Full paper

Students View on Text Chats (CH), Forum Discussion (FR), and Online Learning Interaction (LI)

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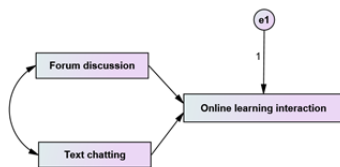[b]Centre for Teaching and Learning, Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor, Malaysia

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Graohical abstract

Abstract

The objective of this research is to get the students' opinion on using online forum discussion (FR), text chatting (CH), and online learning interaction (LI). Quantitative and qualitative approaches were used through questionnaires and semi-structured questions which were administered to 133 Social Science students of a Malaysian public university, selected using volunteer random sampling. The result of a descriptive analysis shows that FR was more favoured by the students (mean = 4.11) compared to CH (mean = 3.87) and LI (mean = 4.06). Next, the path analysis found that FR is more significant (r = 0.59, p < .05) compared to CH (r = 0.35, p < .05) towards LI aspect. However, FR and CH are interrelated with critical ratio (C.R) = 6.455, p < .05). Qualitative analysis found that student's views leaned more towards FR because of its ability to generate meaningful discussions in LI compare to CH according to some of stated reasons. From the perspective of LI, students need a learning environment that encourages them to participate in learning activities actively and involves the lecturer as learning supervisors. The results of analysis explain that the online FR and CH have different perspectives of focus of use. The implication of this study suggests the involvement of students and lecturer during design and development stage of online learning process.

Keywords: Online forum discussion; text chatting; social interaction; online learning

Abstrak

Objektif kajian ini ialah untuk mendapatkan pandangan pelajar terhadap perbincangan ruangan forum (FR), perbualan teks (CH), dan interaksi kepada pembelajaran dalam talian (LI). Pendekatan secara kuantitatif dan kualitatif melalui instrumen soal selidik dan soalan subjektif berstruktur telah digunakan kepada 133 pelajar aliran Sains Sosial di salah sebuah universiti awam Malaysia yang dipilih secara *volunteer random sampling*. Analisis deskriptif mendapati bahawa pemboleh ubah FR lebih dipersetujui pelajar (min = 4.11) berbanding dengan pemboleh ubah CH (3.87) dan pemboleh ubah LI (min = 4.06). Seterusnya, analisis laluan mendapati FR lebih signifikan (r = 0.59, p < .05) berbanding CH (r = 0.35, p < .05) kepada aspek LI. Walau bagaimanapun, FR dan CH adalah saling mempengaruhi dengan *critical ratio* (C.R) = 6.455, p < .05. Analisis kualitatif mendapati pendapat pelajar lebih terarah kepada FR lantaran ia mampu menghasilkan perbincangan bermakna kepada LI berbanding CH dengan beberapa alasan dinyatakan. Dari aspek LI, didapati pelajar memerlukan persekitaran pembelajaran yang menggalakkan pelajar aktif menyertai aktiviti pembelajaran serta penglibatan pensyarah sebagai pemantau pembelajaran. Dapatan secara ringkas menerangkan perbincangan ruangan forum dan perbualan teks mempunyai perspektif fokus penggunaan berbeza. Seterusnya, implikasi kajian menerangkan reka bentuk dan pelaksanaan dengan fokus kepada penglibatan pelajar dan peranan pensyarah semasa pelaksanaan pembelajaran dalam talian.

Kata kunci: Perbincangan ruangan forum, perbualan teks, interaksi sosial, pembelajaran dalam talian.

1.0 INTRODUCTION

The trend for recent studies on education, in particular from the aspect of teaching and learning, shows a tendency towards the active learning approach (Wright *et al*., 1994; Leu *et al*., 2005; Watson, 2008; Salar, 2009). The concept of active learning in short refers to a learning concept that is not unilateral or a delivery of information without active involvement of students (Silberman, 1996; Prince, 2004; Rine, 2006; Sirinterlikci *et al*., 2009). This approach is identified as being able to help students develop their

skills such as communication (Dufresne *et al*., 1996; Shih *et al*., 2002; Malik, 2011), teamwork (Smith, 2000; Loo & Thorpe, 2008; Perez-Martinez *et al*., Garcia *et al*., 2010), problem solving (Hintz, 2005; Kember & Leung, 2005; Snyder & Snyder, 2008) and achieve academic performance (Malik & Janjua, 2011; Kosnin, 2007).

Referring to the concept of 'change in technology affecting Teaching and Learning Approach' (Brown *et al*., 1959; Ololube, 2006; Glenn *et al*., 2008; Warger & Dobbin, 2009), recent studies have been carried out on active learning with technological support where the technology enabled information to be delivered quickly, making it possible to achieve various achievement objectives (Karagiorgi & Tziambazi, 2005).

Among the technologies that are focused on in the T&L process, especially where active learning is involved, is website applications, in particular that which lead to interaction, communication, collaboration and socialisation such as forum discussions, and text chatting. Further, this application is often used in learning management systems (LMS) (Despotović-Zrakić et al., 2012; Pandey & Pandey, 2009; Graf & Kinshuk, 2002).

Studies such as Plantamura *et al*., (2004), Bermejo (2005), Dabbagh (2007), and Ramli (2010), had found that using websites applications, such as online forum and text chatting have positive impact on learning results and processes. However, the use of technology itself was not the main focus, as technology only acted as a tool to facilitate the implementation of T&L (Clark, 1994). Hence other factors need to be considered such as theory, methods, and design of learning, the needs for a teacher's role and the students' expectation with regard to the use of the technology itself

Looking at the perspective of students' expectation towards using technology such as interactive tools in the T&L process, related questions arise such as: what are the students' views about the use of online forum and text chatting in online learning? Which media is more helpful in generating meaningful discussions in the online learning process? Is there a relationship between views of students about online discussion forums, text chatting, and interactive online learning? What is the role of a lecturer in online learning?

These are the questions that must be considered in order to develop the implementation and environment of learning suitable to the needs of students, as technology is only a medium to deliver the message (Jonassen, 1994), and an environment of technology must therefore be designed to be in accordance with the students' needs.

1.1 Studies on Online Forum and Text Chatting in Online Learning

There are many studies on the development of learning as supported by online forum and text chatting, including Ramli (2010), Tilwaldi *et al*., (2010), Ortega *et al*., (2010), Silverstone & Phadungtin (2008), Kushima *et al*., (2008), Augar *et al*., (2004). In addition, online discussion forums, and text chats are proposed to act as support to facilitate the process of learning (Dabbagh, 2007; Bermejo, 2005; Plantamura *et al*., 2004; and Wang *et al*., 2000).

The need for a discussion forum and text chats in active learning such as cooperative learning through websites, can be seen from its complementary function. For example, text chats are restricted to specific time period, and require students to be online at the same time (Stout *et al*., 1997). Text chats in addition, do not lead to any in-depth discussions (Bonk *et al*., 1998). The flaw in text chats demonstrates clearly the importance of having a forum platform.

Based on the review above, it can be said that forums and text chats need to be provided together to support interaction,

communication and socialisation requirements during the process of learning.

1.2 Research Objectives

The objective of this study was formulated by referring to analysis and discussions of literature study. The main objective of the study is to obtain the views and tendencies of students towards discussion forums, text chats, and online learning interaction. The study also looked at the correlation between online forum discussion and text chatting, with online learning interaction. Based on the foregoing, the following study model (refer to Figure 1) is proposed for this study.
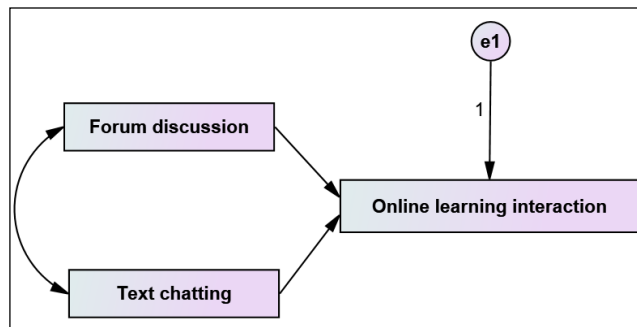

Figure 1 The correlation between three (3) study variables

The result of analysis and review based on Figure 1 is subsequently discussed as an implication of the study, which elaborated on design, implementation as well as the role of the lecturer in managing the online learning implementation.

■2.0 INSTRUMENT OF STUDENTS' VIEWS

Interview items and structured subjective questions were formed based on the review and modification of several earlier related studies, such as Tetard *et al*., (2009), Neo & Tse-Kian (2009), Coutinho & Bottentui (2007), So & Brush (2007), and Lara & Reparaz (2005). In addition, aspects relating to interaction and communication in learning, as proposed by Johnson & Johnson (1989; 1991; 1999) were also used as a guide to construct instrument items. Table 1 explains the instrument in brief.

Table 1 Instruments

Part	Form	Measurement		Theme
A	Quantitative	Nominal		Demography
B	Quantitative	Likert Scale (5 – 1)	i.	FR
C	Qualitative	Structured Subjective Questions	ii.	CH
			iii.	LI

■3.0 ANALYSIS OF INSTRUMENTS RELIABILITY AND VALIDITY

There are several stages of an analysis of the study's instrument reliability and validity.

For the purpose of content validity, the instrument was given to relevant learning specialists for assessment. On the whole, learning specialists agreed with the use of the instrument, and that it is appropriate with the study's objective. The instrument was then discussed in depth with the co-researcher. The findings suggest that

statements of the instrument be changed without changing their meaning.

The instrument was also assessed from the internal consistency reliability aspect, with the administration of the instrument to 25 students, representing actual population characteristics. Tables 2a to 2c show the results of the internal consistency reliability test with SPSS v.16 software.

Table 2a Reliability Test for FR Item

Item	Alpha if Item Deleted
S1	.84
S2	.84
S5	.81
S7	.85
S12	.84
	Mean = .87

Table 2b Reliability Test for CH Item

Item	Alpha if Item Deleted
S6	.78
S10	.8
S13	.82
S20	.78
S23	.78
S24	.78
	Mean = .82

Table 2c Reliability Test for LI Item

Item	Alpha if Item Deleted
S3	.82
S8	.8
S9	.8
S11	.87
S14	.82
S16	.79
S17	.82
S18	.79
S25	.83
	Mean = .83

On the whole, the value of "Alpha if Item deleted" for each item exceeds 0.7 which shows that the instrument has a high consistency level, to be used in collecting actual data.

Further, the Validity test is carried out using the Confirmatory Factor Analysis (CFA) with AMOS v.21 software as shown in Table 2d to Table 2f.

Table 2d Regression Weights - (Group number 1 - Default model) for FR Construct

	Estimate	S.E.	C.R	P
s1 <--- FR	1.000			
s2 <--- FR	.834	.087	9.606	***
s5 <--- FR	.878	.096	9.154	***
s7 <--- FR	.686	.097	7.078	***
s12 <--- FR	.706	.098	7.179	***

Table 2e Regression Weights - (Group number 1 - Default model) for CH Construct

	Estimate	S.E.	C.R	P
s3 <--- LI	1.000			
s8 <--- LI	1.020	.220	4.644	***
s9 <--- LI	1.187	.220	5.404	***
s11 <--- LI	.614	.193	3.179	.001

s14 <--- LI	.976	.201	4.852	***
s16 <--- LI	1.390	.241	5.774	***
s17 <--- LI	1.135	.230	4.942	***
s25 <--- LI	1.237	.234	5.276	***
s18 <--- LI	.934	.194	4.816	***

Table 2f Regression Weights - (Group number 1 - Default model) for LI Construct

	Estimate	S.E.	C.R	P
s3 <--- LI	1.000			
s8 <--- LI	1.020	.220	4.644	***
s9 <--- LI	1.187	.220	5.404	***
s11 <--- LI	.614	.193	3.179	.001
s14 <--- LI	.976	.201	4.852	***
s16 <--- LI	1.390	.241	5.774	***
s17 <--- LI	1.135	.230	4.942	***
s25 <--- LI	1.237	.234	5.276	***
s18 <--- LI	.934	.194	4.816	***

The findings of the Maximum Likehood Estimates (M.L.E) show that the Critical Ratio (C.R) values of all items exceed + 1.96 at the level of $p < 0.05$ (see Table 2d to Table 2f). In short, every item is significant and matches the represented variable (FR, CH, and LI) and has validity for the purpose of collecting the study's data.

The implementation of the reliability and validity studies at various stages suggest an increased trust and verification of the instrument to be used for the actual study (Said, H., Badru, B. B., and Shahid, M., 2011).

■4.0 SAMPLING

Volunteer random sampling was used to obtain the study sample. A total of 149 questionnaires were distributed among all 149 students from a single course over many year of study at the Faculty of Education of a local university. Out of this, 135 questionnaires were returned but only 133 could be used for analysis. All respondents had moderate knowledge and skill on the usage of online learning system.

■5.0 ANALYSIS

Descriptive analysis with the help of SPSS v.16 software was carried out to study the opinion tendency of students towards the presented item.

Centred tendency which reflect the opinion of students was seen based on the min value of each item on the Likert scale, that is 5 = strongly agree → 1 = strongly disagree.

Next, path analysis was used to obtain the link between the variables. To facilitate and simplify the path analysis, the items for each construct is compiled to form three main constructs, i.e. FR (online forum), CH (text chatting), and LI (online learning interaction). Table 3 shows the process of calculation of the three constructs of the questionnaire items using SPSS v.16.

Table 3 Students' views on the use of Online Forum (FR)

Item	Action - Transform > Compute	Target Variable
S1, S2, S5, S7, S12	COMPUTE FR = (s1+s2+s5+s7+s12)/5. EXECUTE.	FR
S6, S10, S13, S20, S23, S24	COMPUTE CH = (s6+s10+s13+s20+s23+S24)/6. EXECUTE.	CH
S3, S8, S9, S11, S14, S16, S17, S18, S25	COMPUTE LI = (S3+S8+S9+S11+S14+S16+ S17+S18+S25)/9. EXECUTE.	LI

Finally, the content analysis method was used to review written opinions of the students. The results of the content analysis were compiled into specific themes to identify the opinion and tendency of students.

■6.0 RESEARCH FINDINGS

The descriptive statistical analysis of the first part of the instrument was translated into the form of mean value and standard deviation. Tables 4 to 6 show the students' opinion tendency towards the respective item in the form of mean value.

Table 4 Students' view on the use of online forum (FR)

Question	Item	Mean	SD
S1	Discussion forums help more to spread information and ideas to study partner	4.15	.84
S2	Discussion forums facilitate the assessment of learning related information.	4.15	.75
S7	The feedback received from discussion forums helps to generate better ideas.	4.13	.78
S5	Online discussion forums with supporting multimedia elements make it easier to share and clarify information and idea.	4.11	.83
S12	Discussion forums have better impact on online learning compared to other web application.	4.03	.82

Total Mean = 4.11
* N = 133 students

Table 5 Students' views on the use of text chats (CH)

Question	Item	Mean	SD
S23	I like to receive feedback through text chats compared to message forums.	3.99	.83
S24	Text chats allows an experience similar to a face to face discussion.	3.99	.87
S6	Text chats are important as a short discussion before joining an actual discussion of studies in the discussion forums.	3.98	.94
S20	Text chats facilitates online learning.	3.83	.87
S13	Text discussion tools facilitate group discussions.	3.8	.85
S10	Text chats are more suitable for online learning compared to forum discussion.	3.64	.96

Total Mean = 3.87
* N = 133 students

Table 6 Students' views on the online learning (LI)

Question	Item	Mean	SD
S8	Students must motivate each other to better support online learning interaction.	4.31	.87
S16	Lecturers must monitor activities during online learning to increase students' social interaction	4.27	.82
S18	Social interaction in online learning can be enhanced with motivational messages among students.	4.16	.76
S9	Effectiveness of interaction in online learning can be increased with the availability of various interactive tools.	4.1	.8
S25	Relating current problems with learning activities can increase student interaction in the implementation of online learning.	4.09	.7
S17	Online learning social interaction can be improved with the distribution of different tasks to each group member.	4.08	.88
S14	Online learning discussion and activities can be carried out at different times with the help of website applications	3.96	.78
S3	Interactive website applications such as discussion forum, text chats and e-mail can increase the effectiveness of online learning interaction.	3.89	.85
S11	Putting together individuals from various backgrounds can help to increase interaction in online learning.	3.68	.86

Total Mean = 4.06
* N = 133 students

The next path analysis was done to see to what extent the link and relationship between each main variable, that is, the discussion forums, text chats and online learning interaction.

Table 7 shows the Estimate, Standard Error and Critical Ratio (C.R) values for forecast variants of FR and CH to LI variant.

Table 7 Regression weights

		Estimate	S.E.	C.R.	P
LI	← FR	.466	.052	9.006	***
LI	← CH	.32	.054	5.903	***

The analysis shows that C.R value for the FR variant to the LI is 9.006 (0.466/0/052) at p < 0.05 level. For C.R Value, CH variables to LI is 5.903 (0.32 / 0.054) at the level of p< 0.05. These C.R values here clearly exceeds the + 1.96 value, which shows FR and CH variables are significant predictor variables (regression) to LI variables.

Table 8 Standardized regression weights / path coefficient

	Estimate
LI ← FR	.559
LI ← CH	.367

Table 8 shows the Estimate value for Standardized Regression Weight (Beta - β) that reflects the direct effect of FR and CH variables to LI. The Estimate values of the FR variable to LI are 0.559 and 0.367 for the CH variable to LI. The calculation of the Estimate value shows that FR and CH variables are significant and affect the LI variable although many experts take the view that a better and more significant value is 0.7 and above.

The next comparison found that FR variables are stronger and more significant to the LI compared to the CH variable.

Table 9 Covariance's

	Estimate	S.E.	C.R.	P
FR ← CH	.259	.04	6.455	***

Table 9 shows the relationship between the exogenous variables, such as FR and CH shown by the C.R. value. This analysis shows that the C.R between the FR and CH variables is 6.455, which is beyond 1.96 at p < 0.05. This shows that the FR and CH variables are interrelated.

Table 10 Correlations

	Estimate
FR ←→ CH	.68

Table 10 show the Estimate values, being correlation between the FR and CH variables. The analysis shows that the Estimate value is 0.68, which indicates that the correlation or relationship between the FR and CH variables is strong.

Table 11 Variances

	Estimate	S.E.	C.R.	P	Label
FR	.399	.049	8.124	***	
CH	.364	.045	8.124	***	
e1	.076	.009	8.124	***	

Table 11 show the C.R value for changes in FR and CH exogenous variables which caused changes to the LI endogenous variable. With the C.R variant for FR, CH, and *e1* exceeding 1.96 simultaneously indicating that the FR and CH variables can significantly predict changes to the LI variable.

Table 12 Squared multiple correlations

	Estimate
LI	.726

Table 12 is on Squared Multiple Correlations indicating the variance value in the LI variable as predicted by the FR and CH variables for the relevant data.

The Estimate value, of 0.726 shows that 72.6% variance in the LI variable was predicted by the FR and CH variables. Conversely, 0.274 or 27.4% (1 - 0.726) variance in the LI variable cannot be predicted based on the FR and CH variables for this data, marked as *e1*. The result of the path analysis discussed here can be summarised in Figure 2.

The analysis findings show that the FR variable ($\beta = 0.59$, C.R = 10.406, p < 0.05) and CH ($\beta = 0.367$, C.R = 6.136, p < 0.05) are significant predictor variables to LI (see Table 4 and Table 2).

Further, the analysis found a strong correlation between the FR and CH variables (r = 0.64, C.R = 6.455, p < 0.05) which indicate that the views of students to FR and CH are interrelated.

The result of this analysis shows that variance value to the LI variable as predicted by the FR and CH is 0.723, which indicates that 72.3% variance in LI can be predicted by FR and LI in this analysis.

Next, the study further explores the students' views qualitatively through structured subjective questions.

Table 13 Analysis of written answers

Question	Frequency Tendency / Activity	
Are there interactive tools in e-learning at your institute of education? (For example: text chats, discussion forums, blogs) that can help you better interact for online learning?	Agree	79
	Uncertain	28
	Disagree	13
	Others	5
What e-learning tools are most attractive for you to use? Example: Forum, text chats, sharing of text editing, blog, notes download.	Forum	70
	Notes download	28
	Text chats	9
	Contacting colleague/lecturer	6
Why do you like that activity?	Reading notes	6
	Answering questions/quiz	6
	Wiki	2
	Personal message	2
	Link to other websites	2
	Building own notes	1
	Others	1
Does the e-learning system at your institution support the learning process in lecture hall? Explain your answers	Yes	101
	No	17
	Others	9
	Uncertain	5
	No answer	1
Will you give your cooperation if group learning is carried out via e-learning? Example: Text chats to stimulate a more active discussion.	Agree	57
	Disagree	45
	Other	17
	Uncertain	14
In your opinion, can written communication skills be improved with the group learning via e-learning system?	Yes / Agree	65
	No	49
	Less / Uncertain	14
	Other	5

N = 133 students

Table 13 shows the result of content analysis of the students' written answers, translated into the frequency tendency format.

6.1 Discussion on the Students' Views on the Use of Discussion Forum

Table 4 shows the mean score of students' views about the usage of discussion forums falling between 4.05 to 4.19 with overall mean of 4.15. The mean value exceeds the level of "Agree" which suggests that the students had high and positive tendencies towards discussion forums for online learning.

On details of each item it is found that the main attraction to a user of discussion forum is its ability to help in spreading the ideas being taught, in addition to the element of multimedia integration support. Further, the input received from discussions conducted in such forums is seen as being able to aid the students in producing

better ideas in the study discussions. The production of better ideas may be helped by the participation factor in online discussion forums, which can result in obtaining more useful information and is more helpful towards the process of learning (Shana, 2009).

Further, the pathway analysis (See Table 7) found that the predictive aspect of FR is more significant to LI compared to CH. Similarly, Table 8 shows that FR is more significant to the LI compared to CH. However, FR and CH variables are affecting each other and have a strong correlation in reference to Table 8. This analysis suggests that students have positive and significant views on discussion forums and text chats in online learning with emphasis being on discussion forums.

The result of this quantitative analysis is also supported by the students' written answers on their views. Analysis on question 1 and 2 (see Table 13) shows that the majority of students have a tendency and agree on discussion forums in relation to online learning interaction, compared to other website applications.

The result of this analysis on the whole indicate that students take the view that discussion forums are more meaningful for online learning, as compared to text chat.

The students' views or perception based on this analysis are similar to the results of the study conducted by Ajayi (2009), which relates to students' positive perception on the use of the Asynchronous Discussion Board on the online learning process. The findings of the study together with various other early studies may be because online discussion forums greatly assisted discussions and tasks of online learning (Ramli, 2010 and Moallem, 2003). This is in addition to the fact that discussion forums are able to give more time to reflect to the students before joining the discussions (Bermejo, 2005). These advantages allow the students to achieve effectiveness or high level of learning of the objective of learning (Kanuka, 2005; Andresen, 2009). However, the functions and active participation of a teacher is still required in an online discussion forum, similar to a face to face in a lecture room (Andersen, 2009).

6.2　Discussion on the Students' Views on the Usage of Text Chat Tools

Table 6 shows a mean score of the students' view towards text chats falling between 3.61 to 4 with an overall mean of 3.87.

Although the overall mean is close to the level of "Agree", it still rests at the level of moderately Agree, and is lower compared to FR value, i.e. 4.1.

On further investigation it is found that 4 out of 6 items are set at the level of "moderately Agree" which may be influenced by the opinion on the discussion forum (see Table 8, the CR = 6.455 > + 1.96 which shows the opinion of students on the FR and CH affect each other).

This descriptive analysis is supported by the path analysis (See Table 7 and 8) which found that text chats are less significant and have less influence on the learning interaction compared to discussion forums. Hence it can be said that students' opinions on text chats are moderate compared to the discussion forums, in the context of online learning interaction.

The qualitative analysis, through the written answers (see Table 13) further supports the preceding quantitative analysis's findings.

The research findings in relation to the opinions of students, when observed on the circumstances of actual online learning, are similar to the results of studies conducted by Blau & Barak (2012) which found that text chat are less focused on, in online learning.

This situation can be related to the text chat itself which is not too helpful in generating deep meaningful discussions (Bonk *et al*., 1998).

From a technical perspective text chats have time restrictions, (Stout *et al*., 1997; Kreutz *et al*., 2000) which requires all the students to be online at the same time, and this will require the cooperation of all students which can be difficult to attain.

However, text chats can be used as a medium for short discussion before the students participate in discussion forums, as is shown in Table 3, and in the study conducted by Paulus (2005).

This is as text chats allow a discussion environment similar to being face to face, which allows the students to receive instant feedback, in real time, short and usually personal in nature. In addition, text chats has multiple use such as a medium for collaboration, sharing and to interact with peers (Grigsby, 2001).

6.3　Discussion on the Student's Views towards Online Learning Interaction

Aside from focusing on technology, the design and implementation of online learning must also consider and fulfil the students' needs. According to Jonassen (1994), the students learn more effectively if their views are taken into account during the process of design and implementation of the learning.

Referring to Table 6, it is found that students have high expectations for the existence of a motivational element which needs to be created through students' interaction during the learning. Further, the lecturer's active involvement is also stated to be a required element for online learning as it is proven to have a positive impact on the students learning motivation (Alias, 2012). At the same time, monitoring needs to be done by the lecturers to increase the effectiveness and implementation of the learning activities. The views of the students further strengthens the research findings of Moallem (2003) which looked at scaffolding support, monitoring and active participation by lecturer, as requirements of online learning.

Synchronous and asynchronous interaction, through online discussion forums and text chats is stated by the students to be able to increase the effectiveness of online learning, especially when both together will allow learning activities like discourses to take place without any limits of time.

At the same time, bilateral interaction must be given emphasis to improve effectiveness of discussion and to develop knowledge (Lee, 2012). In this respect, one of the ways to encourage interaction and discussions amongst students in the process of learning is the division of tasks and information (Salmon, 2002) in a manner approved by the students, especially if students are from various backgrounds.

Based on findings and discussions, there are several conclusions to be made and subsequently lead to implications, resulting from studies on the design and implementation of online learning.

■7.0　CONCLUSION AND IMPLICATION

Overall, the research findings support and have similarities with the related previous studies.

Based on the students' opinion, it can be said that study discussions are more effective and meaningful if carried out through a forum, while text discussions are the main support to social interaction of a discussion forum.

Although discussion forums are not in "real time" form, it is nevertheless identified as the main discussion medium, sharing information, assessing idea, and a social platform for online learning. This is as the forum provides an area for discourse and brainstorming session for ideas which is wider than the activities and scope of the learning. Generally because of the weakness of

not being able to support messages in real time, forum is more favoured by the students compared to text chats, in online learning.

Active participation in text chat indirectly creates a situation of social interaction similar to that in a face to face discussion. Hence the students can utilise text chat as a medium of interaction and instant feedback in relation to studies. The main constraint to text chats is that it requires all to be online at the same time. This can be overcome by the provision of a forum for discussion.

Further, as a conclusion and arising from the views of students on the design and implementation of learning:

i.   Lecturers need to create learning environments which encourages discussion and social interaction activities. This is as active participation by students in social interaction, communication and discourses can create positive motivation among them, in accordance with the learning activity.

ii. Division of information or tasks can stimulate interaction and communication amongst students in online learning, especially if the students are from various backgrounds.

iii. Providing various website tools which support synchronous and asynchronous interaction with priority given to the use of text chats and discussion forums.

iv. Lecturers must act as facilitators and supervisors to the learning activity to increase the effectiveness of learning.

■8.0 BENEFITS OF THE STUDY AND FURTHER STUDY

Even though this study bears some similarities with previous studies, the results suggest several issues to be considered to increase the effectiveness of online learning implementation, based on students' view.

First, that the views and expectations of students in respect of the learning design and implementation must be taken into account, even though findings of previous studies and the current learning framework have provided an existing guide to online learning. Secondly, the results of this study are based on the students' views which bear some similarities with the previous studies. Further studies must therefore be carried out to see to what extent the opinions of the students are translated into the implementation and actual usage in online learning. Thirdly, the students' views based on the findings of this research are of a general nature, with regard to the text chats, discussion forums and implementation of learning online. However it can still be used as a guide to the online learning implementation and design, as a specific learning strategy, such as for collaborative, cooperative, discovery and problem based learning.

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