

# **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 on account of lesser importance being given to it during the school level, and their inability to participate in group discussions due to a lack of training. To help eighteen 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 subsequent use of the strategy of ‘brainstorming’ which was the eighth strategy introduced to them.

### **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’?
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### **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, this study aimed to explore the understanding and use thereafter, 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 improvement of 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.

While several studies have been conducted on various aspects of language learning strategies and their influence on the four skills, an insignificant amount of research looks 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 the strategy extant in the literature, 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, followed by 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 eighteen (six female and twelve male) first year engineering students in Kolkata, India. All of them were majoring in electrical engineering and were between 17 and 19 years of age. Most of them had an English

medium background of education till class twelve. But, by their self-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 such participants (two female and four 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

*Figure 1*  
Layout of the Study

S.No	Phase I- Training Period	Time Period	Strategies taught prior to the group discussion
1.	Group Discussion, Round 1	August 10 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)	<b>Brainstorming</b> , 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	
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

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 sequentially. The findings from 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, 'Q' defines the questions asked by the researcher and P1...P6 refer to 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. Information in brackets are to be interpreted as follows: (P2,2) is to show that the quotation has been taken from participant number two, during the second interview.

#### **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 while only one participant had a partial understanding of the strategy during the time of the first round of administering the questionnaire, during the second time one participant had complete understanding while two others had developed a partial understanding of 'brainstorming'. Therefore, at this juncture, the understanding and use of the strategy of 'brainstorming' can be said to have developed partially among 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 that they have understood the four basic principles of brainstorming- generating ideas, randomness of ideas, exaggerated notions regarding the topic, and being nonjudgmental.

**Interviews:** The responses from the semi-structured interviews underwent content analysis. The responses obtained can be broadly categorized as 'arranging and

rearranging ideas', 'pick out selective words/ideas', 'logically ordering points', 'lateral thinking', 'focus on specific words', and 'use in the preparatory stage'. 'Arranging and rearranging ideas' was one understanding which the participant had developed. Sample responses are enumerated as under,

- Then comes I think brainstorming because one has to continuously arrange and rearrange according to the need. (P1,1)
- 'Logically ordering the points' also was important. Responses from participants include,
- 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.(P2,1)
  - 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. (P3,1)
- 'Lateral thinking' was another category which emerged as a good understanding of the strategy of 'brainstorming'.
- 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. (P1,1)
  - 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. (P3,1)

For some of the participants, the understanding of the strategy was yet to develop completely. It was limited to collecting points by thinking about the topic.

- 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. (P5,1)
- 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. (P4,1)
- 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. (P6,1)

## **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 No. 1

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#### **Q: Give an example of the use of the strategy of brainstorming**

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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

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P5:No answer

P6: No answer

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It is evident from the table (Table no. 1), 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:** During the interview conducted in this phase of the data collection it was found that ‘searching for key words’, ‘thinking hard’ and ‘ordering the points’ were the dominant understanding which participants were able to retain about ‘brainstorming’. Examples are as follows:

‘Key words’

- Brainstorming has to do with the usage of key words like searching for key words which will actually be the summarization of a point. (P1,2)
- When a topic is given to us then regarding that topic what are the keywords coming to our mind.(P5,2)

“Thinking hard’

- 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.(P6,2)
- Brainstorming means the facts which I try collecting from my memory the moment I receive the topic.(P3,2)

‘Ordering the points’

- And the important words we order in the form of brainstorming. (P2,2)
- So I thought these in my mind that how can I arrange these points and I opposed their points and how can I make my points more stronger in against of FDI (P1,2)
- Ok, brainstorming means recalling everything which you have related to this topic. Means just write everything and then sequence it in a logical order (P4,2)

The participants were also able to understand the use of the strategy and all of them claimed to have used it in the preparatory stage of the group discussion. Therefore, by the end of the delayed recall it is evident that all the participants had a clear idea about using the strategy. The following table delineates their responses.

Table No. 2

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**Q3: At which stage do you make use of this strategy?**

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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.

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P4: Preparation time

P5: During thinking time before the GD has started

P6: After topic is given, thinking time

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### **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 the strategy 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 of logically ordering points. 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.

Overall, it was found that three participants (P1, P2 and P4) found ‘brainstorming’ useful for *logical ordering of points* while earlier, it was either absent or the participant depended on their intuition for it. The remaining three participants (P3, P5 and P6) did not find the strategy useful for *logical ordering of points*. Instead they made use of other strategies like ‘setting goals’ and ‘visualization’ for it.

### **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 awareness raising 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. Examples of their responses include,

- That is how brainstorming. Thinking a lot. Deeply thinking what had happened (P4,2) (sizeable quantity of points)
- In brainstorming I thought about three or four different points which were not related completely. (P3,2) (randomness of the ideas)
- Think about everything related to the topic- both positive and negative (P5,2) (nonjudgmental ideas)
- Ma'am, the income. Ma'am when FDI comes into India, then it will create new job opportunities the income level of the people will increase. So ultimately the income will increase (P1,2) (exaggerated ideas)

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 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 'brainstorming' for arriving at keywords essential for the group discussions. The participants unanimously maintained that 'brainstorming' could be used in the preparatory stage of group discussions. This is a clear indication of the participants' evolution of both understanding and use of the strategy of 'brainstorming'. It is also indicative of their better understanding about the group discussion task itself. The concept of *logically ordering ideas* continued to exist in the participants' understanding of the strategy. This necessitated another round of interviews with the participants to get to the source of how the skill of logically ordering points became a part of 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 the strategy.

### **Conclusion**

As has been mentioned earlier, this research was carried out with first year engineering students. Though the researcher had a prolonged engagement of almost seven months with the participants, scope for practicing the language learning strategies through group discussions was available for only the time period of the awareness raising 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 various strategies enumerated earlier 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. Moreover, language learning strategies training should be incorporated within the English syllabus. This is at present deficit since the English syllabus of engineering colleges does not adhere to any well-defined language teaching methodology. Furthermore, 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 the language. This clearly supports Oxford's (1990) definition of learning strategies as operations employed by the learner to aid the acquisition, storage, retrieval, and use of information keeping in mind the requirements of the task.

In this study the strategy of 'brainstorming' and its use in group discussions has been examined. As is evident from the findings, while conforming to the definition in the literature, the participants also included the group discussion skill of logically ordering ideas within 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. Their ability to verbalize their understanding and use of the strategies also supports Cohen's (1998) claims. 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 further changes in the understanding of the strategy and improve the participants' utilization of the skill of logically ordering ideas.

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