



RESEARCH ARTICLE

GRAMMATICAL METAPHOR: NOMINALIZATION IN THE 6TH AND 7TH GRADE TURKISH CLASSROOMS

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ABSTRACT

Language is the fundamental means of instruction and learning. When children start formal schooling, they face new linguistic demands like *grammatical metaphor*. Grammatical metaphor, in particular *nominalization*, is a lexico-grammatical process which plays a central part in the construction of knowledge in the 'language of schooling' (Schleppgrell, 2004). In order to be successful in school, the student is expected to organize knowledge through grammatical metaphor, a notion frequently dealt within Systemic Functional Linguistics. This study takes the perspective of Systemic Functional Linguistics to explore the ideational grammatical metaphor in the form of nominalization in the classroom discourse. In nominalization, "any element or group of elements is made to function as a nominal group in the clause" (Halliday, 1994, p. 41). Within this framework, the aim of this *cross-sectional* study is to determine the frequency and types of nominalization in the Turkish classroom. To examine the level of academic language accessible to students, 8 teachers teaching Turkish to both 6th and 7th grades were video-recorded in their classes with their students. These recordings have been fully transcribed verbatim into scripts and analyzed in term of nominalization use. The findings of our research revealed slight differences in the use of nominalization in the 6th and 7th grades, and hence these differences were statistically not significant. This study can have some implications for developing children's literacy in that an understanding of these literacy-oriented constructions will enable educators and caregivers to recognize the importance of making use of a wide range of linguistic expressions.

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INTRODUCTION

The grammatical system in all languages has a meaning making power which enables language users to construe meaning using different grammatical constructions. Academic discourse defines, categorizes, explains, and justifies scientific knowledge by making use of these constructions. In this view, academic language contains unique grammatical structures that builds knowledge and reshape human experience (Halliday 1994; Halliday and Matthiessen, 1999). Halliday and Martin (1993) define grammatical metaphor (GM), nominalization and technical taxonomies as some of the important features of academic language. Thus, constructions such as complex nominal groups are the main lexico-grammatical characteristics which make academic texts abstract, impersonal, and objective. Systemic Functional Linguistics (SFL), developed in the 1970s

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by M.A.K. Halliday, is a social theory of language which argues that school knowledge is a constructed language, both spoken and written. Spoken and written language both play an important role in the development of educational knowledge. Textbooks and teachers use grammatical constructions which are typical of scientific discourse. Therefore, when children start formal schooling, they face new linguistic demands like grammatical metaphor. SFL is a theory of language that explains the syntax of academic discourse and how it is used. In other words, SFL provides teachers, teacher educators, and literacy researchers with a language theory to examine how language construes knowledge within the academic content accessible to students (Rose and Martin, 2012) and also instruction in SFL metalanguage supports students in deconstructing and constructing disciplinary texts in ways that enables literacy development (Gebhard, Chen and Britton, 2014). Researchers working with SFL have tried to determine the lexico-grammatical features of the *language of schooling* (Schleppgrell, 2004). One such feature of the language of schooling is grammatical metaphor.

Grammatical Metaphor: Nominalization

Grammatical metaphor (GM) may be broadly described as “a remapping of the semantics on to the lexicogrammar” (Halliday 1998, p. 194). There are two types of grammatical metaphor: ideational and interpersonal. This study focuses on the first type i.e. ideational grammatical metaphor, which includes nominalization. Nominalization, as one of the main features in academic discourse is “the single most powerful resource for creating grammatical metaphor” enabling academic writers to taxonomize or classify (Halliday 1994, 352). Since things are more easily defined, classified, qualified and categorized, GM, in particular nominalization reveals a drift towards “thinginess”. By construing any phenomenon of experience as a thing, we give it the maximum potential for semantic elaboration. Participants are realized by noun groups and qualities are attached to things. However, processes have much less potential than participants for being taxonomized and characterized. Thus, the primary motif of GM is that of construing a world in the form of things (Halliday and Matthiessen 1999). Nominalization is observed as a meaning making tool in scientific discourse (e.g. Banks, 2005; Baratta 2010; Biber 1988; Guillén Galve 1998; Martin 1993). Nominalization is a process “whereby any element or group of elements is made to function as a nominal group in the clause” (Halliday 1994, 41).

- (1a) The driver drove the bus too fast down the hill, so the brakes failed. (congruent)
 (1b) The driver’s overrapid downhill driving of the bus caused brake failure. (metaphorical)
 (Halliday, 1998, p. 191)

The metaphorical construction in example (2b) contains two types of shifts: rank shift and class/function shift. In class shift, the elements *drive* and *fail* are nominalized by the use of nominalizing suffixes (-ing, -ure). A downward rank shift is also involved when the clause ‘*the driver drove the bus too fast down the hill*’ is transformed into a noun group ‘the driver’s over rapid downhill driving of the bus’. The same is applied also to the clause ‘*the brakes failed*’ which functions now as a noun group ‘brake failure’. In the congruent construction the information is thus expressed in two clauses to express a cause-and-effect relation, while in the metaphorical construction using nominalizations, information is packed into a single clause. As the examples given exemplify, basically nominalization involves morphological and syntactic structures.

Studies related to grammatical metaphor have grown rapidly in number since the introduction of the concept by Halliday (1985). Previous research on GM (e.g. Banks 2003; Halliday 1985, 1998; Halliday and Matthiessen, 1999, 2004; Lassen, 2003; Ravelli 1988, 2003; Taverniers 2003) was mainly on English. Banks (2003) focuses on the use of GM and its development in the history of science. Taverniers (2003) research explores GM in comparison to lexical metaphor on semantic variation. GM has been examined as a feature in early childhood (Derewianka 2003; Painter 2003; Torr and Simpson 2003), as the language of schooling (Schleppegrell 2004, 2009) and as an adult language (Lassen 2003). In contrast to

numerous studies in English, it is rare to find studies on GM in other languages (Huang, 2002; Maagerø 1997, Plementitas 1998) or contrastive studies of grammatical metaphor (Steiner, 2001, 2002, 2004; Stålhammar 2004, 2006; Yang 2008; Yuan Yuan 2006). Steiner (2001, 2002, 2004) compared German and English texts, and Çakır (2011) examined Turkish and English scientific texts. They found that translated text tends to demetaphorize metaphorical structures. In Educational linguistics SFL-based studies examined changes in students’ academic literacy development (Christie, 2012; Gebhard, Chen & Britton, 2014; Devrim, 2013), language education (Devrim, 2015a, 2015b) and also SFL-based approach to academic literacy instruction (Rose & Martin, 2012; Gebhard, Chen & Britton, 2014). The findings of these studies found that the SFL metalanguage provided students and educators support in deconstruction and constructing academic language.

Nominalization in Turkish

Turkish has also various options in creating nominal elements. These options as in English are either morphological or syntactical. Morphologically nominalizing suffixes (e.g. -mA, -Im, -Iş, -Ilk) are added to the non-nominal element (Kornfilt, 1997).

- (2) kullan - kullanma
 (use - using/usage)

Syntactically when subordinating suffixes -mAk, -mA, -DIK, -(y)AcAk or -(y)Iş are added to the clause and this clause functions as a noun group taking the role of a subject, object or complement (Göksel and Kerslake 2005, 413):

- (3) [Türkçe öğren-**mek**] zor.
 [Learning Turkish] is difficult.
 (4) [Sigarayı bırak-**ma**]-nın faydasını ilk günlerde görmeyebilirsin.
 ‘You may not experience the benefit of [giving up smoking] in the first few days.
 (Göksel and Kerslake, 2005, pp. 359-363)

In the examples the constructions ‘Türkçe öğrenmek’ and “Sigarayı bırakma” function at the nominal rank as the subject of the clause. Together with the subordinating suffixes mentioned above, the auxiliary verb *ol-* is widely used with the nominalizing suffixes to form nominal constructions in Turkish.

- (5) Çocukluğunda Atatürk’ü gör-müş**ol-mak**] kendisi için bir gurur kaynağı idi.
 [To have seen Atatürk in his/her childhood] was a source of pride for him/her.
 (Göksel and Kerslake, 2005, p. 374)

In addition to these nominal structures, passive nominalization is also possible in Turkish.

- (6) [Bu ürünün elde yıkan**ması**] tavsiye edilir.
 It is recommended [that this product be washed by hand].
 (Göksel and Kerslake, 2005, p. 364)

In the example (6), the passive marker -In is used with the nominal suffix -mA and forms a passive nominalization. In Turkey, studies examining nominalization within the framework of functional approaches (Oktar and Yağcıoğlu 1995; Van Schaaik 1999; Türkan, 2008; Çakır, 2011; Cengiz & Çakır, 2012) are limited, although there is a large body of descriptive studies on nominalization in Turkish (e.g. Erguvanlı 1984; Göksel and Kerslake 2005; Hennesy ve Givón 2002; Koç 1987; Kornfilt, 1997; Sezer 1991; Pamir Dietrich 1995; Underhill 1976; Uzun 2000; Yaldir 1999, 2004). To our knowledge, no systematic empirical research exists in Turkey addressing the question of how knowledge is built using nominalization in teacher-student interaction. This study seeks to fill the existing literature regarding nominalization use in classroom discourse. The present study examines only syntactic nominalization structures and lexical nominalization is not included. Syntactic nominalization is a process where the morphology of the lexical items involved are affected and changes are applied to move from congruent to a metaphorical structure. In this respect, the present study investigates nominalization from a SFL perspective and tries to answer the following question:

- Are there any differences in teachers' use of nominalization in terms of class level?

Method

Participants

To determine demographic features of the participants, a personal information form was devised, seeking such information as age, gender and experience. The participants were 8 teachers and their students in Turkish classrooms. Teachers participated in the research voluntarily, without any remuneration. They differed in age, gender and teaching experience. Of the 8 participating teachers, 4 were male and 4 were female, and were still serving in the province in which the research was carried out. Table 1 shows the demographic characteristics of these teachers according to age and Table 2 presents characteristics regarding teaching experience.

Table 1. Demographic characteristics of participants (n=8) regarding age

Age of Teachers						
Gender	N	Mean	Median	Standard Deviation	Minimum	Maximum
M	4	39.500	35.500	11.210	31.000	56.000
F	4	33.500	31.500	8.1854	26.000	45.000
M+F	8	36.500	34.000	9.636	26.000	56.000

Concerning age of the participants, their ages ranged from 26 to 56 years old. As illustrated in Table 3, the average age of participants (n=8) was 36.50 (SD= 9.64). Male teachers' (n=4) age was between 31 and 56 (M= 39.50; SD= 11.21) and female teachers' (n=4) age ranged from 26 to 45 (M= 33.50; SD= 8.18).

Years of teaching experience ranged from one year to 30 years. Distribution of the teaching years of the participants was as follows: 50% were between 1-10 years, and the other 50%

were between 10-30 years. Teachers (n=8) had an average of 12.75 years of teaching experience (SD= 8.73). Male teachers' (n=4) had an average of 15.75 years of experience (SD= 9.91) while their female (n=4) counterparts had an average of 9.75 years of experience (SD= 7.45).

Table 2. Demographic characteristics of participants (n=8) regarding experience

Experience of Teachers						
Gender	N	Mean	Median	Standard Deviation	Minimum	Maximum
M	4	15.750	13.000	9.912	7.000	30.000
F	4	9.750	9.500	7.455	1.000	19.000
M+F	8	12.750	12.000	8.731	1.000	30.000

Research Design

This study was conducted in secondary schools in different districts of Nevşehir province in central Turkey. The research permission was received from the Ministry of Education, and the schools were randomly selected. The schools generally represented families on the lower level of the socioeconomic status. After the individual school visits of the researchers, 8 teachers from different schools teaching Turkish to 6th and 7th grade classes volunteered to participate in the study. Data were collected during the fall and spring semesters of the 2012-2013 school year. In terms of content, all teachers taught the same units specified by the national curriculum. The classes participating in the research used the same Turkish textbook for the appropriate class level. The independent variables of this research consist of class level. The dependent variable in the research is nominalization. In order to prevent any preparation for their lessons, teachers were not given any information on the content of the research. Video recording dates were previously scheduled with the teachers and two 40-minute lessons of 6th and 7th grade classrooms were video and audio taped during Turkish lessons.

Recording

The lessons were recorded using two tripod-mounted digital cameras. Given the inevitability of quiet, unclear, and otherwise difficult-to-transcribe speech in a room with over 20 students, two supplemental digital audio recorders were placed in the opposite corners of each classroom where the video cameras were set up. Due to equipment-related limitations, a few students were outside of the cameras' field of view, but the majority were always visible in each classroom. One video camera was placed in a front corner and the other camera was placed in a back corner of each classroom. During the lessons, the investigators sat in the back near the camera quietly making field notes, and at the end of each lesson, the equipment was taken down while the teacher and students prepared to leave the classroom. In order to mitigate the teachers' and students' consciousness of the investigators' and equipment's presence during the recording sessions, observation-only visits were made to each classroom prior to recording. Teachers were also told that the goal was to videotape a typical lesson with typical defined as whatever they would have been doing had the class not being recorded. As it worked out, teachers and students seemed to pay virtually no attention to the investigators or the

cameras. As a final check, each teacher was asked, after recording, how conscious s/he had been of the investigators' and the cameras' presence and whether s/he had noticed any differences in the students' behaviors. All teachers indicated that there had been no deviations from the norm. Moreover, teachers who try to alter their behavior for the videotaping will likely show some evidence that this is the case. Students, for example, may look puzzled or may not be able to follow routines that are clearly new for them. The researchers have not observed any such unusual behaviors from the students while making field notes. Since no deviations from the norm in class were observed by the teachers and the researchers, students were not asked how conscious they had been of the investigators' and the cameras' presence.

Transcription and Data Analysis

The video and audio recordings from the 6th and 7th grade classes of the 8 teachers provided the data for the dependent variable. These recordings have been fully transcribed verbatim into transcripts. Each classroom interaction lasted about 80 minutes. Approximately 21.3 hours of 16 Turkish lessons (8 lessons to the 6th and 8 lessons to the 7th grade classes) were transcribed into four columns: Non-verbal, Line, Speaker, and Verbal. The Non-verbal column contains all transcribed visible instances of students' raising hands or other non-verbal discourse. The Line column aligns consecutive reference numbers with each utterance. In the Speaker column was recorded the name (e.g. Teacher, name of the student) of the producer of the utterance on the same line in the adjacent Verbal column. Into the Verbal column were transcribed all audible utterances, in standard orthography.

utterance, and two or more independent clauses, occurring within the same conversational turn were considered as separate utterances. The present study was a single-group design and to assess the use of grammatical metaphor Mann Whitney U test was applied on the data. IBM SPSS 21 package program was used in analyzing the data and the critical alpha value was set at 0.05 for this investigation. Significant p -values ($p < .05$) are highlighted in grey in tables displaying scores.

RESULTS

The purpose of the statistical analysis conducted in this study was to determine differences in incidents of nominalization use based upon the class level. Moreover, the study tried to identify the types of nominalization used by teachers and students.

Total Number of Nominalization

Through data analysis, we attempted to identify differences between the total numbers of nominalization based upon the class level. Figure 1 gives the raw numbers of nominalization use of teachers and students.

Figure 1 illustrates that teachers while teaching in the 7th grade used more nominalizations in their classes than while teaching in the 6th grade. In accordance with the higher number of nominalization use in the 7th grade, the students in these classes used slightly more nominalizations during the teacher-student interaction. Table 3 gives the descriptive statistics of the total number of nominalization used in class 6 and Table 4 shows the descriptive statistics of nominalizations produced in class 7.

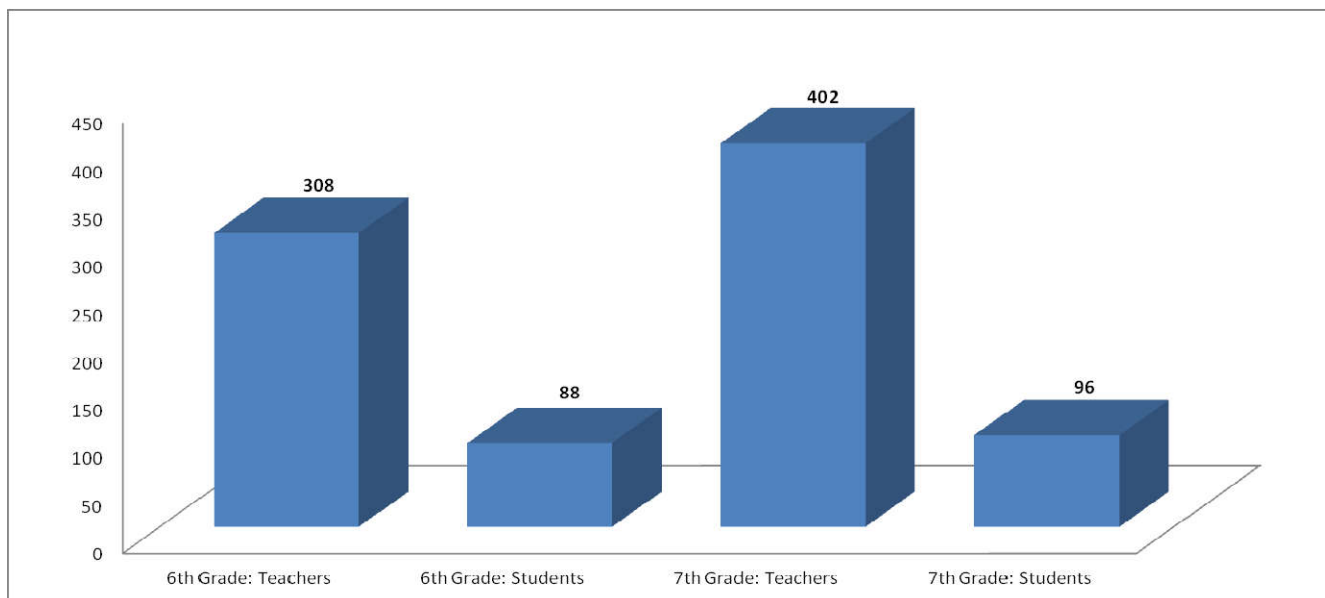


Figure 1. Raw numbers of total number of nominalization in class 6 and 7

In this column, the speech of teachers was coded as *utterances*. An *utterance* is defined as a conversational turn that contains one or more syntactic units and it is usually preceded and followed by a pause (Huttenlocher *et al.*, 2010; Rowe, 2012). In line with Rowe (2012), the unit of transcription was an

As shown in Table 3 and Table 4, although divergence was found in the raw numbers of nominalization, no statistically significant differences ($p > .05$) have been observed on the total number of nominalization use of teachers and their students in terms of experience, gender and class level.

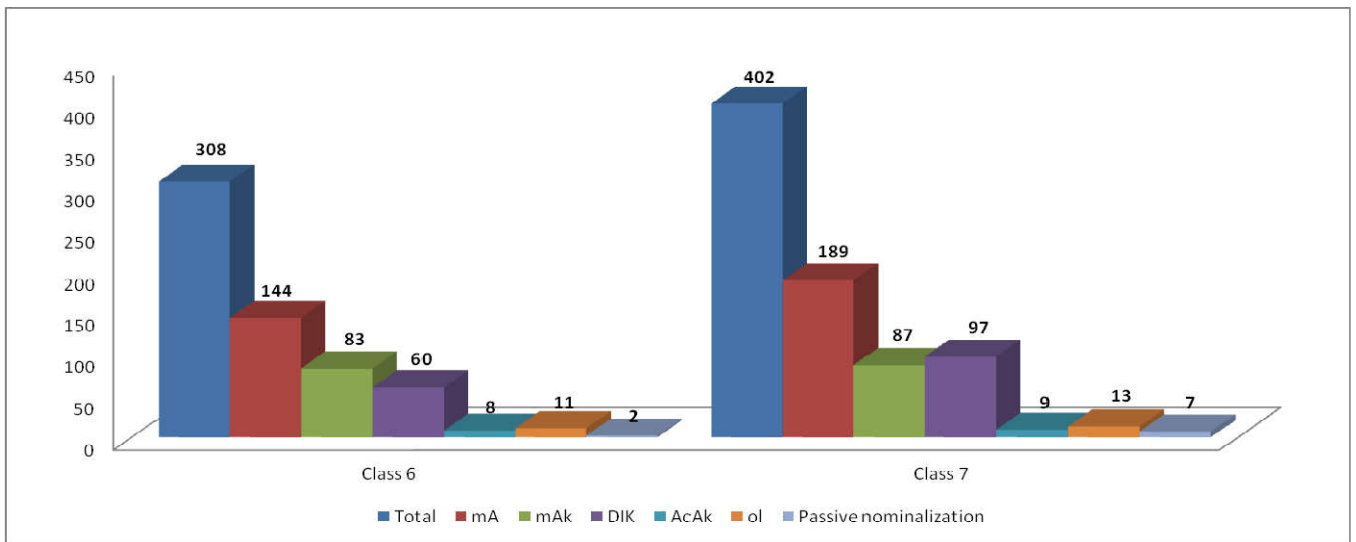


Figure 2. Raw numbers of nominalization types used in class 6 and 7

Table 3. Descriptive Statistics of Teachers' Use of Nominalization

Variables	Mann-Whitney U	Wilcoxon W	Z	p valueAsymp. Sig. (2-tailed)	Exact Sig. [2*(1-tailed Sig.)]
Class level	26,500	62,500	-,578	,563	,574 ^b

Table 4. Descriptive Statistics of Students' Use of Nominalization

Student Total Nominalization	Mann-Whitney U	Wilcoxon W	Z	p valueAsymp. Sig. (2-tailed)	Exact Sig. [2*(1-tailed Sig.)]
Class level	26,000	62,000	-,632	,528	,574 ^b

Table 5. Descriptive Statistics of Teachers' Use of Nominalization Types

Nominalization Types	Mann-Whitney U	Wilcoxon W	Z	p valueAsymp. Sig. (2-tailed)	Exact Sig. [2*(1-tailed Sig.)]
-mAK	30,000	66,000	-,211	,833	,878 ^b
-mA	26,000	62,000	-,632	,527	,574 ^b
-DIK	28,000	64,000	-,423	,672	,721 ^b
-AcAK	32,000	68,000	0,000	1,000	1,000 ^b
-İş	28,000	64,000	-1,000	,317	,721 ^b
-ol	28,500	64,500	-,383	,702	,721 ^b
Passive nominalization	30,000	66,000	-,276	,782	,878 ^b

Table 6. Descriptive Statistics of Students' Use of Nominalization Types

Nominalization Types	Mann-Whitney U	Wilcoxon W	Z	p valueAsymp. Sig. (2-tailed)	Exact Sig. [2*(1-tailed Sig.)]
-mAK	22,000	58,000	-1,060	,289	,328 ^b
-mA	28,000	64,000	-,425	,671	,721 ^b
-DIK	30,500	66,500	-,165	,869	,878 ^b
-AcAK	29,000	65,000	-,385	,700	,798 ^b
-İş	31,500	67,500	-,091	,927	,959 ^b
-ol	23,000	59,000	-1,091	,275	,382 ^b
Passive nominalization	28,000	64,000	-1,000	,317	,721 ^b

Nominalization Types

Another purpose of this study was to examine the nominalization types used in the classroom discourse. An analysis was conducted separately for both teachers and students in the 6th and 7th classes to examine if the use of nominalization types differed. The analysis of classroom interactions based on class level revealed the following results.

As shown in Figure 1, teachers in the 7th grade used slightly more nominalizations than teachers teaching in the 6th grade.

According to the analysis of the use of nominalization types in terms of class level, teachers both in class 6 and 7 used all types of nominalized structures in their teacher talk. The most frequent types of nominalization used in these classes were -mA, -mAK and -DIK. Table 5 shows the descriptive statistics of nominalization types used by teachers and Table 6 gives the descriptive statistics of nominalization types used by students.

Table 5 illustrates that no statistically significant differences ($p > .05$) have been found on the types of nominalization used of teachers in 6th and 7th grade Turkish classes. Similarly,

there was no significant difference ($p > .05$) in the use of nominalization types by the students.

DISCUSSION AND CONCLUSION

The principal objective of the present study was to examine ideational grammatical metaphors in the form of nominalization and in particular their respective frequencies and also types. Thus, we tried to explore the knowledge building in Turkish classes and also tried to determine how much academic content was accessible to students. In response to our research question, the analysis of teachers' academic discourse patterns indicated that in terms of raw numbers, when teaching in the 7th grade teachers used slightly more nominalizations than when they were teaching in the 6th grade. Similarly, students in the 7th grade (Age 12) also used nominalization structures a little more than their counterparts in the 6th grade (age 11). Although, statistically not significant, the findings may suggest that there is a slight rise in the use of nominalization as the level of the class increases. This finding confirms Halliday's (2004, p. 32) claim that language development that he calls "semiotic maturation", in particular the move from congruent to metaphorical takes place between the ages of 9 to 13.

According to the analysis of the use of nominalization types in terms of class level, teachers both in class 6 and 7 used all types of nominalized structures in their teacher talk. The results demonstrated that all types of nominalization structures were employed by teachers and the most frequent types of nominalization used in classes were -mA, -mAK and -DIK. Thus, when children enter school, they are expected to use a variety of new linguistic resources and the results show that in Turkish classrooms different nominalization types were accessible to students.

From the above discussion, we can conclude that students' literacy is closely associated with the quality of classroom discourse. Thus, as teachers, we should be aware of the specific features of the *language of schooling* and introduce these structures in the spoken discourse during classroom interaction. This study can have some implications for developing children's literacy in that it can deepen our understandings of the lexico-grammatical features of the academic language. This kind of examination of the use of nominalization suggests that grammatical metaphor is indeed a fundamental and powerful resource for meaning construction (Painter 2003). An understanding of these literacy-oriented constructions will enable educators and caregivers to recognize the importance of making use of a wide range of linguistic expressions. The aim of this research was to examine the lexico-grammatical features of classroom discourse with a particular emphasis on nominalization. Using video recordings of teacher-student interactions, we tried to discover the nominalization structures used in spoken classroom discourse. The results revealed that teachers introduced their students with the most important tool of academic language, that is, *nominalization* during instruction. In this regard, teachers need to devote more attention to the importance and use of nominalization so that students can gain an awareness of the language of schooling (Cameron, 2011). The implications of this study relate to the

strategic role SFL-based pedagogy can play in supporting teachers since "understanding the patterns of language characteristics of different school subjects and genres can enable teachers to better scaffold the development of language and knowledge" (Fang, Schleppegrell and Cox, 2006, p. 248). As a result, instruction in SFL metalanguage may provide students with important tools for deconstructing and constructing academic texts (Gebhard, Chen and Britton, 2014; Devrim, 2013, 2015a).

Although this study contains rich observational data, it is limited in some respects. First of all, this study was limited in that sample size ($n=8$) was small. Another limitation was that this study examined only syntactical nominalization structures in Turkish lessons comparing the 6th and 7th grades. Future multidisciplinary and as well as longitudinal studies are needed to investigate other features of academic language and its effects on students' achievement. There is especially a need for longitudinal studies with a SFL-based instruction to examine the academic literacy development in students. This study used a single-group based experimental study. Future research could employ an experimental-control group design with an intervention to examine the effect of the intervention on teachers' knowledge building strategies and students' motivation to deconstruct and construct academic language. By understanding more about the teachers' academic language use in classroom, we can better understand the types of academic literacy practices to which students are being exposed. These studies would be valuable for improving the efficacy of classroom practices and, hence improve student literacy and success in class.

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