An Investigation of Classroom Communication Strategies Across Discipline

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Abstract
In the classroom, communication is the defining factor for many things. It defines how well the class is organised. It also defines how well the teaching and learning have progressed. Effective communication keeps learners engaged in the activities. Therefore, the use of appropriate communication strategies is important in order for the conveyance of information to take place. This study is done to investigate the use of verbal and non-verbal strategies by engineering and social science students. The instrument used is a survey with 3 main sections. The first section contains items for the demographic profile. The second section has 9 items for verbal strategies and the third section has 17 items for non-verbal strategies. for verbal strategies, students from social sciences were more concerned with their audience before the verbal interactions. Students from engineering were more concerned with the audience's reaction to what they said. Next, when it comes to non-verbal strategies, findings in this current study showed that the learners from social sciences used more fillers for communication when they do not know how to express what they wanted to convey. Students from social sciences used more verbal strategies than students from engineering. On the other hand, engineering used as many non-verbal strategies as social science students. The findings of this study have interesting pedagogical implications for the teaching and learning of communication strategies for students of various disciplines.
Keywords: Disciplines, Communication Strategies, Information, Verbal Strategies, Non-Verbal Strategies.

Introduction

In the classroom, communication is the defining factor for many things. It defines how well the class is organised. It also defines how well the teaching and learning have progressed.

Effective communication keeps learners engaged in the activities. The use of appropriate communication strategies is important for the conveyance of information to take place. Communication strategies are needed to communicate information related to issues or events. They serve as the blueprints for communication. According to Sherman, Parupudi, Mentzer et al (2020), to make sure for planned activities to work well, behind the scenes would be that good communication strategies are at work. Many times activities failed not of merely failed planning but of a lack of communication between team players. The learners' beliefs and expectations affect the success of the activities (Rahmat, 2021). Tucker (2020) listed several barriers to classroom communication in the classroom. The first barrier is language difficulties. This can happen if the classroom is a meeting place for learners with a variety of mother tongues and who have little knowledge of the language used in the classroom. The next barrier is personality difference. Some activities failed because some team players may have existing personality differences and could not go past the differences to work well as a team. Nevertheless, Rahmat (2020) reported that conflicts in groups encourage team members to use their critical thinking and problem-solving skills. Conflicts may seem negative at first; however, the process of conflict resolution is a good practice for problem-solving skills.

Teams within a group who settled problems within their group use good communication strategies. According to Rahmat (2020), team members often use accommodation and avoidance strategies to get their message across to their audience. According to Daoust-Boisvert (2021), the use of communication strategies is an asset for career advancement later in their work life. This study is done to answer the following question:

- How does the use of verbal strategies differ across disciplines?
- How does the use of non-verbal strategies differ across disciplines?

Literature Review
Classroom Communication
Many factors are involved in classroom communication. Firstly, the classroom environment prepares the learners for participation. Positive learning environment sets the mood for positive interactions and successful activity outcomes and vice versa. Next, the learning process planned by the instructors sets the correct tempo for learners' participation. Well planned activities encourage effective learning process. Finally, the use of learner strategies helped learners communicate and learn efficiently.
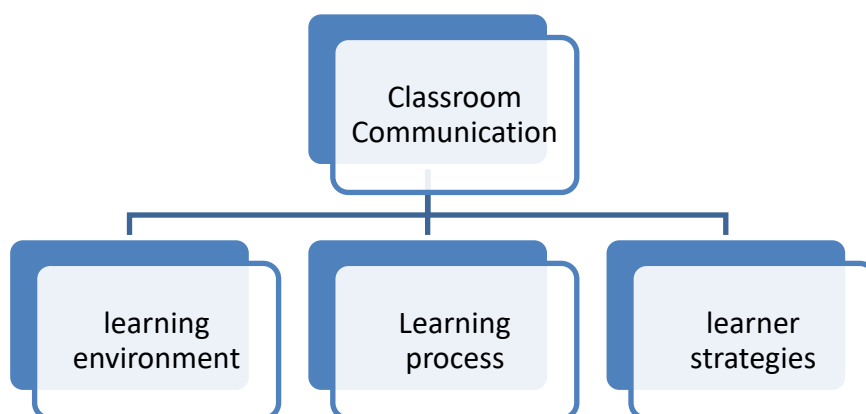
Figure 1- Factors for Classroom Communication (adapted from Rahmat, 2019)

Past Studies

Ford (2004) conducted a study investigate the transfer of rhetorical knowledge by students in an engineering course. Rhetorical knowledge is defined in the study as audience awareness, sense of purpose, organization, use of visuals, professional appearance, and style, between the technical communication and the engineering disciplines. Various data collection methods were used to examine the non-verbal skills and rhetorical knowledge students learned in a technical communication course. The study is also done to determine whether or not students relied on that knowledge as they completed writing assignments in an engineering course. In addition to that, the study also examined the effect of workplace experiences on shaping students' rhetorical knowledge. Findings indicated that students did appear to transfer rhetorical strategies between different contexts, and those strategies were learned in the workplace as well as the classroom.

The study by Cheng & Lu (2016) reports a 3-month study investigating engineering students' Communication Strategies in a mobile-assisted course. 67 Chinese learners of English in this course volunteered to participate in the study. The instruments included oral communication sessions, stimulated recall interviews, WeChat exchanges, etc. Results showed that the participants used a variety of Communication Strategies when completing the academic tasks. The Communication Strategies were closely related to the students' involvement in meaning negotiation while they were interacting to complete learning tasks. It is suggested that instructors have Communication Strategies training tailored to their students' learning tasks. Future research should focus on a longitudinal investigation of the transfer of Communication Strategies across tasks. Findings revealed that learners use message abandonment, message replacement, circumlocution, approximation word-coinage, literal translation, foreignizing, code-switching, repair, mime, use of fillers, and repetition to communicate. They were also reported to appeal for help, ask for clarification, and express non-understanding.

Binhayeearong (2009) investigated communication strategies used by English Program students in Attarkiah Islamiah School, Thailand. The study also explored whether their use differs significantly according to their English language proficiency and task. The subjects were 20 students whose average grades of four English subjects over two years. They were divided into dividing them into high and low proficiency groups. Roleplay and definition formulation tasks were used to elicit communication strategies employed by each student which were calculated as percentages and the results were compared by t-tests. The analysis of the data was guided by a taxonomy of communication strategies selected and compiled based on several taxonomies from previous literature. Findings revealed that students used compensatory strategies more frequently than avoidance strategies. There were significant differences between the use of communication strategies by the high and low proficiency students and between the students' use of communication strategies in the role play and definition formulation tasks.

Conceptual Framework

This study is adapted from the communication strategies by Yaman, & Kavasoğlu, (2013). The listed strategies are then categorised into (a) verbal strategies and (b) non-verbal-strategies (figure 2). The verbal strategies are (i) negotiation for meaning and (ii) accuracy oriented. The non-verbal strategies are ; (i) social affective strategies, (ii) fluency-oriented strategies and message reduction, orientation and non-verbal strategies. According to Rahmat, et. al (2022),

non-verbal strategies are as equally important in communication. The mind processes visual and auditory separately. Different types of communication strategies are therefore needed to convey different types of messages. That is why this study explored the use of verbal and non-verbal strategies by engineering and social science students.
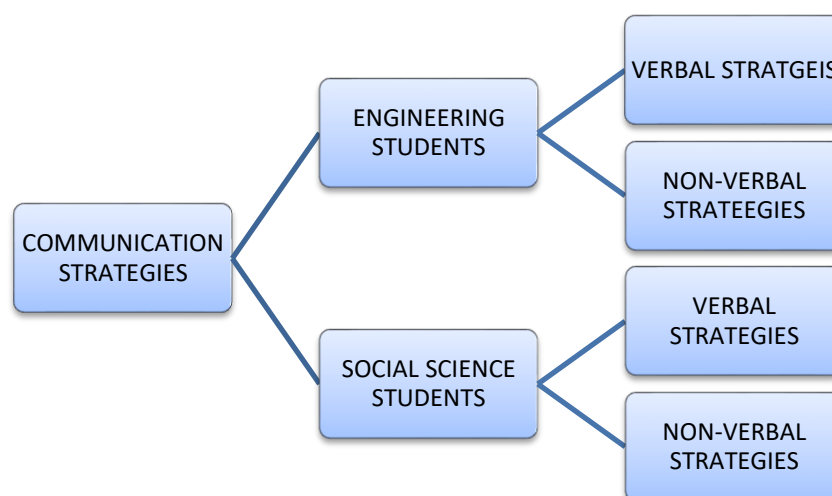

Figure 2- Conceptual Framework of the Study-Communication Strategies of Engineering and Social Science Students

Methodology

This quantitative research is done to investigate how learners use communication strategies are used in online paired and group work. The instrument used is a survey adapted from (Yaman & Kavasoglu, 2013). 56 respondents were purposively chosen to answer the survey. The survey has 4 main sections. With reference to Table 1, section A has items on the demographic profile. Section B has 6 items on Fluency Oriented Strategies, section C has 5 items on Accuracy Oriented Strategies, section D has 6 items on Social-Affective Strategies, section E has 4 items on Negotiation for Meaning Strategies and section F has 5 items on message Reduction, Orientation and Non-Verbal Strategies.

Table 1- Distribution of Items in the Survey

Section	STRATEGY	SUB-STRATEGY	NO. OF ITEMS
B	VERBAL	Negotiation for Meaning	4
C	VERBAL	Accuracy Oriented	5
D	NON-VERBAL	Social Affective	6
E	NON-VERBAL	Fluency-Oriented	6
F	NON VERBAL	Message Reduction ,Orientation and Non-Verbal	5
Total number of Items			26

Table 2- Reliability Statistics

Reliability Statistics

Cronbach's Alpha	N of Items
.921	26

Table 2 presents the reliability statistics for the instrument. SPSS analysis revealed a Cronbach alpha of .921 thus showing high internal reliability of the instrument used. Data is collected online via google form. Data is then analyzed using SPSS version 26. Analyzed data is presented in the form of percentages and mean scores to answer the 2 research questions.

Findings
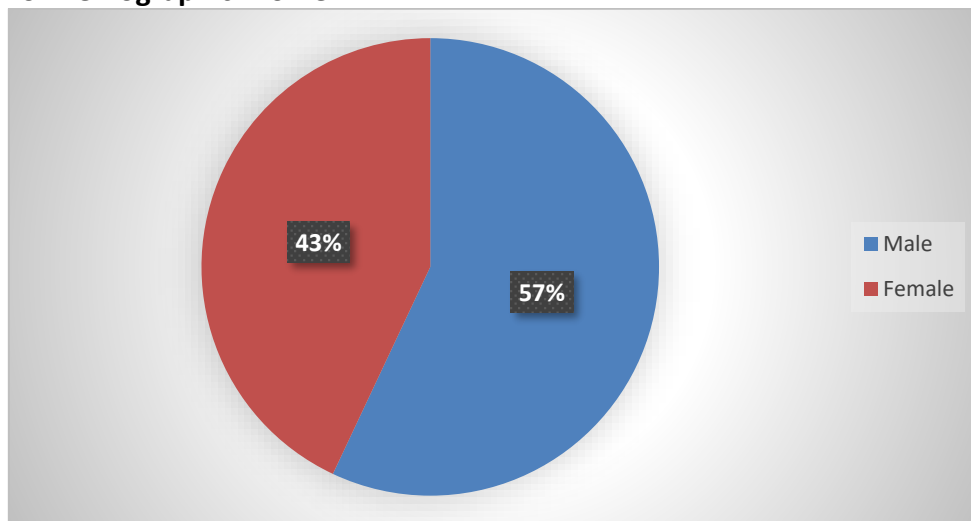**Findings for Demographic Profile**

Figure 3- Percentage for Gender
Figure 3 shows the percentage for gender. 57% are male while 43% are female respondents.
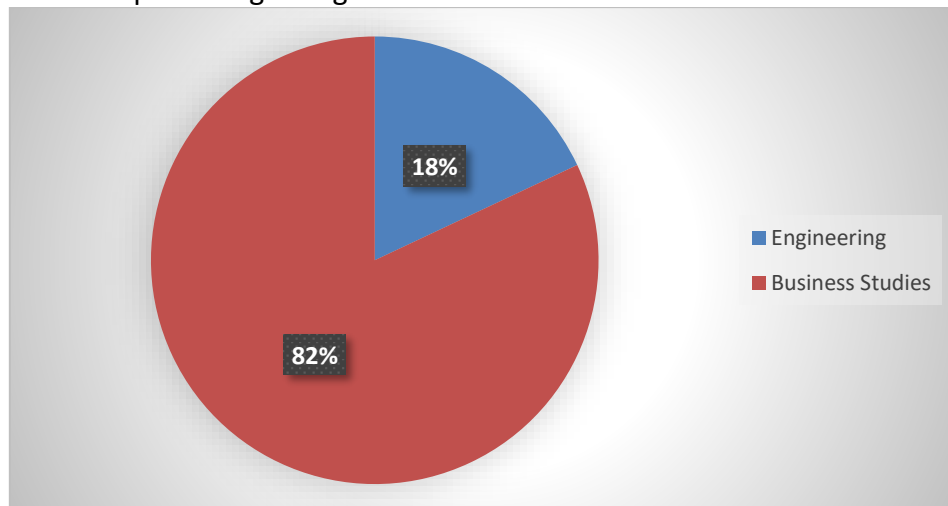

Figure 4- Percentage for Course
Next, figure 4 shows the percentage of course discipline that the students are taking. 18 % are from an engineering course, and 82 % are taking social sciences courses.

Findings for Use Verbal Strategies

This section presents findings for research question 1: How does the use of verbal strategies differ across disciplines? In the ten contexts of this study, verbal strategies refer to (a) negotiation for meaning, and (b) accuracy-oriented strategies.

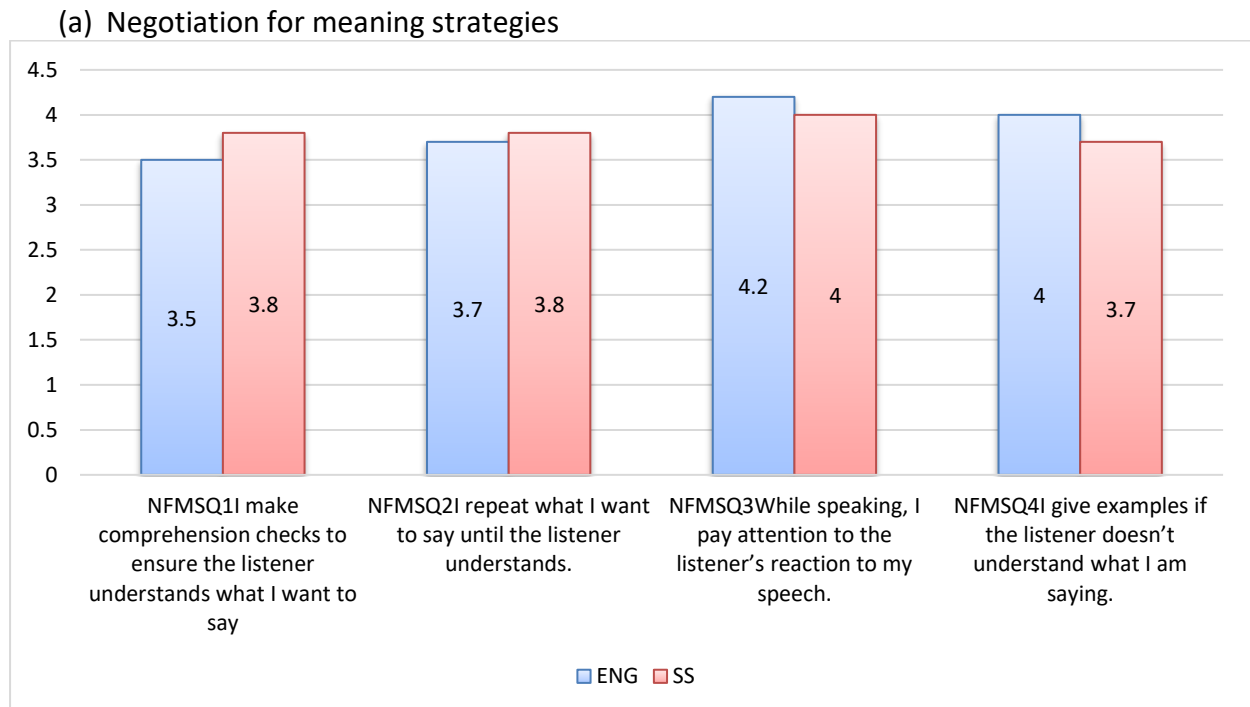(a) Negotiation for meaning strategies

Figure 5- Mean for Negotiation Strategies

The mean for negotiation strategies used shown in figure 5. To begin with, the social science students reported higher mean for two items. The two items are for "I make comprehension checks to ensure the listener understands what I want to say " (social science mean =3.8; engineering mean= 3.5) ; and for "I repeat what I want to say until the listener understands" (social science mean =3.8; engineering mean= 3.7).

Next, engineering students obtained higher mean for two items and they are "while speaking, I pay attention to the listener's reaction to my speech" (engineering mean= 4.2; social science mean= 4) and also for "I give examples if the listener doesn't understand what I am saying (engineering mean= 4; social science mean=3.7).
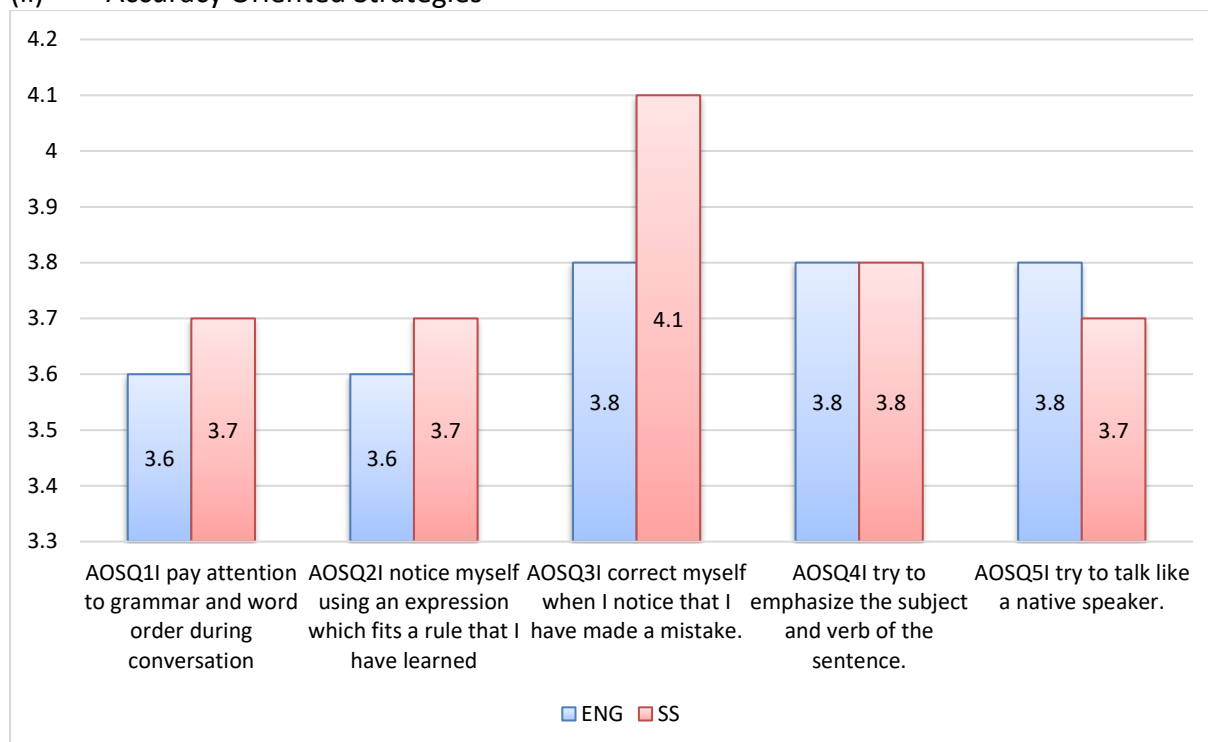
(ii)   Accuracy Oriented Strategies

Figure 6- Mean for Accuracy-Oriented

Another verbal strategy accuracy-oriented (figure 6). Three items showed that the social sciences had higher mean. The first is " pay attention to grammar and word order during conversation" (social science mean= 3.7, engineering mean= 3.7), "notice myself using an expression which fits a rule that I have learned" (social science mean= 3.7, engineering mean= 3.6), and "correct myself when I notice that I have made a mistake" (social science mean= 4.1, engineering mean= 3.8).

Next, for item "try to talk like a native speaker," engineering respondents showed higher mean (engineering mean= 3.8, social sciences= 3.7). Finally both engineering and social science respondents had the same mean of 3.8 for "try to emphasize the subject and verb of the sentence".

Findings for Use of Non-Verbal Strategies
This section presents findings to answer the second research question: How does the use of fluency-oriented strategies differ across disciplines? In the context of this study, non-verbal strategies refer to (a) social-affective strategies, (b) fluency-oriented strategies, and (c) message reduction, orientation and non-verbal strategies.
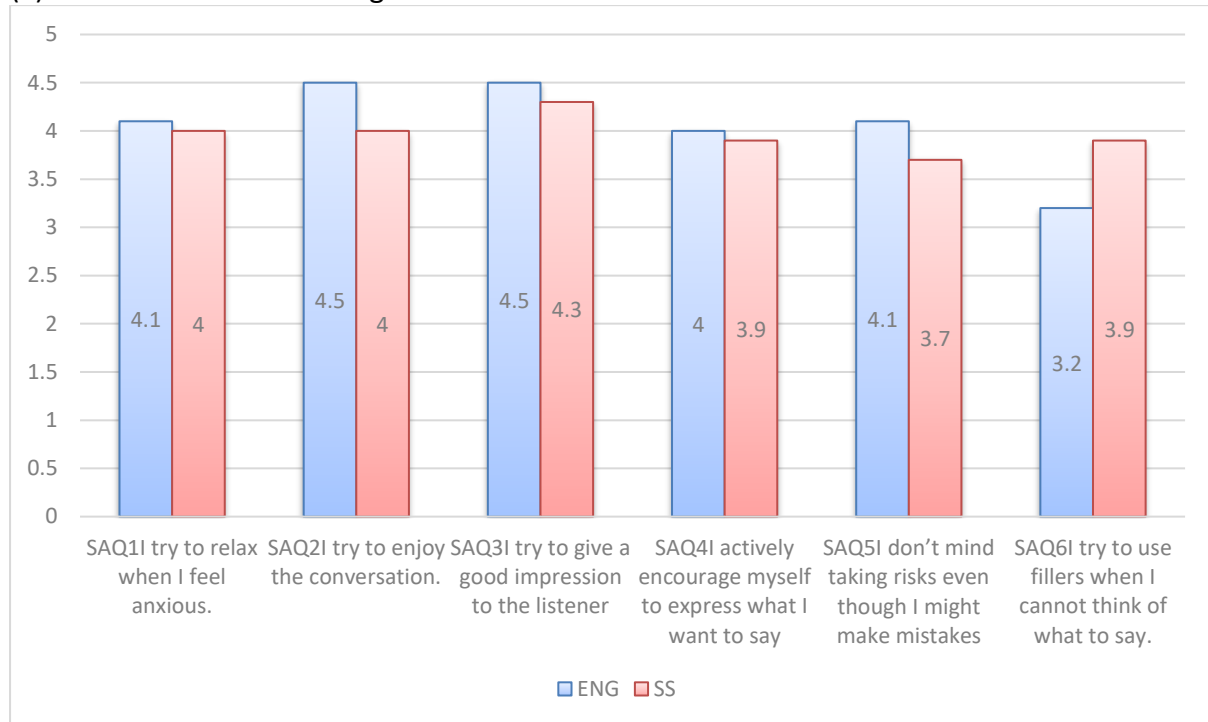
(a)   Social-affective Strategies

Figure 7-Mean for Social Affective Strategies

The mean for social-affective strategies is presented in figure 7 above. The social science respondents had higher mean only for "try to use fillers when I cannot think of what to say" (social science mean=3.9, engineering mean=3.2). Engineering respondents reported higher mean for "try to relax when I feel anxious" (engineering mean=4.1, social mean= 4), "try to enjoy the conversation" (engineering mean=4.5, social mean= 4), and "try to give a good impression to the listener" engineering mean=4.5, social mean= 4.3). They (engineering respondents) also reported higher mean for "actively encourage myself to express what I want to say" (engineering mean=4, social mean= 3.9) and also "don't mind taking risks even though I might make mistakes
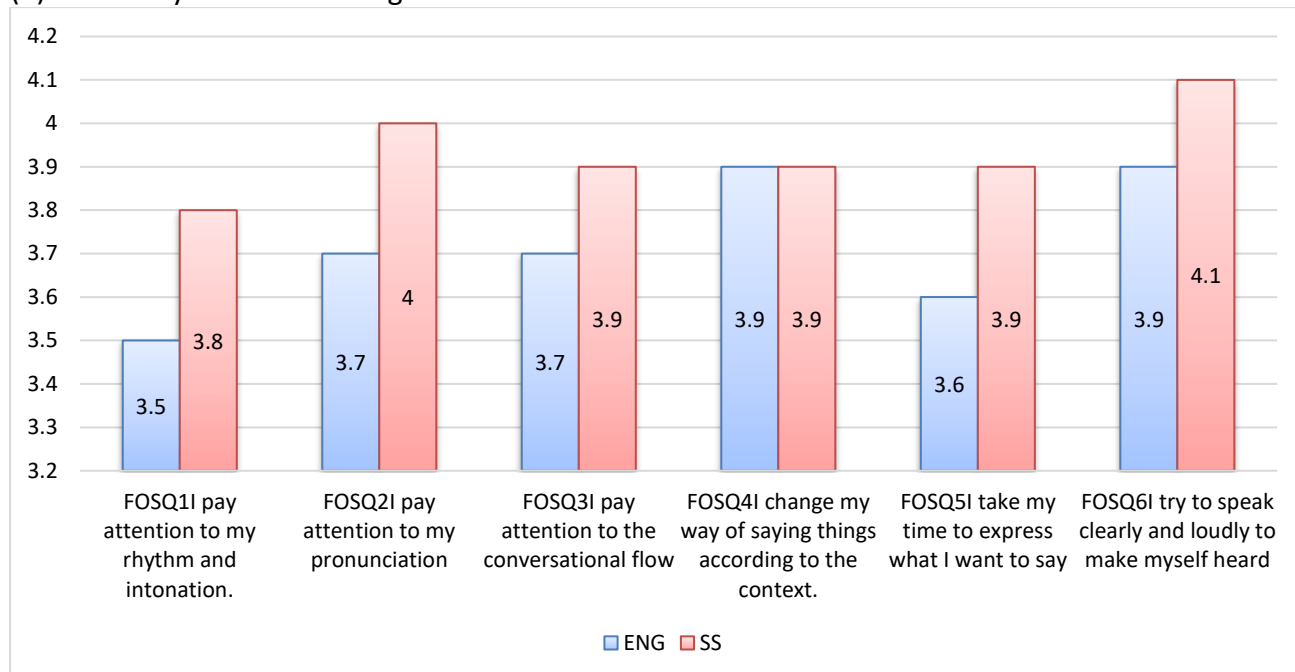
(b)   Fluency oriented strategies

Figure 8- mean for Fluency-Oriented Strategies

The mean for fluency-oriented strategies is presented in figure 8. Almost all items showed higher mean score for social science respondents. Only item on "change my way of saying things according to the context" had the seam mean for both engineering and social science respondents (mean =3.9). The means for item "pay attention to my rhythm and intonation" is 3.5 for engineering respondents and 3 8 for social science. Next, the mean for "pay attention to my pronunciation" is 3.7 for engineering respondents and 3.4 for social science. The mean for "pay attention to the conversational flow" is 3.7 for engineering respondents and 3.9 for social science. The mean for "take my time to express what I want to say" is 3.6 for engineering respondents and 3.9 for social science. Finally, the mean for "try to speak clearly and loudly to make myself heard" 3.9 is for engineering respondents and 4.1 for social science.

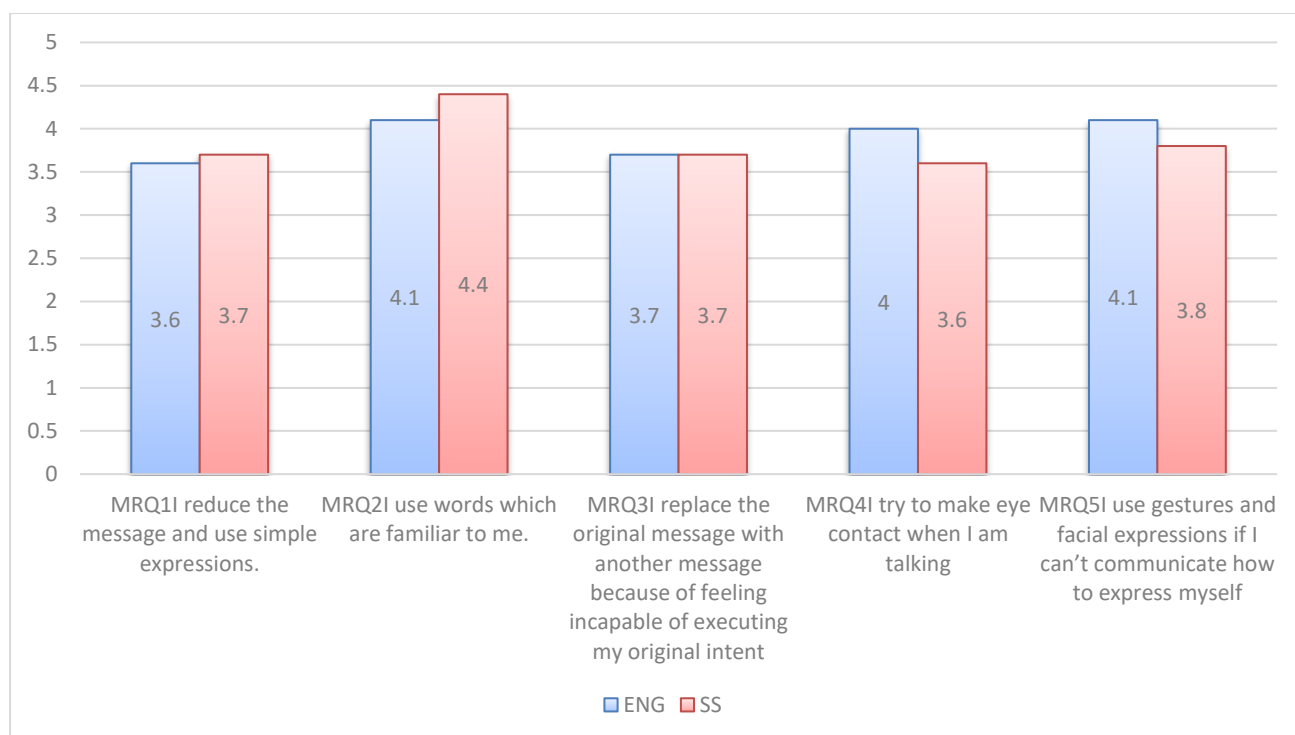© Message reduction ,orientation and non-verbal strategies

Figure 9- Mean for Message reduction, orientation and non-verbal strategies

Figure 9 shows the mean for message reduction ,orientation and non-verbal strategies. For item on "replace the original message with another message because of feeling incapable of executing my original intent", both engineering and social science respondents had the same mean of 3.7. Two items showed higher mean for social science learner and they are for " reduce the message and use simple expressions" (engineering mean=3.6, social science mean =3.7) and for " use words which are familiar to me" (engineering mean=4.1, social science mean =4.4). Two items had higher mean for engineering and they are " try to make eye contact when I am talking" (engineering mean=4, social science mean =3.6) and " use gestures and facial expressions if I can't communicate how to express myself" (engineering mean=4.1, social science mean =3.8)

Conclusion
Summary of Findings and Discussion
The study now concludes the major findings and discusses them from two aspects; verbal and non-verbal.

Verbal
To sum up, for verbal strategies, students from social sciences were more concerned with their audience before the verbal interactions. Students from the engineering were more concerned with the audience's reaction to what they say. Figure 10 shows the total mean for verbal strategies used by engineering and social science students. Generally, students from social sciences reported a higher overall mean (4) for negotiation for meaning strategies and also accuracy oriented strategies (3.8). This finding is in accordance with the study by Cheng & Lu (2016) who also found that learners used a variety of verbal communication strategies when completing the academic tasks.

In addition to that, the findings in this study also found that learners from social sciences were more concerned with accuracy. At the same time, both learners from engineering and social sciences found that learners from both social sciences and engineering put importance on fluence when they spoke. Similar findings were reported by Binhayeearong (2009) who also found that in verbal communication, learners used compensatory strategies more frequently than avoidance strategies.
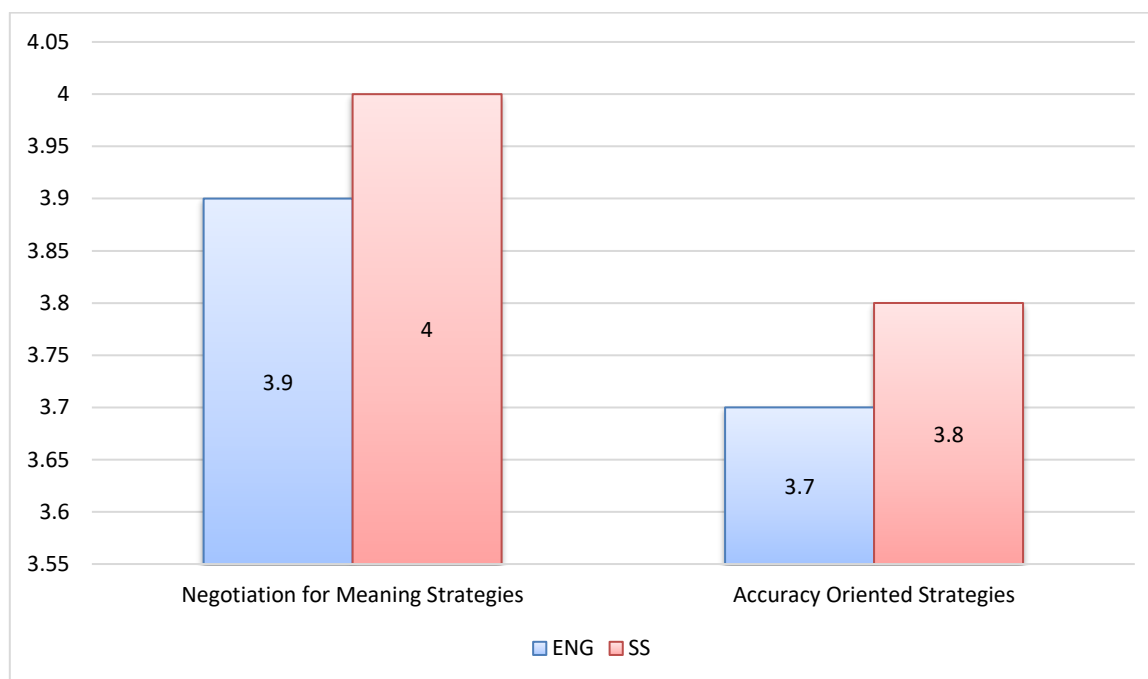

Figure 10-Total mean for Verbal Strategies

Non-Verbal
Next, when it comes to non-verbal strategies, findings in this current study showed that the learners from social sciences used more fillers for communication when they cannot do not how to express what they wanted to convey. Findings also showed that engineering took their time to express what they wanted to convey. The overall mean for non-verbal strategies is presented in figure 11. The group of engineering students reported higher total means for social affective strategies and message reduction, orientation and non-verbal strategies. Social science students had higher mean for fluency-oriented strategies. This finding is in accordance with the study by Ford (2004) who also reported that engineering made efforts to convey their information; and resort to using non-verbal communication.
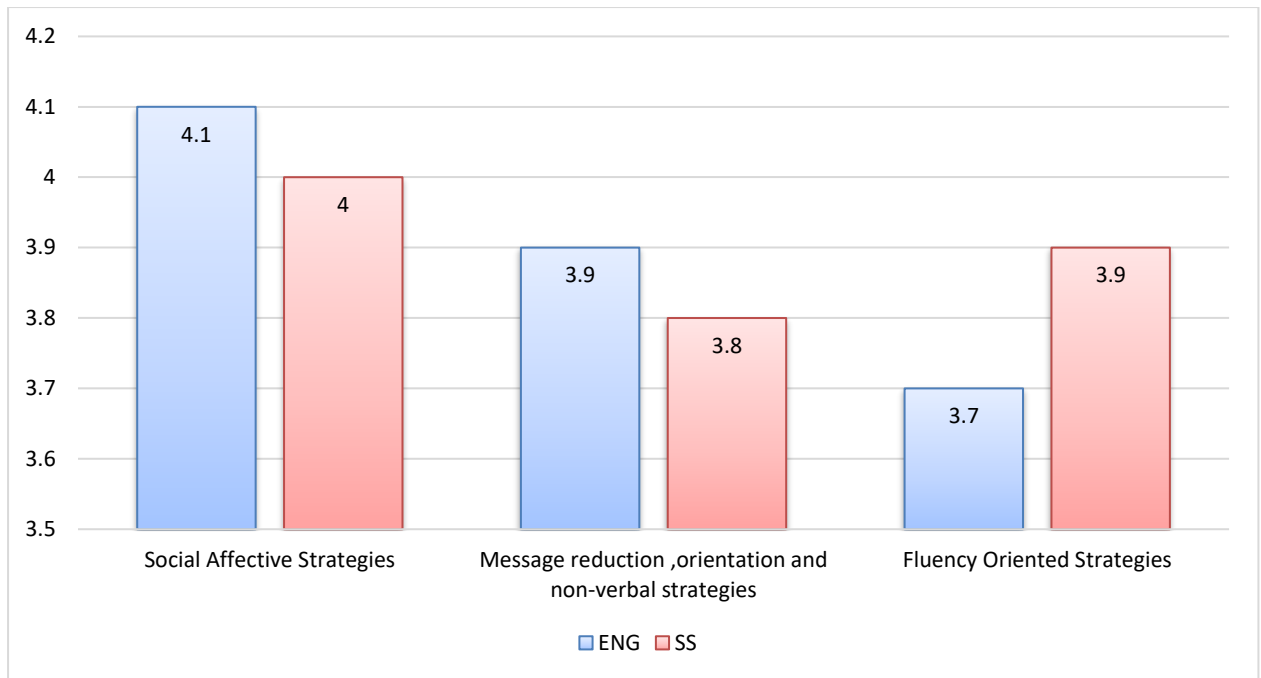
Figure 11-Total Mean for Non-Verbal Strategies

Verbal Strategies vs Non-Verbal Strategies across Discipline
Figure 12 shows an overall comparison of means for verbal and non-verbal strategies across disciplines (engineering vs social sciences). Students from social sciences used more verbal strategies than students from engineering. On the other hand, engineering used as much non-verbal strategies and social science students.
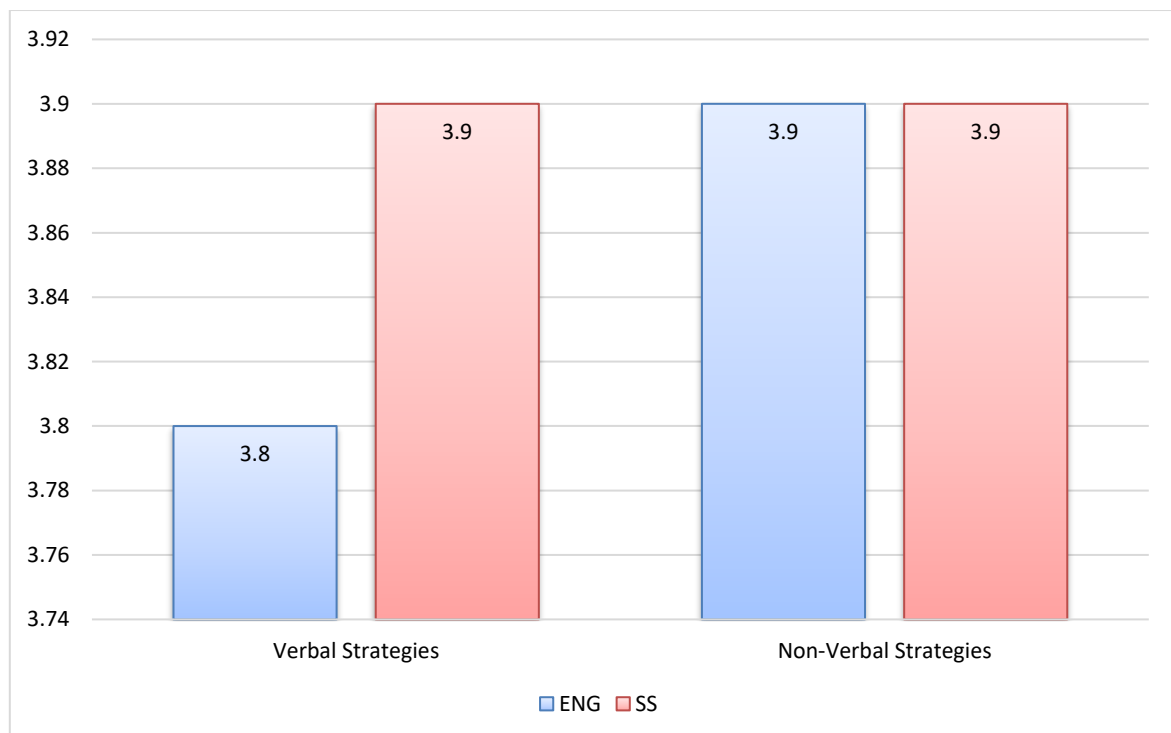

Figure 12-Verbal vs Non-Verbal Strategies across disciplines

Pedagogical Implications and Suggestions for Future Research

Although the results of the study is not conclusive for all engineering students and /or all social students, the focus of the use of verbal and non-verbal communication strategies for students of different disciplines is a call for concern. Many courses in universities (and higher institutions of learning) put emphasis on oral presentation skills to wrap up learning when semester ends. While it is true to say oral communication skills is a much needed skill way after students have left the higher institutions. The skill is much needed at the workplace. Maybe instructors can reassess the need for oral communication as assessment so as to reduce students existing burden to assessments. Perhaps, oral communication can be assessed in other ways. Maybe the presence of recorded presentations can be an advantage. Future researchers could look into what type of oral presentations are most preferred by students across the board.

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