International Journal of Instruction *July 2008 ● Vol.1, No.2*
ISSN: 1694-609X ● www.e-iji.net

ASSISTED PERFORMANCE – A PRAGMATIC CONCEPTION OF ONLINE LEARNING

Habibah Ab. Jalil
Department of Science and Technical Education, University Putra Malaysia, Malaysia. *bib@educ.upm.edu.my*

Angela McFarlane
University of Bristol, United Kingdom

Ismi Arif Ismail
Department of Professional Development and Continuing Education, University Putra Malaysia, Malaysia.

Fadzilah Rahman
Department of Language and Humanistic Education, University Putra Malaysia, Malaysia.

This paper proposes a novel theoretical perspective on the nature of online learning. Taking a socio-cultural perspective, an argument is offered for the theorisation of peer to peer learning as a variety of 'assisted performance'. Using this theoretical lens, a case study is then offered which uses this model to frame an analysis of the nature and occurrences of online exchanges between students, and with tutors. The case study looks at two years of online discussion in a Master's programme in a United Kingdom university. The results suggest that looking for examples of assisted performance in the online exchanges can offer insights into the learning that can take place in online discussion and offers one way of recognising meaningful online interaction, and therefore point to ways of promoting such exchanges.

Key Words: online learning, socio-cultural, assisted performance, communities of practice

INTRODUCTION

Opportunities for learning in an online discussion rely on the nature and quality of the posts made, not just by the tutor but also by the learners. The 'practice' of such online participation cannot be understood clearly if we limit ourselves to observing the 'learning practice' from the perspective that students are always the learners, and a teacher is always the one who actively teaches (Ab Jalil, 2007). In an online space, the social fabric is complicated and teaching and learning behaviours are mixed.

There are several explanations of what teaching is in collaborative endeavours where peers take the role of teachers. Anderson *et al*. (2001) deliberately used the term 'teaching presence'[1] to indicate that not only the teacher, but also the students are taking part in teaching roles within online environments.

Through the struggle to find an ideal conception of teaching in the online environment, the premise proposed by Tharp and Gallimore (1988) is most significant one. They have stressed that teaching must be a responsive endeavour. Teaching can be said to occur when assistance is offered at points in the Zone of Proximal Development (ZPD) where performance requires assistance (Tharp and Gallimore, 1988). They therefore stressed that teaching must be redefined as 'assisted performance' in that teaching is occurring when performance is achieved with assistance.

LITERATURE REVIEW

Today, we see 'a' new environment for learning (i.e. the online learning environment), where access to networked computing (Smith, 2004) enables students to interact for learning as long and whenever they want. There are no hieratical conditions where the teacher is the one who 'speaks' first or most often, or is controlling the learning. Students can always communicate with each other for learning and teachers take the role of moderators (Salmon, 2000) or facilitators. Moreover, these interactions between students are seen equally or more important to the learning process as interaction with the tutor. Therefore there is a need to redefine what teaching is in the online environment. The conceptualisation of teaching as assisted performance in the classroom context may equally well apply to the online context. Thus the learning process in online contexts may involve peers 'teaching' each other by offering assistance.

[1] Anderson *et al*. (2001) refer to 'teaching presence' as the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educational worthwhile learning outcomes.

The word 'assistance' however, is not an established term when discussing and analysing interactions within online learning environments. Instead, the terms 'support', 'guided construction/participation' and 'scaffold' are more widespread in the literature. In the next section, we will review the use of these terms and how 'assisted performance' is related to these concepts. We discuss the similarity of these terms to assistance and why we resist using these terms. In essence there are three assumptions about the notion of assistance:

- Assistance as supporting interactions in online learning
- Assistance as guided participation of learner and their environments
- Assistance as scaffolding of learning

Each is discussed in turn.

Supporting interactions in online learning

Existing research predominantly acknowledges the need for support in order to achieve productive interactions in online learning environments. Littleton concludes in the final chapter of *Learning with Computers – Analysing productive interaction*: 'Underpinning many of the contributors' interest in understanding productive interaction is that through the study of collaborative interactions we can come to understand how better to support learners' joint endeavours' (1999). Support for interaction could mean: encouraging and enabling practice, coaching, guiding discourse and supporting computer use. As the word 'support' could cover many things, it is likely to be used in a general sense. For example, Coomey and Stephenson (2001), Roberts and Rostron (2004), and Kitsantas and Chow (2007), in three large-scale research studies, use the term 'support' in different ways.

Consequently, both technological and human support, as evidenced by the studies, have been understood to have an inter-related role in the field as the word 'support' itself could cover many aspects. However, in the current paper, 'assistance' is a particular term that identifies tutor and peer supportive actions during discussions undertaken in online learning environments that support the learner to learn whether intentionally or not. It is thus a very particular sub-set of support. And more importantly, the assistance we mean to highlight is the type that can be found (or evidenced) in through their communication in the online environment.

Assistance as guided construction / guided participation

Shuell (1992: 21-22) offers four 'models of learning' (i.e. Learning as passive reception, Learning as discovery, Learning as knowledge deficit and accrual, and Learning as guided construction). 'Learning as guided construction', is

more associated with assistance, and draws from the constructivist perspective. This model of learning highlights the important role of external guidance, whether from a teacher, a computer program, or other learners. However, as this notion is drawn from the constructivist perspective, 'guidance' is meant to facilitate individual knowledge construction. An example of a study that might employ this perspective would focus on the learners to construct the learning with the guidance provided, rather than focusing on what the people around them are doing. As this study is focusing on tutor and peer assistance, the sociocultural perspective is employed to obtain insight into their actions when learners need assistance. The sociocultural perspective asserts that 'human action, on both the social and individual planes, is mediated by tools and signs' (Vygotsky's idea, see: Wertsch, 1993). 'Signs' in this context represent a symbolic form of mediation and are portrayed as psychological action such as communicating.

An alternative concept to assistance is offered by Rogoff (1990) in the form of guided participation. The crucial factor of this concept is it emphasises participation, which has important implications for 'how children gain knowledge from social interaction' as stressed here:

> The notion of guided participations is intended to stress shared activity with communication that includes words as well as actions, and to encompass the routine, tacit activities and arrangements of children and their companions (Rogoff, 1990).

Research that employs this concept is seen in Rogoff *et al.* (1993a). Communication between children and their caregivers involves two focal processes: *creating bridges*, and *structuring the children's participation*. This process shows how learners could be assisted: first, by developing an engaging atmosphere for participation between learner and the other parties; and second, by monitoring and managing the learner's participation. However, the concept of 'guided participation' is different for a study that involved more than one learner participating in the learning activities together. In term of scope of observation: 'The concept of guided participation is used in an attempt to keep individual, interpersonal, and cultural processes simultaneously in focus, representing inseparable aspects of whole events in which children and communities develop' (Rogoff *et al.*, 1993b). The question here is whether this notion of assistance can persist in an online environment when all the other non-textual manifestations are absent. Furthermore, it could be argued, students still may be able to learn in online learning contexts, without participating or communicating with other group members. Indeed there is a question of

whether contributors to an online forum do in fact represent a community of practice rather than a group who choose to share an affinity space (Gee, 2007).

Assistance as scaffolding

The term 'scaffolding' has been generally attributed to Wood, Bruner, and Ross (1976) who describe it as a: 'process that enables a child or a novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts'. The term is used as a metaphor for the situation in which an adult assists a child to carry out a task beyond the child's capability. This metaphor is parallel to the concept of the Zone of Proximal Development (ZPD), developed by Vygotsky. The term 'scaffold', like the term 'support', has been used more widely in the literature as, generally, the concept of scaffolding has been accepted and applied in educational settings (e.g. Salmon, 2000; Oliver and Herrington, 2001; Masters and Yelland, 2002; Yelland and Masters, 2005; Choi *et al.*, 2005; Jeong and Joung, 2005; and De Laat, 2006). Compared to 'support', 'scaffolding' is seen as more theoretical and therefore there were efforts by educational practitioners to re-conceptualise the term. However, assistance goes beyond scaffolding and Tharp and Gallimore (1988) put forward reasons why the 'scaffold' metaphor needs more refinement:

> the field has advanced to the point that a more differentiated concept can be developed. For example, scaffolding suggests that the principle variations in adult actions are matters of quantity – how high the scaffold stand, how many levels it supports, how long it is kept in place. But many of the acts of the adult in assisting the child are qualitatively different from one another (1988).

Given the above discussion, we wish to highlight the importance of 'assistance' rather than 'support' and 'guided construction'. The reason for using 'assistance' rather than 'support' is to humanise this particular action. Similarly, 'guided construction' is not used as it does not stress the assistance provided by the person or persons around the learner and the word 'construction' emphasises the processes only on the learner side. As to data availability factor (which through messages only, we couldn't capture the whole activities that have took place), the concept of 'guided participation' is not possible in this study. The 'scaffolding' concept is important for understanding how 'help' could be given through interactions. However, the terms/assumptions presented above imply intent on the part of the provider, which it is not always the case. Someone might assist another's performance just simply by stating what s/he thinks, or by asking a question the reader had not thought of. Therefore, 'assisted performance' and the categories developed from this notion were seen

as suitable for the study described here, which intends to identify meaningful peer supported learning interactions, through seeking for evidence of assistance provision. We used the following categories developed by Gallimore and Tharp (1990) adapted in Kirkley *et al*. (1998) to analyse the message transactions, or means of assistance, in CMC 'Discussion Board'. They are: Scaffolding, Feedback on Performance, Cognitive Structuring, Modelling, Contingency Management, Instructing and Questioning. Details of the categories are given in Table 1 below:

Table 1: Means of Assistance Categories

Scaffolding	Refers to the help, guidance, assistance, suggestions, recommendations, advice, opinions, and comments that the tutor or peer provides to help the learner master the materials and move to a higher level of understanding.
Feedback on Performance	It is used when the tutor or students provide information (positive or negative) on specific acts, performance, or situations or acknowledge a contribution in reference to a given standard or set of criteria. Often it includes grades.
Cognitive Structuring	It is a means of assistance whereby the tutor provides a structure for thinking and acting that helps the learner organize "raw" experience.
Modelling	This occurs when a tutor or more knowledgeable peer offers behaviour for imitation.
Contingency Management	It is used by the tutor to reward desired behaviours through praise/encouragement, or to control undesirable behaviours through punishment in the form of reprimand/censure.
Instructing	This occurs when the tutor give explicit information on specific acts (e.g., assignments, task, group processes, etc.) It is usually embedded in other means of assistance but is often identified when the teacher reassumes responsibility for learning.
Questioning	It calls for an active linguistic and cognitive response and is used as a prompt, to stimulate thinking and to provoke creations by the student. If the question is meant to provide assistance to the reader, then it is in this category.

adapted from Kirkley *et al*. (1998)

If teaching is defined as assisted performance (Tharp and Gallimore, 1988), the categories of assisted performance suggest that teaching behaviour can also be seen in the students' contributions. For example, assistance in the form of questioning and modelling may be serendipitously delivered by anyone participating in online discussions. Assisted performances provided by the participants in online discussion are therefore the evidences of occurrences of opportunities for learning through social interactions.

If assisted performance is indeed a useful theorisation of peer to peer learning, the questions that must arise are what would it look like in an online discussion, and is there any evidence to support this interpretation of online interaction? To understand the nature of assisted performance in online discussions, the following research questions were developed:

1. *Do tutors and students offer assisted performance within online discussion threads?*
2. *What types of assistances are provided by both tutor and students?*

METHOD

Participants

This two year study involved two cohorts on a one year Masters programme, one of 19 and one of 17 students, and 12 tutors, a total of 48 participants. The programme ran on a one-year basis for the full-time students and up to five years for the part-time students. It consisted of eight taught units and a dissertation. Six of ten part-time students in the first group were also enrolled in the second group. Seven units out of eight in the first year and six units out of eight in the second year were chosen for this study. Some units were not included in the study because they had used the CMC too little or not at all[2]. In this study, the first group is labelled 'Year 1' and the second group is labelled 'Year 2'. Most of the findings are presented according to year groups, (i.e. Year 1 and Year 2) to get an overview of the pattern of assistance.

The focus is on participants who used CMC in the Blackboard Online Learning System in the context of a Masters in Education programme at a university in the South West of England. Here, the CMC is used as a communication tool, extending face-to-face (or classroom) discussion and CMC is used in an adjunct mode[3]. The classes were held for 20 weeks in a traditional university classroom setting.

---

[2] Reasons for excluding the units are: some of them contain no discussion at all, meaning tutor and students in the unit did not used the 'Discussion Board' as a medium for discussion outside the face-to-face sessions; and some contain too much of information about the participants, where the participants used the forum to get to know each other. For ethical reasons, these units should not be used as they revealed the participants' identity. Furthermore, such discussions were largely social and less academic in nature.

[3] An adjunct mode (as in this study), occurs when students on a course use CMC through an online delivery system as an optional rather than a compulsory learning activity (Harasim *et al.*, 1999).

Procedures

Assistance offering and giving, captured in the messages, are the evidence of teaching in this context. Content analysis was one method used to investigate the circumstance of assistance through discussion. Content analysis was performed on all the messages in the 'Discussion Board' for all courses selected. The quantitative analysis of the data, through regularities or frequencies, showed the nature of assistance in tutor-student/s and student-student interaction. The total number of instances of assistance and types of assistance by group, role and different task types were counted and diagnosed.

The steps for analysis were as follows:

Step 1: Messages were printed on paper for intensive reading. The 'Discussion Board' gives certain facilities (in form of pull-down buttons) to view the messages threads sorted by 'Date' (time of posting), 'Author', 'Subject' and 'Default'. However, when all the messages were collected by selecting the 'COLLECT' button, all the messages were actually sorted according to time posted. To understand the flow of the conversation, the messages were transferred to Microsoft® Word and rearranged according to the sequence in the 'Default' setting, which is the order of responses based on the sequence of threads posted.

Step 2: The transcripts were then anonymised as far as possible for ethical reasons.

Step 3: The text was read intensively for deep understanding. The transcripts were then coded according to the type of assistance given in each message, and each category was highlighted in a different colour.

Samples of coding from the transcripts from three of the units were checked by two other researchers to check whether the coding was applied appropriately according to the categories constructed.

Step 4: The number of each category was counted.

Procedures from **Step 1** to **Step 4** were performed with all the units.

Step 5: The whole transcripts were then given to interrater(s) to check on the reliability.

Step 6: The difference between the two phases of coding was noted. The original coding was compared to the coding made by the interrater(s). The Cohen's Kappa (κ) was calculated for reliability.

For the first year group, a Cohen's Kappa of 0.764 was established and the SPSS output is shown as follows:

		Interrat						
Coder1			*A*	*B*	*D*	*F*	*G*	*Total*
	A		1	3			1	5
	B	6	36	1		2		45
	D	4		12				16
	F	3				43	1	47
	G	1	1				23	25
	Total	15	38	16	1	45	25	140

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement Kappa	.764	.041	16.767	.000
N of Valid Cases	140			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

In this SPSS output, N is 140, which is more than 25% of the whole number of assistance instances in Year 1. As 0.764 was achieved, we then proceeded with the coding for the rest of the messages. This value was high enough for us to have confidence in proceeding with the coding.

While in the second year group, a Cohen's Kappa of 0.706 was established. The details of SPSS output is as follows:

		Interrat							
			A	*B*	*C*	*D*	*E*	*F*	*G*	*Total*
Coder1		28	0	1	3	2	2	0	1	37
	A	7	25	3	3	2	0	0	0	40
	B	1	0	7	0	0	2	0	0	10
	C	0	0	0	4	0	0	1	0	5
	D	0	1	0	0	2	0	0	0	3
	E	0	0	1	0	0	3	0	0	4
	F	1	0	1	1	0	0	2	0	5
	G	0	0	0	0	0	0	0	37	37
	Total	37	26	13	11	6	7	3	38	141

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement	Kappa	.706	.043	17.446	.000
N of Valid Cases		141			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Again, in this SPSS output, N is 141, which is more than 35% of the whole number of assistance instances in Year 2. As 0.706 was achieved, we again proceeded with the coding for the rest of the messages as this value was high enough for us to have confidence in proceeding with the coding.

FINDINGS

Table 2: Number and percentage of messages posted by role of participants according to year group

Group Year 1	*Number of message*	*% of total messages posted*	*N*	$\overline{X}$	*SD*
Tutor	131	24.9	11	11.8	14.3
Student	395	75.1	19	29.5	20.2
Total	526	100	-	-	-
Group Year 2					
Tutor	75	24.5	8	9.4	9.2
Student	231	75.5	23	15.4	16.6
Total	306	100	-	-	-

N: Number of participant (Tutor or Student); $\overline{X}$ *: Mean number of messages posted by each participant Tutor or Student; SD: Standard deviation of number of messages posted by the participant Tutor or Student.*

From the table above, with respect to Year 1, the students posted the majority (75.1%) of overall messages (526). The mean of 29.5 in the table above indicates that each individual student posted an average of 29.5 messages. Alternatively, the tutors made 24.9% of the postings based on the number of messages sent, with a mean of 11.8. However, as the value of Standard Deviation (SD) is high in the tutor posting, the number of messages contributed by the tutor were varied or spread out from the mean.

With respect to Year 2, the students posted 75.5 % of overall messages with a mean of 15.4. This percentage is not much different than that of Year 1. This balance of contributions is equivalent in the tutors' postings where tutors made 24.5% of postings compared to 24.9 % in Year 1, with a mean of 9.4. The value

of Standard Deviation (SD) is slightly higher in the students posting which suggests some variability among students' contributions.

These analyses of participation in both Year groups suggest that the students have posted considerably more messages than the tutors, and that there is significant variation in the number of posts by individual students and tutors. Moreover these patterns remained stable in Year 2.

Now we need to know which of these groups (tutor and student) provided more or less assistance. This identification is to show the pattern of assistance provided by these roles, who provided more assistance and how much. We also need to know what types of assistance were provided by both of these groups.

Table 3: The number of occurrence assistance and percentage of type of assistance overall by tutor and students in Year 1 and Year 2 according to type of assistance

Assistance	*Group Year 1*				*Group Year 2*			
	S_1	*%*	T_1	*%*	S_2	*%*	T_2	*%*
Scaffolding	112	21.1	85	16	132	33.6	69	17.6
Feedback	17	3.2	59	11.1	9	2.3	40	10.2
Cognitive Structuring	0	0	2	0.4	5	1.3	9	2.3
Modelling	4	0.8	6	1.1	8	2.0	1	0.3
Contingency Management	0	0	9	1.7	1	0.3	7	1.8
Instructing	7	1.3	140	26.3	4	1.0	33	8.4
Questioning	25	4.7	66	12.4	35	8.9	40	10.2
Total	165	31	367	69	194	49.4	199	50.6

S_1: by students in Year 1; S_2: by students in Year 2; T_1: by tutors in Year 1; T_2: by Tutors in Year 2; %: percentage of assistance according to type of assistance overall.

The Table above identifies the number of occurrences of each form of assistance in Year 1 and Year 2. The Table above shows that in Year 1, more assistance was from the tutors even though the students posted more messages than the tutors (tutors provided 367 assistances in Year 1 compared to 165 from students). In Year 2, however, there is no significant difference in terms of total number of instances of assistance from the tutors (199) or students (194). Compared to the number of messages sent in this year group (75 from the tutors and 231 from the students – see Table 2) and since there are far fewer tutors than students, it seems that assistance is more still likely to be provided by an individual tutor than a student.

In Year 1, Scaffolding at 37% is the type of assistance most commonly found in the units' discussion compared to the other types of assistance. Cognitive

Structuring is the type of assistance that is least commonly found (0.4%). Feedback (14.3%), Instructing (27.6%) and Questioning (17.1%) are quite common type of assistance found between the two end points, suggesting that these types of assistance have significant roles in such interactions.

In terms of which type of assistance is most prevalent in the tutor or students' postings, it shows that in Year 1, most of the instances of Scaffolding (as the most popular type of assistance) were from the students. This is followed by Instructing, although most of these were from the tutor. Questioning and Feedback were less used and mostly by the tutors. The least common form of assistance given by the students were Instructing, Modelling, Contingency Management and Cognitive Structuring. From the Table, it can be seen that assistance was more frequently given by the tutors than the students for all types of assistance except for Scaffolding, where 112 (56.9%) out of 197 incidents of assistance were given by the students.

The finding also indicates that the number of assistance occurrences is not related to the number of messages posted, but to the participants' role. Students were more likely to provide a simple form of assistance, such as Scaffolding. Even though the tutors sent the least number of messages overall, they remain the main source of support. They used most of the opportunities in their posting to give assistance while students did otherwise.

In Year 2, the total number of assistance from both tutors and students are almost equivalent, which illustrates an increase of students' role in giving assistance, in contrast to Year 1. Compared to Year 1, Year 2 shows a higher percentage in type of assistance used that were the least used in Year 1. These types of assistance are Cognitive Structuring, Modelling and Contingency Management.

In Year 2, the most common form of assistance given was still Scaffolding (51.1%) and mostly (two-thirds) from the students. This is followed by Questioning (19.1%), Feedback (12.5%) and Instructing (9.4%). The least common forms of assistance given by the students were still Cognitive Structuring (3.6%), Modelling (2.3%) and Contingency Management (2.0%). From the Table, it can be seen that while the students posted more messages, the total number of assistance given by the tutors and students was fairly equal (199 and 194 respectively). This instance shows the consistent contribution of tutors' assistance throughout the courses/units. Assistance was given more frequently by the tutors for all types of assistance except for Scaffolding and Modelling. From these results, tutors have shown a larger contribution in their role of giving Feedback and Instructing compared to students.

These analyses of assistance suggest that assistance is more likely to be found in tutors' postings compared to the students'. The balance of most type of assistance to be given by either role (tutor and student) in both year groups shows a similar pattern i.e. students are most likely to provide assistance through Scaffolding and tutors through Feedback and Instructing.

DISCUSSION AND CONCLUSION

The purpose of this paper was to analyse the nature and occurrences of online exchanges between students, and with tutors. The case study looks at two years of online discussion in a Master's programme in a United Kingdom university. The following are our discussion and conclusion of our findings.

Do tutor and students offer assisted performance through online discussion threads?

Here, we discuss the occurrence of assisted performance through interaction, as:

> Vygotsky argues that a *learner's* development cannot be understood by a study of the individual (*alone*); one must also examine the external social world in which that individual life has developed. *Therefore*, we can understand the learner's developing mind by studying the social interactions of teaching and learning (Tharp and Gallimore, 1988: 19, emphasis mine).

Overall, there are similarities of pattern of assisted performance in Year 1 and Year 2. First, through the analyses of patterns of assisted performance according to role, it is disappointing that tutors remain more likely to promote assistance compared to the students (further discussion below). Sociocultural learning theory suggests that learning could be enhanced when performance is assisted through interaction in the learning process. Therefore the ideal model of learning through discussions is that there are strong interaction containing of assistance provision and the interactions are between students. However in practice, it is rare to find assistance provision in student-student interactions in the discussions.

The findings in this study revealed that the tutor remains the main source of learning support in terms of providing assistance to the students. For example, in Year 1, the findings indicate that the numbers of assistance occurrence are not related to the number of messages posted according to the participants' role. Even though the tutors sent the least number of messages overall, they remain the main source of assistance. Unlike the students, the tutors have used most of the opportunities in their postings to give assistance. In Year 2, even though the

students posted more messages, the total number of assistance given by the tutors and students remained fairly equal (199 and 194). When considering the proportion of assistance contained in the messages, the tutors' assistance is consistent and important (i.e. in both year groups). However, as the total number of assistance from both tutors and students are almost equivalent in Year 2, there is an increase in the students' role in giving assistances compared to Year 1.

The nature of assistance

There was some evidence in the units, that the tutor was actively involved in posting messages and providing assistance, but this assistance was inappropriate as the assistance was given to most of the students' individual postings rather in the spirit of encouraging student-student assistance. Harasim et al. stress that:

> unless the teacher facilitates the networking activities skilfully, serious problems may develop. A conference may turn into a monologue of lecture-type material to which very few responses are made. It may become disorganized mountain of information that is confusing and overwhelming for the participants. It may even break down socially into name calling rather than building a sense of community (Harasim *et al*., 1999: 174).

Furthermore, Laurillard highlights the implications of using technology (including the CMC) in the university context when she argues that: 'A better method is to allow the student to complete the task undisturbed and to give a retrospective account of how they experienced it' (1993: 49).

There were varieties in terms of proportion of assistance in the messages posted. Some of the discussions contained a high proportion of assisted performance and some were the opposite. But this fact does not mean that the messages without assistances are less important. As stated in Salmon (2000), the interaction in the online environment includes five stages of learning: *Access and motivation, Socialization, Information exchange, Knowledge construction and Development*. Even though this model is more suitable for a total online learning mode[4], it is clear that the stages could happen in any part of the learning in the adjunct mode. As these stages are considered as 'a system' of learning in online environment, all the messages posted in the discussion should

[4] This model was written by Salmon through her experience teaching in the Open University which the learning context is different. The courses in Open University are more likely in 'total online mode' rather in this study; it was in the 'adjunct mode'.

be considered. For example, the messages in the second stage (*Socialization*) strengthen the participants' social networks *relation* in terms of providing assistance and it contributes to the whole learning processes.

What types of assistances are provided by both tutor and students?

While both the tutors and students offer assistance, it is usually in the simpler forms of Scaffolding and Feedback. For both Years, assistance was more frequently given by the tutors for almost all types of assistance, the exception being that Scaffolding was more frequently given by peers. This finding suggests that some elements of peer-to-peer collaboration are indeed present in that they are offering feedback and scaffolding of each other's learning. What is of concern here is that the more complex forms of assistance are almost absent (Ab Jalil *et al*., 2004a and 2004b). In fact, student did not fully follow the tutor 'model' of providing assistance, instead they appear to 'leave it to the tutor'. Therefore, as a tutor, it is hard to predict the best strategy to promote or to increase student assistance giving. It is important to remember that assisted performance in this context of study is text-based. It is open to questions whether participants are able to provide 'all' types of assistance through the medium especially when it is in textual form. Using a sociocultural perspective, 'Scaffolding' (and all other form of assistance), occur through the mediation tool (*symbolic* or *sign*), which, in this study, is the text itself.

Therefore, assisted performance in such media, at some point depends on the ability of the participants to perform assistance in the CMC with the medium of text. This circumstance suggests that, at least in this context, the range of forms of assistance given is limited. In turn, it begs the question of whether such forms of assistance are being offered elsewhere in the course, since CMC is an adjunct role here, and so are not required, or whether the CMC environment available simply makes it difficult to provide such assistance. This question needs further research.

Through the analysis for type of assistance, it could be concluded that there is no specific, strong distinguishable pattern of distribution for types of assisted performance. The exception is Scaffolding which is found mostly in the units' discussion and occurred at a significantly high level in almost all the units, when compared to other types of assistance. This finding shows that Scaffolding is seen as most frequently given means of assistance overall by the participants. Cognitive Structuring, on the other hand, is the type of assistance that is least commonly found in the first group and the number increased slightly in the second group. Feedback, Instructing and Questioning are quite common types of assistance, which suggests that they have a significant role in such interactions. The least common form of assistance received by the students

are: Modelling, Contingency Management and Cognitive Structuring. Students were not involved in giving Cognitive Structuring and Contingency Management at all to their peers in Year 1. However, in Year 2, students did give, albeit in very small numbers, these two types of assistance especially Cognitive Structuring.

Up to this point, it seems that giving assistance is a deliberate action, which may be rationalised in two ways: first, students may see their role as to help the group and deliberately try to do this; and, second, the contributions they make when seeking help or simply offering a view, which may support another's learning even though this is not their intention. It have been evidenced in this study that assisted performances were found in students' exchanges in Discussion Board that these postings are potentially valuable to the group, whether or not the students intended them to be.

REFERENCES

Ab Jalil. H. (2007). Conceptualising Peer Learning as Assisted Performance - The Implications of Task Type and Social Networks in Online Discussion. Unpublished PhD Thesis, University of Bristol.

Ab Jalil, H., McFarlane, A., Yunus, M. M., & Saufi, M. M. (2004a). *Assistance in Electronic Discussions.* Paper presented at the 5th International Conference on Information Communication Technologies in Education (ICICTE), Samos Island, Greece.

Ab Jalil, H., McFarlane, A., & Shariman, T. N. T. (2004b). *Role of Assistance in Computer-mediated Communication in Higher Education.* In Cook, J. (Ed). Blue skies and pragmatism: learning technologies for the next decade. Research Proceedings of the 11th Association for Learning Technology Conference (ALT-C 2004). Held 14-16 September 2004, the University of Exeter, Devon, England.

Allan, M. (2004). A Peek into the Life of Online Learning Discussion Forums: Implications for Web-based distance learning. *The International Review of Research in Open and Distance Learning, 5*(2), 1-18.

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing Teaching Presence in A Computer Conferencing Context. *Journal of Asynchronous Learning Networks, 5*(2), 1-17.

Choi, I., Land, S. M., & Turgeon, A. J. (2005). Scaffolding peer-questioning strategies to facilitate metacognition during online small group discussion. *Instructional Science 33*, 483-511.

Coomey, M., & Stephenson, J. (2001). Online learning: it is all about dialogue, involvement, support and control - according to research. In J. Stephenson (Ed.), *Teaching & Learning Online: Pedagogies for New Technologies*. London: Kogan Page.

De Laat, M. (2006). *Networked Learning.* Unpublished PhD Thesis, Universiteit Utrecht.

Gee, J.P. (2007). *Good Video Games + Good Learning: Collected Essays on Video Games, Learning and Literacy (New Literacies & Digital Epistemologies)*. New York: Peter Lang.

Harasim, L., Hiltz, S. R., Teles, L., & Turoff, M. (1999). *Learning Networks: A Field Guide to Teaching and Learning Online*. Cambridge; London: The MIT Press.

Jeong, A., & Joung, S. (2005). Scaffolding collaborative argumentation in asynchronous discussions with message constrains and message labels. *Computers & Education, In Press*.

Kirkley, S. E., Savery, J. R., & Grabner-Hagen, M. M. (1998). Electronic Teaching: Extending Classroom Dialogue and Assistance Through E-mail Communication. In J. C. Bonk & K. S. King (Eds.), *Electronic Collaborators - Learning-Centered Technologies for Literacy, Apprenticeship, and Discourse*. London: Lawrence Erlbaum Associates.

Kitsantas, A., & Chow, A. (2007). College students' perceived threat and preference for seeking help in traditional, distributed, and distance learning environments. *Computers & Education, 48*(3), 383-395.

Laurillard, D. (1993). *Rethinking University Teaching - a framework for the effective use of educational technology*. London and New York: Routledge.

Lave, J., & Wenger, E. (1991). *Situated Learning - Legitimate peripheral participation*. New York: Cambridge University Press.

Littleton, K. (1999). Productivity through interaction: an overview. In K. Littleton & P. Light (Eds.), *Learning with Computers - Analysing productive interaction*. London & New York: Routledge.

Masters, J., & Yelland, N. (2002). Teacher Scaffolding: An Exploration of Exemplary Practice. *Education and Information Technologies 7*(4), 313 – 321.

Oliver, R., & Herrington, J. (2001). *Teaching and learning online - A beginner's guide to elearning and e-teaching in higher education.* Edith Cowan

University: Centre for Research in Information Technology and Communications.

Roberts, E., & Rostron, J. (2004). *Walking the asynchronous talk: exploring community in a postgraduate distance-based programme.* Paper presented at the e-Learning ESRC/WUN Seminar Series - Researching Dialogue & Communities of Enquiry in eLearning in HE, Department of Educational Studies, University of York.

Rogoff, B. (1990). *Apprenticeship in Thinking - Cognitive Development in Social Context*. Oxford: Oxford University Press.

Rogoff, B., Mosier, C., Mistry, J., & Goncu, A. (1993a). Toddlers' Guided Participation with Their Caregivers in Cultural Activity. In E. A. Forman, N. Minick & C. A. Stone (Eds.), *Contexts for Learning: Sociocultural Dynamics in Children's Development*. Oxford: Oxford University Press.

Rogoff, B., Mistry, J., Göncü, A., Mosier, C., Chavajay, P., & Heath, S. B. (1993b). Guided Participation in Cultural Activity by Toddlers and Caregivers. *Monographs of the Society for Research in Child Development, 58* (8), i+iii+v-vi+1-179.

Salmon, G. (2000). E-Moderating - The key to teaching and learning online. In (pp. viii). London, Sterling: Kogan Page.

Shuell, T. J. (1992). Designing Instructional Computing Systems for Meaningful Learning. In M. Jones & P. H. Winne (Eds.), *Adaptive Learning Environments* (Vol. F 85). Berlin Heidelberg: Springer-Verlag.

Smith, T. (2004). *Ubiquitous Computing in Higher Education*. In Cook, J. (Ed). Blue skies and pragmatism: learning technologies for the next decade. Research Proceedings of the 11th Association for Learning Technology Conference (ALT-C 2004). Held 14-16 September 2004, the University of Exeter, Devon, England.

Tharp, R. G., & Gallimore, R. (1988). *Rousing minds to life: teaching, learning, and schooling in social context*. Cambridge: Cambridge University Press.

Vygotsky, L. S. (1978). *Mind in Society: The development of higher psychological processes*. In Michael Cole, Vera John-Steiner, Sylvia Scribner, and Ellen Souberman (Eds), Cambridge, London: Harvard University Press.

Wertsch, J. V. (1993). *Voices of Mind: Sociocultural Approach to Mediated Action* Cambridge, Massachusetts: Harvard University Press.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17*, 89-100.

Yelland, N., & Masters, J. (2005). Rethinking scaffolding in the information age. *Computers & Education, In Press*.