



## **Awakening the Critical Thinking Ability of College Students through Socio-culturally Mediated Instructor Tools in Higher Education**

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### **Abstract**

This study attempted to examine the extent to which university instructors contributed as obstacles or facilitators to developing critical thinking skills in undergraduate, graduate, and doctorate students. To this end, six university classes, two classes from each of the above-mentioned programs, were selected randomly from the Department of Foreign Languages and Linguistics in a State University. The corpus of the study was collected via video recordings during a semester. Vygotsky's (1978) sociocultural theory was utilized to interpret the data. The results revealed that instructors in BA and one of MA classes were facilitators of critical thinking skills, while those in the other MA class and both Ph.D. classes acted more as obstacles to such skills. This finding contradicted the expectations of the researcher who, based on Fisher's (2005) arguments, believed that thinking skills should be more developed at tertiary levels by instructors, particularly as one moves from bachelor to master and doctoral levels, which are more about frontiers of knowledge. The implications of the study pointed to the vital role of the university instructors in promoting thinking skills by decreasing interruptions, increasing wait-time, asking referential questions, and using selective repair.

**Keywords:** Critical thinking, discourse analysis, sociocultural theory, thinking skills

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### **Introduction**

Thinking skills are considered a crucial issue in the learning process, particularly in developing autonomy and engagement of learners as an integral part of instruction (Chew & Hamad, 2018; Li, 2016). Theorists as well as educators maintain that cognition and the study of a subject are connected to each other (Tunmer & Hoover, 2017). However, as Cheng and Yeh (2019) argued, there are difficulties cultivating students' thinking skills and critical thinking skills in an EFL class. How teachers deal with classroom communication, such as the use of different pedagogical tasks and the status of ideas exchanged, can develop or limit educational opportunities and space for thinking. (Cargas, Williams, & Rosenberg, 2017; Li, 2016). According to Hall-Verplaetse (2000), classrooms are discourse and social learning

communities, where the teachers and learners communicate to develop a moment for sharing, reflecting, and perceiving. Developed collaboratively and connected with learners' regular and repeated involvement in tasks, the communications in the class promote perceptions as a common task, (Chen, Wu, & Marek, 2017). As a result, language is seen as a critical vehicle for imparting co-constructed meaning through the ability to think critically, analyze others' opinions, and autonomously participate in co-learning opportunities freely. Nevertheless, several investigations (Chew & Hamad, 2018; Ghanizadeh, 2017; Yen, & Halili, 2015) have uncovered that the teaching activities observed in the classroom may not induce higher-order thinking skills, even if in some learning settings teachers claim to be practicing thinking strategies as Li (2016) has argued:

The primary responsibility that learners take in learning a second language requires learners not only to remember and recall expression in its abstract form simply but to engage in critical and creative analysis

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and evaluation of material at hand to internalize the language. However, limited progress has been made in addressing developing learners' higher-order thinking skills in second language education (p. 1).

Teachers usually encourage recalling and recognizing practices in their class (Sternberg, 2004). In these classes, the primary source of developing thinking skills is asking questions. However, as argued by Jacobs, Helke, and Renandya (2018), 'fact-based' or 'lecture-based' inquiry approaches may not be conducive to developing thinking skills.

The most typical communication pattern in classes is the traditional IRF (Initiation, Response, Feedback) framework: the teacher initiates with a question, the student responds, and the teacher may give feedback (Van Lier, 1996). This IRF process can only develop knowledge elicitation rather than knowledge formation, which does not promote creativity and thinking skills. Ignoring the contextualized dialectics as well as the pedagogical objectives, teachers often suffice to simple explanations (Mercer & Littleton, 2007; Smith, 2016; Sulaiman, Ayub, & Sulaiman, 2015; Wallace & Adams, 2018).

In their studies, Rojas-Drummond and Mercer (2003) found that the teacher's examination can also elicit learners' opinions, justifications, and competence. They argued that teachers' may use the type of language that is utilized in group discussions and other settings; e.g., asking 'why' questions to seek justifications. In short, delineating spaces for learners to participate in class activities can reveal their perceptions as well as their gaps.

With a focus on classroom activities, Vygotsky (1978) particularly accentuated the link between thinking and the social structure of pedagogy, centered on the language practiced. Referred to the Zone of proximal development (ZPD), this social structure is practiced by learners, particularly by those who are more skillful and knowledgeable. In this meaning-construal process, learners should build a sort of skill to conceptualize their thoughts and formulate them through a context-bound articulation, receive other students' opinions, communicate their ideas skillfully, and take into account the meaning-making process. Such tasks are all facilitated through language practice, where the learners can show their experiential character.

According to Robinson (2017), each teaching session includes several complicated, flexible and interconnected sub-contexts. In addition, the primary burden for organizing communication would be on the teacher's shoulders. It is the teacher who determines the learner roles through taking into account both the subject of communication and turn-taking processes.

Several studies (Guan, & Gao, 2019; Li, 2016; Song, Oh, & Rice, 2017;) illustrate the importance of dialogic discussions as the comments of the participants facilitate the process of obtaining more information, solve problems related to understanding, and open spaces for evaluation and reflection (Montgomery & Baxter, 1998, Wegerif, 2006).

The development of thinking skills mediated through communication, dialogs, and interactions becomes even more significant when one enters higher education. As argued by Fisher (2005), thinking skills and learners' capability to apply such skills through communications and discussions are essential university duties. Such a necessity to utilize such skills will become the most essential in master's degrees and doctoral programs dealing with frontiers of knowledge. Therefore, university instructors play a significant role in providing the appropriate space for the development of such skills.

This study is a discourse analysis of classroom content at Iranian university classes. It was postulated on a sociocultural scope, maintaining that negotiation of meaning via interaction and other cues assists the development of concepts (Rojas-Drummond et al., 2008). Indeed, the present research underlines the crucial nature of classroom communication as a means to develop thinking opportunities and hence to construct meaning.

## Theoretical Framework

Sociocultural theory claims that knowledge is a dynamic process and that the environment has a significant role in education. Such theories derived from Vygotsky's (1978) idea state that education is not just a personal matter. Rather, it is mediated by the social context. Sociocultural theories postulate the social context is necessary for the growth of mind (Cole & Wertsch, 2001, p. 4). In the same vein, Vygotsky maintained that in the learning process, instructors apply some mediating learning means. He argued that cognitive development is not an explicit consequence of a task. Rather, it is an implicit process occurring while learners communicate and utilize mediatory means to accelerate the learning process. Vygotsky contended that these tools are "psychological" (p. 53); that is, they are used to perform thinking; they can contain signs, symbols, writings, texts, and mnemonic techniques.

Communication is the most vital sociocultural instrument; it is to do with how to use the language itself, and it is crucial in the process of developing more complex activities (Gall et al., 2004). In the preliminary phases, the mediation tools are external, as

the person in charge of scaffolding instructs the learner on how to use the tool. In the later stages, they become internalized when the learner starts using the tools to perform other activities. During the internalization process, the learners' thinking processes change as mediation becomes more and more internalized. As a result, one can see the influence of the social environment on learning; that is, the instructors' selection of the teaching tools affects the way the learners express their thinking and thought (Cole & Wertsch, 2001; John-Steiner & Mahn, 1996).

## Objective

This study focused on the critical importance of thinking skills in academic environments. Based on Vygotsky's (1978) sociocultural theory of learning, it attempted to illustrate to what extent university instructors in the Department of Foreign Languages and Linguistics at an Iranian University, acted as facilitators or obstacles to developing thinking through classroom interactions in BA, MA, and Ph.D. courses.

In particular, the study tried to answer the following questions:

1. To what extent do the instructors develop thinking skills in their classrooms?
2. Are thinking skills utilized progressively as one moves from BA to Ph.D. courses?
3. What proofs of manipulating thinking skills are present at university classes?

## Method

### Participants

Convenient sampling was used to recruit six university professors teaching at undergraduate, graduate, and Ph.D. courses in the Department of Foreign Languages and Linguistics at an Iranian University. Table 1 introduces all the participants in details. The participants are named A, B, C, etc for the sake of privacy.

**Table 1.**

*Participating classes.*

<b>Instructor A</b>	a BA course in English Language and Literature: Literary Schools About 25 students Students' age: 20–22 Students' fourth year of formal instruction in English Language and Literature A female lecturer in her late 20s. It was her third year of academic teaching in that university
<b>Instructor B</b>	a BA course in TEFL: Reading Comprehension 3 About 35 students Students' age: 19–23 Students' second year of formal instruction in TEFL A female assistant professor in her 40s. She had been teaching over 10 years in that university
<b>Instructor C</b>	An MA course in TEFL: Materials Development About 25 students Students' age: 22–28 Students' second year of formal instruction in TEFL A male associate professor in his 50s. He had been teaching for about 20 years in that university
<b>Instructor D</b>	An MA course in TEFL: Advanced Writing Students' age: 22–26 Students' first year of formal instruction in TEFL A female assistant professor in her 40s. She had been teaching over Ten years in that university
<b>Instructor E</b>	A Ph.D. course in TEFL: Research Methods Five students Students' age: 27–36 Students' first year of formal instruction in TEFL A male associate professor in his 30s. He had been teaching for about 10 years in that university.
<b>Instructor F</b>	A Ph.D. course in TEFL: Discourse Analysis Five students

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Students' age: 27–36

Students' first year of formal instruction in TEFL

A male associate professor in his 40s. He had been teaching for about 20 years.

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## Instruments

This research paper used video recording as a research tool. When used as a research tool, video footage provides researchers with a copy of actual classroom events. The primary aim was to record linguistic cues such as language and turn taking. The instrument also allowed the researchers to record contextual information regarding the physical setting such as space, conditions, classroom organization, teacher movement, posture, and so on. Thus, a complete record of exchanges in the classroom including all words spoken and all actions taken was recorded.

## Data Collection Procedure

Data collection started in the eleventh week of the semester, which usually lasts for seventeen weeks. Data were collected from six university classes (two from BA, two from MA, and two from Ph.D. levels) at the Department of Foreign Languages and Linguistics. The researcher was present in classrooms and videotaped all the lessons. Before each observation, the researcher sought consent from both the instructors and the students for video recording. After each observation, the researcher asked the students to see whether they felt any difference between the observed session and other sessions during the semester regarding the instructors' style of class management. To avoid any bias, the researcher did not tell the instructors or students about the topic of the research before observation. The videotapes were then transcribed in details.

## Extract 1, Instructor A

1	I	any comments about the sort of narration we have in modernism? In the modern novels? How is it
2		different from the Victorian novels? (2)
3	SS	((two unintelligible))
4	S1	the stream of consciousness=
5	I	= <b>perfect</b> what else?
6	SS	fragmentation
7	S2	fragmentation is so evident in their style of writing
8	I	excellent fragment clash what else?
9	SS	plot ((two unintelligible))
10	S3	no plot
11	I	no <b>plot</b> excellent there is <b>no</b> plot
12	I	the stream of consciousness, what does the word mean? The stream of consciousness? (1) it's
13		influenced? (1) the science? (2)
14	S2	psychology
15	I	well, ah ... in the stream of consciousness we do not have any plot so if I ask you to tell me to

## Data Analysis

This study used the discourse analysis method to analyze recorded videos. Discourse analysis is method to study verbal communication in its social context (Johnstone, 2017). The aim of discourse analysis is to understand how the language is used in real life situations (Fairclough, & Wodak, 1997). In this study, the following procedures were performed as proposed by Silverman (2016). First, the taped corpus was transcribed. The transcriptions were done by hand. The initial coding was done using open source. Following the identification of concepts, related concepts were grouped together and were given a label. The groups were then classified in related categories according to Wegerif and Mercer's (1996,) features of Exploratory Talk as follows:

- Interlocutors engaging critically but constructively with each other's ideas;
- Statements and suggestions for joint consideration;
- Justifying and reasoning the challenges;
- Interlocutors actively participated;
- Making joint decisions through debate.

Simplified conventions of notation and layout were also employed based on the principles of conversational analysis (see Appendix A for transcription conventions).

## Findings

This section will present the results obtained. A summary of results is given using comments and excerpts.

- 16 give me the summary of the Mark on the Wall can you do it? =  
 17 SS =no  
 18 I no it's the flow of thoughts, memories and feelings; there is no certain plot ah ... why don't we  
 19 have any plots? (5)  
 20 S3 ah you know ah... we cannot also say that the theme was great ah... I mean the writer  
 21 it's nothing ((one unintelligible)) the writer and for example, I was reading this Mark on the  
 22 Wall and my mind could go astray as like as she was doing that =  
 23 I =yes  
 24 S3 so I think she wants to shape the mind of the reader, but you cannot give a kind of  
 25 ((0.5 unintelligible)) plot because in the mind of the writer or author there was not a  
 26 specific character or action going on so you cannot define it so exactly

*Comments:* This extract shows the instructor's tendency to elicit various ideas in a collaborative style to co-construct meaning. In lines 1, 5, 8, such inquiring phrases as "any comments?", "What else?", and "What else?" reveal that the instructor endeavored to engage learners in the interaction. Since the concentration was on private perception and ideas instead of evaluating memory, these referential questions encouraged learners to contribute the communication. In addition, extended pauses and the two attempts to invite contributions (lines 2, 13, 19) allowed learners to take advantage of opportunities for pondering to self-evaluate and develop thoughts or to rehearse the concepts prior to articulation. Such attempts and opportunities facilitate students' thinking activities and topic engagement. Other examples of learner contribution are the extended learner turns (lines 20-22 and 24-26), which are desirable for developing thinking skills and meaning construction. In the lines 5 and 11, the instructor's recast verified the

learner's contribution, and in the line 18, the instructor even extended the student's answer. Such interactions and turn exchanges between the instructor and the students provided a space that encouraged students to share their ideas more comfortably. Also, the example novel the instructor supplied in the line 16 (*the Mark on the Wall*) created an opportunity for imagination. According to the extracts, students made use of this example to justify their answers (line 21). This issue can promote students' creativity, and hence develop their thinking skills. Furthermore, the reasoning question the instructor posed in the lines 18-19 (*why don't we have any plots?*) provided the students with the opportunity to make their judgments and suggestions; as a result, it can promote criticality and pondering. The instructor emphasized more on the joint development of perceptions and advancing through managing turn-takings and creating an environment to foster thinking skills.

### Extract 2, Instructor B

1. I which statement is the restatement of the sentence I read to you? what  
 2. do you think about the first sentence if a person has confidence in his performance he will  
 3. achieve a high position in a group  
 4. S1 er... No it can't be  
 5. I why? Why not? (3)  
 6. S1 because er... it is er...I think the er...opposite of the sentence=  
 7. I = yes it is the other way around  
 8. S1 yes the other way around

*Comments:* Extract 2 illustrates another example of negotiation and meaning co-construction. The question in lines 1-2 (*what do you think about the first sentence?*) is an example of referential queries and not a display question. In fact, through this type of questioning, the instructor invited the learners to contribute meaning-making. This issue is utterly different from checking their memory regarding the teacher input. A crucial feature of learning as a social activity extended learner contribution, promoted through spaces created by referential questions. In line

6, the learner expressed her idea with difficulty. Therefore, the instructor responded to the cue via linguistic scaffolding in the line 7, which again helped the learner's contribution; that is, in line with ZPD theory, the 'more knowledgeable' (the instructor) supported the 'novice' (the learner) to complete the turn by expressing her idea.

Furthermore, the reasoning question 'why?' in the line 5, which was raised by the instructor, created more opportunities for the learner to contribute and elaborate meaning. To open a space for learners to

participate in academic classrooms, this spiral IRF pattern is desirable. The advantage is that learners and their perspectives and judgments are heard and valued, especially when instructors encourage students to reason, clarify, and reformulate their contribution. Besides, there was a deliberate pause for the learner to

participate, which shows both instructors A and B are aware of developing space for learner contribution and participation. A similar type of interaction happened between the instructor and another student to the end of the class.

### Extract 3 Instructor C

1. P the items that are more interesting for example for the students should be in the
2. curriculum and planning of the lessons and er... it should be able to evaluate when students
3. are ready to learn the material=
4. S1 high teachability?
5. I what?
6. SS ((unintelligible))
7. S1 teachability
8. I/ what do you think?
9. SS no ((unintelligible))
10. P if it yes more than the=
11. I it's not to do with gradation I mean single items presented yes
12. P yes the materials shouldn't be higher than the level of students
13. I yeh
14. SS ((two unintelligible))
15. P and it is it should be I plus one
16. S2 excuse me how about moving from the most everyday items to the?
17. ((unintelligible because of noise))
18. I the most frequent item; she is asking **this question** NAME (S1)
19. moving from most recurrent to what?
20. S2 less numerous
21. I to less least constant, what is your idea?
22. P the processing learning is the same you start from for example your prior experience as
23. you found number seven the course should have the learners who make the most effective
24. use of previous knowledge whether it is in their first language or in their second
25. language
26. S3 I think the learning of a language shouldn't be in a linear fashion (0.5) spiral it should be
27. when you teach something you should go back to other previously shown points

*Comments:* This class was an excellent clarification of collective development and construction of meaning. In this class, one of the two master's courses, one of the students had a presentation through PowerPoint. Although the instructor was not teaching, how the presenter handled the session revealed a lot of information about the way their instructor had trained them to manage the discussions in class. The class could be a real conference room in which almost all of the students took part in the studies related to the topic. However, the most significant role was played by the instructor, who was acting as a professional coordinator of the session. The way he intervened in the key points (the lines 5, 8, 18) of the discussion provided the best chances for students to participate in the negotiation and co-construction of meaning. These lines showed the instructor's ability to manage the turn-taking/giving in class context. The most

appropriate intervention was in the line 18; the instructor tried to attract the attention of the class; they were discussing the topic in response to the question asked by one of the students; they seemed to be eager to take part in the discussion. However, they could not speak loud enough to be heard by the class; she appeared to be a little bit shy. The instructor tries to convey S2's question to the students by saying, *she is asking this question*, emphasizing on the phrase *this question*. In fact, through initiating and directing turns, the instructor managed and guided the space by providing confirmation and inquiring clarification in the following lines. Followed by an inferential question in the line 21 (*what is your idea?*), the instructor invited the whole class to think about S2's questions. In the lines 18-21, the instructor provided a chance for S2 to ask her issue; also she created the best opportunity for the students to think about this

question and express their ideas. Another example of referential question is evident in the line 8 (*What do you think?*). The number of times students (depicted as SS in the extract) took part in the conversation shows their appropriate reaction to such referential questions. This extract shows the instructor's high ability to

#### Extract 4 Instructor D

1	I	what is meant by descriptive statistics? do you know? (1)
2	S1	some statistics such as mean=
3	I	= mean ((she is raising her hand and counting with her fingers))
4	S1	median=
5	I	=median
6	SS	mode
7	S2	standard deviation=
8	I	=standard deviation
9	S1	variance=
10	I	= variance
11	S1	range
12	S2	correlation?
13	I	correlation is not included it's within the inferential type of statistics
14	S3	that's ((interrupted by the instructor))
15	I.	what else? Whatever you said was related to descriptive statistics mean median range how
16		about theoretical data if you are dealing with nominal data what should what sort of statistics
17		should you include? Ha? Testing your knowledge ((instructor is smiling)) (2)
18	S2	percentage and percentile rank
19	I	aha percentage and?
20	S3	frequency
21	I	<b>frequency</b> excellent

*Comments:* As Extract 4 displays, instructor D posed questions to introduce a topic; that is, Descriptive Statistics. The instructor attempted to open space for learners to co-create a context for a discussion. She elicited their knowledge and personal experience. However, more accurate analysis of the instructor's questions revealed that she did not actually provide the students with opportunities to express their ideas, because the problems she asked, *what is descriptive statistics. do you know* (the line 1), were not referential questions, but display questions which only test the memory and restrict student input. Besides, such questions do not provide the learner with an extended turn, either. It was evident that, as the extract shows, such issues – *what is/do you know* – are quite tricky for students to participate in or comment on because they are not clear enough. Furthermore, it is evident in this extract that the instructor and learner talk followed the typical IRF dialogues where knowledge-transmission is focused. This traditional framework of exchange could not be a means of facilitating thinking skills and promoting learning opportunities. Furthermore, the instructor didn't give the students enough time to construct their

guide the discussion and manage the turns like a conductor of an orchestra in which every musician (student) has space to play its turn.

ideas and meanings. It is the instructor's pause and quiet time that may let the students have more discussion, help them express utterances, and facilitate deeper thinking. This issue is not visible in the questions in Line 1. Furthermore, the way the instructor counted the correct answers, along with the students suggested a mechanical means of dealing with the issue at hand. This way of treating the topic is nothing more than testing the students' prior knowledge, and it does not provide the students with any chance for thinking, negotiation, and co-construction of meaning. Even in the line 17, the instructor herself said, *testing your knowledge*; i.e., she explicitly stated that she was testing the students' learning. Such strict boundaries determined by the instructor as a true response leading to reluctance of students (Higgins *et al.*, 2003). The fact that the instructor did not let the students take part in a discussion is more evident; in the line 14, S3 was going to say something, but the instructor interrupted him immediately to ask her questions. In fact, in this extract, there was no real collaboration or negotiation, and meaning was not co-constructed by the students.

**Extract 5, Instructor E**

1. I what about the other one? ((looking at only S1))
2. S2 I think the other one was not= ((she is interrupted by the instructor))
3. I =the collaborative translation task
4. S2 it was not that much ...it was not significant the topic was not ((she was interrupted by another student))
- 5.
6. S3. It was not practical; it was exciting but not useful ((the instructor turns again to S1))
7. S1 the topic was not that interesting but the way he pro proposed=
8. I **proposed** ((the instructor nodded his head to confirm))
9. S1 yes, offered his procedures were I think ... good he just made some examples and the
10. audience can just er ...tangibly get the point

*Comments:* In this extract from a Ph.D. class, instructor E started the session by asking the students to evaluate two Ph.D. thesis proposal defense sessions held the day before. As it is evident in the line 1, although the instructor asked the students to evaluate the defenses, he addressed his subject to only one of the students, S1, in whom he seemed to be more interested. He asked his question while he was looking only at S1. His behavior sent other students the message that their ideas were not very important to be heard by him and the class. This action impeded the negotiation and development of thinking skills. The situation exacerbated when in the line 2, S2 was going to give her idea, but she was interrupted by the instructor. Besides, the instructor paid little attention to S2 and turned his head to S1 again and continued asking his question in the line 3. This issue is the best way to block the discussion in class, not to pay attention to a student's ideas. It seemed that in this turn, the instructor obstructed student involvement, prompting a damaging impact on perceiving the intention. However, this student proceeded to accomplish her part (the line 4), despite the instructor's interruption. This issue shows her competence and self-confidence in classroom

communication as an autonomous student. She tended to keep her part and control her concentration on the task. However, this time she was interrupted by S3. A close examination of the video at this moment revealed that it was the instructor who caused the second interruption by his inability to manage the turn-taking and -giving processes. The instructor should have acted as a coordinator, like Teacher C, and let S2 finish her words, then let S3 start her discussion. For S2 and S3, one can see no confirmation or collaboration on the part of the instructor. However, in the lines 6 and 7, the instructor once again turned his head to S1, implying that it was only relevant to what S1; she was going to say and *not* others and S1 had difficulty pronouncing the word *proposed*, the instructor helped him eagerly with the pronunciation along with nodding his head as a sign of confirmation which was absent for other students. This type of interaction was between an instructor and student in a doctoral course; students' participation and negotiation should reach its highest level and it is so disappointing. The extract showed that the instructor was not able to manage the turn-taking and turn-giving process in classroom discourse.

**Extract 6, Instructor F**

- 1 I so you can have different registers of the social life
- 2 P yes
- 3 I but it depends on which outlook you have on the social life each perspective lead to a
4. new discourse represented as a register of that social life
- 5 S1 sorry but we can we summarize it into I mean the discussion of capitalism is no more than
- 6 a discourse ((interrupted by the instructor))
- 7 I yes no more than a discourse
- 8 S1, but he said er... there is a dialectical relationship between the social structure and the
9. discussion and ((interrupted by the instructor))
- 10 I yes but anyhow whatever you have at your disposal is a discourse
- 11 S1 by realism Fairclough I think believes that there is a social world outside of (interrupted by 12
- the instructor)
- 13 I but it is again in discourse (3) that's in new conversation so
- 14 there is nothing more than the discussion (2)

- 15 S1 so how do we know that that real-world exists the point that ((interrupted by the  
16 instructor))  
17 I ((one unintelligible)) in the discourse  
18 S1, so we have access, er. if we do not have access I mean ((interrupted by the instructor))  
19 I/ we have access to language and discussion and nothing more than that everything is in  
20 discourse  
21 S1 ok, we cannot be sure that truth exists outside er. the discourse because of the only thing  
22 that we ((interrupted by the instructor))  
23 I. conversation is the reality itself, so the truth is represented in discussion if you analyze the  
24 conversation you go to the truth (2) that's something which is physical er. tangible this is  
25 this is a complete er. let's say new liberal this new liberal is represented in discourse this  
26 is the change of the conversation, which leads to a modern enlightened time (2), right?  
27 P and also in the previous chapter we can analyze discourse through into  
28 ways which ((interrupted by the instructor))  
29 I to forget about the analysis of speech whatever we have is represented in the  
30 discourse

*Comments:* This was the second extract from a postgraduate course, and unfortunately, the worst interaction out of the six observed classes. As Fisher (2005) stated in master's and postgraduate courses, the need for participation, discussion, co-construction of meaning, and thinking is most demanded. However, this extract showed the least opportunity for meaning-making and thinking. In extract 6, the instructor seemed to be the only power in the class. The atmosphere of the class was not at all friendly. It appeared that students were very anxious in this course as the researchers themselves were the students of this course for about one semester and could feel the tension. One of the students was presenting a part of the textbook through slides. Other students were silent during class time. Occasionally, the instructor gave some comments on some parts of the presentation, which appeared essential to him. It was only after a long time of about 30 minutes when one of the students raised a question in the line 5. However, before he could complete his question, the instructor interrupted him to give his answer. Once again, the student tried to express his idea in the lines 8-9 but again was interrupted by the instructor. S1 suspension in the lines 6, 9, 12, 14, 16 can show how the instructor obstructed the debate and acted as an obstacle in the way of S1's thinking process. When the presenter tended to participate in the debate in the line 22, the suspension occurred again. Furthermore, at the end of the debate, as it was evident in the video, S1 got disappointed and withdrew from the debate and reluctantly nodded his head to show his superficial acceptance. The extract also shows that other students did not take part in the debate because the instructor did not provide such an opportunity. Finally, although in some regions, like the lines 10 and 11, the instructor had extended pauses, the way he interrupted S1

frequently suggests that where he had to pause to let S1 and other students express themselves, he did not. Thus the pauses were not in appropriate points in the discussion. This extract was an excellent example of an instructor who could not manage the turns; i.e., not only did he interrupted S1 frequently and did not let him complete his turns, but also deprived other students of talking and thinking spaces.

## Discussions and Conclusions

The above six extracts illustrated that contrary to expectations, as one moved from BA to Ph.D. classes, the university instructors provided students with fewer opportunities for interaction, discussion, and consequently the development of thinking skills. This finding becomes even stranger when the instructors themselves frequently call students, particularly in master and postgraduate courses, critical thinkers and evaluators in class discussions and arguments. Yet, in practice, even thinking skills are not well developed, let alone critical thinking. This issue is against what Fisher (2005) stated about the concepts of thinking skills and negotiation of meaning through communication, which is more significant in tertiary education, especially in master and postgraduate programs where the courses deal mostly with frontiers of knowledge. As it was evident in the analysis of the extracts, the instructors played a crucial role in facilitating or obstructing students' thinking processes. However, as Zuengler (2011) maintained, the interlocutors collectively build the capability in class rather than being simply taught by the teacher. Learners are also required to perform and participate in classrooms actively. For instance, in extract 3, which illustrated the best class in terms of practicing thinking skills, besides the instructor's skillful role as

the facilitator of the discussions, and thinking skills, the students were also quite extroverted, energetic, active, and motivated for participation and giving ideas. However, this is not always the case; i.e., instructors might sometimes need to deal with shy, unassertive and introverted students who do not show any tendency to have active participation in class. But this is not a good excuse especially in the context of tertiary education, especially in master and postgraduate degrees, where the students intend to become experts in their field of study and gain the ability not only to evaluate ideas but also question and even criticize them (Fisher, 2005).

Another possible justification is that instructors never want students to question their profession. As a result, they avoid situations in which students can challenge their experience. Arguments, discussions, and negotiations are the best places for students to find a deficiency with the instructors' experience of a particular topic. These situations could be suppressed by interruptions, abusing of authority, and ignorance on the part of the instructors. The result will be what we could see in the last three extracts. Another finding was that no explicit link is present between the instructors' ability to apply thinking skills and the years of educational teaching experience. For instance, instructor A was the youngest of all with only three years of educational teaching experience. However, she was very skillful in handling the class and providing the students, with opportunities for practicing thinking skills. Also, instructor F was one of the two oldest instructors, with about 20 years of academic teaching experience. However, he had the least ability to conduct arguments and negotiations in class. As Richards and Farrel (2005) stated, having experience is not enough. Instead, it is essential that instructors must become "up to date with theory and practice in the field in improving their teaching skills, so that they feel more confident about what they teach and achieve better results with their students" (p. 9).

Furthermore, concerning the third research question, the above six extracts provided evidence on how classroom interactions could facilitate or hinder thinking skills through co-construction, participation, and meaning negotiation in university classrooms. In fact, in the first three classrooms, with instructors A, B, and C, teacher talk provided spaces for student participation, communication, meaning co-construction, and negotiation. However, in the next three classes (with instructors D, E and F), fewer opportunities were observed in these respects; hence, it was the subject knowledge that was enhanced rather than student thinking skills. Furthermore, the classroom interaction analysis revealed that instructors

who created areas to foster students' thinking skills asked more referential questions. However, instructors who impeded such spaces asked more display questions, as argued by Walsh (2006), compared to display questions, referential questions provided more spaces for students to produce natural utterances.

Moreover, referential items encouraged students to co-construct meanings and concepts among participants, and negotiate solutions for a problem. The reason is that referential questions are more tangible, meaningful and personal to students. Furthermore, referential questions make interaction, negotiation, problem-solving, and co-construction possible via extended turns and several turn-takings and-giving among learners. However, display questions usually seek brief answers, such as 'yes' or 'no,' which most often lead to conversation breakdown ultimately.

Another significant difference between these two types of classrooms was the fact that in the first group of classes, as Thornbury (1996) stated, referential questions were often followed by extended wait time. According to Garton (2002), learners' 'rehearsal' time can be an excellent opportunity to manage the interaction with the instructor and their peers and to promote their initiatives. As a result, more referential questions with increased wait-time should be available for learner response. Also, small group discussion before presenting the answers can be another alternative. Instructors, therefore, need to resist the temptation to fill in the silent gap by giving the answers and reconsider silence from students.

Furthermore, the analyses showed that referential questions led to reformulation and summarization of learners' responses. This issue was not present in knowledge-based classes where, according to Sternberg (2004), learners are "taught to do little more than recall and recognize" (p. 68). This phenomenon can exist in a knowledge-focused community where memorization is critical to a large extent. Unfortunately, this is what happens in universities of Iran, even in master and postgraduate courses. Simply presenting learners with questions that have fixed correct answers will result in less thinking skills and inappropriate evaluation. Such questions are knowledge-based and only demonstrate how much the students have learned. Beghetto (2007) described this phenomenon as 'intellectual hide-and-seek,' which means that a shortcut to academic achievement is memorizing correct answers.

Learning and thinking are socially and cognitively complex and require learners to participate actively in meaning construction and reflection, rather than passive reception, memorization, and reproduction of

information. Learners should not “just take in and store up given information...they make tentative interpretations of experience and go on to elaborate and test interpretations” (Perkins, 1992, p. 49). Higher-order thinking becomes much restricted if the learning focuses solely on memorization of events rather than thinking and constructing personal meaning (Jacobs, Helke, & Renandya 2018).

Different studies (Chew & Hamad, 2018; Ghanizadeh, 2017; Li, 2016; Wells, 1999) have criticized the typical IRF exchange widely observed in classroom discourse. They revealed that such traditional interactions minimize meaningful student participation. In the present study, it was evident that whenever knowledge-transmission was focused (e.g., extract D), the instructor and learner talk followed the typical IRF exchanges. When participation and negotiation were critical (e.g., extracts A, B, and C), the exchanges moved more towards spiral IRF in classrooms. That is, in these interactions, students' participation and involvement improved only when the instructor's feedback (F) initiated a new initiation (I); hence a new learning cycle was created. Finally, the interruption could be the worst and most detrimental element which hindered the process of thinking and learning. As a result, instructors should avoid interrupting students, should let them finish, and then should start their talk.

### Limitations of the study

This study had some limitations. Therefore, the findings has to be interpreted cautiously. First, as in other qualitative studies, this study was limited by the small number of the participants (n=6). Second, since the nature of courses taught by the instructors was different, differences could not be solely attributed to the instructors. Third, in the absence of quantitative data, the findings should not be generalized.

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### Appendix A. Transcription conventions

Language has not been corrected and standard conventions of punctuation are not used.

I:	Instructor
P:	presenter
S:	learner (not identified)
S1: S2: etc.,	identified learner
SS:	several learners at once or the whole class
/ok/ok/ok/	overlapping or simultaneous utterances by more than one learner
=	turn latching: one turn follows another without any pause
. . .	pause of one second or less marked by three periods
::	sound stretch
(4.0/0.4)	silence; length given in seconds or microseconds
?	rising intonation – question or other
<b>yes</b>	emphatic speech
NAME	name of individual student
!	falling intonation
((2 unintelligible))	a stretch of unintelligible speech with the length given in seconds
((T organizes groups))	researcher's comments

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