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Exploring the Understanding and Use of the Metacognitive Strategy of Brainstorming in Group Discussions

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ABSTRACT

Awareness of apt strategy use helps learners in the development of their English language skills. This study aims to explore the change in the understanding and consequent use of the metacognitive strategy of 'brainstorming' in the various stages of group discussions. Six female and twelve male first year students doing their Engineering in Kolkata, India participated in the study. The data was collected through four rounds of one on one semi-structured interviews, five rounds of group discussions, a questionnaire based on their use of the strategies, a strategy use sheet, and classroom observations. The data was analyzed qualitatively and through data triangulation it was found that students were using the strategy of 'brainstorming' to organize their arguments in the preparatory stage of the discussion. This is at variance with the meaning and understanding of the strategy as discussed in the literature available. Also, since this strategy was introduced to the learners towards the end of the training programme, it is imperative to determine what strategy the students used to organize their ideas in the earlier rounds of group discussion. This will help to identify the alternative strategies which can be used to address the issue of organization of arguments in group discussions. Other findings and the pedagogical implications of the study have been discussed as well.

Keywords: Metacognitive strategies, ESL, language learning strategies, brainstorming, engineering students, Indian

Introduction

The teaching of English in the second language classroom has changed from being literature oriented to language oriented with the use of communicative language teaching methods at all academic levels. An example of this is the inclusion of *Language for Communication* and *Soft Skills* in most engineering colleges across the country. The employability skills of students are enhanced by preparing them for group discussions and interviews, which they need to face at the time of campus recruitment conducted by various companies and organizations.

Students pursuing various courses of engineering are given job opportunities even before the completion of their four- year course. This happens through a campus recruitment drive conducted at most engineering institutes sometime during the third year (fifth or sixth semester) of their study. Among the various stages of the selection process, these prospective candidates have to participate in group discussions. The discussion encompasses topics of both national and international importance which may or may not be directly linked to the content matter of their courses. This stage of the selection process is useful for giving the selection committee of the hiring company an idea about the linguistic competence, and the personality traits of the prospective candidates. In turn, it helps to gauge the appropriateness of the candidate for the company.

Most students, especially those who do not have an English medium education, face difficulty at this stage. This happens for two reasons- their lack of proficiency in English and their inability to participate in group discussions due to a lack of training. To help 18 such students a ten-week strategies training programme on group discussions was designed. The ten strategies which were introduced to the participants were 'setting goals', 'visualizing', 'activating background knowledge', 'self-talk', 'prediction', 'self-monitoring', 'self-evaluation', 'brainstorming', 'selective attention', and 'using resources'. This study is limited to the participants' understanding and the subsequent use of the strategy of brainstorming which was the eighth strategy introduced to them.

Objectives/Research Questions

The paper aimed to explore the changes in the perception of the strategy of 'brainstorming' and its subsequent use in group discussions by first year engineering students. This included tracing the change which took place in the use of the strategy from being a strategy of retrieving information to a strategy of organizing ideas. This begs the question, what strategy, if any, was the logical ordering of ideas a part of before the introduction of 'brainstorming'. Therefore, the research questions which this study aims to answer are,

- How has the learners' understanding and use of the strategy of 'brainstorming' undergone a change starting from the initial days of the strategies training programme to the time of delayed recall?
- How did the group discussion skill of logically ordering ideas become a part of the strategy of 'brainstorming'?

Theory

Cognitive psychology describes the process of information acquisition in four stages, namely, *selection, acquisition, construction* and *integration* (Weinstein and Mayer, 1986). The first stage, selection helps learners to focus their attention on specific information. This is then transferred to the working memory, also known as the short term memory. All information gathered here undergoes changes for better retention in the long term memory. The next stage involves the transferring of this knowledge from the working memory to the long term memory through active effort from the learner. Thereafter, in the third stage, the learner builds internal connections among the ideas in the working memory. These connections usually are in the form of images and mind maps which help in the retention of ideas. Finally, in the fourth stage, the learner makes use of the information stored in the long term memory to tackle tasks in the working memory. Weinstein and Mayer (1986) state that learning strategies become important at this juncture where awareness raising may lead to improved understanding of the process of learning, thereby making learners more efficient. This means that the learner uses the schemata one possesses to understand newer concepts. Learners are dependent on these schemata to make optimum utilization of the strategy of 'brainstorming'.

Oxford (1990) maintains, "…learning strategies are operations employed by the learner to aid the acquisition, storage, retrieval, and use of information" (p.8). Cohen (1998) suggests that learners are also able to verbalize their learning processes. Macaro (2006) looks to the identification of essential characteristics rather than attempting to define learning strategies. Dornyei (2005) gives a new turn to the discussion and brings in the concept of self-regulation of learning which can happen when the learner not only uses cognitive strategies but also takes recourse to metacognitive strategies. Therefore, language learning strategies can be defined as "activities consciously chosen by learners

for the purpose of regulating their own language learning" (Griffiths, 2008, p. 87). Holec (1994), Chamot and O'Malley (1994), Wenden (1995), Oxford (2002), and others involved in training learners in the use of learning strategies suggest that metacognitive knowledge should be an integral part of language programmes. They maintain that students who learn to consciously monitor their own learning, and have a storehouse of strategies to use when learning becomes difficult, fare better than students who do not have such strategies. This has been validated through a perusal of the rounds of group discussions which the learners had participated in as part of the research. Although, studies conducted elaborate upon the effectiveness of language learning strategies, not much work has been produced to record its utility in group discussions. Keeping this in mind, the present study aimed to explore the understanding and subsequent use of the metacognitive strategy of 'brainstorming' in the various stages of group discussions.

During the training programme the strategy of 'brainstorming' had been explained to the participants using the four rules propagated by Osborn (1948). These include the following,

Going for quantity. This follows the adage that maximum quantity breeds quality. Therefore, the more the ideas generated regarding the group discussion topic, the better the ideas were likely to get.

Withholding criticism. To be able to brainstorm properly, the participants were encouraged to think unbiasedly about the topic. Having a free flow of ideas associated with the topic was encouraged.

Welcome wild ideas. During the training, the participants were encouraged to "think out of the box" and come up with as many ideas as possible. They were instructed to write anything and everything which may be even remotely related to the topic.

Combine and improve ideas. Finally, the participants were asked to join two or three ideas which they found to be similar. This in turn could give rise to more detailed and concrete ideas.

Research on Language Learning Strategies

Several researches have been conducted which study the influence of cognitive and metacognitive strategies on the development of the various language skills. Unfortunately, the feasibility of teaching learning strategies has often been a point of debate among researchers. A considerable amount of research proves that these are teachable (Cross and Paris, 1998; Dignath et.al., 2008; Haller et.al., 1988; Kramarski and Mevarech, 2003). These researches have corroborated the usefulness of teaching cognitive and metacognitive strategies across the four skills. In the study conducted by Cross and Paris (1998), one hundred and seventy-one students in the third and fifth grades were taught using a curriculum aimed at creating awareness and increasing the use of effective reading strategies. The experimental group was made aware of evaluation of task difficulty and one's own abilities (linking it to the person and task knowledge propagated by Flavell), planning to reach a goal and the monitoring of the progress in the process of reaching the goal itself. Schraw et al. (2006) maintain that these strategy training programmes should emphasize not only on the how of using the strategies but also the when and why of using those. In keeping with the suggestion given by Kuhn (2000), this study aimed to create awareness about strategies rather than focusing only on the task to be performed.

The importance of strategy use for developing speaking proficiency has been delineated in a study conducted by Ghapanchi and Taheryan (2012). Ninety-six Iranian university students participated in this study which proved that metacognitive strategy use along with metacognitive knowledge and linguistic knowledge were instrumental for improved speaking skills. The use of metacognitive strategies for developing speaking

skills has been influential in an online mode as well (Xu, 2012). 186 non-English major students of the Guilin University were selected for the study. It was reported that among the metacognitive strategies, subjects made the most prolific use of planning strategies when engaged in oral communication.

In a study conducted by Liyanage, Bartlett, Birch and Tao (2012), the use of metacognitive strategies was observed to increase when used in an 'out-of-class' context. The subjects comprised one thousand four hundred and forty students at the B.A. level who were required to pass the College English Test -BAND 4 (CET-4). The study focused on selective attention, organizational planning and self-management for the development of listening and speaking skills. Although not the aim of the study, here too the strategy of brainstorming was found to lend itself to the organizational and planning aspects.

Tan and Tan (2010) conducted a study using audio blogs on twenty-five students at the secondary 2 level (Grade 8). These students were around thirteen years old. A significant improvement in their oral performances was recorded after the students were given explicit instruction in the metacognitive strategy of reflection. This study also showed that learners at that level were more likely to focus on task knowledge as opposed to either person knowledge or strategy knowledge.

Although several studies have been conducted on various aspects of language learning strategies and their influence on the four skills, none of the studies look inward into the understanding of the strategy itself. This gap forms the cornerstone of this paper wherein the strategy of 'brainstorming' has been intricately analyzed. The different aspects which make up the strategy have been explored further. An interesting point of departure is that along with the definition of strategy in the literature, the participants have also included the group discussion skill of logical ordering of ideas within 'brainstorming'. Therefore, the study further explored the source of this aberration.

Methodology

In this section a brief explanation of the participants is presented. This precedes a discussion on the tools used in the study. The section ends with an outline of the data collection procedure.

Respondents

The data for this study was collected from 18 (6 female and 12 male) first year engineering students in Kolkata, India. All of them were majoring in electrical engineering and were between 17 to 19 years of age. Most of them had an English medium background of education till class 12. But, by their own admission memorization of answers was the norm to score marks in the school leaving examination. Consequently, on entering college, there were students who were unable to understand the content of the engineering courses as the teaching was carried out in English. In this paper, the data presented has been limited to the experiences and responses of six participants (2 female and 4 male).

Tools

The tools used for data collection included one on one semi-structured interviews, group discussions, a questionnaire based on their use of the strategies, a strategy use sheet, classroom observations and written input using WhatsApp messaging service.

Procedure

The first phase of data collection lasted ten weeks from August to October, 2015. The delayed recall took place five months later during March-April, 2016. The final phase

of data collection was in July, 2016. The following table delineates the data collection process sequentially.

S.No	Phase I- Training Period	Time Period	Strategies taught prior to the group discussion
1.	Group Discussion, Round 1	August10 to 17, 2016 (Weeks 1,2)	No introduction to strategies
2.	Strategies inventory for group discussions Group Discussion, Round 2 First Interview	August 18 to September, 7 2016 (Weeks 2,3,4,5)	Setting goals, Visualizing, Activating Background Knowledge, Self-talk, Prediction
3.	Group Discussion, Round 3 Strategies use sheet Second Interview	September 15 to 29, 2016 (Weeks 6,7,8)	Self- Monitoring, Self-Evaluation
4.	Group Discussion, Round 4 Strategies use sheet	October 5 to 9, 2016 (Weeks 8,9)	Brainstorming, Using resources, Selective attention
5.	Strategies inventory for group discussions Group Discussion, Round 5 Strategies use sheet Third Interview	October 13 to 16, 2016 (Week 10)	No new strategies were taught
S.No	Phase II- Delayed Recall	Time Period	Strategies taught prior to the group discussion
1.	Worksheet on understanding of strategies Group discussion, Round 6 Strategies use sheet Fourth Interview	March 28 to April 8, 2016	Revision of the understanding of the strategies
S.No	Phase III	Time Period	
1.	Fifth Interview WhatsApp conversation	July 5 to 11, 2016	Confirmation of the findings of the research

Figure 1. Layout of the Study

This study focuses on the strategy of 'brainstorming' which was introduced before the third round of interviews. The participants were first introduced to the strategy by a hands-on method. This was followed by dividing the class into three groups. Each group was given a topic on which they had to brainstorm and come up with as many points as possible.

The participants were interviewed on the use of the strategy twice, once during the training period and next, six months later, as part of the delayed recall. The fifth interview was conducted to confirm the findings which emerged after an analysis of the data gathered.

Findings

The findings have been presented as per the data collection procedure. The findings of the training period have been presented first, followed by the delayed recall, and last of all from the fifth interview. In the analysis of the data obtained from the various tools, Q1… Q4 define the questions asked by the researcher and P1, P2,...P6 define the

participants whose responses regarding the understanding of brainstorming have been taken into consideration. P1 and P2 are highly proficient in English, P3 and P4 are moderately so and P5 and P6 have low proficiency in English.

Phase I-Training Period

Strategies inventory for group discussions. The strategies inventory for group discussions was administered twice during the training programme.

The first time, P1 and P5 claimed to use 'brainstorming' in the self-study stage, P3 claimed to use it only in the preparatory stage. P2 claimed to use it both in the self-study and the preparatory stages. P4 used 'brainstorming' after the discussion was over and P6 did not provide an answer to the item.

In the second administration of the inventory P1, P3, and P4 claimed to use 'brainstorming' during the discussion. P2 claimed to use it in the preparatory stage. P5 used it in the preparatory and self-study stages and P6 used it in the preparatory stage and during discussion.

This suggests that although P1's idea about the stage at which to use 'brainstorming' had changed, it was still incorrect. P2's understanding changed from the partially correct to absolutely right. P3's understanding changed from correct to wrong, P4's understanding was wrong on both counts, P5 moved from wrong to partially correct and P6 moved from no answer during the first time to a partially correct response. Therefore, at this juncture, the understanding and use of the strategy of 'brainstorming' cannot be generalized with respect to the English proficiency level of the participants.

Classroom observations-samples of brainstorming. The classroom observation reports on the understanding of the strategy and the participants' use of it on the day it was introduced to them. The participants' responses suggest they have understood the four basic principles of brainstorming- generating ideas, randomness of ideas, exaggerated notions regarding the topic, and being nonjudgmental.

Interviews. In this qualitative approach based content analysis of the data obtained from the interview questions, the following process has been adhered to- firstly, the data which have been obtained from the answers of the participants from the interview have been put into the tables. Then, the repeating ideas based on the answers have been presented in a separate column.

Table 1

Q1: Which strategies do you find most useful during group discussions?	Repeating Ideas
P1: Then comes I think brainstorming because one has to continuously arrange and rearrange according to the need.	Arrange and rearrange
I need to pace myself then I have to brainstorm, pick out selective ones	Pick out selective ones (words)
P2: …most useful I find brainstorming. It helps me point out the specific ideas on which I will be presenting my speech.	Point out the specific idea
P4: I find two or three strategies most useful and they are like visualization, brainstorming, activating background knowledge and using resources.	

Table 1 shows that three out of the six participants find the strategy of brainstorming useful in group discussions. P1 and P2 find it useful for arranging and rearranging information which is done through picking out certain words and ideas. P4 does not specify its exact use at this point in the interview. P3, P5, and P6 have used it to varying degrees but do not consider it to be among the most useful.

Table 2

Q2: Immediately before the discussion began, which strategies did you make use of?	Repeating Ideas
P2: How to present my speech. How to make my friends understand what I am about to speak. I was ordering my points in a logical order so that they can understand my points more clearly what I'm going to say. That was my main thought.	Expressing oneself Logically ordering points
P3: The points that I arranged in the paper, I was thinking about the points, how can I say them? How can I logically order the points? And place my points properly in front of the other members so that they understand my points better.	Logically ordering the points Place my points properly
P5: When topic is given and thinking time is given, on that time we are just thinking what the points are come out in our mind, in my mind. I just thinking how many points and what points will come out.	Thinking about the points

Question no. 2 (Table 2) aims to identify the juncture at which the participants are most likely to use the strategy of brainstorming. The repeating ideas which emerge about brainstorming are that it helps in logically ordering points and consequently expressing oneself clearly.

Table 3

Q3: When the discussion is underway, which strategies do you find most useful?	Repeating Ideas
P1: Because when others speak while listening to them attentively I keep on arranging my points and rearranging my points	Arranging and rearranging the points depending on the response of others
Now, I have to think it over how am I to present the same thing or rather how, what can I say about it, how can I think out of the box.	Think out of the box

As evidenced from the table above, only one participant thinks that brainstorming might be useful when the discussion is underway as in his opinion the strategy is best used for arranging and rearranging points depending on the responses of the other members of the discussion and for gaining global knowledge about the topic.

Table 4

Q4: How have you used the strategy of brainstorming?	Repeating Ideas
P1: Brainstorming is important in the sense it helps me arrange my content better.	Arranging the content better.
Now brainstorming helps me to arrange it and then adds facts	Arrange it and add facts

Q4: How have you used the strategy of brainstorming?	Repeating Ideas
to it.	to it
P2: I first prepared the points from brainstorming.	Prepared points from brainstorming
I prepare all the points in that order… So in that way brainstorming helped me to prepare the points in which I can talk about.	Logical ordering sample
P3: I did a brainstorming and I made the points that I had to say according to the group discussion. I was thinking of something out of box like the foreign investors.	Thinking about the points Thinking out of the box
P4: During GD, brain storming, I circled the topic and I visualized some specific words that will enhance the GD. And I think that the brainstorming words.	Circling the topic Specific words
P5: When topic is given and thinking time is given, on that time we are just thinking what the points are come out in our mind.	Thinking in the preparatory stage
P6: At first I collected points and what I said I did not collect those points. And the points which I had said I had collected those after brainstorming. That's it.	Collecting points

All the six participants have given examples of their use of the strategy. Brainstorming has been used for arranging information, reflecting on the points and logically ordering the ideas.

Phase II- Delayed Recall

In the delayed recall phase, a worksheet was given to the participants to test their recall of the strategies which were taken up five months earlier. This was followed by a session of revision of the various strategies with all the participants. Finally, another round of group discussions was conducted. As before, this was followed by a round of interviews for further clarification.

Worksheet

Table 5

Q: Give an example of the use of the strategy of brainstorming
P1: No answer
P2: Helps in quick strategizing of our points
P3: Brainstorming means the words or related events that strike our mind immediately after hearing about something.
P4: Proper pictorial representation. No ordering
P5:No answer
P6: No answer

It is evident from the table (Table 5), that three out of the six participants attempted to respond to the question on brainstorming. Among them, only one participant, P4 still had the understanding and use of the strategy as per the training provided earlier. The response provided by P2 is unclear. Participant 3 has partial understanding of the strategy.

Strategies use sheet. Through this data collection tool, it was found that P1 and P4 have not used the strategy at all. P6 has noted down a single point only. P2, P3 and P5

have used the strategy to an extent as evidenced by their use of the blank mind map provided in the sheet.

Interview. The questions asked to the participants and their responses are shown in the tables below.

Table 6

Q1: What do you understand by brainstorming?	Repeating Ideas
P1: Brainstorming has to do with the usage of key words like searching for key words which will actually be the summarization of a point.	Key words Searching for key words
P2: I have used brainstorming... the first word that came to my mind, is that one must gain knowledge and then the thing that follows is practice.	First word that comes to mind
P3: Brainstorming means the facts which I try collecting from my memory the moment I receive the topic.	Try collecting facts from memory on receiving the topic
P4: Brainstorming means certain topic related keywords which can be elaborated upon during the GD. During group discussions suddenly certain words cam come to our mind and then we can speak about those.	Keywords
P5: When a topic is given to us then regarding that topic what are the keywords coming to our mind.	Keywords
P6: Brainstorming means I have heard about the topic and I can't remember much during the group discussion. Means putting a lot of effort and trying to think harder about the topic to get the information.	Putting a lot of effort Trying to think harder
Such as suppose I had heard about a topic long ago and I did not remember about it a lot so I can extricate it from my mind and use the information during the group discussion.	Extricate from mind something heard long ago

The responses of P1, P4, and P5 indicate that by the time of the delayed recall, the notion of 'brainstorming' being the source of keywords became predominant. P3, and P6 associated it with the idea of thinking deeply to arrive at points. By using the term first word and then following it up with the next few words which it leads to, P2 indicates using the strategy for ordering his points. This understanding of the strategy has been discovered among the other participants as well, as evidenced by the next table.

Table 7

Q2: What is the difference between brainstorming and activating background knowledge?	Repeating Idea
P1: Brainstorming deals with looking for specific and classified data.	Specific information
P2: And the important words we order in the form of brainstorming.	Ordering important words
During the discussion we can look at it and check whether we have covered all the points or not. And also it helps us to say something which we might not have said before.	Checklist of points to be covered

Q2: What is the difference between brainstorming and activating background knowledge?	Repeating Idea
P3: Brainstorming means the facts which I try collecting from my memory the moment I receive the topic.	Recollecting facts about the topic
P4: Brainstorming refers to a single word which helps to describe lots of things.	Single word to describe lots of things
P5: When topic is given many points are coming in our mind…these are very key words which come in our mind.	Keywords
P6: Brainstorming means I have heard about the topic and I can't remember much during the group discussion. Means putting a lot of effort and trying to think harder about the topic to get the information.	Putting a lot of effort and trying to remember Think harder
Brainstorming means trying to remember something which we have forgotten completely.	Trying to remember which we might have forgotten

This question brought out a few more attributes of the strategy as per the participants' understanding. P1 used 'brainstorming' for retrieving specific information about the topic. P2 considered it important for ordering points and using it as a checklist to mark the points already taken up during a certain discussion. P3 used it for recollecting facts while for P4, and P5, 'brainstorming' was used to come up with keywords. P6 used it for thinking deeply about ideas which might have slipped the mind.

Table 8

Q3: At which stage do you make use of this strategy?
P1: Before discussion, after we are given the topic, in the preparation time rather.
P2: Oh, the preparatory stage.
P3: Brainstorming means the facts which I try collecting from my memory the moment I receive the topic.
P4: Preparation time
P5:During thinking time before the GD has started
P6: After topic is given, thinking time

By the end of the delayed recall it is evident that all the participants had a clear idea that brainstorming could be put to maximum use in the preparatory stage of the group discussion.

Phase III- Final Interview
This was conducted in July, three months after the delayed recall. This was required to determine why the skill of logically ordering ideas was incorporated within the strategy of 'brainstorming'.
P1 claims to use 'brainstorming' for finding links to connect to the main idea. First of all, the points are thought about. Then more ideas are generated and examples furnished using 'brainstorming'. Once the links are made, they are ordered according to importance and used during the group discussion. Before learning about the strategy, P1 would rely mostly on his instincts to decide the level of importance of the points and order them. P2 maintains that 'brainstorming' is the logical ordering of ideas. Before being introduced to the strategy, he found it problematic to order points and was therefore not serious about using it. For him, since brainstorming refers to the gathering of important points and

arranging those, brainstorming and logical ordering of points go hand in hand. P3 claims that brainstorming provides the points which are then ordered in the mind by picturing the sequential occurrence of the events. P4 said that the strategy of 'brainstorming' could be executed better if it included the logical ordering of ideas. Moreover, before knowing about the strategy, the participant had never made use of the skill of logically ordering his ideas during the discussion. Making use of the strategy introduced him to the notion of keywords which in turn helped him to logically order his ideas better by enabling him to find links between those words. Contrary to the responses given by the other participants P5 asserts that she does not find brainstorming very useful for logically ordering ideas. In her opinion setting goals is a better choice for using the group discussion skill. On being asked about his impressions about the strategy of 'brainstorming' vis a vis the skill of logically ordering his ideas, P6 responded by saying that the skill did not exist for him before the strategy as more often than not his contribution to the discussion would be limited to summarizing points mentioned by others. Seldom did he have something of his own to contribute to the discussions. Then he contradicts himself by saying that at times setting goals and visualizing can also prove to be helpful. But on being asked to provide a reason for his transferring the skill from one strategy to another he was unable to provide a clear answer.

Discussion

In this section, the findings of the study have been discussed. This has been done after correlating the information gathered from the different research tools used for conducting the study. It is followed by a note on the information gathered using a last round of telephonic interview and WhatsApp to validate the findings of the study and to clarify the doubt regarding the inclusion of the group discussion skill of logically ordering points as a sub-strategy of the strategy of brainstorming.

The data collected during the training programme suggests that the basic ideas which make up the strategy of brainstorming- randomness of the ideas, exaggerated ideas, nonjudgmental ideas, and a sizeable quantity of points have all been adhered to by the participants. The group discussions in which the participants participated also exhibited their use of the strategy adequately through the points which they had brought out during the discussions. Their use of the strategy is also evident from the information provided in the strategies use sheet. Apart from the four ideas mentioned earlier, there is another aspect which emerged from the responses provided by the participants- using the strategy of brainstorming to logically order the ideas. It must be mentioned here that this skill of group discussion was not introduced to the participants as part of the strategy of brainstorming.

In the delayed recall stage, along with the previous understanding of the strategy, participants claimed to use the strategy for arriving at keywords essential for the group discussions. The understanding of the strategy has improved for participants P5, and P6. It has continued to be the same for participants P2, P3 and P4. Surprisingly enough, the understanding of the strategy has changed completely and unfortunately into an incorrect one for participant P1. A possible reason for this is that for this participant, the basic ideas of 'brainstorming' were forgotten and only the idea of keywords which the other participants spoke about was retained. Also, P1 makes it clear in the interview that the process of compressing points into keywords was contrary to his style of thinking. This is at variance with the understanding exhibited by the other participants who have claimed that the keywords helped them in expanding their points further.

By the end of the delayed recall, the participants unanimously maintained that 'brainstorming' could be used in the preparatory stage of group discussions. This was in

keeping with the understanding in the literature about the strategy. The concept of logically ordering ideas continued to exist in the participants' understanding of the strategy of brainstorming. This necessitated another round of interview with the participants to get to the source of how the skill found its way into the strategy. This answers our first research question of how the understanding and use of the strategy of brainstorming has undergone a change from the initial period of the training programme to the delayed recall stage.

A few factors came to light which helped to explain this phenomenon better. For most of the participants, 'brainstorming' comprises specific words which could be elaborated into points. These words could also be linked together to form more concise ideas which in turn could help to make their points better. This notion of linking the words and ideas together might have given rise to the utilization of the skill of logically ordering points. Only one participant felt that using the strategy of setting goals is more appropriate for the skill of logically ordering ideas. Another participant mentions that after getting the points from the key words, it has to be visualized which in turn helps to logically order the arguments. This shows that the aspect of keywords which the participants have identified helps to logically order the ideas. Before the strategy of group discussion no other strategy was introduced which could give them an idea about keywords. Therefore, it can be concluded that though logical ordering of ideas had existed to some degree for most of the participants, it was properly defined and used only as a part of the strategy of brainstorming. This answers our second research question about how logical ordering of points became a part of 'brainstorming'.

Conclusion

As has been mentioned earlier, this research was carried out with first year engineering students. The campus recruitment takes place in the sixth semester. However, on account of administrative factors such as scanty attendance, and the introduction of the *language for communication and soft skills* course of which group discussion is a part, in the first semester of their course the participants were chosen from first year. Though the researcher had a prolonged engagement of almost seven months with the participants, unfortunately, scope for practicing the language learning strategies through group discussions was available for only the time period of the training programme. Immediately after that the participants were promoted to the next semester which did not have any language acquisition courses. The next practice was made available only during the delayed recall phase with the researcher. It is presumed that had there been more practice opportunities for the participants, the understanding and the use of the strategies could have evolved. Furthermore, it will be interesting to investigate whether or not the transfer of the skill of logical ordering of ideas shifts to other strategies as a result of prolonged practice.

Integrating language learning strategies is a time consuming process and is likely to make greater impact with the participants who have prolonged engagement and practice. Therefore, participants should have exposure to English language training all through the engineering programme instead of limiting it to the first semester alone. Moreover, language learning strategies training should be incorporated within the English syllabus. This is at present deficit since the engineering syllabus is yet to adopt the communicative language teaching methodology. The emphasis should be as much on the strategies as on the language tasks. This will ensure the transferability of the strategy use into the different skills thereby increasing the metacognitive task competence of ESL learners, along with overall proficiency.

In this study the strategy of 'brainstorming' and its use in group discussions has been examined. While conforming to the definition in the literature, the participants also included the group discussion skill of logically ordering ideas in their understanding and use of 'brainstorming'. The understanding of the concept of specific ideas pertaining to the group discussion topic was transferred into the participants' uptake as keywords. Due to the limited scope for practice, they erroneously consider all the ideas which emerged from their thinking process to be of equal importance. Consequently, the participants thought it imperative to link all the keywords. These were then logically ordered and presented during the discussion. The concept of keywords appeared in the participants' perception only when the strategy of 'brainstorming' was introduced to them. Therefore, the skill of logically ordering ideas was incorporated within this strategy as its sub-strategy. Although, some of the participants have identified other strategies which can incorporate logically ordering of ideas, this skill was most pronounced in 'brainstorming'. More scope for practicing the strategies may bring about further changes in the understanding of the strategy and better utilization of the skill of logically ordering ideas.

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