Preferred Collaborative Skills Used in Weblog among Learners

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Abstract

Computer Supported Collaborative Learning (CSCL) is an educational setting that merges the idea of group-based learning with communication technology to support teaching. CSCL has attracted many researchers to study the nature of collaborative learning in a virtual context. This paper discusses the preferred collaborative learning skills among learners and explains the internal and external learning processes in a weblog. A qualitative approach was used to understand the actual processes that took place in this CSCL mode. The results generally demonstrated that weblog permits learners to operate actively in a virtual mode as it encourages high level of information to be provided. The participants generally have combined the internal and external factors to actively participate in a virtual context. This formulates an understanding that learning in a CSCL context is a collective mediation.

1. Introduction

Computer is a pertinent tool used in teaching language in the modern world today. The role of computer is beyond a machine used by professionals in major disciplines such as economics, medical and military. As a result, learning has become technologically driven and has invented wired classrooms equipped with sophisticated gadgets to support learning. The focus of instruction in language classrooms now has shifted from teachers drilling students to memorize facts to more autonomous learning modes where learners are involved in negotiation of meaning. Today, learners could learn and collaborate together by accessing the internet. This has created a technological society (Baker, 1994) and learning is now an integration of pedagogical groundings with computers. Learning

via computer also has led towards collaborative learning beyond the classroom among students and teachers (Azizah Ya'acob et al., 2005).

The formulation of technological society clearly explains the significant role played by computers in classrooms. The paradigm shift from a structural approach to the advent of constructive and communicative approaches in learning is supported by computers. Computers are able to function in a broader context by engaging all the learners together and goes beyond a traditional classroom where learning can be conducted anywhere, anytime and most importantly the interaction can be captured and documented. Computer Mediated Communication (CMC) has drastically led to new discoveries and knowledge construction that stimulates collaborative learning because the participants share and exchange ideas that are of their common interest (Mohamad Kamarul Kabilan, 2006).

Weblog can be seen as a venue to generate constructive discussions that provide opportunity for meaningful learning. A local research conducted by Vethamani in Kabilan Mohamad Kamarul (2006) highlights that teachers teaching literature based courses perceive weblog forum as a new pedagogical imperative that multiplies the opportunity for learners to verbalize their thoughts and creates an interesting learning atmosphere. Given these possibilities, lecturers at Universiti Kebangsaan Malaysia (UKM) have also enthusiastically embraced in incorporating weblog with teaching modules (Marlia Puteh, 2007). Weblog forum crafts learners to construct knowledge together. It has significantly impacted on collaborative learning as learners have to rely on each other to achieve their goals or arrive at a certain level of mastery of an assigned task.

The notion of constructing shared knowledge is perceived as Computer Supported Collaborative Learning (CSCL). CSCL is a medium used to bind learners together (Kimball, 2001 & Anuratha, 2009). It allows learners to work in a group independently where the learner cast the role of both recipient and sender of knowledge. Computers are

seen as machines that orchestrate learning in a student-centered learning mode. Presence of weblog forum from the perspective of CSCL has changed the perspectives of learning as compared to the group discussions that took place a decade ago.

It has also changed the Malaysian's perception about communication and technology which has eventually changed the notion of how students learn (Pramela, 2006; Wan Irham Ishak & Shafinah Mohd. Salleh, 2006). Extensive use of computers in the realm of pedagogy has directed towards numerous researches. Much work has been focused about how computers function in learning environment and the conditions to support computer based learning. However, less attention is given to understand the interaction and the processes that take place in a virtual mode (Warschauer & Kern, 2000; Sfard, 1998).

2. The Study

The intention of the study is to find out the learners' preferred collaborative learning skills and subskills that enhance interaction in the CSCL context. The attributes used in the preferred skills and subskills can be used to further investigate the underlying processes that take place in the interaction. The term "process" explains the theoretical perspectives that are used to explain the shared collaborative knowledge in the interaction. The terms *internal process* and *external process* are used to unravel the learning processes. The internal process explains the aspect of cognition in an individual, whereas the external process is related to the social factors.

The research generally seeks to answer the following research questions:

1) What are the preferred skills and subskills among the participants in the weblog?
2) To what extent the internal and external processes predispose a collaborative discussion in a weblog?

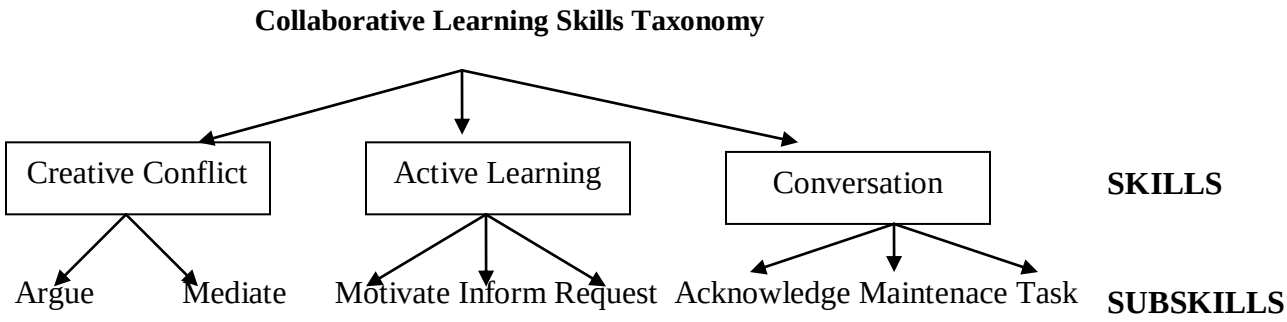
3. Literature Review

This study builds on notions of collaborative learning which progressively traced the evolution CSCL and considers the relevant theories to study CSCL. For the purpose of this study, the term internal process is defined as the abstract thinking process in the head of the individual such as solving problems or initiating doubts. The thinking that takes place in the individual is considered as the internal process. Construction of arguments, explanation or justification by an individual can be referred to internal process. Whereas, the attempt to involve other participants such as requesting for peers' assistance or when a group of learners collectively disagree to a particular context and the participants profit the learning when new meaning or understanding is formulated are considered as the external process.

The broadest definition of collaborative learning is the combination of two or more learners working together in a learning environment. Roberts (2004) has defined collaborative learning as the interdependence of the individuals as they share ideas and reach a conclusion or product. Panitz (1996) further explains that learning is a "philosophy of education" as it involves a group of learners where they share perceptions, experiences and expects to be listened by others. Panitz's principle is working together results greater understanding than working individually. Crook (1999) says that collaborative learning has changed the nature of knowledge acquisition and it is a popular teaching method today. Collaboration among learners is seen as an important crux to learning where participants interact with each other and exchange ideas and share information with each other. Finally, collaborative learning found its way in the virtual world and created a new field in educational scenario that merges the notion of group-based learning and the potential of communication technology. Wasson (2007) and Lipponen (2001) define CSCL as an emerging paradigm of research to examine the presence of technology in enhancing peer interaction. Kirschner (2002) on the other hand perceives CSCL as a tool to encourage constructivist insights in teaching and learning. Clearly, CSCL is an extension of the traditional collaborative learning concept that

requires researchers to look at various aspects in order to study the process of building collaboration. The infusion of CSCL in the educational world is changing the nature of teaching and learning. It reflects profound effects in learning. In line with this, McManus & Aiken in Soller (2001) constructed a system based on Collaborative Skills Network Taxonomy. This taxonomy will be used to identify the preferred skills and subskills among the learners.

Figure 1: Collaborative Learning Skills Taxonomy



Source: Soller, 2001

Figure 1 illustrates the skills and subskills in a CSCL learning environment. The taxonomy highlights Creative Conflict, Active Learning and Conversation as the main skills in a CSCL environment. The subskills for Creative Conflict are Argue and Mediate. The Active Learning skill is represented by Motivate, Inform and Request subskills. Lastly, the subskills for Conversation skill are Acknowledge, Maintenance and Task. Relevant theoretical perspectives are important to further study the taxonomy above to unravel the processes that take place in a CSCL context.

3.1 Relevant Theories and Perspectives to Study CSCL

The two main approaches to theoretically conceptualize the internal and external processes are to explore the cognitively oriented acquisition perspectives and the socio-culturally based perspectives in learning. Thus, the study builds on constructivist theory to make interpretations from the individual cognition approach and explores the sociocultural perspectives to investigate how learners work together to create new knowledge or understand a particular context. Although the theories applied emerged decades ago, but it is still applicable because the present study views technology as an integral part of learning. Therefore, technology is not contradicting with pedagogical aspects but is the cause of transition between collaborative learning and the emergence of CSCL.

Constructivist theory focuses on how an individual learner creates meaning out of their environment. Learning is believed to be more on individual than on the surrounding of the individual participation (Piaget, 1977). Construction of knowledge is a dynamic process as new ideas are derives from previous experience (Faccini & Jain, 1999). Kanselaar (2002) delineates that learning is an active participation of learners in solving problems critically based on their prior knowledge. Bereiter (2002) on the other hand perceives learning as individual learners' construction of knowledge whereby learners define their own learning objectives. Therefore, constructivism can be understood as a process of constructing new knowledge based on learners own idea and previous knowledge.

Unlike contructivist perspective that emphasizes on more on individual, the sociocultural perspective emphasizes on the surrounding within the individual participation. Wertsch (1991) notes that sociocultural perspective should be perceived from the context or surrounding of the learners. Learning is seen as a result of shared activity. In this sense, solutions are achieved through dynamic behavior of the surrounding members in a group. In other words, knowledge has only significant value in the context of joint activity. Rogoff's (1998) approach towards sociocultural perspective

is by concentrating on scaffolding activity. The presence of a more knowledgeable individual in the learning process can lead towards effective learning. The "expert" member in the learning group will coach the one who needs help. This will bridge the expert's own understanding with the one who need assistance. Therefore, two individual trying to solve a complicated problem will not have the same level of expertise, thus the novice will be facilitated by the expert in the meaning-making process. The context situates and foregrounds the learning process.

By situating the thought of studying the internal and external process, constructivist and sociocultural perspectives provide a framework for understanding on how learning takes place in a CSCL context.

4. Methodology

Data gathering and analysis were guided by qualitative theory techniques. Qualitative techniques were designed to explore how a topic was being discussed where it requires researcher to listen to the participants and construct a picture based on their ideas (Creswell, 1994). In line with this, the researchers analysed the aspect of collaborarative learning in weblogs posted by a group of postgraduates. Patton (2001) interprets qualitative research as an attempt where a researcher wants to seek a real world setting to understand the actual process that takes place in a situation. A total of 11 postgraduates from a literature based course participated in this the research. The participants were given a literary text to analyse via MELTA's weblog. The data collected was reduced to simplify the rich information and also to focus on a specific context. The participants' pseudonyms were coded in alpha-numeric form such as P1 (ASH). "P1" refers to the postion of the posting in weblog, whereas "(ASH)" refers to the abbreviation of the participants' pseudonym. Finally, the collected data was analysed by creating a frequency chart that encapsulates the number of preferred skills and subskills by every participant. Then, the constructivist and sociocultural perspectives were used to examine the CSCL context. These approaches responded well with the qualitative technique as the

researcher played an important role to make interpretations congruent with the nature of qualitative approach. These assumptions also matched well with the objective of the study to unravel the processes that take place in a CSCL context.

5. Data Analysis and Discussion

This section presents the findings of the study based on the analysis of the data obtained. The first section identifies the dominant skills and subskills in the collaborative learning skill taxonomies. The following section analyses the internal and external processes.

5.1 Identification of the dominant skills and subskills based on the Collaborative Learning Skill Taxonomy

Identification of the dominant skills and subskills is to capture the understanding on how learners generate discussion in a CSCL mode. It will also be an important tool to visualize and interpret the learners' involvement in the learning processes. Table 1 explains the frequency of the preferred skills which was obtained by calculating the total number of frequency of the subskills. Active Learning skill represents 59.82% of the overall interaction, which is equivalent to 207 attributes out of 346. The second most used skill is the Conversation skill containing 75 attributes with a percentage of 21.68%. The lowest number of attributes lies in Creative Conflict skill which represents a percentage of 18.5%.

Table 1: Identification of the Group's Dominant Skill in the Collaborative Learning Conversation Skill Taxonomy

Skills	Number of Attributes	Percentages (%)
Active Learning	207	59.82
Conversation	75	21.68
Creative Conflict	64	18.5
Total	**346**	**100.00**

The study also seeks to find the frequencies and percentage of the subskills. Participation in the subskills particularly explains how specific features of the main skills are used in generating group discussion. Table 2 represents the breakdown of the subskills.

Table 2: Identification of the Group's Dominant Subskills in the Collaborative Learning Conversation Skill Taxonomy

Skills	Subskills	Number of Attributes	Percentage (%)
Active Learning	Inform	196	94.69
	Request	9	4.35
	Motivate	2	0.96
	Total	**207**	**100**
Conversation	Acknowledgement	39	52
	Task	24	32
	Maintenance	12	16
	Total	**75**	**100**
Creative Conflict	Argue	64	100
	Mediate	0	0
	Total	**64**	**100**

A total number of attributes generated by Active Learning are 207. The Inform subskill represents 196 attributes (94.69%), followed by Request, 9 (4.35%) and then Motivate only constitutes 2 (0.96%) attributes. Creative Conflict represents Mediate and Argue subskills. 64 attributes comprising a total 100% represent the Argue subskill and no attributes were identified for the Mediate subskill. Conversation skill constitutes Acknowledgement, Maintenance and Task subskills. The highest attribute for Conversation skill is Acknowledgement representing 52% (39 attributes). The percentage for Task and Maintenance subskills is 32% (24 attributes) and 16% (12 attributes).

5.1.1 Analysis of the dialogues identified in the dominant skills and subskills

Tables 1 and 2 reflect that participants are inclined towards Active Learning. The participants are able to assist each other mainly by providing extensive information. The participants in the present study actively explained their ideas and also the claims made by their peers. Most of the participants constructed independent claims or arise a new understanding which are supported by self-explanation to support their claim and convince other participants. The explanation given is by providing textual evidence as it strengthens clarity in the author's claim. To ensure continuity in interaction, self-explanation is further supported by feedback from other group members. The active participation among group members to provide information creates interaction patterns. The following interaction patterns were identified based on the coherent explanations given by the participants. The interaction pattern in Figure 2 is not the representation of individual participation, but interaction that occurred among the members on a particular subject matter.

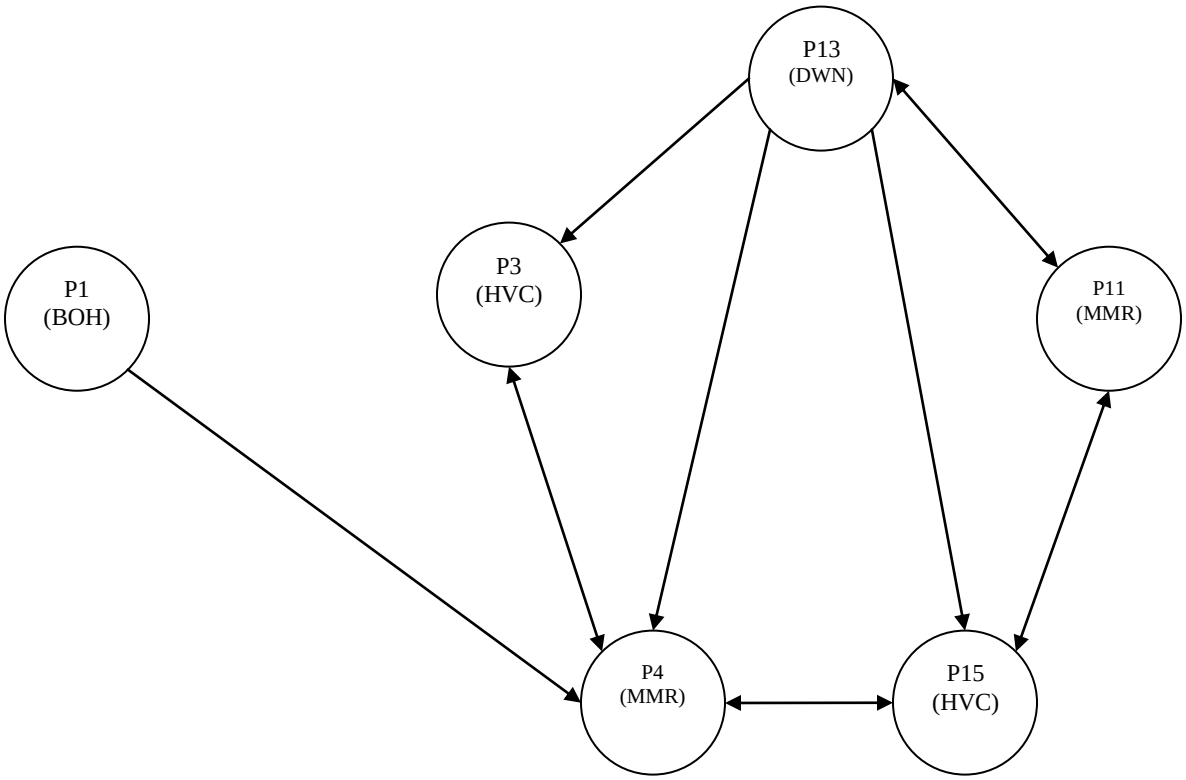


FIGURE 2: Interaction Patterns among Four Participants in the Beginning Phase of the Interaction

Figure 2 is an example of interaction pattern traced at the beginning phase. In the beginning phase, the strong presence of HVC is evident in the community. HVC posted two replies in the posting and almost connected to all the members of this community. This position to some extent suggests that HVC is the central figure in the interaction pattern above. HVC seems to act as the central member by actively taking the lead in discussing the subject matter. DWN is also another central member in the community as DWN is also almost connected with the other members. However, DWN has a different way of contributing as the emphasis is more on self explanation rather than HVC who actively responds to individuals in the community by trying to make the interaction keep going. DWN's posting indicates that the learner is conscious in making a high contribution to the group's discussion because the posting refers to the replies sent by all

the members, while HVC's presence is important for the community to keep task-focused. HVC mentions the participants' names and plays an important role in not only contributing ideas to the group but also concerns in mostly moderating towards this community. Therefore, the diagram (Figure 2) explains how explanation given by the participants formulates a subgroup within a group of learners.

The participants generally have low preference in making request. The form of request made in the interaction is unlike the typical way of struggling students requesting for information. The participants are generally aware of the subject matter, but often requested for further explanation to enrich the discussion. Finally, for the Motivate subskill only two students made use of the attribute. Reinforcing reply was given for presenting an attractive point. However, encouragement given was also entailed by disagreement. In this context, the motivation given can be perceived as a positively foresaid argument to avoid dispute.

Out of 346 attributes, only 39 attributes are identified as Acknowledge subskill from the Conversation skill. The participants generally accepted and showcased appreciation to contribution made by others. 24 attributes represent Task subskill which explains the participants' attempt to coordinate the group. The participants summarize information to request for change of focus. Summaries provided by the participants were a combination of the individual's perception and information gathered from others. Summaries are also dominantly used to strengthen a particular point of view before progressing to a new topic of discussion. Finally, the Maintenance subskill which functions to request confirmation in order to validate information constitutes only 12 attributes. It explains that the participants are generally aware and confident in terms of the opinions shared with others. The participants are more inclined towards making interpretations, evaluations and presenting evidence to strengthen the claims made instead of maintaining the task by explicitly complementing others or navigating the group to progress to new subject matters.

Finally, the Creative Conflict skill that encompasses Mediate and Argue subskills delineates no attributes for Mediate subskill and 64 attributes for Argue subskill. The participants actively constructed argumentative statements upon opposing viewpoints. Although the attributes for Creative Conflict appear to be the lowest, but it can be perceived as the most important skill and subskill as the controversies were followed by extensive explanation, elaboration and justification. These are normally summarized with inferences which an implicit way of making interpretation and also ending a conversation. This eventually builds an active interaction as the participants blend together to submit their postings.

5.1.2 The social and cognitive constructions in a CSCL mode

To ensure the interaction goes on with appropriate collaborative skills, the participants posed questions to their peers. The questions addressed to their peers can be seen as a social factor to elicit extended thinking. The participants asked questions to gain alternative view. It explains the participants' role to construct knowledge beyond the ability of each peer to supply knowledge. It can be seen as a valuable strategy to pursue the task. Besides that, the participants also asked questions to request for further explanation to extend the topic further. Lastly, questions are asked to invite others to contribute in the interaction. This indicates that the authors are raising opportunity for other members to contribute. The participants also end the topic discussed explicitly and implicitly based on understanding gained from the context of learning. In terms of dealing with conflict, the interaction is not a smooth sailing journey as some of the contributions made did not solely fit in the group's common thinking. This leads to conflict and it attracts other peers' concern and this creates a socially mediated conversation. Ability to put forward competitive attributes is due to the contributions made by other. It explains how members in a collaborative learning environment co-construct meaning together. The participants also demonstrated supportive behaviour to reach a deeper discussion and handle complex issues in delivering opinions. The participants show interest and concern to invite others to participate.

In terms of the internal process, the participants discuss issue beyond literal meaning by providing contradicting statements. This attempt clearly requires higher level of thinking on the individual part as the statements made is contradicting with the common view given by the other participants. At this stage, individuals need to think critically to seek for information. The participants also practice self-question-asking where questions formulated are answered by the one who initiates the doubt. Therefore, the answer for the question constructed can be treated as the individual's attempt to seek for solution without solely depending on other peers' assistance. It does not only improve the individuals' ability to solve problems but also exemplifies that learning is individually centered.

Therefore, it is plausible to summarize that the participants are both cognitively and socially inclined. Hence, learning involves the presence of both social and cognitive factors.

6. Conclusion

A general understanding that could be formed based on the findings is the learning reflects the combination of both internal and external processes. Thus, the internal and external processes can be seen as a collective device that learning is formulated from an individual's understanding into a group activity or vice versa. In other words, the research indicates that both social and cognitive strategies are a collective process that formulates understanding among the participants.

For decades, theorists believed that learning is depending on an individual. Individual thought is a necessary condition in the creation of constructive learning (Piaget, 1977). Driven by this need, learners perceive learning as a self-perception process. This perspective reflects the participants in the present study as the individuals put forward contradicting statements by thinking critically, constructing hypothetical

questions or evaluating others point of view based on the individuals' understanding. Expression of opposing point of view is a form of self-perception as the individual learners come to understand and interpret a text differently by themselves. This perception lays the foundation of how individuals make sense of the world without any help or support from others. Being able to substantiate new set of evidence and providing hypothetical statements for opposing point of view also explain an individual's ability to operate concretely to be more logical and differ from others.

Vygotsky on the other hand believes that social engagement is pertinent in learning. This aspect is also pertinent in the present research. Participants actively constructed questions, responded to conflict and progress through the task by introducing new topics due to the engagement with other peers. All these actively involved the participants to fit in the discussion. Some of the participants who were more receptive added to comments made by others. Some of them joined or further continued the discussion when was invited by their peers to contribute their ideas. Asking questions to other participants for clarification or further assistance reveal that the participants possess collaborative skill. Parallel to this situation, learning does not take place in isolation by an individual, but rather in a social context. In other words, learning is shaped by social attributes of the learning community such as when they attempt to progress through task, participate in conflicting situation and partake in social behaviour. Through such relationship and behaviour, participants collaborate towards a shared goal. As the participants together make references and acknowledging each other, knowledge is transmitted throughout the constant interaction. This constant interaction has led the group of learners to formulate a few subgroups that are bound together.

To this point we have seen how internal and external processes interchangeably predispose discussion in a virtual context. It has now broadened the lens of understanding on how learning takes place in a virtual context. It encapsulates that learning in a virtual context via weblog forum is a collective process which is interrelated especially in

formulating understanding among the participants. Figure 3 shows how the internal and external processes mediate together in a learning environment.

The coded circles in the wide circle represent each individual in the subgroup. The arrows represent the connection between the participants in the subgroups. The structure (see Figure 2) in the subgroup explains the transformation of information from one group to another between the members of the network. The space in the wide circle reflects the social context in the interaction. The individual mind denotes how an individual behaviour influences learning. As mentioned earlier, the participants actively debated issues contradicting with their individual thought. Therefore, it can be inferred that disagreements stimulate individual learners to actively indulge in Explain skill. Presentation of contradicting issues cause disjoint among the learners. The mismatch among the group members can be seen as the fundamental characteristic for the individual learners in the group to provide proper evidences and explanations. The individual perception will influence others because the contradicting statement sets a demand for others to accept or reject the opinion. This is the point where learning becomes a social affair because the individual thought is extended with other members' involvement in the group. Although sociocultural perspectives are embraced and acknowledged, it is still important to submit to the development of individual learner's involvement to produce insightful views. Figure 3 also garners that surrounding is an important venue for learners to participate in learning as the community around "forces" individuals to participate in the discussion by inviting them join or asking for clarifications.

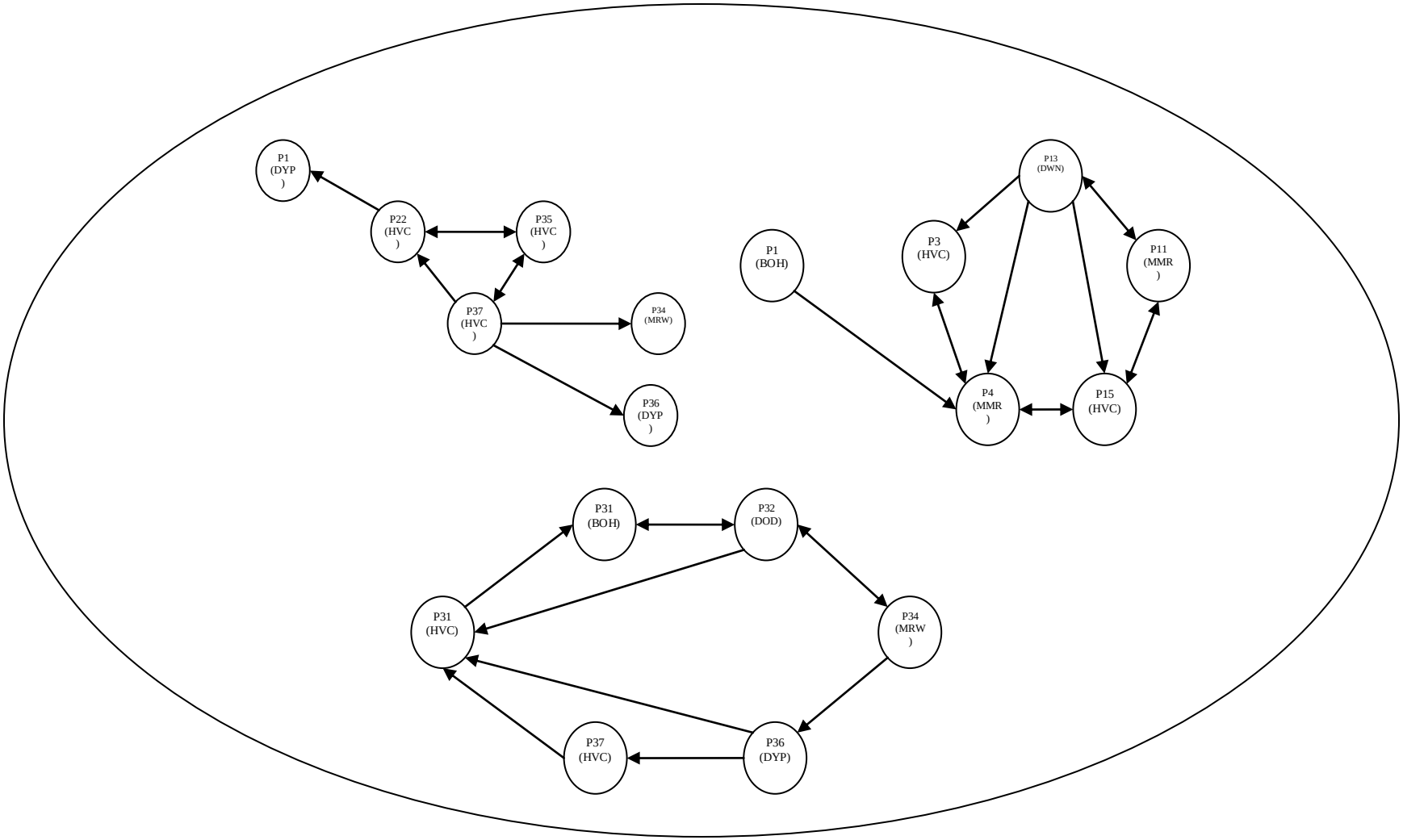


FIGURE 3: Interaction Patterns Showing How Learning Takes Place in a CSCL Environment

One of the reasons that the learners are able to operate in a dual mode is due to the nature of asynchronous mode of learning where learners could participate and respond at their convenient. The advent of asynchronous mode of learning has opened up possibilities for learners to reflect, revisit and construct comments independently. A wide range of cognitive and social attributes in the interaction could be due to the aspect of anonymity. The anonymous context by the use of pseudonyms could have influenced the participants to create numerous responses that create "noisy" but productive learning opportunities.

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