

## **An Examination of the Impact of Teachers' Functional Questions on Students' Oral Production in Algerian EFL Classrooms**

**Ilyes Gouider**

Department of English, Faculty of letters and languages  
Mouloud Mammeri University of Tizi Ouzou, Algeria  
Corresponding Author: [ilyes.gouider@ummt0.dz](mailto:ilyes.gouider@ummt0.dz)

**Hamid Ameziane**

Department of English, Faculty of letters and languages  
Mouloud Mammeri University of Tizi Ouzou, Algeria

Received: 06/02/2022

Accepted: 08/14/2022

Published:09/24/2022

### **Abstract**

This research explores the functions of questions used by EFL teachers and the impact they have on students' oral production. The main aim is to examine the distribution of questioning techniques and the length of language output elicited by each category. The study will fill the research gap, in the local context, regarding the effects of functional questions on the length of students' responses. The following main question is sought to be answered: What is the epistemic category of questions that can prompt students to produce more extended language output in EFL? The study involves descriptive correlational research that makes use of a quantitative method for answering the research questions. It implements Long and Sato's (1984) taxonomy (based on Kearsley, 1976) for the categorization of functional questions. The database of this study included 566 questions, of which 420 were epistemic and 111 were echoic in function. The data collection procedure took place at the departments of English of two academic institutions, namely: the University of El Chadli Ben Djedid-El Tarf and the University of Badji Mokhtar-Annaba. The major findings of the study revealed that despite the primacy of referential questions in eliciting learners to produce lengthier language output, evaluative questions were more frequently asked by teachers. Further research is needed to be carried out in the context of Algeria to reach more comprehensive results.

**Keywords:** Functional questions, Algerian EFL classrooms, language output, referential questions evaluative questions

**Cite as:** Gouider, I., & Ameziane, H. (2022). An Examination of the Impact of Teachers' Functional Questions on Students' Oral Production in Algerian EFL Classrooms. *Arab World English Journal*, 13 (3) 72-88. DOI: <https://dx.doi.org/10.24093/awej/vol13no3.5>

## Introduction

Classroom discourse research has been allotted much attention in the fields of second and foreign language learning. Among the defining aspects that characterize classroom discourse is the prevalence of teachers' questions as they play an essential role in prompting students to produce and participate through the target language (Wright, 2016). The emphasis on questioning strategies is manifested in the practice of language teachers inside classrooms as the average amount of instructional time allocated to classroom questions range from thirty-five percent to fifty percent of the overall time of lessons (Cotton, 1988). Teachers' dependence on questions stems from their need to engage students in discussing content to ensure the co-construction of knowledge, which can eventually lead to better learning outcomes.

Since the norms of classroom discourse are different from those existing in casual conversations which take place outside pedagogical settings, students often wait for their teachers to ask questions before speaking since interrogatives can be considered the signal that grants students the permission to talk. This is due to the fact that teacher-student talk is embedded with an imbalance of status and power between interlocutors, because of the teacher being in possession of higher authority over students and regularly holding the role of a primary knower during classroom discourse (Burton, 1981; Thwaite, Jones, & Simpson, 2020). That being the case, the output produced by learners is often supplied in the form of responses to the questions that teachers pose in their quest to elicit information from learners about content or form in the target language. It is important to note that the language output that students produce is believed to be one of the main factors that drive the process of language acquisition (Gass, 1997). To highlight the role of language production as a fundamental element of Second Language Acquisition (SLA), Swain (1985) argued that language output may indeed play an essential part in triggering learners toward attending to the required linguistic forms and communicative resources needed for conveying the intended meaning. The causal relationship between classroom questions and the students' language output is apparent because, simply put, teachers' questioning behavior is what often brings students to engage in content discussion (Brock, 1986).

Classroom questions occupy a large portion of the whole time that a lesson takes, and therefore understanding classroom interaction requires exploring the nature of the questions used in classroom. Based on the same premise, the outcome of EFL courses and the shape of discourse are partially related to the questioning techniques that teachers use during verbal interaction (Brock, 1986). The smoothness of the course delivery and how communication proceeds are associated with the questioning techniques teachers employ to convey information to students. Moreover, the language output produced by students is an essential factor for language learning development (Swain, 1995), and students' language production is often bound to happen due to the questions asked by teachers. Therefore, success in delivering an effective instructive course entails developing questions that promote the teacher to act as an initiator and sustainer of interaction, and that encourage students' production (Brown, 2014). Yet, to reach an understanding about which questions may guarantee better learning, there is a need to study the nature of the questioning techniques used in EFL classrooms and the effects they have on learners' oral production in the first place. The lack of observational and empirical research in Algeria regarding this research subject is problematic. There is therefore a need to conduct initial

quantitative research to investigate the nature of teachers' questions and their influence on the length of students' oral production.

It is worth noting that many researchers have attempted to examine classroom discourse in the context of Algerian EFL classrooms. Still, only a few of them made use of analytic schemes for the systematic analysis of discourse. Despite that a lot of studies about classroom questions, at a global level, adopted taxonomic and quantitative paradigms (Ellis, 2012), there is still a scarcity of research in the local context in respect to the implementation of questions' analytical schemes. To our best knowledge, the present study, adopting Long and Sato's (1984) taxonomy, is the first to be implementing the model in the local context of Algeria.

The objectives of this research are to identify the distributions of functional questions across Algerian EFL classrooms and the resulting length of output that would be stimulated by each questioning category. Since epistemic questions lie at the core of any content-oriented language classroom, we will also solicit to gauge the significance of the numerical differences in the length means of responses which correspond to evaluative and referential questions.

This paper aims to answer the following main questions:

- 1-What is the overall mean length of students' responses to functional questions in Algerian EFL classrooms?
- 2- What is the distribution of functional questions used by teachers?
- 3-What is the average amount of language output elicited by each functional type of questions?
- 4- What is the epistemic category of questions that can prompt students to produce more extended language output in EFL?

The following null/alternative hypotheses are put forward:

$-H_0$  (null): There is no significant difference between the distributions of evaluative and referential questions and the length means of language output elicited by each category.

$-H_1$  (alternative): There is a significant difference between the distributions of evaluative and referential questions and the length means of language output elicited by each category.

The present paper will attempt to offer an overview about relevant key concepts and a number of related studies, as we will initially review the previous literature along with the pertinent analytical models that were devised for the categorization of questioning techniques. Subsequently, we will elaborate the adopted research methodology, and then proceed by presenting results and discussing the findings that we have attained through the systematic analysis of data.

## Literature Review

In the last few decades, classroom discourse has gained much attention in the field of language studies. The nature of language used in classrooms is often distinct in form and function from other communication contexts (Richards & Schmidt, 2010). Among the communicative aspects that characterize classroom discourse from natural discourse is the prevalence of pedagogical questions. Bellack, Kliebard, Hyman and Smith (1966) considered the interaction that happens inside the classroom to follow four moves: structuring, soliciting, responding and

reacting. The soliciting move that the teacher makes to elicit a response is often supplied in the form of a question (Johnson & Johnson, 1999). The consequent following moves (responding and reacting) are partially dependent on the question asked in the soliciting act, which is usually performed by the teacher. Such an important role that questions play in shaping classroom discourse is frequently highlighted in literature (e.g., Brown & Lee, 2015; Dalton-puffer, 2007; Tsui, 1995).

Sinclair and Coulthard (1975), in their pioneering work about classroom discourse, proposed another pattern that has been seen as a typical model which elaborates the nature of exchanges taking place during teacher-student talk. The suggested pattern constitutes three main moves: initiation, response, follow-up (or evaluation). It is often referred to as the IRF model, and it has been widely used to explain and examine classroom discourse. In this model, questions are considered to play a crucial role in driving the process of communication since initiation moves are frequently issued through interrogatives. In this context, Richards and Schmidt (2010) stated that "in this typical three-part structure, the teacher initiates a question in order to check a student's knowledge, a student responds, and the student's responses evaluated with feedback from the teacher" (p.80). Ellis (2012) also pointed out that "a teacher question is likely to occupy the first part of the ubiquitous three-phase initiate-respond-follow-up (IRF) exchange" (p. 120). He explained further the prevalence of questions by associating them with the power of control they give to the teacher since they enable the questioner to take over the discourse. Thus, they constitute a key element of interaction that allows the teacher to deliver content while engaging students in constructing knowledge and guiding them toward attaining teaching-learning objectives. In brief, making use of questions is fundamental if the teacher wants to avoid rendering his/her course into an extended monologue.

There are many taxonomies and classifications that have been designed to study the nature of teachers' questioning techniques. Thompson (1997) highlighted that questions can be categorized differently according to their form, content, or purpose (function). As far as this study is concerned, questions are examined based on the function they serve since the purposive nature of questions is perceived to have an impact on variables related to learners' achievements (e.g., length and complexity of learners' language output). Among the influential taxonomies that have been designed to categorize questions according to their function is Long and Sato's (1983) taxonomy. This categorization model was adapted from the work of Kearsley (1976) in which they classified question according to a set of functional categories. Long and Sato's (1983) taxonomy subsumed teachers' questions into echoic and epistemic types and then sub-categorized these into two sets of categories; each category set pertained either to the echoic or epistemic type of questions. More importantly, the major contribution lied in the identification of two functional categories called referential and display questions, which Long and Sato's (1983) included under the umbrella type of epistemic questions (as cited in Ellis, 2012). Later on, this typology became a trend of classification as many scholars accounted for display and referential questions in order to examine the effectiveness of questioning techniques used inside ESL/EFL classrooms (Dalton-Puffer, 2007). Despite that numerous quantitative analytical studies have addressed the effects of functional questions on learners' language output in many language learning contexts, the research issue remains unresolved in Algeria. That is, a research gap is identified in the local context of EFL education.

### *Related Studies*

There has been a significant amount of research directed toward investigating the role of display (evaluative) and referential questions in second/foreign language classrooms. As mentioned before, one of the influential studies that dealt with this subject is embodied in the work of Long and Sato (1983) in which they explored the effects of the two questioning categories on the oral production of learners. The major findings in their study indicated that display questions were more frequently used in ESL classrooms than it was the case for their referential counterparts. Moreover, they pointed out that despite the observed scarcity of referential questions, the latter may lead to longer and more authentic responses than display questions (Shomoossi, 2004).

Drawing on their work, Brock (1986) conducted a study to examine whether there is a causal relationship between the nature of epistemic questions and students' responses in terms of length and complexity of output. To achieve this purpose, she compared treatment groups whose teachers were trained to ask more referential questions with control groups whose teachers were not exposed to such training. The results showed that students in treatment groups, who were subjected to more referential questions, produced longer and more complex output than those in control groups who were not subjected to an equal amount of referential questions. That is to say, the study revealed that referential questions were more effective in enhancing the quality and length of the language output produced by students.

In another study, Wright (2016) conducted similar research investigating the effects of display and referential questions on output quantity through an analysis of both the length and complexity of students' utterances following each strategy of questioning. The findings showed that referential questions have more potential to push learners toward producing more extended output. Also, the results revealed that referential questions increased the negotiation of meaning and prompted learners toward producing accurate utterances. Wright suggested further that referential questions may have positive effects on the process of second language development.

In the local context of Algeria, there has been a lack of research on this subject. Nevertheless, Khadraoui (2016) attempted to explore teachers' and students' attitudes regarding the use of display and referential questions. Because of the purpose of the study, she did not examine the effectiveness of the two types of questions drawing on an experimental or an analytic observational design. The study was instead based on a survey that reported teachers' and students' attitudinal beliefs about each questioning strategy. To achieve that objective, she used questionnaires directed at both teachers and students to inquire about the attitudes they have with respect to the two categories. The findings showed that the majority of participants held positive attitudes in favor of referential questions and the advantages they can bring about to classroom interaction.

A recent study by Liu and Gillies (2021) explored the effects of referential and display questions on mediated-learning behaviors through a qualitative analysis of five English lessons in Chinese high schools. The study concluded that referential questions are more likely to trigger more diversified mediated-learning strategies, as they were conducive of more extensive interactive episodes. In addition, the findings suggested that referential questions may lead to the generation of more complex responses and lengthier output in the target language. Furthermore,

in another study within the Chinese context of EFL learning, Liu (2022) compared the questioning strategies used by local and foreign teachers in China. The researcher concluded that both local and foreign language educators were aware about the importance of referential questions. Yet, Chinese teachers failed to recognize their usefulness in extending the learners' oral production.

However, some studies have revealed contradictory findings that do not support the conception of referential questions as being superior to display questions. David (2007) carried out a study to investigate the influence of these two functional categories on the quality of teacher-learner interaction at the level of Nigerian middle schools. The result showed that 85% of the questions that were used belonged to the display category, while only 15% of the questions were referential. More importantly, the study concluded that referential questions do not encourage the learners to participate and teachers should exploit more display questions to increase learners' engagement and involvement within Nigerian ESL classrooms. Furthermore, Van Lier (1988) and Seedhouse (1996) questioned the purpose of such functional distinction in the first place. They argued that regardless of whether questions are authentic or not, what should be accounted for is the language eliciting force served by teachers' questions since they are both conducive to an IRF cycle.

### *Functional Questions*

Long and Sato's (1984) taxonomy, which is used in this research, also makes use of the highlighted dichotomy as it divides the epistemic type of questions into evaluative (display) and referential questions. However, it is based fundamentally on the work of Kearsley (1976) as it classifies questions into four rather than two types of functional questions. In this classification model, the echoic type of questions is marked by instances in which confirmation checks and clarification requests are asked. Kearsley (1976) elucidated that "echoic questions are those which ask for repetition of an utterance or confirmation that an utterance has been interpreted as intended" (p. 360). As the name suggests, these kinds of questions echo what the student has said either by issuing a repetition or seeking clarification about a given utterance (Long, 1981). These can act as strategies for negotiating meaning (Long, 1996) or supplying implicit corrective feedback in the form of a prompt (Ellis, Loewen, & Erlam, 2006; Lyster & Ranta, 1997). For instance, Gass, Behney, and Plonsky (2013) pointed out that it is not uncommon for scholars to consider that the sort of "feedback obtained through negotiation serves a corrective function" (p.362). Likewise, Ellis (2021) encapsulated clarification requests and confirmation checks within the implicit class of feedback and defined any implicit feedback move as being "one where the corrective force is masked because it is potentially performing some other function (e.g., topic continuation or the negotiation of meaning)" (p.341). Like the case of echoic questions, the epistemic type, in this model, subdivides into two main categories: evaluative and referential questions. These two categories have been paid with particular attention in second/foreign language studies that investigated classroom questioning techniques (Brock, 1984; Chaudron, 1988; Long & Sato, 1983). Evaluative questions are also called display questions. They refer to those questions that the teacher asks while he/she already knows their answers beforehand, as they merely serve to evaluate or test the learners' knowledge (e.g., what is the past tense of "make"?). In other words, the teacher seeks to elicit from the respondent some kind of already known answers or to call for information that the questioner has established at least the parameters about (Brock, 1986; Lee, 2006).

On the other hand, referential questions are seen as being functionally different from evaluative questions since their answers are not known in advance to the questioner (Walsh, 2006). Referential questions are believed to simulate to some extent the questions that happen in real-life situations, and for this reason they are seen to be more authentic than their counterparts (e.g., where do you live? What is your opinion about unemployment in Algeria?). Since referential questions may not be pre-empted with certainty by the questioner, once they are asked, they decrease the teacher's primary knower status into a secondary knower position. In this regard, Dalton-Puffer (2007) explained that "in situations where these roles are activated, it is the primary knower who asks display questions from the secondary knower; in situations where the distinction is irrelevant, 'authentic questions' are asked" (p. 96). Such a shift of roles that occurs when referential questions are asked is among the reasons that establish the foundation for assuming referential questions to be more authentic and effective in allowing students to produce more output as they promote the communicative language use of the target linguistic system.

In Long and Sato's (1984) taxonomy, the third type of questions accounted for represents expressive questions. This functional type is associated with those questions that convey the attitudinal information of the questioner to the addressee. Kearsley (1976) elaborated the main defining aspects of expressive questions by highlighting their peculiar syntactic structures and the corresponding intonation patterns that can hint at the existence of attitudinal bias in the transmitted message. Expressive questions are often issued through tag questions or yes/no questions (e.g., you are coming, aren't you?). They can transmit various expressive information that can be either neutral, positive, or negative, such as: doubt, confidence, surprise, impatience, etc. (Quirk, Leech, Greenbaum, & Svartvik, 1972; Kearsley, 1976). This kind of questions can signal the attitudinal bias that teachers tend to exhibit while discussing content and the extent of emotional involvement or subjectiveness displayed during the interaction. Moreover, Long and Sato's (1984) taxonomy accounted for a fourth type that encompasses social control questions. This last type includes three main categories, namely: social control, attentional and verbosity questions. Social control questions are asked to exert authority and maintain control (e.g., are you listening?). Attentional questions serve a similar but not an identical purpose since they are asked to attract the learners' attention toward what is being said or to take over the direction of discourse when there is a perceived pedagogical need to intervene. A representative example can be reflected in the case when a student is performing a task or making a presentation, and then the teacher interferes for the sake of taking the floor or for the purpose of elaboration (e.g., can I say something now? may I comment on that?). Verbosity questions, as implied by their literal meaning, are asked for the sake of sustaining speech, maintaining conversation, or avoiding communication breakdowns. Kearsley (1976) highlighted that they "serve to avoid embarrassing silences in conversation and maintain interaction between speakers" (p. 363). They may also be used to keep a friendly atmosphere or a supportive socio-emotional climate (e.g., where is your classmate by the way?)

## Methods

This study represents descriptive correlational research that employs an ex-post facto design. The reason behind the used method is associated with the research objectives that aim at exploring the distributions of functional questions in EFL classroom and to gauge the significance of the differences between the length means of responses corresponding to evaluative and referential questions. The process of data collection was based on classroom observations. The

study employs a quantitative method for answering the research questions. Qualitative considerations took place for coding questions in accordance with their distinct functions. That is to say, teachers' questions were categorized in respect of their underlying qualitative properties (see Chaudron, 1986). Subsequently, data were analyzed statistically to determine the frequencies of occurrence, mean length of students' responses, and percentages corresponding to each type of questions. The procedure of categorizing questions was based on Long and Sato's (1984) taxonomy, while counting the length of students' responses was adapted from Brock's (1986) procedure. This study made use of a binomial test and a t-test for testing hypotheses, since correlational designs enable gauging the significance of relationship (Curtis, Comiskey, & Dempsey, 2016) between independent variables (e.g., epistemic questions) and dependent variables (e.g., length of language output). In this context, Cohen (1968) stated that the purpose of t-tests and other parametric tests is to explore relationships among variables and therefore produce correlational evidence (as cited in Curtis et al., 2016).

### ***Participants***

This study took place at the departments of English at the University of El Chadli Ben Djedid-El Tarf and the University of Badji Mokhtar-Annaba, within which four EFL sessions were observed and then analyzed. Purposive-convenience sampling was used in the process of data collection. The observed lessons involved 73 third-grade students with four different EFL teachers during the academic year 2019/2020. Each session of observation occurred after getting permission from the administrative staffs of the two universities. All participants were informed about the content of the research and they gave consent to take part in the study. The linguistic repertoire of the concerned students encompasses Arabic (L1), French (L2), and English (L3) with different degrees of mastery.

### ***Research Instruments***

The process of data collection took place during EFL lessons through the use of audio-recordings while backing up the retrieved data with note-taking and the observation of classroom events in real-time. Later on, the audio-recordings of lessons were transcribed and coded according to Long and Sato's (1984) taxonomy. That is to say, more than four hours of EFL classroom discourse were recorded and subsequently transcribed for the sake of establishing the means for the procedures of taxonomical categorization and output counting to be carried out.

### ***Research Procedures***

In order to assure that the process of categorization has an appropriate level of reliability, another researcher was asked to recode the questions' functional categories. The level of intercoder reliability was estimated through a "percent agreement" test that measures the reliability of the coding procedure (Lombard, Synder, & Bracken, 2002). A coefficient of 0.85 was deemed as an appropriate level of agreement. The calculated level of agreement between coders was 0.92 (92%), and therefore considered appropriate to proceed in the analysis and interpretation of data.

After the process of categorization, the output of each question was counted, and then the calculation of the length means of students' responses was carried out in correspondence to the functional nature of questions. Counting students' output was established drawing on the number of words uttered in response to each questioning technique involved in the used taxonomy (e.g.,

Brock, 1986). All the responses issued by students following teachers' questions were accounted for while measuring the length of language output. Once the teachers issued a follow-up or feedback move, the questioning episode was considered over, and the counting procedure ceased to operate at that indicative moment. The findings were later described and explained with respect to the research questions. The process of data analysis went through the following phases: identification, classification, calculation, description and explanation of the results. SPSS version 28 was used for the statistical analysis of data, and a p-value of 0.05 was set as a threshold of statistical significance. A binomial test was used to measure the significance of the difference between the distributions of evaluative and referential questions. At the same time, a t-test was implemented to gauge the level of significance between the different means of language output stimulated by the two epistemic categories.

## Results

To answer the first research question "What is the overall mean length of students' responses to functional questions in Algerian EFL classrooms?", the generic length ratio of responses to questioning techniques was calculated. The findings of the study showed that the observed episodes of classroom discourse contained a total number of 566 functional questions asked by teachers while delivering their courses. The total amount of output that learners produced following questions was 2117 words. The average length of output that questions stimulated was therefore 3.74 words per question. The following table illustrates the number of questions asked across EFL lessons along with the language output and mean length of responses in each class:

Table 1. *Total number of questions, language output and ratios of responses*

Variables	Class A	Class B	Class C	Class D	Total
Total Frequency of questions	243	114	85	124	566
Total amount of Language output	786	367	359	605	2117
Mean length of responses	3.23	3.22	4.22	4.88	3.74

The previous table serves to illustrate the total number of questions output and mean ratio of responses regardless of questions' types and categories. The generic mean length of responses (3.74 words per response) indicates that most of students' answers constituted brief utterances only, rather than extended or syntactically complex utterances during content discussion.

To answer the second research question "What is the distribution of functional questions used by teachers?"), descriptive statistics were employed to explore the frequencies of occurrence and the proportions of questioning techniques across the examined classes. First, it must be noted that Long and Sato's (1984) taxonomy classifies questions into four main types: echoic, epistemic, expressive, and social control questions. In this respect, the findings show that the number of epistemic questions was significantly greater than the number of echoic questions asked during lessons, since a total number of 420 questions were epistemic while only 111 questions were echoic in function. That is to say, epistemic questions constituted 74.20% of questions raised by

teachers and echoic questions composed 19.61% of the whole proportion. Furthermore, the results showed that the two remaining types of questions, namely expressive and social control questions, were not used quite often by language educators. These two types comprised only 6.19% of the overall proportion of questions. Only 11 expressive questions were posed during the observed sessions, composing 1.94% of the questions in the database. The number of interrogatives with a social control function was 24 (including attentional questions), which is equivalent to 4.24%. An absence of verbosity questions was also observed. The low frequency of these two functional types, along with the corresponding sub-categories, cannot offer accurate interpretation about their impact on students' output. The previous results are illustrated in detail in the Appendix.

As mentioned earlier, in Long and Sato's (1984) taxonomy, the epistemic type subdivides into two categories: evaluative and referential questions. The former category of questions occurred more frequently than the latter. The frequency of occurrence pertaining to evaluative questions was equal to a sum of 323 questions. It is equivalent to 76.90% of the holistic percentage belonging to the epistemic type, which involved a total of 420 questions. On the other hand, only 97 questions had a referential function, entailing that merely 23.10% of epistemic questions were prone to be authentic. The former results are illustrated below in table 2.

For the purpose of answering the third research question "What is the average amount of language output elicited by each functional type of questions?", the length means of responses were examined. The ratio of output corresponding to the echoic type was 4.08 words per question and that of epistemic interrogatives constituted 3.82 words per question. Thus, the stimulated output was numerically close in terms of length. Once again, the low frequencies of occurrence corresponding to social control, attentional, and verbosity questions prevented the researchers from identifying accurate length means for the former three functional types. The statistics can be checked in the Appendix in spite of the mentioned limitation.

The same procedure was used for answering the fourth research question "What is the epistemic category of questions that can prompt students to produce more extended language output in EFL?". The mean length of students' responses was 5.10 words for referential questions, and 3.43 words for the evaluative category. The table below illustrates the frequencies of occurrence that belong to the two questions accompanied by their output, mean ratios, and percentages:

Table 2. *Referential and evaluative questions' frequencies of occurrence, language output, mean length of responses, and percentages*

Variables	Class A	Class B	Class C	Class D	Total	Pct (%)*
Referential questions	50	13	15	19	97	23.10%
Language output	187	52	105	151	495	
Mean length	3.74	4	7	7.95	5.10	
Evaluative questions	108	77	58	80	323	76.90%
Language output	318	244	227	319	1108	
Mean length	2.94	3.17	3.91	3.99	3.43	

\* Percentages (%) in table 3 represent the relative proportions of referential and evaluative questions with respect to the epistemic type of questions only, rather than the whole proportion of questions reported in the database.

The fact that the number of evaluative questions was 3.33 times greater than referential questions is important since it implies that teachers depended strongly on posing questions to which they have already pre-empted the answers. More importantly, the findings showed that students' responses tended to contain more extended output when referential questions were asked.

For testing the research hypotheses, a binomial test and an independent samples t-test were used. The results of binomial test showed that differences in the rounded distributions of referential (23%) and display questions (77%) were highly significant ( $p < .001$ ), as they deviate significantly from the assumed test proportion of 0.50 (50%). Statistical results are illustrated in table 3.

Table 3. *Binomial test*

		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Epistemic Questions	Group 1	Referential	97	.23	.50	<.001**
	Group 2	Evaluative	323	.77		
	Total		420	1.00		

\*\*  $p < .001$

The reported significant difference between the distributions of the two epistemic categories reveals that teachers were highly biased toward asking more evaluative questions during classroom interaction. That is to say, most of teachers' epistemic questions did not serve genuine communicative purposes, as the larger proportion of interrogatives were merely posed for the sake of assessing the students' factual knowledge.

Descriptive results concerning the output generated subsequent to epistemic categories indicated that the mean language output pertaining to referential questions ( $M=5.10$ ;  $SD= 7.53$ ) was numerically greater than that of evaluative questions ( $M=3.43$ ;  $SD= 4.99$ ). Results are illustrated in the following table:

Table 4. *Descriptive statistics about referential and evaluative questions*

		Category	N	Mean	Std. Deviation	Std. Error Mean
Epistemic	Referential		97	5.10	7.534	.765
	Evaluative		323	3.43	4.987	.278

The high standard deviation belonging to the output resulting from referential questions suggests that responses falling into this category were relatively asymmetrical in terms of length, if compared with the lower standard deviation value of their evaluative counterparts.

An independent samples t-test was used to determine the significance of the numerical difference observed between the language output elicited by referential and evaluative questions. Since the assumption of normality was violated as shown by Levene's test for equality of variances ( $F= 21.80$ ,  $p < .001$ ), a Welsh t-test was used instead. The findings revealed the existence of a

statistical difference between the two means of language output as indicated by the  $p$ -value  $< .05$  and the confidence interval [ $t(122.30) = 2.06, p = .042, 95\% CI = .062, 3.28$ ]. The results are elaborated below:

Table 5. *Independent samples test*

		Levene's Test		t-test for Equality of Means							
		F	Sig.	t	Df	Significance		Mean	Std. Error	95% CI	
						One-Sided p	Two-Sided p	Difference	Difference	Lower	Upper
Output	Equal variances assumed	21.80	<.001	2.55	418	.006	.011	1.67	.66	.38	2.96
	Equal variances not assumed			2.06	122.30	.021	<b>.042*</b>	1.67	.81	.062	3.28

\*  $p < .05$

Based on the statistical findings derived from the binomial test and the independent samples t-test, the null hypothesis is rejected and the alternative hypothesis is deemed more plausible. That is to say, there is a significant difference between the distributions of evaluative and referential questions and the length means of language output elicited by each category.

To determine the strength of results reported in table 5, the effect size was examined through the use of Cohen's  $d$ . Results entail the existence of a small to moderate effect size [ $d = 0.295, 95\% CI = .067, .522$ ]. The next table displays the former findings:

Table 6. *Cohen's d independent samples effect size*

		Standardizer <sup>a</sup>	Point Estimate	95% Confidence Interval	
Output	Cohen's d	5.674	.295	Lower	Upper
				.067	.522

a. The denominator used in estimating the effect size. Cohen's  $d$  uses the pooled standard deviation.

For the sake of clarity, we will try to summarize the findings in relation to the research questions and postulated hypotheses. The study disclosed that most of students' contributions following teachers' questions ( $N=566$ ) were not entrenched with extended oral production in EFL (3.74 words per question). The typological distribution of functional questions is ordered as follows: epistemic ( $N=420; 74.20\%$ ), echoic ( $N=111; 19.61\%$ ), social control ( $N=16; 2.83\%$ ), expressive ( $N=11; 1.94\%$ ), and verbosity questions ( $N=0; 0\%$ ). The categorical distribution of epistemic questions was found to represent a proportion of 76.90% ( $N=323$ ) for evaluative questions and a proportion of 23.10% ( $N=97$ ) for referential ones. The mean length of output elicited from the referential category ( $M=5.10$ ) was greater than the mean corresponding to the evaluative category ( $M=3.43$ ). The statistical significance of differences between the distributions ( $p < .001$ ) and output length means ( $p = .042$ ) of referential/display questions led to the rejection of the null hypothesis and the acceptance of the alternative hypothesis.

## Discussion

This study reveals that teachers in Algerian university classrooms use a variety of questioning techniques during EFL courses, and that most of students' responses were not embedded with long utterances. The frequencies with which diverse types of questions were asked

differed depending on their functional properties. The epistemic type of questions was the most frequently exploited type of questions due to the content-based nature of Algerian language curricula. Referential and evaluative categories of questions which constitute the epistemic type of questioning techniques were used asymmetrically during the observed sessions of classroom discourse. Evaluative questions were predominant in comparison to referential questions as the difference between frequency distributions was very significant ( $p < .001$ ). Despite the low frequency of referential questions, they had a higher potential of encouraging students to generate more extended production in the target language. The mean length of responses following referential questions was 5.10, while display questions induced 3.43 words per question. The difference between these means was found to be statistically significant ( $p = .042$ ). Though the study reveals that students' answers in EFL lessons were generally brief in terms of output length, referential questions were more effective in extending students' oral production. The attained results fall in line with the disclosures of other studies found in literature (e.g., Brock, 1986; Long & Sato, 1983; Wright, 2016) and the common perception of referential questions as being more conducive to language output (Dalton-puffer, 2007). It is also fundamental to note that the difference between the two means is deemed meaningful since a small to a moderate effect size was reported drawing on Cohen's  $d$  ( $d = 0.295$ ) (see Bakker, et al., 2019; Kotrlík, Williams & Jabor, 2011). Hence, it is not daring to say that referential questions in the context of Algerian EFL classrooms are associated with students' extended oral production and tend to be superior to evaluative questions in this regard.

The echoic type of questions was the second type of questioning techniques to be exploited by teachers, since 19.61% of questions pertained to instances in which teachers used clarification requests and confirmation checks. This implies that there had been a significant amount of negotiation of meaning happening throughout teacher-student talks because requesting clarification and seeking confirmation are indicative moves of meaning negotiation (Long, 1996). Echoic questions can also give the students opportunities to revise their utterances and to self-correct in cases where the produced output is considered inappropriate or flawed by the teacher, since they can also function as implicit strategies for the provision of corrective feedback (Ellis, 2021; Ellis, Loewen & Erlam, 2006; Lyster & Ranta, 1997). The relative proportion of echoic questions attests to the instances of negotiation of meaning or provision of implicit corrective feedback, which constitute two fundamental elements of pedagogical discourse that contribute to language learning (Gass, Behney & Plonsky, 2013).

The last two types of analyzed questioning techniques represent expressive and social control questions. Expressive questions composed merely 1.94% of the number of questions in the database. The results imply that teachers opted to discuss content without involving much of their attitudinal bias in lessons delivery. It may also indicate that teachers attempted to keep an objective point of view about the information being discussed during EFL courses. The functional type of social control questions, which subdivides into three main categories, composed 4.24% of the whole number of the questions in this study. It implies that teachers did not tend to exert their authority while conducting EFL courses, since social control questions are often asked for management or to maintain order (Ellis, 2012). Such a low frequency can show that the delivery of lessons was characterized by a continuity of discourse and a friendly atmosphere as teachers proceeded in discussing concepts and exchanging ideas without exerting an authoritative

questioning behavior or a considerable number of procedural questions for covering lessons' units. Furthermore, the low frequency of verbosity questions may suggest that teachers were tactful in the orchestration of classroom interaction, and for this reason they did not resort to the adoption of questions that aim at releasing tension, avoiding embarrassment or skipping communication breakdowns (Kearsley, 1976).

Finally, it should be noted that the present study is not devoid of limitations. Despite the prominent number of functional questions that were coded, the findings are only based on the examination of four EFL classrooms at two universities. Therefore, the earlier results cannot be generalized to the whole context of EFL education in Algeria. Yet, the study paves the ground for other researchers who want to address the topic to conduct similar studies or replicate the used research procedures within the local context, which would eventually lead to more comprehensive results.

### Conclusion

The main aim of this research paper is to explore the distribution of functional questions and the impact they have on the length of students' oral production in Algerian EFL classrooms. The study concluded that teachers use a variety of questioning techniques during classroom interaction with asymmetrical frequencies of distribution. The major findings showed that evaluative questions were significantly more frequent than referential questions despite that the latter promoted lengthier language output. Thus, the results imply that teachers should solicit to decrease the amount of evaluative questions or at least maintain a balanced approach toward implementing the two questioning techniques. Language practitioners need to be informed about the potential primacy of referential questions in promoting lengthier language output in the local context. Eventually, further research needs to be carried out in Algeria about the impact of teachers' questioning strategies on the length and complexity of oral production in order to obtain more comprehensive results with a higher level of research representativeness.

### About the Authors

**Gouider Ilyes** is a Ph.D. student at the department of English at Mouloud Mammeri University of Tizi Ouzou in Algeria. He has a Master degree in Didactics of foreign languages. His research interests include interactionist theory of language acquisition, foreign language teaching and learning, and applied linguistics. ORCID: <https://orcid.org/0000-0001-6479-1487>

**Ameziane Hamid** is a retired Professor who taught at the department of English at Mouloud Mammeri University of Tizi Ouzou in Algeria. He has a doctorate degree in didactics along with many published works in the field of language teaching and learning. His research interests include cognitive theory of language acquisition, didactics of foreign languages, and pedagogy in Algeria.

### References

- Bakker, A. et al. (2019). Beyond small, medium, or large: Points of consideration when interpreting effect sizes. *Educational Studies in Mathematics*, 102(1), 1-8.  
<https://doi.org/10.1007/s10649-019-09908-4>
- Bellack, A. A., Kliebard, H. M., Hyman, R. T., & Smith, F. L. (1966). *The Language of the Classroom*, New York: Teachers' College Press.

- Brock, C. A. (1986). The effects of referential questions on ESL classroom discourse. *TESOL quarterly*, 20(1), 47-59.
- Brown, D.H. (2014). *Principles of language learning & teaching: A course in second language acquisition* (6<sup>th</sup> ed.). New York, US: Pearson Education.
- Brown, D. H., & Lee, H. (2015). *Teaching by principles: An interactive approach to language pedagogy* (4th ed.). New York: Pearson Education ESL
- Burton D. (1981). Analysing spoken discourse. In M. Coulthard & M. Montgomery, (Eds.), *Studies in discourse analysis* (pp. 61-81). London: Routledge & Kegan Paul.
- Chaudron, C. (1986). The interaction of quantitative and qualitative approaches to research: A view of the second language classroom. *TESOL quarterly*, 20(4), 709-717. <https://doi.org/10.2307/3586521>
- Chaudron, C. (1988). *Second language classrooms: Research on teaching and learning*. New York: Cambridge University Press.
- Cohen, J. (1968). Multiple regression as a general data-analytic system. *Psychological Bulletin*, 70 (6), 426-443.
- Cotton, K. (1988). *Classroom questioning*. New Jersey: Northwest Regional Educational Laboratory.
- Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of correlational research. *Nurse Researcher*, 23(6), 20–25. doi:10.7748/nr.2016.e1382
- Dalton-Puffer, C. (2007). *Discourse in content and language integrated learning (CLIL) classrooms* (Vol. 20). Philadelphia: John Benjamins Publishing.
- David, F. O. (2007). Teachers' questioning behavior and ESL classroom interaction pattern. *Humanity & Social Science Journal*, 2(2), 127-131.
- Ellis, R. (2012). *Language teaching research and language pedagogy*. Chichester, West Sussex: Wiley-Blackwell.
- Ellis, R. (2021). Explicit and implicit oral corrective feedback. In H. Nassaji & E. Kartchava (Eds.), *The Cambridge handbook of corrective feedback in second language learning and teaching* (pp. 341-364). Cambridge: Cambridge University Press. doi:10.1017/9781108589789.017
- Ellis, R., Loewen, S., & Erlam, R. (2006). Implicit and explicit corrective feedback and the acquisition of L2 grammar. *Studies in Second Language Acquisition*, 28(2), 339–368. doi:10.1017/S0272263106060141
- Gass, S. (1997). *Input, interaction, and the second language learner*. New Jersey: Erlbaum.
- Gass, S. M., Behney, J., & Plonsky, L. (2013). *Second language acquisition: An introductory course* (4<sup>th</sup> ed.). New York: Routledge.
- Johnson, D. W., & Johnson R. (1999). *Learning together and alone: Cooperative, competitive, and individualistic learning* (5<sup>th</sup> ed.). Boston: Allyn & Bacon.
- Kearsley, G. P. (1976). Questions and question asking in verbal discourse: A cross-disciplinary review. *Journal of Psycholinguistic Research*, 5(4), 355–375.
- Kotrlík, J.W, Williams, H.A, & Jabor, M.K. (2011). Reporting and interpreting effect size in quantitative agricultural education research. *Journal of Agricultural Education*, 52(1), 132–142
- Khadraoui, H. (2016). *Teachers' and students' attitudes towards the effect of referential questions on EFL classroom interaction*, (Unpublished Master dissertation). Oum El Bouaghi, University, Algeria. Retrieved from:

- [http://bib.univoeb.dz:8080/jspui/bitstream/123456789/3686/1/Hanane%20KHADRA OUI%20pdf.pdf](http://bib.univoeb.dz:8080/jspui/bitstream/123456789/3686/1/Hanane%20KHADRA%20OUI%20pdf.pdf)
- Krashen, S. (2009). *Principles and practice in second language acquisition*. University of Southern California. Retrieved from [http://www.sdkrashen.com/content/books/principles\\_and\\_practice.pdf](http://www.sdkrashen.com/content/books/principles_and_practice.pdf)
- Lee, Y. (2006). Respecifying display questions: interactional resources for language teaching. *TESOL Quarterly*, 40(4), 691-713.
- Liu, H. & Gillies, R.M. (2021). Teacher questions: Mediated-learning behaviors involved in teacher-student interaction during whole-class instruction in Chinese English classrooms. *Frontiers in Education*, 6, 1-11. doi: 10.3389/educ.2021.674876
- Liu, R. (2022). A research on different classroom questioning strategies between Chinese and foreign EFL teachers. *Journal of Contemporary Educational Research*, 6(6), 1-12. doi: 10.26689/jcer.v6i6.4008
- Lombard, M., Snyder-Duch, J., & Bracken, C.C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research*, 2(4), 587-604.
- Long, M. & Sato, C. (1983). Classroom foreigner talk discourse: Forms and functions of teachers' questions. In H. Seliger, & M. Long (Eds.), *Classroom-oriented research in second language acquisition* (pp. 268-286). Massachusetts: Newbury House.
- Long, M. & Sato, C. (1984). Methodological issues in interlanguage studies: An interactionist perspective. In A. Davies, C. Cramer & A.P.R. Howatt (Eds.), *Interlanguage: Papers in honor of S. Pit Corder* (pp. 253-279). Edinburgh: Edinburgh University Press.
- Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W.C. Ritchie & T. K. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 413-468). New York: Academic Press.
- Long, M. H. (1981). Input, interaction, and second-language acquisition. *Annals of the New York Academy of Sciences*, 379, 259-278.
- Lyster, R. & Ranta, L. (1997). Corrective feedback and learner uptake: Negotiation of form in communicative classrooms. *Studies in Second Language Acquisition*, 20, 37-66.
- Quirk, R., Leech, G., Greenbaum, S., & Svartvik, J. (1972). *A grammar of contemporary English*. London: Longman.
- Richards, J. C. & Schmidt, R. (2010). *Longman dictionary of language teaching and applied linguistics* (4<sup>th</sup> ed.). London: Longman Pearson Education.
- Sinclair, J & Coulthard, R. (1975). *Towards an analysis of discourse: The English used by teachers and pupils*. London: Oxford University Press.
- Seedhouse, P. (1996) Classroom interaction: possibilities and impossibilities. *ELT Journal*, 50 (1), 16-24.
- Shomoossi, N. (2004). The effect of teachers questioning behavior on EFL Classroom interaction: A classroom research study. *The Reading Matrix*, 4(2), 96-104.
- Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass, & C. Madden (Eds.), *Input in second language acquisition* (pp. 235-253). Rowley, MA: Newbury House.
- Swain, M. (1995). Three functions of output in second language learning. In G. Cook & B. Seidlhofer (Eds.), *Principles and practice in applied linguistics; Studies in honour of H. G. Widdowson* (pp. 125-144). Oxford: Oxford University Press.

- Thompson, G. (1997). Training teachers to ask questions. *ELT Journal*, 51 (2), 99-105.  
<https://doi.org/10.1093/elt/51.2.99>
- Thwaite, A., Jones, P., & Simpson, A. (2020). Enacting dialogic pedagogy in primary literacy classrooms: Insights from systemic functional linguistics. *Australian Journal of Language and Literacy*, 43(1), 33-46.
- Tsui, A. B. M. (1995). *Introducing classroom interaction*. London: Penguin Books.
- Van Lier, L. (1988). *The classroom and the language learner: Ethnography and second-language classroom research*. London: Longman.
- Walsh, S. (2006). *Investigating Classroom Discourse*. London: Routledge.
- Wright, B. (2016). Display and referential questions: Effects on student responses. *Nordic Journal of English Studies*, 15(4), 160-189.

### Appendix

#### *Distributions of echoic, epistemic, expressive, and social control questions along with the elicited language output, and mean length of responses*

Type/Class	Class A	Class B	Class C	Class D	Total	Pct (%)
1-Echoic questions	57	22	12	20	111	19.61%
Language output	237	71	27	118	453	
Mean length	4.16	3.23	2.25	5.9	4.08	
2-Epistemic questions	158	90	73	99	420	74.20%
Language output	505	296	332	470	1603	
Mean length	3.20	3.29	4.55	4.75	3.82	
3- Expressive questions	9	1	0	1	11	1.94%
Language output	18	0	0	6	24	
Mean length	2	0	0	6	2.18	
4- Social control	11	1	0	4	16	2.83%
Language output	17	0	0	11	28	
Mean length	1.55	0	0	2.75	1.75	
4.1- Attentional questions	8	0	0	0	8	1.41%
Language output	9	0	0	0	9	
Mean length	1.13	0	0	0	1.13	
4.2- Verbosity questions	0	0	0	0	0	0%
Language output	0	0	0	0	0	
Mean length	0	0	0	0	0	