SPC Journal of Education, 2 (1) (2019) 10-14

SPC Journal of Education

Website: www.sciencepubco.com/index.php/JE

Research paper

Classroom interaction patterns of high and low achievers at an undergraduate private university in Dubai

Walid Salameh [1] *, A. A. Sathakathulla [1]

[1] Hamdan Bin Mohamed Smart University, Dubai, United Arab Emirates
**Corresponding author E-mail: wsalameh@hbmsu.ac.ae*

Abstract

This research emphasizes a study which was conducted to observe the patterns of classroom interactions of both high and low achieving students at a private university in Dubai. The main aspects of the research were: (1) Frequency of interactions; (2) Nature of interactions; and (3) Reasons for avoided interactions initiation. It was determined that more interactions were initiated by high achieving students than by low achieving students, although low achieving students attained a similar level of interaction as high achievers when discussion was initiated by the teacher. It was also observed that low achieving students prefer privacy when asking a question or checking for correctness of answers, whereas high achievers exhibited more confidence towards asking questions and providing comments on discussion. Surveying students regarding the reasons they avoid initiating interactions revealed that high achieving students lack motivation as they are probably under-challenged, while low achieving students lack confidence as well as motivation.

Keywords: *Classroom Interaction Patterns; Frequency of Interaction; Reasons of Avoiding Interactions. Nature of Interactions.*

1. Introduction

The main purpose of this study was to observe and draw conclusions regarding classroom interaction patterns of high and low achievers. Interaction between students and the teacher is a reflection of the students' understanding of concepts explained. Through questions and answers from students, the teacher can assess the students' standing and measure the extent to which the objectives he/she set for the class are accomplished and a sign to be a major component of efficient instruction being employed in learning (Jones & Gerig, 1994, p.170). The difference in the degree to which the aforementioned groups of students interact with the teacher during classes is of vital importance; it sheds light on the teaching techniques the teacher must employ in order to engage each group in classroom discussion. Acknowledging and characterizing the differences in classroom interaction between high and low achievers' aids in adapting a teaching technique that serves to maximize both high and low achievers' interaction, simultaneously, in order to provide better feedback for the teacher. The form of interaction in the observed English classes had different forms and purposes, some students expressed their willingness to participate by raising up hands, waving hand and calling teacher's name, speak when called by the teacher, yell teacher's name and raise up hand…etc. The purpose of the interaction was to answer a question, to orally summarize a text, to check his answer and to ask for explanation …etc. while the forms and purposes of interaction in the observed Physics classes were not the same, similar forms to some extent but mostly speak when called by the teacher, in other words, the frequency and nature of interaction through the observed classes for both subjects, (English and Physics), were different

2. Literature review

2.1. Importance of interaction in the class

Robinson (1994) has defined interaction as "the process of face to face action which can be either verbal; channeled through written or spoken words, or non-verbal; focused through touch, proximity, eye-contact, facial expressions, gesturing etc." (as cited in Wilson, 1999). Beyazkurk and Kesner (2005), pointed out interaction in the class is very important in the teaching and learning process because students benefit from this interaction at both the social and academic level. According to him, elementary school students benefit from encouraging relationships and positive interaction with their teachers (as cited in Dumak, 2010). However, Brophy and Good (1998), Argues that "a fundamental problem in classroom interaction is that teachers try to encourage students to participate effectively in classroom discussions but unfortunately these efforts may fall flat."
In the study carried out (2010), he stressed that students in early childhood educational settings are more socially competent and do better in their classes as a result of positive interactions with their teachers and peers. Brophy and Good (1998)posits that teachers engage in a great deal of interaction with their students while in the classroom, most teachers have difficulty remembering these interactions. So, he suggests that teachers can make 'mental notes' to record which students interact more, interact less or do not interact at all which will help teachers to encourage students to interact appropriately and improve learning.

According to Mustapha (2010) active classroom involvement helps students learn about what they are learning, writing about it, relating to past experiences and applying it to their daily lives. By doing that students can make what they learn as part of themselves. When students can relate to what they are learning, they tend to improve the retention of information and active classroom participation is important in promoting affective learning.
Bishop (2003) is of the opinion that classroom interactivity has a number of significant benefits; it promotes an active learning environment, provides greater feedback for teachers, increases student motivation, and enables a learning community. On the other hand, interactive activities for large classes have proven to be quite difficult and often inefficient.
As defined by Helja Robinson, interaction is any form of written or spoken "face to face action" including words and gestures among other forms (1994, p. 7). When considering a classroom of mixed abilities, a teacher must be familiar with differentiated instruction strategies that match all students. The relevant literature and research that highlight differentiated instruction strategies present mostly the brain-based classroom and the role understanding the concept plays in facilitating student learning, and the importance of cooperative learning, where the teacher understands the students' levels and abilities by grouping them to upgrade their motivation. Teachers who are aware of the students' different levels prevent student frustration in the classroom, which usually results from low achievers not being able to comprehend class material. According to Wolfe, if students are presented with information that does not affirm previous knowledge, the information will be deemed meaningless unless it fits within an established "network" in their brains (2001, p. 86). Paradoxically, a low level of interaction is observed when students are under-challenged or over-challenged (Tomlinson 2000). Students with a high level of intellect and advanced skills choose not to interact in the classroom as class activities seem trivial, while students with insufficient knowledge and skills choose not to interact because they lack the ability to. Thus, differentiation in strategies employed in the classroom can help all levels of students to interact. One such a strategy is cooperative learning, where students are divided into groups so that students within every group help one another with class material to collectively construct conclusions. According to (Beyazkurk & Kesner, 2005), cooperative learning is highly dependent on the teacher's awareness of the cooperative structure. Unless the teacher accounts for "individual accountability" within every group, students with high leadership and technical skills will accomplish the assigned tasks, leaving low achievers with no role in the classroom (Beyazkurk & Kesner, 2005). The nature of classroom interaction is of extreme relevance to the topic. Dukmak notes that students exhibit enthusiasm about interacting with the teacher in the classroom in the Arab culture (2009, p.22). He continues to explain that students seem to not only rely on raising their hands, but also call the teacher's name and even beg him/her to allow them to answer, regardless of whether they know the answer or not (Dukmak 2009, p.22).

2.2. Classroom interaction and achievement

A study carried out by Younger and Warrington (1996) revealed that high-achieving students initiated more interactions than low-achieving ones. The study also found that the nature of interactions among high achievers differed from those of low achievers. High achievers initiated interactions to volunteer answers, whereas low achievers interacted primarily to seek help (as cited in Editors, 2006).
Wilson (1999) supported that student involvement in classroom discussions can be a major element in effective instruction. Verbally active students are more likely to be high achievers, and student–teacher interaction can help students develop their cognitive skills. He also pointed out that interaction of high- and low-achieving students were not solely determined by their experiences in their current classroom rather ''such behaviors were as a result of previous schooling experience.''
When a teacher initiates more interactions than the students, this may indicate that the classroom is teacher-controlled; if students initiate more interactions, it may mean that the students control the classroom. Some studies suggest that, when students control classroom interaction, they are more active in the learning process and participate more willingly (Good &Brophy, 1998).

3. Methodology

The study is conducted at Al Mahad Al Dini for Primary and Secondary Education in Dubai. It focuses on a group of 14 students in their final year of secondary education, which includes both high and low achievers. This classroom is convenient for this study as the students are not of the same level, which allows a comparison between the interactions of those types of students. Observations were carried out for two different subjects, namely Physics and English, taking into consideration that high and low achievers in both subjects could exhibit differences, i.e. a student who is a high achiever in one subject could be a low achiever in the other. For each of the two subjects, three different classes were observed in order to confirm the data gathered, as well as assess the way different teaching strategies affect classroom interaction.
Data collection techniques included observation and field notes, with the main technique being observation. These observations included the teaching strategies utilized by the teachers, the resulting student interactions, and the type and purpose of student interactions. As three classes were observed for each of two different subjects, observation of the effect of the class content on the teaching technique and the way that reflects on student interactions was facilitated.
To analyze the obtained data, a previous study by Julie Willson, conducted in 1999, on a similar subject matter was used. In her study, Willson examines high and low achievers' classroom interaction patterns in an upper primary classroom. She focuses on three areas of classroom interactions to extract conclusions from her collected data: frequency of interactions, nature of interactions, and reasons for avoided initiation of interactions. This study will adopt a similar method for data reduction and analysis.

4. Data analysis

Frequency of Interactions
The observations were recorded separately for English and Physics classrooms, to take into account the fact that the high-low achiever classification of students is not the same in both subjects. Also, the frequency of interactions was observed and recorded in terms of whether they were student-initiated or teacher-initiated, to facilitate reflection on strategies' impact on classroom interaction. Tables 1 and 2 below present the frequency of student-initiated and teacher-initiated interaction in the observed three 40-minute English classes, respectively.

Table 1: Frequency of Student-Initiated Interactions (English)

Achievement level	No. of students	Interactions (Class 1)	Interactions (Class 2)	Interactions (Class 3)	Interactions (Average)
High	6	7	5	10	7
Low	8	3	3	2	3

Table 2: Frequency of Teacher-initiated Interactions (English)

Achievement level	No. of students	Interactions (Class 1)	Interactions (Class 2)	Interactions (Class 3)	Interactions (Average)
High	6	10	7	7	8
Low	8	8	6	12	9

Table 3 and 4 below present the frequency of student-initiated and teacher-initiated interaction in the observed three 40-minute physics classes. The outcomes of the observations for Physics show that the students (high and low achievers) interactions were not as well as in English subject and that was due to the fact that different teaching strategies affect classroom interaction and the nature of the content taught in Physics.

Table 3: Frequency of Student-Initiated Interactions (Physics)

Achievement level	No. of students	Interactions (Class 1)	Interactions (Class 2)	Interactions (Class 3)	Interactions (Average)
High	4	3	2	4	3
Low	10	0	1	1	1

Table 4: Frequency of Teacher-Initiated Interactions (Physics)

Achievement level	No. of students	Interactions (Class 1)	Interactions (Class 2)	Interactions (Class 3)	Interactions (Average)
High	4	5	4	8	6
Low	10	4	4	5	4

4.1. Nature of interactions

Equally as important as the frequency of interactions was the nature of interaction, i.e. the form and purpose of interaction. Tables 5 and 6 present a summary of every student's interaction details in the second observed class for English and Physics, respectively.

Table 5: Nature of Interactions (English, Class 2)

Student's name	Achievement level	Form of interaction	Purpose of interaction
Hamad	High	Raise up hand	To check his written answer
		Waving hand and calling teacher's name	To answer a question
		Raise up hand	To answer a question
Ahmad	High	Raise up hand	To orally summarize text
		Raise up hand	To write answer on the board
Fateh	Low	Got up seat	To check his answer
Obaid	Low	Calling teacher to come to seat	To ask for an explanation
Nader	High	Stand up and raise up hand	To answer a question
		Yell teacher's name and raise up hand	To answer a question
Mohammed	Low	Raise up hand	To ask a question
		Raise up hand and yelled teacher's name	To answer a question
Fares	High	Calling out to the teacher	To answer Mohammed's question
		Calling out teacher's name	To answer a question
Saif	Low	Speak when called upon by teacher	To make a comment about class discussion
		Speak when called upon by teacher	To ask a question about what he does not understand
Murad	Low	Speak when called upon by teacher	To repeat classmate's answer
Ali	High	Raise up hand	To ask a question (for his own personal knowledge)
		Raise up hand	To write answer on the board
Abdullah	Low	Speak when called upon by teacher	Answer a question
		Called upon by teacher	Refuses to give an answer
Omar	High	Raise up hand	To check his answer
Abdul Rahman	Low	-	-
Khaled	Low	-	-

Table 6: Nature of Interactions (Physics, Class 2)

Student's name	Achievement level	Form of interaction	Purpose of interaction
Hamad	High	Raise up hand	To ask a question
		Speak when called upon by teacher	To answer a question
		Raise up hand	To answer a question
Ahmad	Low	Speak when called upon by teacher	To answer a question
Fateh	High	-	-
Obaid	Low	Speak when called upon by teacher	To answer a question
Nader	Low	-	-
		Speak when called upon by teacher	To answer a question
Mohammed	Low	Raise up hand	To ask a question
Fares	High	Raise up hand and call teacher's name	To give a calculated answer (when teacher asked)
Saif	Low	-	-
Murad	Low	Raise up hand	To answer a question
Ali	High	Raise up hand	To give a calculated answer
		Raise up hand	To answer a question
Abdullah	Low	-	-
Omar	Low	-	-
Abdul Rahman	Low	-	-
Khaled	Low	-	-

4.2. Reasons for avoided interaction initiation

Interaction initiation is avoided by both high and low achievers. By surveying students from this Grade 12 class, reasons for avoided interaction were elicited. Students' responses are presented in Table 7 below.

Table 7: Reasons for Avoided Interaction Initiation (English)

Reason	No. of High Achievers	No. of Low Achievers	Total No. of Students
Feeling embarrassed	0	3	3
Afraid of being wrong	1	7	8
Teased by other students in class	2	4	6
Lacking confidence	0	3	3
Lack of motivation	1	5	6
Lack of reward for right answer	3	6	9

5. Discussion of results

5.1. Frequency of interactions

For English classes, when examining Tables 1 and 2, a few observations can be made. First, high achieving students initiated more interaction than did low achieving students, as evident from the average of 7 interactions by high achievers and 3 interactions by low achievers. However, as Table 2 shows, when the teacher initiated interactions, both high and low achieving students' interaction averages increased. More importantly, the teacher's initiation of interaction resulted in almost equal interaction for high achievers (average of 9) and low achievers (average of 8). Furthermore, comparison of Tables 1 and 2 reveals that more interactions result when a teacher initiates discussion, by asking a question for example. Thus, it can be said that teacher-initiation of discussion was effective in urge all students to interact, regardless of their achievement level.

As for physics classes, the interactions were less than that observed in English classes. However, since class material is not germane to the current discussion, this will be disregarded. Similar patterns were observed, where high achieving students initiated slightly more interactions than did low achieving students. Also, interaction level increased when teacher initiated discussion, for both low and high achievers. (Dukmak 2009, p.22).

5.2. Nature of interactions

Tables 5 and 6 show that high achieving students are more confident about raising their hands and giving answers to questions. They are also interested in asking questions for their personal knowledge, making comments about class material, and answering other students' questions. Most low achieving students, on the other hand, prefer answering questions only, without asking any themselves. Some even prefer asking the teacher privately, like Fateh and Obaid in English class, possibly because they lack the confidence to ask in front of their classmates. Others only attempt answering question when called upon by teacher. Other noticeable patterns include the lack of any form of interactions of some low and high achieving students. Reasons for avoided interaction are discussed in the next section. Additionally, the pattern of calling the teacher's name, yelling, and expressing enthusiasm towards class interaction described by Dukmak (2009) in his study about students in the UAE is observed with high and low achieving students alike.

5.3. Reasons for avoided interaction initiation

As evident from Table 7, students have different reasons for avoiding initiating an interaction in class. High achieving students listed "lack of reward" as the leading reason for avoiding initiating interactions, while low achieving students considered fear of giving a wrong answer/comment to be their main reason for not initiating interactions. Additionally, some students generally seem to lack intrinsic and extrinsic motivations to initiate any form of interaction in the class (repeated comments by students). However, this is more prevalent among low achieving students, who seem to expect a reward for correct answers and do not seem to find any value in initiating interaction, whether it may be a feeling of satisfaction or involvement in classroom discussion. Also more prevalent among low achieving students is the lack of confidence to ask or answer questions, which was apparent I their forms of interaction, where they preferred privacy.

6. Conclusions and recommendations

This paper, which sought to study classroom interaction patterns among high and low achievers in a secondary school, resulted in the following conclusions:

- High achieving students dominated classroom discussion when students were left to initiate classroom interaction.
- Low achieving students benefited from teacher-initiated interactions as they were compelled to become more involved.
- High achieving students focus more on providing and demanding extra information from the class, than do low achieving students.
- Confidence and intrinsic and extrinsic motivation are key factors that affect classroom interaction. Consistent with the previously discussed findings of Tomlinson, both low and high achieving students refrain from interacting in class as they are either over-challenged or over-challenged and thus get no intrinsic motivation to interact.

These findings can be utilized to maximize classroom interaction. For example, teachers can employ the teacher-centered strategy to elicit more responses from low achieving students, while still employing the guided-discovery strategy to allow high achieving students a chance to inquire and comment on class discussion. Moreover, teachers can spend time providing one-on-one sessions with students in order to acquire feedback from low achieving students. Also, teachers can try to provide more extrinsic motivation for students to interact in class through offering rewards, whether participation points or other forms of rewards.

References

[1] Dukmak, S. (2009). 'Ability Grouping and Teacher-Students Interaction among High and Low Achieving Students in Middle Primary Schools in the United Arab Emirates,' in *UAEU Journal of Faculty of Education, 26*.

[2] Robinson, H. A. (1994): *'The Ethnography of Empowerment – The Transformative Power of Classroom Interaction'*. The Falmer Press. London.

[3] Tomlinson, C. (2000). 'Reconcilable differences? Standards-based teaching and differentiation'. *Educational Leadership, 58* (1), 1-7.

[4] Willson, J. (1999). 'High and Low Achievers' Classroom Interaction Patterns in an Upper Primary Classroom,' *AARE Conference*.

[5] Wolfe, P. (2001). '*Brain Matters: Translating Research into Classroom Practice'.* VA: Association for Supervision and Curriculum Development. Alexandria.

[6] Beyazkurk & Kesner, 2005. ": Classroom interaction in regular and special education middle primary classrooms in the United Arab Emirates.

[7] Mustapha, S.M. (2010). Understanding Classroom Interaction: A case study of International students' classroom participation at one of the colleges in Malaysia. International journal for the advancement of science and arts,2(1), 91-99. Malaysia: Kuala Lumpur Infrastructure University College.

[8] Brophy, J., & Good. (1998). Class management as socializing students into clearly articulated roles: Journal of classroom interaction.33 (1).

[9] Bishop, E.P. (2003). Journal of classroom interaction. Retrieved on 5 October from valenciacc.edu/pbishop/lcrb/clssrm-interact.pdf.

[10] Dukmak, S. (2009). Interaction in regular and special education in middle primary classrooms in the United Arab Emirates: British journal of special education classroom. (37). https://doi.org/10.1111/j.1467-8578.2009.00448.x.

[11] Willson, J. (1999). High and low achiever's classroom interaction patterns in an upper primary classroom. Retrieved on October 8, 2010 from http://www.aare.edu.au/99pap/wil99741.htm.

[12] Editor, E.D. (2006). Increasing student interaction.Onlinejournal. Retrieved on 7 October 2010fromhttp://www.thefreelibrary.com/Teacherstudent+classroom+interactions%3A+the +influence+of+gender, -a021072030.