Exploring Interactional Competence through Turn-takings in a Group Oral Discussion Assessment

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Abstract
From job interviews to working in a professional field, clear and effective interactional competence especially in face-to-face oral communication is vital for workplace interactions. As such, group oral communication is taught and assessed at academic institutions to enhance students’ turn-taking skills as an interactional competence. The approach is used to develop ESL students’ turn-taking skills particularly for low proficiency students. Therefore, this study aims to explore turn-taking skills of low proficiency ESL students in a mixed ability group discussion assessment. The group discussion interactions were audio visually recorded and analysed using Conversation Analysis. The transcriptions were analysed using the micro-analysis account focusing only on the turn-taking skills. Notably, self-selected, or indexical speaker selection by posing questions for another speaker to continue or using gaze or gestural signs was the prominent turn-taking skill used by the students to maintain intersubjectivity during group discussion. This somehow facilitated them in ensuring active involvement of all group members, and as an indicator for their interactional competence. This study concludes by discussing how turn-taking skills in group oral communication can benefit low proficiency language users’ interactional competence in learning the target language.

Keywords: Assessment; Interactional competence; Intersubjectivity; Group discussion; Oral communication; Turn-taking

INTRODUCTION

Language learning includes various skills for every learner to master. One of the skills is oral communication skills. Communication is vital in our daily life as it helps us to exchange knowledge, information and thoughts between individuals or a group of people. Good communication skills in English are highly valued by employers as they have better opportunities and promotion in their career. Malaysian undergraduates are urged to be more effective in communication skills to function well at their future workplaces as most international business deals require effective English skills. It is generally conceded that being proficient in English language can help them to leave a good first impression on prospective employers which eventually offer higher chances of securing the applied job position. Also, mastering the language is one of the utmost important aspects in higher institutions for them to function effectively during lectures, tutorials, online discussions and other academic settings (Alam & Sinha, 2009). Hence, it is important for Malaysian undergraduates to have proficient English communication skills especially the face-to-face oral skills as most job interviews are conducted in English.

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For that, higher academic institutions have taken their roles in preparing undergraduates with English language and communication skills especially for oral purposes. Most private and public academic institutions in Malaysia use English language as the medium of instruction and this has drawn a greater emphasis on the ability to communicate effectively in the language. One of the important parts of learning at the institutions is the ability to communicate effectively in the oral form either to instructors or peers. Often, students’ interactional exchanges are apparent in the way they interact with all participants through verbal interactions and non-verbal interactions (though may not be seen as crucial in the interactions) (Young, 2011). The interaction which involves turn-taking skills compel speakers to comprehend what they heard, before they can respond to instructions and peers’ reactions during teaching and learning activities.

Notably, there are still Malaysian graduates who are struggling with the proficiency in the language even after more than eleven years of exposure. It is known that Malaysian ESL learners, even after having the experience of using English during their lessons as well as part of daily communication with society around them (to a certain extent), still face problems to communicate in English effectively despite being exposed to the English language from preschool to tertiary level education (Azman, 2016). They face difficulties communicating in the language, and this poses some problems or difficulties which might occur in the course of the interaction during presentations, peer group discussion and team meetings.

Failing to function effectively both as a speaker and listener during the course of the interaction may lead to misunderstandings and communication breakdowns. This may lead to the intended message not precisely relayed and the interaction span is cut short. In the act of a spoken discourse, there is always an interchangeable role of the interlocutor as a speaker and a listener which if not carefully managed during the course of the interactions, may disturb the flow of the message conveyed and affect the speaker’s understanding as listening is regarded as the foundation of any interaction (Brownell, 2013). Hence, to acquire interactional competence, learners should be able to exchange knowledge and ideas by practicing effective turn-taking skills in attaining mutual understanding, gaining feedback and obtaining responses pertaining to the topic discussed.

Hence, this study is designed to explore higher institution ESL low proficiency learners’ turn-taking skills, which is part of interactional competence, in maintaining their intersubjectivity in oral group discussion. This study is to fill in the gap that is found in the literature concerning ESL learners of mixed proficiency interactions in oral group discussion. As well, most studies on negotiations between learners seem to disregard the fact that learners not only negotiate their topic in face-to-face interactions but also their relationships with other speakers and how they respond to different language abilities of group members (Storch, 2002; Attan, 2014). Little is known about the plausibility of turn-taking skills in an oral interactional group discussion among low ESL proficiency learners in assisting their interactional competence. Therefore, this qualitative inquiry studies the interactional features specifically how undergraduate learners manage their turn-takings in a face-to-face oral heterogeneous group discussion and how understanding is achieved through the mutual exchange of utterances between speakers.

LITERATURE REVIEW

2.1 Interactional Competence

In English as Second Language Acquisition (SLA) research, the focus on interactional competence in most studies can be divided into two broad categories, which are cognitive and sociocultural approaches (Brown, H.D., 2011). The first concerns more on the linguistics aspects of acquiring language and involves mental processes while the latter views language acquisition as a social process which involves interaction between learners and the environmental setting. The cognitive perspective on learning asserts that learning is mediated by symbolic tools, including language (Vygotsky, 1978). By using tools to mediate the relationship of the learners with the world, learners are able to develop their cognition.

In addition, the sociocultural theory developed by Vygotsky (1978), views the cognitive process as the result of social process which governs each of the individual speakers. Interaction between speakers in any dialogue is seen as the crux of language learning. Collaborative dialogues, as termed by (Swain, 2000) from
language learning aspect, are seen as the portrayal of linguistic knowledge possessed by speakers. Swain further asserts that language use mediates language learning, thus language production is as the result of both cognitive and social activities. Collaborative dialogue and the interactional dynamics occur within the interaction, help in language acquisition as the speakers exchange opinions and collaborate upon ideas or problems discussed. Swain and Lapkin (2002) support that collaborative dialogue mediates joint problem solving and knowledge building among speakers. Learners develop their language competence in a joint construction, and at the same time, the opportunity provided for by social interaction can help learners’ learning development as stated by Skehan (1989) that “learners have to talk in order to learn” (p. 48).

As a part of social process, interactions may happen in face-to-face meetings or through other media such as pen and paper, electronic mail, social networks to name a few. Basically, there should be a sender of the message as well as a receiver of the intended meaning in any type of interaction. In the light of speaking-listening realm, (Swain, 2000) states that as “each participant speaks, their ‘saying’ becomes ‘what they said’, providing an object of reflection” in which “their ‘saying’ is a cognitive activity and ‘what is said’ is an outcome of activity”. Hence, to be able to describe an individual as interactionally competent, one “should look at their abilities not as an individual participant rather as a jointly constructed by all the participants involved in the interactions” (He & Young, 1998, p. 7). To add, to be able to function as an effective interlocutor (both as a speaker and listener) in a collaborative discourse brings us to the notion of Interactional Competence (henceforth IC) (Kramsch, 1986; Young, 2011) where learners participate in interactions to construct meaning together rather than looking at communicative competence which focuses more on individual performance (Walsh, 2012). The focus of IC among speakers is how intersubjectivity is achieved through mutual understanding during the course of the interaction.

### 2.2 Patterns of Interaction in Group Oral Discussion

Active participations in an oral group discussion offer language learning opportunities for learners (Stroud, 2017). Group discussions allow language learners to discuss the language, and have their language corrected during the process (Dobao, 2012). In a study by Gan, Davison, and Hamp-Lyons (2008), L2 speakers who were actively involved in peer to peer group discussions managed to pursue, develop and shift topics in completing the assigned task. The study claimed that learners who participated in peer group oral discussion tended to have more substantive conversation as they equally shared the direction of the discussion. Learners who participate in group discussion has the potential to provide real-life interactional abilities as they relate to each other in the spoken discourse. However, the benefits of oral group discussion are contingent upon the extent of how the speakers can be supportive in a friendly and non-face-threatening environment (Foster & Ohta, 2005).

Greer and Potter (2008) conducted a micro-analysis of the way test-takers managed turn-taking during an oral group discussion assessment. It was discovered that by conducting group discussion with speakers of mixed-proficiency levels, novice language users were more orientated to language learning as they seemed to learn from their peers with higher proficiency levels in the same group. This means that peer to peer interactions have potentials in developing language acquisitions especially in mixed-proficiency levels group setting.

Watanabe and Swain (2008), in their study on interactions of mixed proficiency levels also revealed the relation between learners’ proficiency differences and their post-tests scores. There were changes in learners’ collaborative written work when they worked with higher proficiency level group members versus lower proficiency members. The one with high proficiency members had more accurate written tests results as compared with the one of a lower proficiency partner. The interactional pattern of mixed proficiency levels shows that the lower proficiency learners benefit more from the interactions as they were assisted by the more able learners during the course of interactions.

### 2.3 Turn-taking in Group Oral Discussion

During a group oral discussion, speakers have to take turns to talk. This aspect of interaction which is termed as turn-taking plays a significant role for the participants to achieve intersubjectivity during their
interactions. Sacks, Schegloff, and Jefferson (1974), who provided the basis for the analysis of interactions known as Conversation Analysis (CA) state that for an individual to be effectively involved in daily communication, they have to have the ability to manage their turn-takings in conversation. Sacks et al. (1978) model consists of turn unit rules which specify that the current speaker can select the next speaker through address terms or gazes. If no speaker is being selected, then any listener can self-select; with first starter gaining rights to the next unit; and if nobody self-selects himself/herself, the same speaker may continue. Speakers have to have the ability on how to respond accordingly, timely and semantically – to predict when a turn will end and the content of the turn, so that they are able to respond timely and semantically (Riest, Jorschick, & de Ruiter, 2015).

Naturally, speakers take turn during conversations. However, the turn-taking system may become more complicated if there are more than two speakers in the conversation. Therefore, the projection of turn completion of current speaker is usually described by linguistic and prosodic cues of acoustic features of vocalisation such as the drop of tone, frequency and intensity. (Ruiter, Mitterer, & Enfield, 2006). Determining the next speaker’s turn is also characterised by the audience who co-present during the interactions on their knowledge base of interpreting features of bodily conduct such as gaze and gesture (Greer & Potter, 2008).

The turn-taking system, which was first outlined by Sacks et al. (1974), can be summarized as follows: When a current speaker completes a Turn-constructional Unit (TCU), and therefore reaches a point of possible transition, the following rules apply in the order they are listed: (a) If current speaker selects next speaker in the current turn, next speaker has sole rights and obligations to speak until the next Transition-relevance Place (TRP). (b) If (a) has not happened, any other party can choose to self-select, with the first starter gaining the right to the next turn until the next TRP (c) If neither (a) nor (b) happens, current speaker can continue to speak by going on to produce another TCU.

METHODOLOGY

This study applied a qualitative investigation on group interaction patterns of mixed proficiency final year of ESL engineering undergraduates in a group oral assessment of a university English course. The participants came from an intact class of thirty students taking various courses of engineering at a technological university in Malaysia. For the purpose of this paper, one video recording from a data bank of a larger scale of study was used as the basis of analysis and discussion.

3.1 The Participants

The participants of the study were learners in English for Specific Purpose course conducted specifically for tertiary level students. The corpus consists of mixed proficiency ESL learners (aged between 22 to 24) who were audio visually recorded during their oral group task. The participants were categorised as low to intermediate level of proficiency. They have had both primary and secondary education for about twelve years, in which they were exposed to English language classroom. Some of them might have the opportunity to practise English outside of the class, that is, at home or with friends, but the majority did not share the same experience.

3.2 Administration

The English course instructor assigned the students randomly into a group of four or five and an examiner from another class was assigned to assess the session. The assessment was conducted in a special recording room equipped with a round table and armchairs to allow students to face each other during the discussion. The assessment was divided into two parts: (i) one-to-one question and answer session with the examiner, and (ii) oral group discussion among the candidates. In the second part of the assessment, the examiner played a passive role as the main focus is to assess the group interactions among the undergraduates.
3.3 Instrument

The assessment was developed by the instructors teaching the course. It has questions which have been vetted and discussed several times, before it was endorsed by the university’s English Language Department as a formal assessment for the course. Each group was randomly given a topic from a selected list of topics to discuss with their group members. The class instructor’s role was to familiarize the students with the format of the task to be carried out during the assessment, and the students were aware that they would be assessed by an examiner.

The examiner was not involved in the group discussion but was around to assess each speaker’s interaction during the ten-minute assessment duration. The evaluation on candidates’ performance was based on the following criteria: (i) content: topic management, (ii) response; (iii) elaboration; (iv) language: grammar, lexis, and fluency; as well as (v) delivery: pronunciation, turn-taking, and coherence. The scoring of the candidates during the assessment was based on the criteria approved by board of examiners of the English Language Department of the university.

3.4 Data Collection and Analysis

The video-recordings were transcribed and to protect the rights of the participants in the videos, the students’ real names were replaced by pseudonyms. The analysis focused mainly on the management of turn-takings throughout the discussion. The interactions are generally characterised by how the participants achieve mutual understanding or intersubjectivity during the course of the interactions. Conversation analytic conventions Sacks et al. (1974) were used to explore the interactional resources that participants used to maintain their mutual understanding. Sacks et al. (1974) model of turn-taking and (Storch, 2002) interaction patterns are adopted for analysis of the interactions. After the completion of the transcription of the data, Atlas.Ti software was used to code the data of the participants’ turn-taking management.

FINDINGS

4.1 Turn-taking Management: Self-select

The analyses of the findings describe in detail how the speakers (S1 to S4) maintained intersubjectivity through turn-taking management of their interactions in a mixed proficiency group oral interaction. The analysis focuses on how a current speaker selects the next speaker during the interaction process. The interactions of the speakers stated in this paper is verbatim and no editing in terms of grammar or vocabulary was done on the excerpts of the interactions.

In one of the recordings, it was found that the speaker self-selected himself in managing the turn-taking in the discussion. Based on Excerpt 1, at 18.10 minute of the recording, S1, who first initiated the discussion, self-selected himself and began to express opinion on the issue being discussed. However, he passed the floor to others when he had some difficulties to continue his turn.

Excerpt 1:

(18:10) S1: So lack of English communication skill lack of English communication skill is the main reason for unemployment among fresh graduate. For in my opinion, I agree on this topic. This is because English is the international language. All over the world, English is the medium that everyone to speak. Everyone speaks a different language but everyone know English. So it is very important for the graduate to understand English. They do not understand English it shows that they are not competent, and they are not able to compete with the other graduates all over the world. Besides that, I’m sorry, you can proceed.

S1 selected the next speaker by gazing at S2 while simultaneously said “I’m sorry, you can proceed.” Since S1 gaze-selected S2, it was now S2’s responsibility to continue the discussion to make sure the trait of
the discussion continues. The image of gaze-selection between S1 and S2 is illustrated by the arrow in Figure 1.

![Figure 1. The Current Speaker Gaze-selected the Next Speaker.](image)

4.2 Turn-taking Management: Indexical Speaker Selection

In most of the interactional exchanges in the study, the speakers commonly appointed the next speaker by asking “How about you?” to choose the next person who was supposed to continue the turn. This indexical speaker selection could be seen at the 18:48 minute when S2 continued the topic of discussion and ended his view by selecting the next speaker, S3, using the question “How about you?” (in Excerpt 2) together with gaze-selection (see Figure 2) towards the intended next speaker as can be seen in Excerpt 2.

Excerpt 2:

(18:48) S2: Actually, I’m disagree with our topic because this is because, he English communication skill is not the issue. The issue is one, the quality of employee that’s depend on their attitude. One professor that I met also an ex-engineer at the off-shore, guest engineer right, he tell to me that the attitude is most important, when manager want the employee to get the stuff. This is because the attitude that we can make in a short time, but the skill the knowledge can improve that, so the attitude is most important the English communication skill because when we in the job situation, we can meet other people, so the skill that we can practice every day. So it can improve that communication actually, but, the most important that I press here is the attitude, because the attitude can divide from the qualities employee and worst employee. Okay, what’s about you, Syarul?

The question was seemingly used when a speaker would like to request the next speaker to continue the chain of discussion. The selected next speaker then had the chance to continue giving his response based on the same topic similar to what had been discussed by the previous speaker. Interestingly, the selected speaker (S3) seemed a little surprised and not prepared to continue with the discussion. Therefore, there was a silence for a few seconds before he passed his turn and selected another speaker by using a gestural sign through his index finger and also a gaze (see Figure 2).
In Excerpt 3, upon receiving the turn from S3, who was not ready to continue the discussion, S4, nodded (indicating agreement to accept the turn) and continued the topic of discussion by relating to two previous speakers’ (S1 and S2) ideas.

Excerpt 3:

(20:10) S4: Thank you, Asraff. For my point is, I agree with your point but I more agree to the Nie Jing’s point, because English is more important for the attitude. Because English, if you have lack of English communication, you can get communicate with the client or the boss at the company. So, I think, if you have attitude but you lack of the English communication, so I think you need more..more...practice for the English or to get the job. or communicate with other.

Extending the topic is one of listener-based strategies and important as it provides the evidence that the speaker cum listener has the competency to understand what has been said by other speakers in the interactions and has the language ability to extend the topic further (Galaczi, 2013).
Excerpt 4:

(25:20) That because, environment also influence to the employee if we have the one culture, that aa always aa use English as their communication or the first language in thei::r communication s::o the communication skill in English, we can improve it (.) that I stand in aa on aa my points. So how about you Syaril?

In excerpt 4, S2, self-selected himself to continue with the topic of discussion through more elaboration of his view point. Realising that S3 has not said anything in the group discussion, once again, he made an effort to invite S3 to take his turn and offer his idea to the group discussion. The select-other turn taking management done by S2 is through gaze selection (as can be seen in Figure 3) as well as utterances “So how about you Syaril?”. This time around, S3 accepted the invitation and made his contribution. Perhaps, by inviting S3 to take his turn again, S2 gives the chance for S3 to be part of the discussion thus allowing the examiner to assess his oral communicative abilities during the assessment.

Oral group interaction in this study was shaped by the ability of the participants to manage turn-taking during the discussion. The self-appointed speaker (S1) who began the discussion was identified as the most proficient speaker among the four. Right after the examiner gave the cue to begin the discussion, S1 immediately took charge and expressed his views. There were also glances made by the other speakers (S2, S3 and S4) at S1 a few times, indicating him to begin the discussion. Later, S1 was seen to select the next speaker towards the end of his turn instead of waiting for voluntary participation from the others (S2, S3 and S4).

Generally, the speakers would select the next speaker by saying “How about you (name)?” and turn their faces to the selected speaker, signalling the turn was passed to him. Most of the speakers too rarely elaborated what had been said by the previous speaker. Instead, they introduced a new topic and continued elaborating on their own new topic during their turns. This indicates that the speakers might have been too occupied thinking about their own utterances rather than listening to previous speaker(s)’ input and build on them. The indexical selection used by speakers as shown in the findings, indicates that the use of question ‘How about you’ seems to lead the discussion to rounds of talk. The selecting of the next speaker, usually occurs at the end of the current speaker’s response. However, as shown in the data too, selecting the next speaker can also happen when the selected speaker is not ready to contribute in the discussion. This may lead to some problems in the continuation of talk. Moreover, by ending the turn with selecting the next speaker will prevent a self-selecting next speaker who might like to expand and elaborate the current topic (Greer & Potter 2008).

DISCUSSION

From the findings, the intersubjectivity of the group oral interaction was sustained through turn allocations by either self-selection, or indexical speaker selection by assigning the next speaker in a question, or signalling through gazes or gestures. As a self-selected speaker (S1), being the most proficient speaker, did not dominate the discussion. He listened and responded accordingly to what was being discussed in the group. This creates a supporting and democratic environment for other members to participate in the discussion (Storch, 2002). The results concurred with Sacks et al.’s (1978) proposition which suggests that conversation is a fundamental piece of social organisation, moulded by social norms which advocate one speaker at a time, yet still allow open participation, which welcomes other participants to contribute in that particular conversation.

Interactional competence in this study depended on the individual group members’ ability to perform the task. Firstly, the self-appointed leader in the group was observed prompting other participants (low proficiency learners) to talk during the interaction. There were times when other participants were stuck in the discussion, and they turned to the so-called ‘leader’ (S1) of the group to help them. Secondly, the question ‘How about you (name)?’ can be traced throughout the 25 minutes duration of the group discussion. These low proficiency learners were more comfortable to select the next speaker towards the end of their turn. They also resorted to gazes and signals as the ways to manage their turn-takings, instead of waiting for voluntary participation from others, which was rarely the case. They believed that the task had to be fulfilled by giving
everyone fair chances to contribute in the discussion. Perhaps, by nominating the next speaker to participate in the discussion, they were also helping other speakers to prove their interactional competence. Hence, the turn-taking management features identified in this study were useful for the low proficiency learners’ interactional competence in maintaining their group oral discussion intersubjectivity in check.

The evidence of mutual gaze exchanges between the speakers show that they collaboratively assist each other through co-construction in order to find the appropriate linguistic form as well as to express their intended meaning (Gan, 2010). There were instances in the transcripts which indicate that speakers made eye contact with another speaker to find support in completing the turn. This happened especially when the current speaker was lost for word to continue the turn and asked for help from other group members. The quick reaction from other members to come to an aid for the current speaker to complete the turn shows that the students understand their roles as a member of a collaborative talk who needs to be alert and interpret the trouble-source speaker’s call for help.

CONCLUSION

An oral group discussion in an assessment context has a turn-taking pattern. The more proficient speaker is ‘responsible’ to gauge the lesser proficient speakers in the group to contribute. The proficient speaker initiated the discussion by ‘self-selecting’ himself, whereas the lower ones selected others by asking question, or using gazes or gestural signs to maintain the intersubjectivity during their oral group discussion. The mixed proficiency setting and assessment context have allowed the speakers to assist each other through turn-taking management to ensure everyone contributed towards the discussion. They were actively helping whenever necessary for everyone to score points, which were the evidence of the speakers’ interactional competence during the assessment. These turn-taking management features are the evidences of the speakers’ interactional competence. The mutual exchange of utterances between the speakers helps each member to have his fair contribution in the discussion. Conversely, a different pattern of turn-takings could be identified in an informal, casual conversation. Therefore, future investigation is recommended to focus on patterns of turn-takings in a natural, authentic oral group discussion context.

Spoken interaction is fundamental yet a complex endeavour especially for ESL learners. As the interaction between the speakers is reciprocal and the members of in the interaction need to be speaker and listeners at the same time, there is a need for them to be both pro-active and re-active members at the same time (Galaczi and Taylor 2018). The nature of the interaction is thus strongly shaped by the individual’s cognitive ability as well as the contextual factor of the interaction or discussion itself. As in the case of this study, the shape of the discussion is governed by the ability of the group members who come from diverse proficiency levels and also the topic given for discussion. To be able to contribute to the discussion, linguistic ability as well as content knowledge are important factors for speakers to possess and for the examiners to consider while assessing each speaker’s oral communicative ability in group oral discussion. The mutual understanding established between speakers is an aspect within the construct of interactional competence which should be broadened and explored (Kley, 2015). The salient interactional resources used by speakers in this study on a turn-by-turn basis in order to maintain the topic of discussion indicates that there was an effort on the part of the group members to help the smoothness of the interaction.

The study has some implications on ESL learning and teaching in particular setting group oral discussion in an assessment context. Grouping learners of mixed proficiency levels may have some repercussions in the way learners manage their turn-takings. It seems from the data, learners who have higher proficiency levels, even though did not dominate the discussion, assume the role as the leader and initiate the discussion and allocate the speakership turns to those who appear to be quite reluctant to speak. This limits the chance of self-selecting speakers who might have further ideas to expand on previous speaker’s idea. However, on the other hand, having mixed proficiency levels of learners in a group oral discussion can also encourage the less proficient speakers to observe and at the same time learn from the more able peers. It is indeed important that if group oral discussion is to be used in assessment context where learners will be assessed on their interactional abilities with other peers, more classroom activities involving group discussion should be designed to give exposure to the students before the real assessment take place. By providing more practices in the classroom, students will be more familiar with the context of group oral discussion thus more
prepared to contribute in the assessment setting as they already have some prerequisite ideas on some familiar terms as well as how to manage their speakership with more than two members in interactional activities. In addition to that, management speakership appropriately within a group is also a reflection of how natural conversations are conducted outside of classroom therefore, is a valuable contribution towards developing ESL learners’ communicative abilities.

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REFERENCES


