Abstract

In the last decades there has been considerable work on academic literacy practices in schools. In particular, there have been attempts to map out the lexico-grammatical features of the language of schooling. One such feature is grammatical metaphor. Grammatical metaphor is an important linguistic device construing knowledge in school. In order to be successful at school, the student is expected to organize knowledge in certain ways including the use of grammatical metaphor, a notion frequently dealt with in Systemic Functional Linguistics. This study takes the perspective of Systemic Functional Linguistics to explore the types of grammatical metaphor in the form of nominalization in classroom discourse. Nominalization, a meaning making mechanism, is one of the important stylistic features of academic discourse. In this respect, the aim of this cross-sectional study is to describe knowledge building in the Turkish classroom. To examine the discourse patterns of the spoken language of schooling, 8 teachers teaching Turkish to different grades at different schools 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 that the deployment and distribution of nominalization differentiate depending on teacher gender and teacher experience. However, these differences were statistically not significant. This study can have some implications for developing children’s literacy in that it can deepen our understanding of the lexico-grammatical features of the language of schooling.

Keywords: Systemic Functional Linguistics; grammatical metaphor; nominalization; classroom discourse.
1. Introduction

Halliday's Systemic Functional Linguistics (SFL) perceives language as a system which contains choices. According to the purpose of the communication and interpersonal interaction, we choose the appropriate linguistic devices from this system to create meaning [1: 1-2]. SFL is an approach focusing on language functions. Every language fulfills three functions simultaneously to construct meaning: the ideational function representing our experience of the world; the interpersonal function representing our interactions with other people; and the textual function representing the linear arrangement of ideational and interpersonal meanings into a coherent whole [2]. Halliday [3] argues that as children move from home literacy to academic literacy at school, they are “learning language,” “learning through language” and “learning about language” by improving their knowledge building resources.

SFL 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 [4] and also instruction in SFL metalanguage supports students in deconstructing and constructing disciplinary texts in ways that enables literacy development [5]. Researchers working with SFL have tried to determine the lexico-grammatical features of the language of schooling [6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16]. One such feature of the language of schooling is grammatical metaphor.

1.1. Grammatical Metaphor: Nominalization

Grammatical metaphor (GM) may be broadly described as “a remapping of the semantics on to the lexicogrammar” [17: 194]. Lexico-grammatical constructions represent the patterns and wording in a language. There are congruent as well as metaphorical constructions in the language system. Congruently, nouns express things, verbs express processes, adjectives express qualities, and conjunctions provide logical links. In a metaphorical construction, on the other hand, a remapping of these grammatical categories takes place. The following examples show how meaning can be expressed congruently and metaphorically:

\[
\begin{align*}
(1a) \quad & \text{She announced that she was accepting.} \\
(1b) \quad & \text{The announcement of her acceptance} \\
\end{align*}
\]

Example (1a) reflects a congruent construction, whereas in example (1b) verbs (announce, accept) are nominalized and by removing the Mood, the proposition is made unarguable. This creates a powerful rhetorical effect in persuasive discourse. Moreover, in the metaphorical construction the clause is downranked to a noun
group, that is, a noun phrase, and the actor is deleted by replacing the verb with the nominal process “the announcement”. In this case it is not known who made the announcement whether she or someone else. In other words, we structure our academic discourse by means of GM to be able to carry the argument forward, to taxonomize and classify, to pack a great deal of information economically, as well as to construct an objective point of view [18].

GM is a "variation in the expression of a given meaning" [2: 342] construing knowledge in school. GM plays a central part in the construction of meaning. GM, in particular nominalization, is a lexico-grammatical process in which verbs, adjectives, relators and prepositional phrases are encoded as nouns. Nominalization has been known as "the single most powerful resource for creating grammatical metaphor” [19: 657]. By nominalizing a process, we are able to pack a lot of information into a nominal group with the use of modifiers and qualifiers. In nominalization, “any element or group of elements is made to function as a nominal group in the clause” [2: 41]. Thus the nominalization can occupy different positions in the sentence; for instance it can function as a subject or complement. Nominalization, i.e. reconstrual of meaning, represents a landmark in the language development of children and enables them to meet the literacy demands of formal schooling and provides access to school knowledge.

Studies related to grammatical metaphor have grown rapidly in number since the introduction of the concept by [20]. Previous research on GM [18, 19, 20, 21, 22, 23, 24, 25, 26] was mainly on English. Banks [22] focuses on the use of GM and its development in the history of science. Taverniers [26] research explores GM in comparison to lexical metaphor on semantic variation. GM has been examined as a feature in early childhood [27, 28, 29] as the language of schooling [8, 9, 30] and as an adult language [23]. In contrast to numerous studies in English, it is rare to find studies on GM in other languages [31, 32, 33] or contrastive studies of grammatical metaphor [34, 35, 36, 37, 38, 39, 40]. Steiner [34, 35, 36] compared German and English texts, and argued that translated text tends to demetaphorize metaphorical structures. In Educational linguistics SFL-based studies examined changes in students’ academic literacy development [5, 41]) and also SFL-based approach to academic literacy instruction [42]. The findings of these studies found that the SFL metalanguage provided students and educators support in deconstruction and constructing academic language.

1.2. 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 [43].

(2) kullanılan - 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 [44: 413].
(3) [Türkçe öğren-mek] zor.

[Learning Turkish] is difficult.

(4) [Sigarayı bırak-ma]-nun faydasını ilk günlerde görmeyebilirsin.

* You may not experience the benefit of [giving up smoking] in the first few days.

[44: 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.

[44: 374]

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

(6) [Bu ürünün elde yık-anması] tavsiye edilir.

* It is recommended [that this product be washed by hand].

[44: 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 [45, 46, 47, 48, 49] are limited, although there is a large body of descriptive studies on nominalization in Turkish [e.g. 43, 44, 50, 51, 52, 53, 54, 55, 56, 57, 58]

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 teacher experience and gender?

2. Method

2.1. 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 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

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>4</td>
<td>39.50</td>
<td>35.50</td>
<td>11.210</td>
<td>31.000</td>
<td>56.000</td>
</tr>
<tr>
<td>F</td>
<td>4</td>
<td>33.50</td>
<td>31.50</td>
<td>8.1854</td>
<td>26.000</td>
<td>45.000</td>
</tr>
<tr>
<td>M+F</td>
<td>8</td>
<td>36.50</td>
<td>34.00</td>
<td>9.636</td>
<td>26.000</td>
<td>56.000</td>
</tr>
</tbody>
</table>

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).

2.2. 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.
Table 2: Demographic characteristics of participants (n=8) regarding experience

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>4</td>
<td>15.75</td>
<td>13.000</td>
<td>9.912</td>
<td>7.000</td>
<td>30.000</td>
</tr>
<tr>
<td>F</td>
<td>4</td>
<td>9.75</td>
<td>9.500</td>
<td>7.455</td>
<td>1.000</td>
<td>19.000</td>
</tr>
<tr>
<td>M+F</td>
<td>8</td>
<td>12.75</td>
<td>12.000</td>
<td>8.731</td>
<td>1.000</td>
<td>30.000</td>
</tr>
</tbody>
</table>

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 teachers’ gender and experience. The variable “age” is not included in the study because of the correlation with the variable “experience”. Age and experience in teachers tend to go together, and teachers tend to gain experience in accordance with their age. The dependent variable in the research is grammatical metaphor, particularly 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.

2.3. 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.

2.4. 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 scripts.

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. 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. [59, 60]. In line with Rowe [60], the unit of transcription was an 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.

3. Results

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

3.1. Total Number of Nominalization

Through data analysis, we attempted to identify differences between the total number of nominalization based upon the variables of teacher experience and gender. Figure 1 gives the raw numbers of nominalization use of teachers and students.
Figure 1 illustrates that experienced teachers used more nominalizations in their classes. In accordance with the higher number of nominalization use in the classes of experienced teachers, the students of these experienced teachers also employed more nominalizations in teacher-student interaction. Similarly, female teachers and their students produced slightly more nominalizations than male teachers and their students. Table 3 gives the descriptive statistics of nominalization use of teachers and Table 4 shows the descriptive statistics of students.

Table 3: Descriptive statistics of teachers' use of nominalization

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>p value Asymp. (2-tailed)</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>13,000</td>
<td>34,000</td>
<td>-1,845</td>
<td>,065</td>
<td>,073b</td>
</tr>
<tr>
<td>Gender</td>
<td>22,000</td>
<td>58,000</td>
<td>-1,051</td>
<td>,293</td>
<td>,328b</td>
</tr>
</tbody>
</table>

Table 4: Descriptive statistics of students' use of nominalization

<table>
<thead>
<tr>
<th>Student Nominalization</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>p value Asymp. (2-tailed)</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>16,000</td>
<td>37,000</td>
<td>-1,522</td>
<td>,128</td>
<td>,147a</td>
</tr>
<tr>
<td>Gender</td>
<td>29,000</td>
<td>65,000</td>
<td>-316</td>
<td>,752</td>
<td>,798b</td>
</tr>
</tbody>
</table>

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 teacher experience and gender.
3.2. Nominalization Types

Another purpose of this study was to examine the nominalization types used in the classroom discourse. In this respect this study tried to determine whether years of teaching experience had an effect on teachers’ use of nominalization types. The analysis of classroom interactions based on teacher experience revealed the following results.

3.2.1. Teachers’ experience

![Figure 2: Raw numbers of nominalizations regarding teacher experience](image)

According to the analysis of the use of nominalization types in terms of experience, both less experienced and experienced teachers used all types of nominalized structures in their teacher talk. The most frequent types of nominalization used in class 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 nominalizations employed by students.

Table 5 illustrates that no statistically significant differences ($p > .05$) have been found on the types of nominalization used by teachers in terms of experience. As for the scores of their students, as seen in Table 6, there was a significant difference in students’ use of the -mAK structure ($p = .021 < .05$). However, no significant differences ($p > .05$) have been observed in the other types of nominalization.

3.3. Teacher Gender

An analysis was conducted separately for both male and female teachers to examine if male and female teachers’ use of nominalization types differed.
Table 5: Descriptive statistics of teachers’ use of nominalization types in terms of experience

<table>
<thead>
<tr>
<th>Nominalization Types</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>p value</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>-mA</td>
<td>19,000</td>
<td>40,000</td>
<td>-1,200</td>
<td>.230</td>
<td>.263b</td>
</tr>
<tr>
<td>-mAK</td>
<td>15,000</td>
<td>36,000</td>
<td>-1,633</td>
<td>.102</td>
<td>.118b</td>
</tr>
<tr>
<td>-DIK</td>
<td>12,500</td>
<td>33,500</td>
<td>-1,912</td>
<td>.056</td>
<td>.056b</td>
</tr>
<tr>
<td>-AcAK</td>
<td>28,000</td>
<td>49,000</td>
<td>-2,299</td>
<td>.819</td>
<td>.875b</td>
</tr>
<tr>
<td>-Iş</td>
<td>27,000</td>
<td>48,000</td>
<td>-1,775</td>
<td>.439</td>
<td>.792b</td>
</tr>
<tr>
<td>-ol</td>
<td>22,000</td>
<td>77,000</td>
<td>-904</td>
<td>.366</td>
<td>.428b</td>
</tr>
<tr>
<td>Passive nominalization</td>
<td>25,000</td>
<td>46,000</td>
<td>-1,713</td>
<td>.476</td>
<td>.635b</td>
</tr>
</tbody>
</table>

Table 6: Descriptive statistics of students’ use of nominalization types in terms of experience

<table>
<thead>
<tr>
<th>Nominalization Types</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>p value</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>-mA</td>
<td>24,500</td>
<td>45,500</td>
<td>-1,604</td>
<td>.546</td>
<td>.562b</td>
</tr>
<tr>
<td>-DIK</td>
<td>29,500</td>
<td>84,500</td>
<td>-1,057</td>
<td>.955</td>
<td>.958b</td>
</tr>
<tr>
<td>-AcAK</td>
<td>29,000</td>
<td>50,000</td>
<td>-1,32</td>
<td>.895</td>
<td>.958b</td>
</tr>
<tr>
<td>-Iş</td>
<td>24,000</td>
<td>45,000</td>
<td>-1,131</td>
<td>.258</td>
<td>.562b</td>
</tr>
<tr>
<td>-ol</td>
<td>22,000</td>
<td>43,000</td>
<td>-1,002</td>
<td>.316</td>
<td>.428b</td>
</tr>
<tr>
<td>Passive nominalization</td>
<td>27,000</td>
<td>48,000</td>
<td>-1,713</td>
<td>.476</td>
<td>.792b</td>
</tr>
</tbody>
</table>

As seen in Figure 3, the analysis demonstrated that as in experience also in terms of gender the most frequent types of nominalization used in class were -mA, -mA and -DIK. Table 7 illustrates the descriptive statistics of nominalization types used by teachers and Table 8 shows the descriptive statistics of nominalizations employed by their students.

As shown in Table 7, significant differences have been found on the use of -AcAK (p = .015 < .05) and passive nominalization (p = .027 < .05). While male teachers used more passive nominalization, female teachers preferred the -AcAK structure more than their counterparts. No statistically significant differences (p > .05) have been observed on the other types of nominalization. Similarly, as illustrated in Table 8, there was no significant difference (p > .05) in students’ scores on the types of nominalization.
Figure 3: Raw numbers of nominalizations regarding teacher gender

Table 7: Descriptive statistics of teachers’ use of nominalization types in terms of gender

<table>
<thead>
<tr>
<th>Nominalization Types</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>p value</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>-mAK</td>
<td>18,000</td>
<td>54,000</td>
<td>-1,479</td>
<td>.139</td>
<td>.161^b</td>
</tr>
<tr>
<td>-mA</td>
<td>31,500</td>
<td>67,500</td>
<td>-0.53</td>
<td>.958</td>
<td>.959^b</td>
</tr>
<tr>
<td>-DIK</td>
<td>24,000</td>
<td>60,000</td>
<td>-0.846</td>
<td>.397</td>
<td>.442^b</td>
</tr>
<tr>
<td>-AcAK</td>
<td>10,000</td>
<td>46,000</td>
<td>-2.443</td>
<td>.015</td>
<td>.021^b</td>
</tr>
<tr>
<td>-Iş</td>
<td>28,000</td>
<td>64,000</td>
<td>-1.000</td>
<td>.317</td>
<td>.721^b</td>
</tr>
<tr>
<td>-ol</td>
<td>24,000</td>
<td>60,000</td>
<td>-0.875</td>
<td>.382</td>
<td>.442^b</td>
</tr>
<tr>
<td>Passive nominalization</td>
<td>16,000</td>
<td>52,000</td>
<td>-2.210</td>
<td>.027</td>
<td>.105^b</td>
</tr>
</tbody>
</table>

Table 8: Descriptive statistics of students’ use of nominalization types in terms of gender

<table>
<thead>
<tr>
<th>Nominalization Types</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>p value</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>-mAK</td>
<td>25,000</td>
<td>61,000</td>
<td>-0.742</td>
<td>.458</td>
<td>.505^b</td>
</tr>
<tr>
<td>-mA</td>
<td>20,500</td>
<td>56,500</td>
<td>-1.223</td>
<td>.221</td>
<td>.234^b</td>
</tr>
<tr>
<td>-DIK</td>
<td>17,000</td>
<td>53,000</td>
<td>-1.651</td>
<td>.099</td>
<td>.130^b</td>
</tr>
<tr>
<td>-AcAK</td>
<td>28,000</td>
<td>64,000</td>
<td>-0.513</td>
<td>.608</td>
<td>.721^b</td>
</tr>
<tr>
<td>-Iş</td>
<td>31,500</td>
<td>67,500</td>
<td>-0.91</td>
<td>.927</td>
<td>.959^b</td>
</tr>
<tr>
<td>-ol</td>
<td>29,500</td>
<td>65,500</td>
<td>-0.303</td>
<td>.762</td>
<td>.798^b</td>
</tr>
<tr>
<td>Passive nominalization</td>
<td>28,000</td>
<td>64,000</td>
<td>-1.000</td>
<td>.317</td>
<td>.721^b</td>
</tr>
</tbody>
</table>
4. Discussion and Conclusions

This study aimed to examine knowledge building in Turkish classes and 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 experienced teachers used more nominalization structures during instruction. The students of these experienced teachers also employed more nominalizations in class. A slight difference in the use of nominalization was also observed between female and male teachers. Female teachers and their students used a little more nominalization structures in the classroom. However, the differences between teachers in terms of experience and gender were statistically not significant. Although, statistically not significant, the findings revealed the efforts of experienced teachers to provide appropriate resources for construing knowledge through nominalization. An important factor in children's achievement in literacy is the exposure to academic language they experience in class. Thus, experienced teachers systematically matched particular instruction to the needs of students. In this respect, the findings on raw numbers may suggest that in classrooms where academic language features were observed, students also engaged with academic content. In other words, there is some evidence that productive classroom discourse positively affects students’ knowledge building. The results showed that as experienced teachers introduced academic language structures like grammatical metaphor in their classroom discourse, students’ utterances on the academic language increased.

According to the findings of the use of nominalization types, except -AcaK and passive nominalization structures, no statistically significant differences have been found on the types of nominalization used by teachers in terms of experience and gender. However, 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. 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 understanding 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 [18, 19, 21, 28]. 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 [61]. 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" [62: 248]. As a result, instruction in SFL metalanguage may provide students with important tools for deconstructing and constructing academic texts [5, ].

4.1 Limitations

There are some limitations to this study. First, this study was limited in that sample size (n=8) was small. However, although the sample size was small, this study contains rich observational data. In this study the use of grammatical metaphor in the form of nominalization structures of eight teachers and their students were analyzed during 21.3 hours of video-recorded classroom sessions, which actually amasses to analyzing very large samples of classroom discourse during the total of 16 video-recorded sessions. Also, as Wood and Kroger [63: 80] argues, “the focus of discourse analysis is language use rather than language users, the critical issue concerns the size of the sample of discourse (rather than the number of people) to be analyzed”. Another limitation was that this study examined only syntactical nominalization structures. Lexical nominalizations or other forms of grammatical metaphor were not analyzed. Moreover, this study was implemented only in Turkish lessons in the 6th and 7th grades and was a single-group based experimental study.

4.2 Recommendations for Further Research

This study contains valuable insights into the classroom discourse and teacher talk influences on knowledge building. 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. Future multidisciplinary and as well as longitudinal studies are needed to investigate other features of classroom discourse, in particular teacher talk, and its effects on students’ achievement. A longitudinal SFL-based instruction research could be applied in different disciplines in Turkey to observe its effects on students’ literacy practices. The findings of longitudinal SFL-based instruction studies in other countries found that the SFL metalanguage provided students and educators support in deconstruction and constructing academic language and improved students’ academic achievements [4, 5, 9, 15, 64, 65]. Thus, 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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