

Functions of discourse micro-markers in spoken academic discourse in university setting

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Abstract

The present article aims to study the nature of spoken academic discourse in English in university setting and looks particularly at the role of discourse micro-markers in the organization of discourse of a lecturer. English is used as a medium of instruction by non-native academic personnel delivering soft science lectures to international students. The theory provides an overview of contemporary linguistics on discourse markers, outlining the definitions and their functional characteristics. The empirical part of the study is based on the analysis of a case study and the quantitative discourse analysis of a corpus of academic lectures available online. Discourse markers, that are most frequently used in spoken discourse of a lecturer, are studied and the use and the role of 'so', 'now', 'OK', 'well', 'however', 'therefore' and 'all right' is investigated. The results of the study describe the functions of discourse markers in spoken academic discourse and show how discourse micro-markers help in understanding the structure and the thematic development of the discourse.

Keywords: *spoken academic discourse, university setting, English as a medium of instruction, discourse micro-markers*

Introduction

English as an international language of communication used worldwide, including education, is not only a foreign language (FL) learnt at secondary schools in Latvia, but is often a language of studies in higher educational (HE) institutions. At Turiba University English is used in twelve study programs as a medium of instruction (EMI) to teach both international and local students (Online 1). English is often not the first language (L1) of students and lecturers, but is a lingua franca both for students and the academic personnel. The above-mentioned higher educational institution offers studies to international students, including Erasmus students; for example, there were 1614 exchange and full-time foreign (international) students studying in English in Turiba University in 2018 (Online 2). Bearing in mind the significance of EMI in university setting, a need to study the nature of spoken academic discourse and the students' concerns regarding the use of English by the academic personnel was identified. The fact that English is often not L1 of the academic personnel and students requires that lecturers put more effort in being precise while lecturing and that students pay more attention in order to understand the lecture in a FL. The present research looks at one aspect of the academic discourse – the use of discourse micro-markers (DMs) that serve to assist lecturers in structuring and students in following the spoken discourse.

Aims of research

The research aims to find out whether students are aware of the use of DMs by lecturers and whether according to students, academic personnel (lecturers) apply DMs in their lectures delivered in English at all. The article investigates discourse micro-markers by first studying the theoretical background and later presenting the empirical part of the research including a case study and an analysis of the functions of most-frequently used discourse micro-markers in a corpus of academic lectures available online.

Theoretical background

Interest in the study of the nature and characteristic features of spoken academic discourse in university setting started with the emergence of academic genres, such as seminars, conferences, workshops, or lectures. In recent decades lectures as a separate academic genre was explored by an array of researchers including Thompson (1994), Carter & McCarthy (1997), Biber (1999, 2009), Bellés & Fortanet (2004), Lee (2009), Crawford Camiciottoli (2007, 2021), Siepmann (2005), Hyland (2012), Barbieri (2013), Kashiha (2022) and many others who looked at lectures from diverse angles, as an 'oral academic genre' (Bellés & Fortanet, 2004), a 'pedagogical process genre' (e.g. Thompson 1994, Lee, 2009 and Carter & McCarthy (1997)), and as a 'pedagogical genre' or a 'pedagogic register' (Crawford Camiciottoli 2007).

Although discourse analysis as a sub-branch of linguistics has been researched for over five decades (for example Drozd & Seibicke 1973, Hoffmann 1983, Foucault 1990, Bourdieu 1991, Baumann 1992, Schiffrin 1994, Jaworski & Coupland 1999, LeVine & Scollon 2004, Gee 2005, Norris & Jones 2005, Paltridge 2006, Silverman 2010, Paltridge & Starfield 2013, Ranger 2018), the study of spoken academic discourse (university register, Biber 2006) began in the 1980s.

Drozdova (2021) studied the genre-specific features pertaining to the academic lecture, including such characteristics as speech plan, involvement and detachment, interactiveness, genre mixing, hybrid nature of lectures, intertextuality, interdiscursivity and interdisciplinarity of a lecture. Moreover, the move structure of a lecture, the lecturer's lecturing styles and note taking in the context of the academic lecture were researched and described as well.

Special attention in the study of academic spoken discourse was paid to the research of spoken discourse of a lecturer at the lexico-grammatical level, for example the use of lexis, grammatical word classes, pronouns and modal verbs (Biber 2006, Flowerdew & Tauroza 1995, Lee 2009, Bhatia 2013, Barbieri 2013, Drozdova 2021, Crawford Camiciottoli 2007, 2021).

Spoken academic discourse compared to the written discourse of academic genres demonstrated (Eggins 1994, Stubs 1996, Biber 2006, Crawford Camiciottoli 2005, 2007, Drozdova 2021) that the significant difference between them is that lecturing takes place in real time and thus spoken discourse is more dynamic and can be less grammatically structured. Speech is produced in a way of small spurts, each spurt is one clause which may or may not be interconnected. Some parts of texts are more implicit and leave what is to be understood unsaid. Perception of a lecture and note taking by students require understanding speaker's intentions, for example switching the topic, changing it, starting a new theme in the discourse; this is achieved through signaling by the use of special lexico-grammatical elements. That is why special attention in the study of spoken academic discourse should be devoted to such language elements or micro-features as discourse markers.

Discourse markers: terminology and definition

As the study shows *discourse markers* are difficult to define and there exists a big variety of terms to denote these items. Flowerdew and Tauroza (1995), Chaudron and Richards (1986) focused their attention on the study of 'discourse markers' for academic purposes, Strodt-Lopez (1991) analyzed 'asides'. Such authors as DeCarrico and Nattinger (1992), Khuwaileh (1999) described how 'lexical phrases' and 'chunks' are used to indicate the structural organization of discourse and coherence in classroom teaching. Swales and Malczewski (2001: 150) applied the term 'new episode flags' to describe "moves from lecture format to the discussion or to change the direction of the lecture or discussion"; Crawford Camiciottoli (2004) described the application of 'discourse structuring expressions'. Biber (2006) used the term 'discourse connectors' to describe devices that are used as "bridges between turns in speech and sentences", and 'indicate' the interconnection of parts in the discourse. He differentiated between 'discourse markers' and 'linking adverbials.'

Fischer (2013: 1743), for example, stated the notorious difficulty of defining discourse markers and pointed out their 'functional spectrum'. The researcher (*ibid.*) suggested that the use of terms depended on their functional variability that is why different terminology was proposed, for example 'pragmatic markers', 'discourse particles', 'discourse connectives', 'feedback signals', 'backchannel tokens', 'interjections', 'text-relation markers' and others.

Despite this terminological diversity the term 'discourse marker' as stated by Dér (in Furco, 2020: 5) appears to be "the most inclusive and frequently used in the English literature", that is the reason why it is used as a core term in the present article.

Since there is no single precise definition of a discourse marker, the most applicable for the present research could be a definition based on the characteristics given by Furco (2020), Buck (2001), Fraser (1990) and Schiffrin (1987). Discourse markers are "metatextual and metacommunicative devices" (Furco, 2020) that "explicitly signal the micro- and macro-structure of the text" (Buck 2001), "expressions which signal a sequential relationship between the current basic message and the previous discourse" (Fraser, 1990, 2015), "sequentially-dependent units of discourse which serve an integrative function in discourse and therefore contribute to discourse coherence" (Schiffrin 1987). That is to say discourse markers are devices that signal the structure of discourse, show relationship between utterances, help to make discourse more coherent.

Multifunctionality and ambiguousness of discourse markers

Research on academic discourse proves the importance of DMs in structuring the university lecture. Swales and Malzcewski (2001), Tannen, Hamilton and Schiffrin (2015) studied the use of DMs in university settings. Buck (2001: 43), who explored listening comprehension by ESL students, pointed out that students often cannot comprehend the main points of the lecture when there is a lack of "devices that explicitly signal the micro- and macro-structure of the text", accordingly students can benefit from DMs used by lecturers.

Furco (2020: 1) considered that DMs "do not typically change the propositional meaning of an utterance but are essential for the organization and structuring of discourse, for marking the speaker's attitudes to the proposition".

Some authors mentioned the involving nature of DMs. Barbieri (2013) who compiled a taxonomy of linguistic features most common for Humanities and Social Sciences (soft science subjects) considered that the most common DMs in academic discourse were 'well', 'right', 'alright', 'yeah', 'oh', 'like', 'you know', 'I mean' and 'I guess'. The author discussed the "involved nature" of them, highlighting that different linguistic features (e.g. questions, directives, confirmation checks, pronouns, stance adverbs and others) including the above mentioned DMs do not only structure discourse but function as elements to involve the audience (students) in the lecture.

Furco (2020: 8-9), for example, indicated multifunctionality and ambiguousness of DMs, including such functions as "hedging, politeness function, conversational exchangers as openers, turn-taking devices, hesitational devices, backchannels, markers of topic shift and of receipt of information" and others. According to the researcher (*ibid.*) the functions of DMs in a university lecture can be to initiate the speech, to put ideas together, to switch topics, to show important parts in the discourse, to sum up, to make a pause, to conclude and many others. As regards to the perception of lectures by students, DMs are handy tools in the process of lecture comprehension in an academic environment.

It is to be noted that DMs cannot be studied separately, in isolation from the contextual background, their functions in utterance can be deciphered only in the context. As Furco (2020: 8) stated the important property of DMs is their "context-dependence" and "inherent indexicality". According to him "discourse markers are linked to attitudes, evaluation, types of speakers and other features of the communicative situation". The researcher compared "discourse markers" to deictics, "i.e., in terms of having meaning only by virtue of an indexical connection to some aspect of the speech event". Furco

(Ibid.) also associated “discourse markers” with “discourse deictics, including spatial, temporal and social deictics”.

Crawford Camiciotolli (2007: 80) differentiated between discourse micro-markers and macro-markers; micro-markers or ‘markers of lower-order’ indicate links between utterances or work as fillers; they can be attributed to the groups of “segmentation, contrast and emphasis”. For example, ‘so’, ‘right’, ‘ok’, ‘all right’ are lexical units used to show pauses and represent a “segmentation category”. The pause in the speech allows the speaker to reflect on what has been pronounced by him and to formulate the next part of the utterance; whereas a listener uses this break in order to ‘digest’ the information and to prepare his ‘mental feedback’. Discourse marker of ‘contrast’ that was revealed in corpuses of academic lectures is the particle “but”, (Fortanet-Gómez & Bellés-Fortuño 2005: 173), while the micro-markers of emphasis may include (Chaudron & Richards 1986 in Crawford Camiciotolli 2007: 80) such lexical items as ‘of course’, ‘you can see’, ‘actually’, ‘obviously’, ‘unbelievably’, ‘naturally’, ‘in fact’ and others.

Another category of discourse markers is macro-markers or ‘markers of higher order’ (Ibid.). The main role of macro-markers is to emphasize the major information or to indicate the main shift of the theme in the discourse. Some of the macro-markers analyzed by Chaurdon & Richards (1986: 123) include, for example:

“What I’m going to talk about today is...; You probably know something about – already...; We’ll see that...; To begin with...; The next thing was...; This meant that...; What we’ve come to by now was that...; You probably know that...; As you may have heard...” and others.

The most influential role in the study of DMs in a university setting can be noticed in the works of Biber (1999, 2006, 2009), who analyzed and summarized them. According to Biber (2006) DMs of lower-order most frequently used in spoken academic discourse include elements like “OK”, “well”, “now” and “so”. They primarily are characteristic to spoken rather than the written discourse. DMs that are linking adverbials “however”, “therefore”, “for example” and “that is” can be encountered in both. The table below shows the typology of DMs, used in spoken academic discourse according to their functions.

Table 1: Functional typology of discourse markers used in spoken academic discourse

Author (year)	Functions
Buck (2001)	Devices to signal the micro- and macro-structure of the text
Furco (2020)	Devices that are essential in the organization and structuring of discourse Hedging, politeness function, conversational exchangers (openers, turn-taking devices), hesitational devices, backchannels, markers of topic shift and receipt of information
Barbieri (2013)	Elements used to involve the audience
Crawford Camiciotolli (2007)	Micro-markers (indicate links between utterances or work as fillers; they can be attributed to the groups of “segmentation, contrast and emphasis”) and macro-markers (emphasize the major information or indicate the main shift of the theme in the discourse)
Biber (2006: 65)	Devices used to bridge between turns (in speech) and sentences, indicating the logical relations among the parts of a discourse, and providing an interpretive framework for the listener/reader. There are two major classes of discourse connectors: discourse markers and linking adverbials.

The author focused on the investigation of the DMs highlighted by Biber (ibid.) who provided the most detailed description of discourse micro-markers used in academic settings. The author of the present study wanted to discover in an empirical way the use of the most frequent discourse micro-

markers identified by Biber (2006) in the spoken discourse of academic lecturers, to find out whether students consider the use of DMs necessary, and to reveal functions of DMs in academic lectures. So, the following research questions were set and tackled in the present paper:

RQ 1. Do students notice the use of DMs by lecturers? Do Turiba University lecturers use DMs while lecturing in English as a medium of instruction to international students?

RQ 2. According to students, does the use of DMs assist them in lecture comprehension and what are their functions?

RQ 3. What are the functions of DMs encountered in the scripted discourse?

Methodology

In the present article the following principles were applied: mixed methodology – the use of quantitative and qualitative types of research: a case study and a quantitative discourse analysis and triangulation of methods – primary and secondary research. The computer program *Listen and Write* was used to transcribe some lectures and the program *WordSmith 6.0* was applied to extract concordances for the analysis. The results and findings were further described using a manual descriptive approach.

Stage 1

The first stage included a case study performed by way of guided interviews. Case study was chosen because of the small set of participants and limited time frames allocated for the research. It was used to gather information from students concerning the use of DMs by lecturers at Turiba University, Latvia. A set of questions were asked and discussed with students. The term *discourse marker* and its functions were explained to the students before interviews. Interviews were recorded on an IC Recorder Sony ICD – UX71, analyzed and typed in the Word version. The data received from the discussion was summarized in a descriptive way.

Participants

Eleven students participated in the interview, including students from countries such as Belarus (2), Ukraine (1), Poland (3), France (2), Lithuania (1), Uzbekistan (1) and Latvia (1). The author of the present study was a lecturer delivering a subject of Intercultural Communication in English to this group of students and since “applied linguistic research normally depends on the voluntary participation of research subjects” (Duff in Chapelle (ed.) 2013: 696) and it was not easy to attract other respondents the group was chosen from students who attended the course. The English language proficiency level of respondents were found to vary from B1 to C1 according to the results of their university entrance assessment. All participants were the first and the second-year part-time Erasmus or full-time students at the faculty of International Tourism, where English was used as a medium of instruction, but for whom it was not L1.

Stage 2

The second stage included the collection, transcript and analysis of spoken academic discourse (academic lectures). Since access to the lectures at the university was limited, the author had to borrow data from Internet resources. The data used during the course of the research comprises a corpus of 6 transcribed ‘soft science’ lectures given by university lecturers accessed on the Internet (from a corpus of Yale University lectures). Any of the specialized fields or disciplines, such as management, psychology, sociology, anthropology or political science that interpret human behavior are considered ‘soft science subjects’ (Hyland, 2005). The choice of lectures was determined by the Syllabus of students who participated in the case study – similar subjects were taught at the host university. Below is the list of lectures, their titles, length and links of access online.

Lecture 1 (AL1) – Management (length: 60:33) accessed on

<http://www.youtube.com/watch?v=Ei57yFEIjrI>

Lecture 2 (AL2) – Introduction to Economics” (length: 74:12) accessed on

http://www.youtube.com/watch?v=WQui_3Hpmmc

Lecture 3 (AL3) – “Financial Crisis” (length: 69:43) accessed on

<http://www.youtube.com/watch?v=QbosMr2JVrc&index=2&list=PL8FB14A2200B8718>

Lecture 4 (AL4) – “Climate change” (length: 104:54) accessed on

<http://www.youtube.com/watch?v=CrSfloRDLL8>

Lecture 5 (AL5) – “Game Theory” (length: 68:32) accessed on

<http://www.youtube.com/watch?v=nM3rTU927io&list=PLwy3d3shfRNIxgFHkrYscDit-4uKa9yRC>

Lecture 6 (AL6) – “Lecture on Leadership” (51:17) accessed on

<http://www.youtube.com/watch?v=-exu8UGieVQ>

Some lectures did not provide transcripts and were transcribed manually using the computer program *Listen and Write*. The quantitative discourse analysis of academic lectures in English delivered by subject teachers was carried out on the basis of the theoretical findings, described in the theoretical part of the present article and finally the conclusions were made.

The analysis was conducted with the help of the computer program WordSmith Tools 6.0. Due to the fact that the author was able to use only the Demo version of the program, the results of her findings on each linguistic element were limited to the number of 50 examples for each frequently used element. The Concord of *WordSmith Tools 6.0* was used in order to create concordances from the selected academic lectures; the concordances were analyzed and a set of the most frequently used discourse micro-markers was compiled and adapted for their possible application by lecturers who deliver lectures in English.

Results and interpretations

Stage 1. Analysis of the interviews

Students who participated in the interviews were informed about what *discourse markers* are and were asked the following questions concerning the use of them:

1. Do lecturers use discourse markers (DMs)?
2. Do DMs help to follow the lecturer’s speech?
3. What are DMs used for/ what is their role / what are their function?

1. The researcher wanted to ascertain whether students noticed the DMs used by lecturers. All students noted that they did not pay special attention to the use of DMs by lecturers, although they admitted they noticed them in the speech.
2. However, asked if, in their opinion, the usage of DMs was helpful in processing lecturers’ speech the majority of students (90%) stated that they noticed the interconnection of the use of DMs as ‘public speaking elements’ and the success in lecture comprehension. As it was admitted by almost half of the respondents (45%), irrespective of their level of the English language, students do not always notice the beginning, end and switch of the idea in a lecture. That is why they considered that it is possible that DMs might be helpful in following the organisation of discourse by a lecturer.
3. Asked about the possible function of DMs, the students (S) said that they understood the role of the them:

“They (DMs) help to understand the switch of topics and themes, however the words used are closer to informal style rather than formal conventions, something like: OK, next slide, let’s go further”. (S1)

According to the respondents the change of the topic or theme in the narration was also demonstrated by the lecturer by the use of a computer program:

“The change of slide in the screen also helps to understand the shift of topic and idea.” (S2)

The students noted that the spoken speech is processed easier with the assistance of DMs and the use of fillers and linking words in spoken discourse is one of the factors that makes it different from the written discourse. The majority (95%) asserted that lecturers use DMs on a frequent basis:

“These elements help to follow the structure, passing from one thought of a speaker to another. They help us to understand where there is a contrast in the sentence.” (S3)

“They help to follow, to compare things, to conclude. If a lecturer does not use DMs, it is more difficult to follow his speech.” (S4)

Another feature of DMs, according to the respondents, was the assisting role of DMs: discourse markers help lecturers to control their mental processes while delivering a lecture:

“Yes, DMs help lecturers, since most of the lecturers do not speak English as L1, these elements help lecturers to fill the gap and allow students to understand their speech. It is more “humane” than written in the book.” (S5)

It is seen from the description of interviews that students acknowledged the necessity of the use of DMs by lecturers, they also admitted that DMs are helpful in organization of spoken discourse by a lecturer, as well as they named several functions that DMs have, such as: to help listeners following the start, shifting the topic and making conclusions. Students also accepted that the lack of DMs hindered their lecture comprehension.

As a result of this stage the researcher decided to do a study of several discourse markers and see their functions in the discourse.

Stage 2. Quantitative discourse analysis

The second stage of the empirical research included the study of the use of the discourse micro-markers in the spoken academic discourse. It was impossible to cover all discourse micro-markers that could be encountered in spoken academic discourse in the analysis, that is why the author limited her choice by the analysis of *so*, *now*, *OK*, *well*, *however*, *thus*, *therefore* and *all right* that were also highlighted by Biber (2006) in his previous research.

The purpose of the analysis was to discover how frequently the above-mentioned lexico-grammatical features are used in the examples of professionally delivered lectures and what functions they have in modelling the spoken academic discourse.

The discourse marker ‘so’

Below are the examples of concordances with the discourse marker ‘so’ discovered in Lectures 1- 4 (AL1, AL2, AL3, AL4).

So + to introduce the topic:

- (1) “... in our management thinking. *So*, that’s what I wanna talk about...” (AL1)
- (2) “...we think about finance. *So*, I wanted to talk about ...” (AL3)

So+ to add information:

“... and so, what else can you do...” (AL2)

So + to introduce a sudden change of the topic:

“... at the same time. *So*, suddenly the covariance goes ...” (AL1)

So + to summarize:

- (1) “...and *so*, over and over again, so far 42 exciting ideas took...” (AL1)
- (2) “...and, *so* this is a kind of ...” (AL1)
- (3) “... river water temperatures *so* that leads to economical...” (AL4)
- (4) “...and *so*, what was happening is that...” (AL1)
- (5) “... my message here *so so* what is it insurance is the ...” (AL4)

So + to exemplify

- “... real hard science. So, for example, weather forecast...” (AL3)
- So + third person subject
- (1) “...so, these guys, actually don’t...” (AL1)
 - (2) “...had a financial crisis. And so, a lot of people were ...” (AL2)
 - (3) “...so, Intel started by making...” (AL1)
- So + that is construction
- “...until recently and so that’s part of the ...” (AL4)
- So + I think / I hope... expression of stance
- (1) “... and so, I think it is ...” (AL2) (Stance discourse marker expressing attitude.)
 - (2) “...we make things happen. And so, I hope that you have ...” (AL2) (Stance discourse marker expressing desire.)
 - (3) “...how much it went down. So, I figured, well if this we ...” (AL3)
 - (4) “...significant connections so I hope you all join me ...” (AL4)
- So in the meaning of stance expression
- “...will work outside the U.S., and so it’s important...” (AL2)
- So + going to construction in the meaning of intention
- (1) “...the details matter. And so, I’m not going to just ...” (AL3)
 - (2) “... the law school ...and so Am I so I’m gonna I’m...” (AL4)
- So + conditional sentence
- (1) “...but with people. And so, if we want to understand ...” (AL3)
 - (2) “...is of the distribution. So, if you observe a random choice ...” (AL3)
 - (3) “...them all. OK? So, if they all have the same...” (AL3)
 - (4) “...not extreme outliers. So, if you look at a small number of ...” (AL3)
- So + a question
- “... tell are just stories. So, how do we deal with the company...” (AL3) (A rhetorical question asked to the audience.)
- So + let’s expression
- “...a little bit iffy. So, let’s just think about the...” (AL3)
- So + an adjective, with a purpose to emphasize it
- “... the triggers of losses are so different there but ...” (AL4)

It is seen from the above examples that the DM *so* is used multifunctionally, for example: *to start the theme, to introduce the change of the topic, to recapitulate the main ideas, to provide an example* and etc. *So* was often followed by ‘there is’, ‘there are’, ‘this is’, ‘that is’, ‘it is’ constructions and it was also used *to summarize or to conclude*. The lecturers often used *so* with *conditional sentences* or *rhetorical questions* in order to involve the audience in the discussion or to exemplify something.

Another function of *so* was *to precede a phrase of intention*, for example, it was used with the phrase ‘going to’ or the colloquial contraction ‘gonna’. Another finding was that *so* was frequently used with the verbs that express stance, e.g., *so I believe, so I hope, so I think*, etc. as well as in the combination of *so + stance adjective*, e.g. *so it’s interesting*, as well as in order to emphasize an adjective, e.g. *so beautiful*.

It was discovered that *so* is the most often used discourse marker serving different purposes with the main functions *to make a break, to proceed to another theme, to signpost throughout a lecture* as well as *to involve the audience in the discussion*. Having analysed the frequency of the use of ‘*so*’ in the chosen lectures, it was found out that it was used 33 times in AL1, 20 times in AL2, 126 times in AL3 and 185 times in AL4.

The discourse marker 'now'

The discourse marker *now* can be attributed to the category of frequently used markers in the spoken academic discourse too, although it was discovered less frequently than *so*. *Now* was used 4 times in AL 1, 23 times in AL 2, 18 times in AL 3 and 40 times in AL 4

Now was used as an explanation:

"...on 24/7 in any organization. *Now* let me describe how this ..." (AL1)

Now was discovered in the meaning of the next step in the logical proceeding or action:

(1) "... What do they have in common? *Now* about a third of them just..." (AL2)

(2) "...and infinity. *Now* what we're going to do ..." (AL3)

Now and *OK* can be used interchangeably in the function of initiating the topic. *Now* can be changed by *OK* in the following sentences, for example:

(1) "... bad ideas get thrown in to. *Now*, what also happens is that..." (AL1)

(2) "... so, that's where we are. *Now*, I wanted to put this in ..." (AL2)

Now was used with the verbs of stance, e.g., the discourse marker *now*+ I know / I do not know:

(1) "... it in the fall of 1985. *Now* I don't know if that's ..." (AL2)

(2) "...doing these functions. *Now* I know Karl Marx said he ..." (AL2)

Now was encountered with the words *so*, and *but*:

(1) "... the whole time. *And now*, we're trying to decide..." (AL3)

(2) "...Apple on this axis. *And now* I've added a line, which I..." (AL3)

(3) "...market movements. *So, now* the next plot, and this is..." (AL3)

(4) "... looks different. *But now*, what I want to do ..." (AL3)

And now was used 10 times in Lecture 3.

The discourse marker 'OK'

Discourse marker *OK* was used 26 times in AL3 and 10 times in AL2. It was met eight times in both lectures in the end position of the sentence in the form of a question. It is possible to suggest that the lecturers used *OK* to check whether the listeners followed his thought, agreed with him or the lecturer was hesitant:

"...your gross return is 0, *OK*? So, if I plug in..." (AL3)

Another meaning of *OK* was to initiate a new sub-topic:

(1) "...one bad year with minus 100%, *OK*. So, what do you think...?"

(2) "... *OK*. Welcome to Economics 252..."

OK was used in the meaning of confirmation or approval by the listeners:

"...thousands want to set up a company, *OK*? How do you do that..." (AL2)

The analysis of DMs *so*, *now* and *OK* in lectures 1- 4 (AL1-AL4) showed that *so* was the most frequently used DM in all 4 lectures.

The discourse markers 'well', 'however', 'thus', 'therefore' and 'all right'

In order to find out the frequency of other DMs in the spoken academic discourse five other lexical units (*well*, *however*, *thus*, *therefore* and *all right*) were chosen and analyzed in lectures 5 and 6. It was identified that the most frequently used DMs from the five above were *well* and *all right*. *Well* was encountered in both lectures, although in many cases it was an adverb meaning "something done well" and the phrase *as well as* in the meaning of "in addition to." *Well* was used 15 times (out of 18 times) as a DM in AL5 and 8 times (out of 21) in AL6.

It was often used before the construction *let's*+ a verb

"... strategic situation? *Well*, let's start off with what..." (AL5)

It was also used as a DM to start a new theme in the discourse:

"...what's the idea here? *Well*, the first idea is that ..." (AL5)

As a word of hesitation:

“...*Well*, I don't know...” (AL5)

Well was encountered in the meaning of *OK* or *all right* in the answer to a question or the previous utterance:

“...a stronger argument. *Well*, how about this? Even if...” (AL5)

Another use of this DM was in combination with the verb of stance:

(1) “... and I think a power *well* I think you where you have...” (AL6)

(2) “... that you want to do *well* I think I would be comfort...” (AL6)

Another DM that was discovered in Lecture 5, and which was not found in the other lecture was the DM *all right*. 25 out of 30 times, it was used *in the initial position of a sentence*, when the speaker wanted to *proceed with a new theme*, e.g.:

(1) “...everyone filled in. *All right*, so last things to talk about ...” (AL5)

(2) “...we done with the forms? *All right*, so why don't we send...” (AL5)

In three cases out of 30 *all right* was found in the middle position of a sentence, e.g.:

“I think it's quite likely we're going to get a lot of Alpha's chosen, right? But if we played this game up in let's say the Divinity School, *all right* and I'm guessing that Travis' answer is reflecting what you guys are reasoning here”. (AL5)

In this case, *all right* was used with the purpose of finding out if the audience agrees with the proposition of the lecturer. He as if checked whether students followed him, and this DM was also preceded and followed by the verbs of stance: *I think it's...*, *all right* and *I'm guessing that...*

“So, if you don't buy this book this week, I may be able to make the advance copy of the new edition available for some of you next week. I'm not taking a cut on that either, *all right*, there's no money changing hands”. (AL5)

In this episode *all right* was most probably used to check if the listeners agreed with what he was saying. The style of the lecture showed that the lecturer was not fully confident about the information he was giving or whether the audience agreed with him. This could be the reason why *all right* was used 30 times in a course of the lecture. It was noticed that *all right* was often substituted by *OK* or *well*, and that these discourse markers may be used in similar meanings: *OK*, *all right*, *well* are used to switch to a new topic; *OK* and *all right* are employed as reassurance to check whether the audience could follow the speaker.

The research showed that the DM *thus* was not present in the lectures whereas the DMs *therefore* and *however* were used only several times. *However* was used only one time in Lecture 5 in an initial position in the meaning of contrast:

“That's not what Game Theory is about. *However*, once we know what your payoffs are, once we know what your goals are, perhaps Game Theory can you help you get there”. (AL5)

Therefore occurred in two lectures: two times in AL 5, and five times in AL 6:

“Okay, so you chose Alpha right? So why did you choose Alpha?

[inaudible] realized that my partner chose Alpha, *therefore* I chose [inaudible].”

In the next episode *therefore* was used by a student in the dialogue with the Professor, where the student was explaining his reason of choosing a Business Game Alfa. *Therefore* was encountered in the medial position in the sentence. The example is as follows:

“The mid-term will be held in class on October 17th that is also in your syllabus. Please don't anybody tell me late – any time after today you didn't know when the mid-term was and *therefore* it clashes with 17 different things. The mid-term is on October 17th, which is a Wednesday...” (AL5)

The table below shows the frequency use of the studied micro-markers.

Table 2: Frequency use of the discourse markers in the analyzed extracts (AL1-AL6)

Discourse markers	Number of encounters
So (AL1-AL4)	364
Now (AL1-AL4)	85
Ok (AL1-AL4)	36
All right (AL5-AL6)	30
Well (AL5-AL6)	23
Therefore (AL5-AL6)	7
However (AL5-AL6)	1

It is noticed that the most frequently used DMs in the selected extracts were: *so* which also could substitute *thus* and *therefore*; *OK*, which could also be used in the meaning of *all right*, which was used frequently only in one lecture in order to show that the speaker was hesitant whether the audience had agreed with him. *Therefore* and *however* occurred only in several cases in the meaning of giving result.

Conclusion

An overview of the theory helped to define discourse markers and to reveal their main functions when used in spoken academic discourse by academic personnel in general. Theoretical findings of previous researchers demonstrated that the application of discourse markers is an integral skill of the discourse competence needed both for a lecturer and students; for the former in the organization of their speech in a foreign language (FL) and the latter in following and comprehension of the lecture. Discourse micro-markers allow lecturers to signal listeners the structure of a lecture (where they are in their narration, i.e., give structural indicators,); assist learners in recognizing main ideas, details, sequences, cause and effect relations, demonstrate the relationship between the key ideas and secondary details, help learners to differentiate between them, emphasize the main points of the discourse.

Interviews with students showed that, in general, after students were introduced the term discourse marker, they confirmed that they noticed lecturers' use of discourse markers in a course of a lecture. Students also noted several functions that discourse markers have and admitted the significance of the use of them by lecturers. Some students also stated that some lectures did not use or used some discourse markers incorrectly.

The analysis of the chosen spoken academic discourse demonstrated that the most frequently used discourse micro-markers in the analyzed episodes (from *so*, *now*, *ok*, *well*, *however*, *all right* and *therefore*) are *so* and *now*, whereas the least encountered are *however* and *therefore*. It is possible to extrapolate that the reason why the second group of discourse markers was used rarely in the analyzed extracts is because the first group of discourse markers are more common to spoken discourse as such, whereas discourse markers *however* and *therefore* are more characteristic to written discourse.

The computer software WordSmith Tools 6.0 allowed to create and to analyze the concordances from the selected lectures. It was discovered that the most frequently used DM *so* can have at least thirteen functions in the academic lecture, for example, *to introduce the topic*, *to add information*, *to summarize*, *to exemplify*, used with *the expression of stance* (e.g., *so, I think...*; *so, I hope*), with *conditional sentences*, with *let's expression* and others.

The second frequently used DM was the word *now*, that was encountered in the analyzed discourse 85 times in the meanings of *exemplification*, *explanation*, used with *the verbs of stance*, in combination with the words *so*, *and*, and *but* and in combination with the word *right*. It was noticed that *now* can be interchanged with the word *OK* in the function of *initiating the topic*.

Micro-marker *OK* was another frequently used word in the academic discourse used in the *end position* of the sentence in the form of a question, where the lecturer checked if listeners followed him or agreed with him and in the *initial position* of the sentence to initiate a new sub-topic.

Other analyzed DMs included *well*, *all right*, *however* and *therefore*, however their use was not that frequent in comparison to *so* and *now*. It was concluded that in comparison to a written discourse spoken discourse is often poorer in the choice of discourse markers.

Knowledge of the conventions of the use of discourse micro-markers by non-native English speakers in the course of a lecture in EMI settings can be helpful in preparing lectures. It is also beneficial for students' perception of the structure of the lecture and thematic development of the academic discourse. The possible pedagogical implication could be in students' and lecturers' awareness of the functional characteristics of different discourse markers, including those analyzed in the present study.

Cognitive processes taking place in the process of the construction of speech in a FL in EMI settings do not always allow lecturers finding synonyms or substitutes immediately in the moment of speech, as a result they often use discourse markers such as *so*, *now* and *ok* repeatedly. The researcher supposed that the rare use of other discourse micro-markers and frequent use of *so* and *OK* with diverse meanings may lead students to the miscomprehension or misinterpretation of a lecturer's discourse. It is possible that lecturers delivering lectures in EMI might need to pay more attention to the use of different lexico-grammatical elements (DMs) that could enrich their discourse and make it more coherent for the listeners (students). The delivery of soft science lectures by university lecturers in a FL requires the appropriate skills and knowledge of discourse organization and the awareness of making the right choices of language units.

The present study was an attempt to look into the nature of such lexico-grammatical elements as discourse micro-markers used in the spoken academic discourse with a focus on their frequency and functions. The findings need to be supplemented with additional studies of other micro- and macro-markers and by using other methods of data collection as well as a larger population of the participants in order to have a more realistic view of the question. The next study would focus more on the investigation of students' perception of discourse markers, (both micro- and macro-), applied by the lecturers to find out how they affect students' lecture comprehension, as well as the possible analysis of authentic discourse produced by the academic personnel rather than analyzing corpus available online.

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