.

There are definite dissimilarities between Group A and Group B and the efforts made. Throughout Group A's conversation the students were much more functional in their approach compared to Group B. In order to understand this difference, the subsequent segment will use the content analysis method in order to analyse the way that the students communicated with each other and their involvement in working collaboratively. Once this has been achieved, in order to gain a clearer understanding of the effect of a peer leader, an examination of the online conversation about the group project for Group A and B will be undertaken.

### **3. A Content Analysis of Students' Interactions and Contributions in Online Discussions**

This specific method uses three categories: group regulatory behaviour, socio-emotional behaviour, and other. Group regulatory behaviour encompasses the conversations held by students' determination to work towards their collective targets. Examples of these actions include establishing a deadline for a task, discussing which methods to use, administering tasks to different individuals based on their strengths and weaknesses in order to gain maximum results, examining the progress of the group, and praising the group as a whole. The second category, socio-emotional behaviour, encompasses conversations based on the individual and their emotions. This also includes the encouragement of others which eventually develops into a communal feeling. These emotions are multi-faceted; for example, worry, excitement, empathy, and sympathy are all a part of this. Fourteen sub-categories (see Table 3) have also been established which help to understand the messages sent over WhatsApp.

Category	Subcategory	Code	Definition of behavior	Example
Group regulatory behaviors	Scheduling	SCHDL	Schedule group work by checking available time or setting due dates	I work Tuesday morning though so I will try to finish on Monday night!
	Dividing Labor	DV_LBR	Divide labors or specify a person's responsibility on a task	I will do the doctor if you want to do the mother :)
	Task	TASK	Identify tasks to be completed by acknowledging goals or requirements of a project	I need to proof read and see if I can convert it from Word to Wiki so it looks better.
	Strategy	STRTG	Inquire about effective ways to coordinate group process and to achieve goals	As far as our group goes I think we need some leadership ... I would suggest that for the next 4 milestones we have leaders.
	Open-self	Opn_SLF	Share individual strength, weakness, preference, situation to enhance group awareness	I am not a huge fan of writing papers unless it is a subject I enjoy. It takes me forever to really get going on them.
	Monitoring Group Process	MONITOR	Acknowledge group progress by checking and sharing what has been done	I have already done the 'what' part, so I think once we do those other ones, we will have what we need.
	Group Agreement	AGREE	Seek other member's feedback to reach group agreement and to establish group norms	I also had put a part where I said "we may want to" can you guys look at this and see if you agree we should use teamwork in this way
Socio-emotional behaviors	Evaluation	EVAL	Evaluate group product or/and group process	All our schedules are different so it makes the communication process take longer. Milestone 2 is supposed to be an extension of milestone 1, with a total of 2700 words between the two. So, I don't think that repeating things from one is a problem.
	Emotional Expression	EMOTION	Express feeling about members and group work, such as thanks, sorry, excited or worried, etc.	so I apologize for my random absences.
	Encouragement	ENCRG	Encourage others by praising what's done well or by cheering up	Great work everyone! Great team work!
Other	Forming Sense of Community	COMMUNITY	Share personal issues and/or feeling of belonging resulted in developing social bonding	I'm thankful everyone fulfills their responsibility to the group and understands they aren't alone in the craziness of life! :)
		OTHER	Actions which does not match with any other categories.	

**Table 3: Types of online discussion on the group project.**

As can be seen in Table 4, there are statistical differences between the two groups ( $\alpha \leq 0.05$ ) in the following types of online discussion (Scheduling; Dividing Labour; Strategy; Monitoring Group Process; Emotional Expression; Encouragement; Forming Sense of Community) and the sub-total for both group regulation and socio-emotional contributions were in favour of group (A), but in other posts the differences were in favour of group (B).

There are no statistical differences between groups in the following types of discussion: (Open-self; Task; Group Agreement; Evaluation) ( $\alpha \geq 0.05$ ).



Types of online discussion		Groups	Mean	SD	DF	T	Sig
Group regulatory behaviours	Scheduling	A	2.20	1.82	28	2.99	0.01
		B	0.46	1.30	25.35		
	Dividing Labour	A	1.80	1.14	28	2.48	0.01
		B	0.66	1.34	27.31		
	Task	A	2.00	1.88	28	1.32	0.19
		B	1.13	1.68	27.63		
	Strategy	A	1.73	1.16	28	5.77	0.01
		B	0.00	0.00	14.00		
	Open-self	A	2.66	3.03	28	1.41	0.16
		B	1.33	2.02	24.37		
	Monitoring Group Process	A	1.86	1.40	28	2.18	0.03
		B	0.80	1.26	27.68		
	Group Agreement	A	1.73	1.66	28	1.69	0.10
		B	0.86	1.06	23.72		
Evaluation	A	1.46	1.45	28	0.46	0.64	
	B	1.20	1.65	27.55			
Sub-total Group regulation contributions	A	15.46	9.75	28	2.75	0.01	
	B	6.46	8.06	27.04			
Socio-emotional behaviours	Emotional Expression	A	2.60	1.95	28	3.82	0.01
		B	0.46	0.91	16.10		
	Encouragement	A	2.60	1.87	28	3.05	0.01
		B	0.46	0.51	16.10		
	Forming Sense of Community	A	1.66	1.27	28	3.30	0.01
		B	0.13	0.35	16.10		
	Sub-total Socio-emotional contributions	A	5.53	4.13	28	4.30	0.01
		B	0.73	1.22	16.42		
Other	A	0.46	0.74	28	4.87	0.01	
	B	4.80	3.36	15.36			
Total contributions	A	21.46	13.11	28	2.22	0.03	
	B	12.00	9.97	26.12			

**Table 4: The independent samples t-test outcomes of the content analysis of the students' posts in group A and B.**

In general, the collaboration between students in Group A and Group B was different. A more detailed analysis of why this interaction varied throughout the participation of students will follow.

### 3.1 Collaboration within Group A

As evidence has proved, student participation in the project was higher in Group A because a peer leader was allocated; the simple existence of the peer leader ensured that the students were more active within their group. Due to this, the team was highly organised. They scheduled their work, established a tactic, and distributed their workload, while also giving emotional support and reassurance when it was necessary. The extract exemplifies the way in which the peer leader contributed to organise the work between team members.

#### **Extract:**

1. Peer leader: “Hi girls, we need to divide the work between us and set a timeline to discuss it. This will save us time and organise our focus.”
2. S11: “Yes, of course, you are right.”
3. S4: “Yeah, it is a useful way for us to achieve collaborative work.”
4. Peer leader: “OK then, our goal is to design an environment that encourages primary students to learn collaboratively. We need to divide this final goal into smaller parts and each of you will choose the part that you have the ability to do.”
5. S9: “OK, I think that because we have five steps, which are analyse, design, develop, implement, and evaluate, three students will work together on one step.”
6. Peer leader: “Yes, you are right, and that will not stop us asking each other if we need help because we are one group which shares the same goal.”
7. Peer leader: “As we have four weeks to solve the problem we need to finish the first two steps in the first week and the other two steps in the second week, and the third step in the third week. The final week we need to bring together our solution and see if they need revising.”

The above excerpt proves that the peer leader enabled the students to reach their aims by working together. In the excerpt we can deduce that the peer leader guaranteed the involvement of all of the students by making them find their own resolution. S11 and S4 also clarify the peer leader's approach to the task by dividing the labour evenly between the students which helped to cement the inclusion of all of the students.

One of Group A's students clarified this analysis. It is exemplified below:

“At the beginning I was worried how I can work collaboratively and communicate with other members, but after the peer leader divided the work between us and determined time to discuss each step of solving the problem I felt comfortable and started to enjoy working collaboratively.”

**Another student stated that:**

“I was worried the discussion will be messy and I cannot communicate properly but assigning one student from the group members to be leader of the group helped in organising our discussion.”

The need for guidance provided by the peer leader is revealed in the above statements. The students were also in need of someone to uphold a continuous discussion; the peer leader was necessary in this instance too.

Additionally, the continued supervising of the group's progress, the chances that they were given to articulate themselves emotionally and their constant encouragement by their peer leader allowed for a strong sense of community among the members of the group. This, therefore, had a positive impact on the participation of the students. One of the students from Group A stated in the quantitative data, that:

“I usually feel disappointed when I could not participate effectively but when our leader checked what other members did with their work she encouraged me by saying ‘do not panic you can do it, imagine yourself in that situation and put what you prefer to be available to you to engage you to learn collaboratively’.”

Many of the students were invigorated by the constant posts and the opportunity to express themselves emotionally. The next extract is an example in which a student reacted to this kind of expressive questioning.

### **Extract:**

1. Peer leader: “Hi girls, how are you doing? S14, you did not give us your suggestion on how to encourage primary students to learn collaboratively.”
2. S14: “Sorry, but I did not have any great ideas.”
3. Peer leader: “But you have a sister in primary school, you can ask her what she would like which could help you gain some useful ideas.”
4. S14: “Thank you for your suggestion, I had been wondering what I should include in my post but now I can have some ideas from a real situation. Thanks again.”
5. Peer leader: “You are welcome. We are a team that have the same goal which means that we have to support each other if we want to reach our goal. I believe in each student of our group that she can put value to the team work.”

It is apparent that the supportive conversation that the peer leader provided Group A with assurances by posting their work due to them being more certain in themselves. The above example suggests that the students were perplexed by the task. When the peer leader became aware of this by sending reassurance and asking questions, the students were made clear and became emboldened to carry on with their task. Through analysing Group A, finally, it is clear that the tactic used by Group A is akin to Salmon’s e-tivities model which has been discussed in the literature review. This model helps to ensure collaborative learning is effective through scaffolding.

### 3.2 Collaboration within Group B

Through studying Group B, it can be concluded that student involvement relied heavily on only a small number of students because there was no peer leader available to arrange their contributions. In Group B, by analysing the available quantitative data, the regulation of the group by individuals only measured 6.46. This, therefore, led to ineffectiveness within the group. In Group A, on the other hand, management totalled 15.46. Clearly, through the peer leader's dispensing of the workload among the students, and by ensuring that a clear approach had been chosen, they were able to finish their assignment. Group B, in comparison, were not given this opportunity and therefore their level of communication was impacted.

#### **Extract:**

1. S2: "Hello everyone. I am thinking about the level of complexity of the given problem for primary students. Should it be simple for the first time until students become familiar with the idea of collaborative learning?"
2. S9: "I think you are right, it will be better to start with a simple problem for the first time until they are familiar with the idea of collaborative learning."
3. S3: "Yeah. It is an important point."
4. S11: "Also teachers should acknowledge the need to be patient with the students as they will sometime need individual help."
5. S12: sends non-related picture.
6. S13: "S15 this is a useful book that might help in your other module."
7. S15: "Great, thank you."

What can be determined from reading this extract is that students did not develop a strategy to begin to work together collaboratively by sharing the work between them. Instead, they began to only solve the task at hand. Lines 2 and 3 begin with a communal feeling in which the two students are discussing their work; however, lines 5, 6, and 7 are non-related and do not help the team at all.

In an interview one student touched on the value they would have placed on a peer leader:

“I prefer if one student of our group take the responsibility of organising our discussion as some students talk about unrelated thread to our goal, and this, in turn led to more distraction.”

### **A second student noted that:**

“I enjoy it when other members comment and interact with my contribution.”

What can be seen here is students in Group B would have favoured a peer leader in order to help schedule their communication.

The ability for students to express their emotions and for others to reply with reinforcement additionally helped to ensure student contribution. In reference to the previous excerpt, lines 2 and 3, S9 and S3 both stated that they respected S2’s involvement and this furthered input by additional student, such as line 4. An additional two students advanced this claim. One stated that when they saw their colleague give positive feedback through complimenting their classmates’ participation it made them feel confident enough to incorporate their own ideas. What can be deduced from this, therefore, is that commendation stimulated discussions within the group. What can be concluded, therefore, is that peer leadership is imperative in cultivating a sense of community within groups. This is an essential element to the accomplishments of teams. Finally, the ability to express yourself emotionally and to receive reinforcement, within both groups, nurtured this idea of a single unit. These feelings boosted student involvement.

## Suggestions and Recommendations

- Additional studies should be conducted with both genders included to examine this area.
- If further research were to be conducted, a larger sample size of Saudi students would yield results of greater validity and reliability.
- Additional research would be required to investigate how collaborative study approaches can be implemented in tandem with more independent work methods.
- This research reveal the rich possibilities that leadership, in the right conditions, offers a means of facilitating intellectual exchange and a greater degree of involvement in SLTs (e.g. WhatsApp) conducted in educational contexts.
- A system should be implemented through which students can seek advice on how best to use the SLTs from senior staff members and academics.
- It should be stressed that teachers must facilitate the development of strong communication and teamwork skills through setting group work that stimulates social interaction and dialogue.
- Supplementary research into the correlation between the academic results a student obtains and their relative awareness of study as a solo/collaborative/social process could enrich our knowledge of how to educate most effectively.

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