



Everyday and academic language comprehension: Investigating their relationships with school success and challenges for language minority learners



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ABSTRACT

The present study addresses two core assumptions on the concept of *academic language*. We investigated first, whether academic language comprehension is more closely related to academic achievement than everyday language comprehension and second, whether language minority learners are particularly disadvantaged in the comprehension of academic language. Based on data from a nation-wide reading comprehension assessment conducted in German elementary schools in grade 4 ($N = 22,015$), we found that comprehending academic language was more highly correlated with mathematical achievement than comprehending everyday language. While students with a Turkish language background were disadvantaged in their comprehension of both everyday and academic language, students with other home languages only lagged behind their monolingual German peers in their academic language comprehension. After controlling for sociocultural resources, group-specific performance differences in comprehending both everyday and academic language disappeared.

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1. Introduction

The concept of academic language has received increasing attention in educational research and practice in recent years. Over the course of this development, a variety of programs (e.g., FörMig [Language Support for Children and Youths with an Immigrant Background]; Gogolin et al., 2011; Word Generation; Snow, Lawrence, & White, 2009) were launched both in the United States and in Germany to improve students' academic language skills. The perceived need to foster academic language is based on two central assumptions on the concept: First, the mastery of academic language is considered to be crucial for school success (e.g., Bailey, Butler, Stevens, & Lord, 2007; Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006; Schleppegrell, 2004). Second, several researchers assume that gaining academic language proficiency is especially challenging for immigrant students (e.g., Bailey, Butler, LaFramenta, & Ong, 2004; Gogolin & Lange, 2011). Even if language minority learners effortlessly participate in everyday interactions in the language spoken in their country of residence, they may struggle with the specific language demands of school text books and classroom discourse (e.g., Bailey et al., 2004). Thus, the achievement gap between immigrant students and native students, which has repeatedly been documented across countries, subjects, and grade

levels (e.g., Haag, Böhme, & Stanat, 2012; OECD, 2004, 2006; Tarelli, Schwippert, & Stubbe, 2012), might at least partly result from immigrant students' limited academic language skills. Educational research in Germany has additionally shown that students with a Turkish immigrant background are in an especially disadvantaged position regarding their sociocultural resources and their academic achievement (e.g., Kristen et al., 2011). Fostering students' academic language proficiency – not only, but particularly in language minority students – is therefore strongly encouraged from a theoretical and practical stance. In order to legitimate these efforts, empirical evidence on the importance of academic language proficiency for students' academic achievement seems valuable. However, empirical studies investigating the core assumptions on academic language are scarce (Eckhardt, 2008; Heppt, Stanat, Dragon, Berendes, & Weinert, 2014; Townsend, Filippini, Collins, & Biancarosa, 2012).

1.1. The concept of academic language

Academic language can be conceived of as “the specialized language, both oral and written, of academic settings that facilitates communication and thinking about disciplinary content” (Nagy & Townsend, 2012, p. 92). Whereas social or everyday language is often characterized as conceptually oral language, including a more dialogic structure, a more involved and personal point of view, and shorter sentences (Bailey & Heritage, 2008; Snow, 2010; Snow & Uccelli, 2009), academic language more closely resembles written language. The two language

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registers differ from each other in several ways, most noticeably with regard to textual, lexical, and morpho-syntactical aspects (Bailey & Butler, 2003; Bailey et al., 2007; Cummins, 2000; Nagy & Townsend, 2012; Schleppegrell, 2004). But despite the assumed differences between everyday language and academic language, defining a clear-cut boundary between the two language registers is not possible (Berendes, Dragon, Weinert, Heppt, & Stanat, 2013; Snow, 2010). They are instead considered as the two endpoints of a continuum.

At the textual level, both spoken (e.g., discussions and argumentations) and written academic discourse (e.g., expository texts) are more information-dense and concise (Snow, 2010) than colloquial speech and typically follow an argumentative structure (Snow, 2010). These textual characteristics are based on various lexical and morpho-syntactical features. Typical lexical features of academic language are, amongst others, general and specialized academic words (e.g., Bailey et al., 2007), which are often abstract and polysemous. Whereas general academic vocabulary is used across school subjects (e.g., *explain*, *statement*), specialized academic vocabulary primarily pertains to one particular discipline (e.g., *adjective*, *denominator*). Math-specific academic vocabulary, for instance, does not only include technical terms such as *fraction* or *equation* but also words that occur in informal settings, but have different meanings in mathematics, such as *product* or *line* (Schleppegrell, 2007). Morpho-syntactical features that tend to occur more frequently in academic language than in everyday language are, amongst others, verb forms in passive voice, subordinate clauses, including embedded clause structures, and long noun phrases (e.g., Bailey et al., 2007; for an overview of features, see Berendes et al., 2013).

1.2. The role of academic language proficiency for school success

Only few empirical studies have addressed the assumption that proficiency in academic language is closely intertwined with achievement in content subjects. Kotzerke, Röhricht, Weinert, and Ebert (2013), for example, investigated the relationship between listening comprehension of academic language and indicators of academic achievement of German elementary students in grade 2. They found moderate significant correlations between listening comprehension of academic language and students' grades in the German language, mathematics, and science. As measures of more basic language skills (e.g., general vocabulary knowledge) were not included in the study, however, no conclusions can be drawn as to whether academic language skills are indeed more closely associated with measures of school success than everyday language skills.

Townsend et al. (2012) examined if academic word knowledge of middle school students in grades 7 and 8 incrementally explains variance in academic achievement (i.e., reading comprehension, math, social studies, and sciences) when controlling for general vocabulary knowledge. The additional variance explained by students' academic word knowledge was small, as expected, but significant, ranging from 2% for social studies and sciences, and 7% for reading comprehension.

In a recent study, Uccelli, Galloway, Barr, Meneses, and Dobbs (2015) used a set of *Core Academic Language Skills* (CALS; Uccelli, Barr, et al., 2015) to predict students' reading comprehension in grades 4 through 6. Hierarchical multiple regression analyses showed that CALS significantly contributed to students' reading comprehension, even after controlling for academic vocabulary, which obviously does not form part of CALS in this conceptualization, word reading fluency and a number of sociodemographic background variables.

The results by Townsend et al. (2012) and Uccelli, Galloway, et al. (2015) thus suggest that academic language skills may contribute to academic achievement independently from more general language skills. Given this very small body of research, however, our understanding of the particular role of academic language for achievement in different grades and different school subjects is still very limited.

1.3. Empirical evidence for challenges of academic language

A number of studies investigated whether academic language demands are associated with larger comprehension difficulties for language minority learners than for native speakers. Most of these studies examined academic language complexity of test items as a source of construct-irrelevant variance for language minority students in content assessments and typically employed methods of *differential item functioning* (DIF; Osterlind & Everson, 2009). Items with substantial DIF values are more difficult for language minority learners than for native speakers even when mean group differences in performance are controlled. It is assumed that these items not only capture the construct of interest (e.g., mathematical achievement) but also other competences (e.g., language skills). This line of research established a firm relationship between linguistic item complexity and students' test performance. Yet, most studies found that only few items exhibited DIF against language minority learners and were thus disproportionately more difficult for this group of students than for native speakers (Abedi, Leon, Wolf, & Farnsworth, 2008; Haag, Heppt, Stanat, Kuhl, & Pant, 2013; Heppt, Haag, Böhme, & Stanat, 2015). This suggests that, overall, language minority learners are not unduly hampered by test items applied in large-scale assessment studies. However, the DIF that was present in the data was positively associated with academic language features, such as the number of general academic language words (Abedi et al., 2008; Haag et al., 2013) or average sentence length (Heppt et al., 2015).

Another line of research compared language minority students and native speakers in their comprehension of texts that either use the register of everyday language or the register of academic language. By and large, these studies did not find evidence for the assumed interaction effect between language status (native vs. minority) and language demands (academic vs. everyday).

Eckhardt (2008), for example, adapted school book texts so that they differed systematically in their lexical and grammatical academic language features. These texts and the comprehension items were orally presented in German elementary schools in grade 4. The author found that language minority students performed below native students regardless of the linguistic complexity of the texts and that high academic language demands impeded listening comprehension of both groups. A significant interaction between academic language demands and students' language background did not emerge.

To eliminate effects due to disparities in prior knowledge, Heppt et al. (2014) used short fictional texts that included made-up words for assessing effects of academic vocabulary and grammar on elementary school students' listening comprehension in grades 2 and 3. Similar to Eckhardt's (2008) results, not only language minority students but also German native speakers obtained poorer results when processing academic language with no disproportionate disadvantages for language minority learners.

It is important to note that these studies did not differentiate between language minority students from different countries. Yet, there is substantive evidence that the achievement gap between native speakers and language minority learners varies considerably across immigrant groups in many countries, including Germany. Immigrant students of Turkish origin are particularly disadvantaged in their achievement in mathematics, reading comprehension, and listening comprehension (Haag et al., 2012; Müller & Stanat, 2006; Segeritz, Walter, & Stanat, 2010; Stanat, Rauch, & Segeritz, 2010) in the German school system. Considering that they additionally form the largest group of immigrant students in Germany (Statistisches Bundesamt, 2014), investigating their learning prerequisites is of particular importance for education research in Germany. Therefore, the present study specifically focuses on students with Turkish language background and their mastery of academic language.

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