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Multilingual awareness-raising as a pedagogical tool in the initial stage of L3 teaching

The paper examines the effects of multilingual awareness-raising training on L3 writing performance. A set of writing samples retrieved from October to January 2020/21 from two groups of Hungarian students (N=29, respectively) with L2 English and L3 German was analysed. In the intervention group, special attention was paid to raising multilingual awareness, sensitisation towards cross-linguistic similarities and differences between English and German, while the control group received the most widely used L3 teaching method based on Hungarian. It was found that the intervention group produced longer, grammatically more accurate, meaningful texts employing a more diverse and complex vocabulary. It is concluded that applying multilingual awareness-raising would represent a favourable teaching approach in teaching German as L3 in Hungary.

Keywords: German as L3, multilingual awareness-raising, dynamic systems approach, dynamic model of multilingualism, writing assessment

Foreign language education in Hungary: language policy vs. reality

The language policy of the European Union enlists promoting language knowledge, preservation, and protection of linguistic diversity among its main priorities. Goals for citizens of the European Union encompass the knowledge of at least two languages apart from their L1 (Eurobarometer, 2012: 2). In Hungary, the official language is Hungarian and is used by 99% of the population, while the most frequently taught foreign languages in the instructional setting are English and German (Eurobarometer, 2012: 10, 21). Both foreign languages are regarded as the most advantageous considering the learners' personal development and their future perspectives, whereby foreign language knowledge contributes to better employment chances (Eurobarometer, 2012: 100). The Hungarian Ministry for Human Resources issued the *White Paper on the National Strategy for the Development of Foreign Language Teaching from Kindergarten to University* (EMMI, 2012), which is intended as a guideline to raise awareness of the problems in foreign language education and provides directives to tackle these problems. The document confirmed that Hungary was in last place among the European Union's member states regarding foreign language knowledge.

In alignment with the European language policy, the *Hungarian Core Curriculum* emphasizes the development of cross-cultural and cross-linguistic perspectives in institutional contexts by highlighting the key role of teachers in the process of building upon their students' existing language knowledge and making language learners aware of the similarities between the taught foreign languages, thus contributing to the successful learning of foreign languages (5/2020 Kormányrendelet, 2020: 314). The most commonly taught foreign languages in Hungary, English and German, are both languages of Germanic origin, whereas Hungarian belongs to the Finno-Ugric language family. Numerous studies report on the rate of mutual intelligibility between languages within the same language family (Golubović, 2016; Gooskens et al., 2015; 2018; Swarte, 2016; Heuven et al., 2015). Although the rate of mutual intelligibility between languages that do not belong to the same language family has not been researched, the assumption is that the mutual intelligibility between German and English, though relatively low (Heuven et al., 2015) is still higher than the mutual intelligibility between German and Hungarian, since they are unrelated considering their origin. Therefore, it can be assumed that referring to students' knowledge of English as their second language (henceforth L2) would represent a useful asset during the teaching process of German as a third language (henceforth L3).

According to research conducted in 1998, 5.6% of foreign language teachers in Hungary were qualified to teach two Western languages (Imre, 1998) and are, therefore, proficient and trained enough to exploit the pedagogical benefits stemming from the similarities of these Germanic languages in L3 teaching. Although more students are graduating as teachers of two foreign languages in different teacher education programmes, Gutiérrez (2017) highlights the lack of differentiation between L2 and L3 teaching in current teacher education programmes (Gutiérrez, 2017). Therefore, the teaching practice implied by the Hungarian National Core Curriculum is overshadowed by the reality of the L3 classroom where, even though the students already possess prior knowledge of a Germanic language, English or German as L3 are taught in reference to the learners' L1 Hungarian. In addition to the lack of differentiation between L2 and L3 teaching in Hungary, the *integrated didactic approach* (Candelier et al., 2012) that emphasizes the key role of establishing links between the L3 and the language(s) the students already know (Gutiérrez, 2017: 35-38) has not been widely applied in Hungary. According to the integrated didactic approach, L1 should serve as a stepping stone in L2 learning, and learning a second foreign language should be based on the knowledge of both L1 and L2. Although pluralistic approaches that emphasize the inclusion of various languages and cultures into the teaching process (Candelier et al., 2012: 6; Jessner, 2006; Jessner et al., 2016) have been established and researched in the last thirty years, the Hungarian L3 classroom is still the playground of traditional L2 pedagogy,

including grammar-translation or various communicative approaches highlighting the extensive use of the target language (Gutiérrez, 2017: 35-38). To aid the development of multilingual learners as well as increase the level of the students' multilingual awareness, the multilingual teacher should not only obtain general training in second language acquisition (henceforth SLA) but should have specialized knowledge of L3 teaching and its methodology, complemented by linguistic knowledge of other typologically related languages (preferably in alignment with students' foreign language knowledge), and their own language learning experience (Gutiérrez, 2014: 82; Jessner, 2008b).

Although the beneficial effects of building on the students' prior language knowledge have been widely researched on an international level (Allgäuer-Hackl, 2017; Allgäuer-Hackl et al., 2021; Hofer, 2015; Hufeisen, 1998, 2011; James, 1996; Jessner, 2006, 2008b; Kemp, 2007; Traxl 2015), there is still a scarcity of publications investigating multilingual awareness-training as a method in the Hungarian context. The current paper intends to fill this void by drawing attention to multilingual awareness-raising through sensitisation towards cognates as well as similar structures between L2 English and L3 German as an effective L3 teaching method.

Theoretical framework

Several third language acquisition theories have been developed in the field of multilingualism research, e.g., the *Multilingual Processing Model* (Meißner, 2002) or the *Factor Model* (Hufeisen, 2010, 2020), that highlight the qualitative differences between L2 and L3 learning. The Multilingual Processing Model is concerned with how absolute beginners decode an unknown language. The Factor Model asserts that in the case of learning an L3, the linguistic factors are extended from the L1 over the L2 – which functions as a bridge language – to the L3 (Hufeisen, 1991), and foreign language-specific factors come into play since the learner possesses individual foreign language learning experiences and strategies (Hufeisen & Gibson, 2003) gained through L2 learning.

The *Dynamic Model of Multilingualism* (henceforth DMM) (Herdina & Jessner, 2002) gives detailed insight into the emergence of the specific skills and competences that generate qualitative changes in the multilingual system. The term M(ultilingualism) factor covers these competencies and skills. The M factor emerges through the constant interaction of multiple languages in the multilingual mind. It comprises metalinguistic awareness (henceforth MLA) (the ability to focus on the linguistic form and to manipulate language systems) and cross-linguistic awareness (henceforth XLA) (explicit awareness of the similarities and differences between the involved language systems). These competences enable the learner to exploit their prior language knowledge while learning an additional language (Jessner, 2006, 2008a). MLA and XLA construct the core elements of

multilingual awareness that is argued to act as a catalyst in multilingual learning processes (Jessner, 2006; Jessner et al., 2016).

The models mentioned in this section highlight the complexity of L3/Ln acquisition and learning that differs qualitatively from acquiring an L2. We argue that these differences should purposely be addressed in the language classroom, and the teaching material should aid the interaction between the languages, as well as developing multilingual awareness as one of the cognitive factors of language learning.

The role of cross-linguistic similarities in foreign language acquisition

As stated in the previous section, integrating various languages, especially those the students are already familiar with, into foreign language teaching has been widely disregarded in Hungary. The following section highlights the benefits of exploiting cross-linguistic similarities, particularly the facilitating effects of cognate words and structural similarities in language learning. The impact of cross-linguistic similarities has been discussed in the literature for several decades (Gibson & Hufeisen, 2003; Singleton & Aronin, 2007; Singleton & Little, 1984). Cross-linguistic similarities (i.e., the existence of common lexical and structural patterns between the languages) are most obviously observed based on formally identical or similar items. Formal similarities include similarities in the written or spoken form of the words (Ringbom, 2007a: 58). Ringbom (2007a: 75-76) argues that in a written context, formal similarities are recognised first, and the realization of these similarities facilitate comprehension, especially in the early stages of language learning. Similarities in the spoken form are more difficult to recognise since not all speech elements are precisely identified in listening, but they still have a facilitative effect on comprehension (Ringbom 2007a: 58).

Formal similarities may be functional or semantic, considering the item's use or meaning. To demonstrate the overlap of formal, functional, and semantic similarities, an example is provided through the German verb *haben*, which has formal similarities with the English counterpart *have*, as both words begin with the same letters. As a main verb, they carry the meaning *to possess something* in both languages; thus, formal similarities between the two words are accompanied by semantic similarities as well. Since both words belong to the group of verbs, they have the same function in a sentence. Both can be used as auxiliaries in structures together with the *Partizip Perfekt* form of the main verb in a German sentence, the third form of the verb, which is functionally identical to the *Past Participle* form of the verb in English. Functional similarities also exist between these two words, whether used as main or auxiliary verbs.

Cross-linguistic similarities are argued to be present even across boundaries of different language families (Otwinowska, 2015: 59) and are characterized by the degree of congruence (i.e., the similarity of the functions of grammatical

categories) between the involved languages (Jarvis & Pavlenko, 2007; Ringbom 2007a: 8). Several studies concerned with the effect of cross-linguistic similarities in foreign language learning (Gibson & Hufeisen, 2003; Singleton & Aronin, 2007; Singleton & Little, 1984) confirm that in the process of making sense of an unfamiliar text, the learners rely on facilitating similarities between the languages.

Research on the classroom implications of cognate strategy (Dressler et al., 2011) and cognate instruction (Garcia et al., 2020; Otwinowska-Kasztelanic, 2009; White & Horst, 2020) report on the facilitating effects of exploiting lexical similarities between the involved languages. Although the facilitating role of cognate words in foreign language acquisition has been long recognised (Lado, 1957; Weinreich, 1953), the research on cognate awareness is a recent topic. Students' awareness of cognate vocabulary contributes enormously to exploiting the facilitating effect of language similarities in language learning (Ringbom, 1987, 2007a; Singleton, 2006; Singleton & Aronin, 2007). Studies assert that a language related to the target language would provide more accurate help than an unrelated language. Supporting this common-sense view, Ringbom (2007a) highlights that although the majority of research focuses on cross-linguistic similarities in vocabulary when trying to make sense of unfamiliar texts, parallel structures of grammar also play a prominent role for the learners (Ringbom, 2007a: 11). Ringbom (2007b) asserts that in the process of teaching a language that is unrelated to the students' L1, e.g., teaching English to Finnish students, time needs to be devoted for specific guidance in terms of accuracy (i.e., the knowledge of grammar) to understand the structure of the target language.

Considering the role of linguistic awareness in multilinguals, Jessner (2006) claims that cognates play a crucial role in searching for cross-linguistic equivalents in language production tasks. The awareness of target language forms and rules, along with the similarities of the languages, represent a fundamental element of multilingual awareness that enables the students to avoid linguistic interference while exploiting positive transfer (Jessner, 2006: 84-113).

Based on existing research concerning the role of cross-linguistic similarities in language teaching, it can be concluded that time and effort dedicated to understanding target language vocabulary and structure can and – taking the overall workload of Hungarian secondary school students into consideration – should be reduced and optimised when the teacher builds upon existing knowledge of previously learnt languages in the students' mind, especially, when there are languages available that are related to the target language to a certain extent. Therefore, we argue that (a) cross-linguistic lexical and structural similarities between English and German represent a valuable asset in teaching German as L3 in Hungary, and (b) raising awareness of these similarities in the classroom would lead to more beneficial effects than building on the students' L1 (Hungarian) knowledge.

Previous research on the role of multilingual awareness training

The holistic approach to foreign language teaching advocated by the DMM, which takes all the languages in the multilingual learner's mind into consideration and supports the exploitation of the learners' existing knowledge about other previously acquired languages in the teaching process, has been widely researched in the international literature.

Hofer (2015) reports on heightened levels of metalinguistic abilities and awareness in groups in South Tyrol that were exposed to extensive L2 (German) and L3 (English) input. This study provides evidence on how linguistic and metalinguistic awareness combined with training on MLA facilitate the learning process of additional languages (Jessner et al., 2016: 66). Hofer's first results from her most recent wide-scale study (Allgäuer-Hackl et al. 2021: 31-32) concerning learners in German primary schools in South-Tyrol suggest that specific situational initial conditions affect the development of multilingual competencies. Such initial conditions include the multilingual approach to language teaching. The study demonstrates that the multilingual approach to language teaching benefits the development of language performance in the test group. Other evidence for increased language development after MLA training is presented by Traxl (2015). Her research reports enhanced metalinguistic and L3 performance in primary school groups regularly exposed to multilingual intervention. Allgäuer-Hackl (2017) concludes that multilingual training, even with minimal lessons, contributes enormously to developing multilingual skills and abilities, with significant differences between the participants of the multilingual seminar as a test group and the control group.

The discussed research results provide evidence for the beneficial effects of multilingual training through metalinguistic awareness-raising on language development in foreign language teaching.

Only a small number of studies (Angelovska, 2018; DeAngelis & Jessner, 2012; Kecskés & Papp, 2000) are concerned with the analysis of written performance from the multilingual perspective by taking the interaction of the languages in the multilingual learner's mind into consideration. These studies report primarily on transferring grammatical and lexical elements or individual writing strategies (Cenoz & Gorter, 2011). These studies report on the interconnectedness of the language systems and the mutual influence between the involved languages (L1 on L2, L2 on L3, L1 on L3, and vice versa). DeAngelis & Jessner (2012) provide evidence for the influence of the dynamic interaction of the involved language systems on writing performance. Angelovska (2018) highlights that L3 learners consciously use their knowledge of previously learnt languages in writing tasks. Kecskés and Papp's (2000) investigation on the effects of foreign language learning on the mother tongue through the learners' writing performance is the only study concerned with writing processes in the Hungarian school context from the multilingual perspective. The researchers found evidence

of the facilitating effect the L2 has on the development of the mother tongue after a certain threshold is reached in the L2 (Kecskés & Papp, 2000: 121).

Although, in theory, a cross-linguistic and cross-cultural approach in foreign language teaching has been welcomed in Hungary, its application and its effects have not been researched extensively in the Hungarian school context. The current research is intended to provide evidence of the impacts of multilingual awareness-raising on the writing performance of Hungarian L3 learners. Thus, it supports the application of a multilingual teaching method and intends to facilitate eventual changes in teaching German as L3.

The Project

The project, designed for a group of Hungarian 9th-grade secondary grammar school students in a Hungarian town, incorporated the school year of 2020/2021, focusing on the first year of learning German as L3 with particular attention to the sensitisation of the students toward lexical and structural similarities between their L2 (English) and L3 (German). The teaching plan for the project was designed according to the guidelines of the Hungarian National Core Curriculum (EMMI, 2012: 2133-2138).

Participants

Participants for the intervention and the control group were chosen by convenience sampling. Both the intervention and the control group included 29 9th-grader Hungarian secondary school students, each with similar scholastic competences (as measured by the national competence test in Hungarian, Mathematics, and English) (27/2020 Kormányrendelet, 2020: 5877; 110/2012 Kormányrendelet, 2012: 10652-10653), who started to learn German as L3 after they had learnt English for four consecutive years as L2. The intervention and the control group received the same amount of classroom instruction by participating in three weekly German lessons. The students started to learn English in the 5th grade, with four lessons per week, thus at the beginning of the project, they had achieved level A2 as measured by the nationwide competence test (27/2020 Kormányrendelet, 2020: 5877; 110/2012 Kormányrendelet, 2012: 10682).

The intervention group consisted of 10 male and 19 female students who were taught according to TLA principles that recognize that the acquisition of a third language can be affected by both the L1 and L2, thus raising meta- and cross-linguistic awareness between the students' L2 and L3. The method focused on the sensitisation of the students towards (false) cognates, formal and semantic similarities, as well as similar sentence structures in English and German. The group was taught by a multilingual teacher qualified to teach German and English as foreign languages. The control group consisted of 13 male and 16 female learners who were educated according to the communicative language

teaching (henceforth CLT) approach by referencing the students' L1 (Hungarian) by a Hungarian bilingual teacher qualified to teach German as a foreign language. It has to be noted that in Hungary, the usual teaching method is the CLT approach. The CLT has its roots in the 1970s and still influences approaches to language teaching today. The main tenets of the CLT are that a language can best be learnt by communicating in it and using it to do things rather than studying how a language works (Khaydarova, 2022). The CLT thus relies on the extensive use of the target language and the promotion of the monolingual principle (Widdowson 2003: 26).

Consultation sessions between the teachers of the intervention and control groups were organized weekly during the project to ensure that both groups received the same amount of course material at the same pace. Both groups used the coursebook *Kon-Takt 1* (Maros, 2016), which provided the basis for the teaching material and served as a reference concerning safeguarding the teaching pace, the covered topics, and grammar. Since the intervention and control group participants were not specially selected for this study, but were actual classes, for practical reasons such as weekly schedule and workload distribution at the school, it was not manageable that the same teacher could be assigned to all groups. Therefore, a questionnaire about the classroom setting controlled variables such as teacher personality, classroom atmosphere, teacher goal setting, feedback, instruction, and content (Dörnyei, 2001) (Horváth, 2022: 77-80).

Instructional intervention

The German lessons (3 lessons /week) were planned according to the order in the coursebook, ensuring the same amount of teaching material for both groups. Each chapter in the coursebook consisted of three main parts, vocabulary and topic, communication, and grammar. The vocabulary and topic part covered a range of topics, including Introducing Yourself, Family, Housing, Weather, Countries, Shopping, and Eating Habits. The topics, along with the vocabulary assigned to them, were discussed through various reading and listening comprehension tasks. While the participants in the intervention group covered the words and expressions by referencing their English counterparts, with particular attention to cognate words and false cognates, the control group dealt with the vocabulary concerning the Hungarian counterpart of the words.

During the communication part, participants in the intervention group were encouraged to think of the English counterparts of the expressions they wanted to use, whereas, in the control group, references to the Hungarian counterparts were encouraged. In this phase, instructions in both groups were given mainly in the target language; however, if clarification was needed, explanations were given in the intervention group in English and the control group in Hungarian.

Grammar explanations were provided in English with German-English example pairs in the intervention group, whereas in the control group,

grammatical rules were discussed in Hungarian, along with German-Hungarian examples.

The decision to use Hungarian for explanations in the control group represents the most common situation in Hungarian schools in German as L3 teaching. Practically, it resulted from the fact that the teacher of the control group (as the majority of the EFL teachers in Hungary) (see Imre, 1998) was not qualified enough to reference the German language.

The multilingual awareness intervention

The multilingual awareness intervention part consisted of only five stages in the intervention group. Firstly, during the reading comprehension tasks, special attention was given to the recognition and discussion of German-English cognate words to enable the students to establish one-to-one relationships between English as the students' L2 and the target language, enabling at least an approximate understanding of the particular text (Ringbom, 2007a: 10). The recognition of similarities in the spoken form of the words was aided by the teacher who read out the texts. Reading out the texts provided additional cues in recognising cognates because the sound-letter correspondence of German is different from that of Hungarian or English (e.g., the German word for father is *Vater* and pronounced as /ˈfaːtər/). In this case, reading the German word gives the students an easier recognisable reference to the English counterpart. In the second phase, the students were asked to identify words in the texts that looked or sounded familiar, drawing on their English knowledge. After identifying these words, which were mostly cognate words or false cognates, the meaning of the words was clarified, highlighting false cognates (Ringbom, 2007a: 75-76). During the project, the first two stages described above could be covered mainly during a single classroom session, followed by the third and fourth stages in the following lesson.

In the third stage, students received the same text in their L2 (English) to confirm and analyse the functional or structural equivalents assumed through the perception of formal similarities. This third stage is considered crucial for understanding the linguistic structure of the target language (German) (Ringbom, 2007a: 8-9). The realization of structural equivalents between a previously known and the target language is argued to reduce the effort the student has to put into the learning process (Ringbom, 2007b). The fourth phase focused on raising MLA by discussing structural similarities and grammatical categories to enable the students to think about the linguistic nature of the expressions and sentences (Malakoff, 1992: 518; Jessner, 2006: 70; Ringbom, 2007a: 8-9). The final stage included translation activities from the students' L2 into their L3, based on the vocabulary and structures discussed in the previous stages, to facilitate the recognition and understanding of cross-linguistic similarities.

It has to be noted that the students in both groups have not been trained explicitly for composing texts. The compilation of writing samples as the data collection method was considered due to practical and theoretical issues (see section *Methods of Data Collection*). The intervention method addressed the qualitative differences between SLA and TLA and was based on consciously raising MLA and XLA, which are key factors in catalysing multilingual language learning as advocated by the DMM (Jessner, 2006: 214; Jessner, 2008a: 275).

Writing methodology

Compiling writing samples as a data collection method is underpinned by theoretical and practical reasons. In writing, communication is achieved only through combining words as a result of conscious and deliberate analytical work (Vygotsky, 1962). From the practical perspective, given the longitudinal nature of the research, a data collection method had to be chosen that would interfere with the students' everyday school activities to the least possible extent.

For the purposes of the present study, the variables presented in Appendix 1 were identified, operationalized, and analysed. Several studies justify the use of these variables as measures of linguistic development. Text length, clause length, and lexical variety are argued to represent relevant measures for text construction; thus, higher levels of these variables indicate a higher linguistic level (Berman & Verhoeven., 2002: 29). Lexical diversity, or *richness of vocabulary* (Malvern et al., 2004: 155), along with spelling, word length, word rarity, and text length were investigated in texts constructed by nearly 1000 students at the ages of 7, 11 and 14. Results confirm that lexical diversity validly measures linguistic development (Malvern et al., 2004).

For eliciting lexical diversity, the complex calculation of measurement of textual lexical diversity (henceforth MTLD) was applied in the present research. MTLD is calculated as the mean length of sequential word strings in a text that maintains a given type-token ratio value (McNamara et al., 2011). MTLD is argued to represent accurate measures of lexical variability regardless of text length (McCarthy & Jarvis, 2010: 138).

The present study defines lexical complexity as the variety of basic and sophisticated words (Wolfe-Quintero et al., 1998: 101). It has to be noted that the German language operates with a wide range of compound words, e.g., *Lieblingsname, Lieblingsnummer*. The Goethe Institute (Glaboniat et al., 2016) reported that the examples above belong to the 650 most commonly used words. Accordingly, the current paper asserts that word length is inappropriate for eliciting lexical complexity in German texts. In order to obtain data about the lexical complexity of the texts, the proficiency level of the lemmas was elicited with the help of word lists from the Goethe Institute, which were established in alignment with the *Common European Framework of Reference* (henceforth CEFR) and include the 650 most frequently used words at A1 level (Perlmann-

Balme, 2004), 1300 words at A2 level (Hennemann et al., 2016), and 2400 words at B1 level (Glaboniat et al., 2016). B2 level words were identified by using the B2 level Learner's Dictionary (Hessky & Iker, 2017), which includes 25000 German words. The word lists were assembled according to the frequency of use. The proportion of tokens in a text belonging to certain levels in the subject's corpus is considered an indicator of lexical complexity (Penris & Verspoor, 2017).

Syntactic complexity (i.e., features such as sentence length and clause length) refers to the variety of forms that emerge in language production and the degree of refinement of these forms. Quantification methods for syntactic complexity include the length of the production unit (Ortega, 2003). Penris & Verspoor (2017) use average sentence length as a variable of syntactic complexity, referring to a sentence as a production unit. After the initial analysis of the writing samples, a considerable difference in the number of compound sentences was observable between the intervention and the control group. Therefore, a clause containing a finite verb was considered a production unit; thus, the mean clause length is regarded in the current study as an indicator of syntactic complexity.

The notion of grammatical competence as a component of communicative competence (D'Andrea, 2010; Sauvignon, 1997) is defined as the understanding of the linguistic code, along with the ability to identify and manipulate a language's phonological, morphological, lexical, and syntactic elements. This ability and the acquired knowledge at the various linguistic levels are included in the process of comprehension as well as the production of words and sentences that are appropriate and accurate (compared to the target language norm) (Bagarić, 2007).

Considering grammatical accuracy, lexical errors, spelling errors, verb errors, grammatical errors, mechanical errors, and word order errors (see Appendix 2.) were counted by three teachers of German as a foreign language separately, followed by a discussion session where the exact number of errors was agreed upon. These discussion sessions were aimed at ensuring the objective quantification of the data.

Hypothesis and research questions

Highlighting the facilitative effects of recognising formal and structural similarities and differences between the learners' L2 and L3, it is hypothesized that by raising multilingual awareness and building upon their prior language knowledge, the members of the intervention group would outperform their peers in the control group concerning their L3 performance.

The main research question is formulated as follows:

> To what extent does raising multilingual awareness contribute to developing the writing performance of multilingual learners?

In order to track the development of writing performance, the following sub-questions will be addressed:

(a) To what extent do participants of the intervention and the control group reveal differences in produced text length in writing?

(b) To what extent do participants of the intervention and the control group reveal differences in the produced lexis?

(c) To what extent can participants of the intervention and the control group produce grammatically correct sentences in writing?

Data Collection

In order to acquire data concerning the students' linguistic development in writing, the participants completed monthly writing tasks. The tasks were designed in a paper and pencil format, considering that the students were most familiar with this type of task. It has to be noted that during the project, due to the Covid 19 pandemic, online teaching was imposed in Hungary from the 9th grade. The classroom sessions were held via TEAMS, and for the testing session, with the special permission of the headteacher, the students were called in in person, ten people at a time, to do the test. The writing task was part of the performance test, where the first 10 minutes were dedicated to checking the level of multilingual awareness through an out-of-context word recognition task (10 items) and a grammaticality judgement task (five sentences). The timeframe for the writing task was set at 35 minutes because a secondary school classroom session is limited to 45 minutes.

Since in linguistic research, language is considered both the object and the instrument of measurement (Bachman, 1990: 287), instructions for the writing tasks were given in the participants' native language. The assignment enabled the participants to present their knowledge in a language production task. The task was to answer the question: *"What can you say about yourself and your environment in German?"*. This topic was chosen because it represents the communication topic that is introduced at the initial stages of language learning in the school context, i.e., the students first learn how to give information about themselves, then continue to describe their immediate social and physical environments, with the scope of topics extended towards more abstract ones. The students in both groups were encouraged to write as many sentences about the given topic as possible during the provided time frame.

Prior to the analysis and quantification of the texts, proper- and geographic names, as well as numbers, were replaced by the code *place*, *numb*, and *namx* (to avoid interferences with the German word *Name*) to ensure that these words do not conflict with data of word number, lexical diversity or lexical complexity.

Results

Data elicited from the questionnaire of the classroom setting were analysed by Paired Samples t-test. The results are presented in Table 1.

Table 1 Statistical analysis of the questionnaire about the classroom setting

	means		t (28)	*p* (Sig.)
	intervention group	**control group**		
Teacher personality	4.34	4.28	.35	.73
Feedback	4.52	4.45	.36	.72
Classroom atmosphere	4.14	4.17	-.24	.81
Teacher goal setting	4.06	4.14	-.49	.63
Instruction	4.37	4.31	.40	.69
Content	4.13	4.07	.63	.54

The statistical analysis of the questionnaire about the classroom setting reveals no significant differences between the intervention and the control group concerning teacher personality, feedback, classroom atmosphere, teacher goal setting, instruction, and content.

Data from the performance tests were analysed by applying Repeated Measures Analysis of Variance (henceforth RM-ANOVA) with moments of testing as a within-subjects factor and group as a between-subjects factor. Since the assumption of sphericity was violated, the Greenhouse-Geisser equation was applied to produce a valid F-ratio. The results of the RM-ANOVA are presented in Table 2.

Table 2 Statistical analysis of the performance tests

	Time factor F(7;392)	*p* **(Sig.)**	**Time and group interaction F(7;392)**	*p* **(Sig.)**	**Group factor F(1;56)**	*p* **(Sig.)**
Multilingual awareness	95.43	<.001	5.37	<.005	25.02	<.005
Text length	268.49	<.005	39.68	<.005	164.43	<.005
Lexical diversity	149.86	<.005	15.76	<.005	134.22	<.005
Syntactic complexity	69.14	<.005	4.49	<.005	14.56	<.005
Grammatical accuracy	37.71	<.005	4.32	<.005	61.69	<.005

The statistical analysis reveals significant differences between the two groups considering most variables. Differences in time and group interaction considering the multilingual awareness level reveal that the differences between the two

groups over time were insignificant. This outcome may result from a limit to the achievable scores (19 points). The profile plot presented in Appendix 3 asserts that the most significant difference between the two groups was in October, after the first month of launching the teaching project. During each month in the intervention group, the level of multilingual awareness was higher than in the control group, respectively. It should be noted that even in the fourth month of testing, the control group has not reached the level of multilingual awareness that the intervention group already had in October.

Considering the linguistic variables, the statistical analysis summarised in Table 1 and the profile plots presented in Appendices 4-7 report that the intervention group produced significantly longer texts consisting of longer clauses and integrated a wider range of vocabulary. In Appendix 6, fewer grammatical errors indicate a higher level of grammatical accuracy at the clause level.

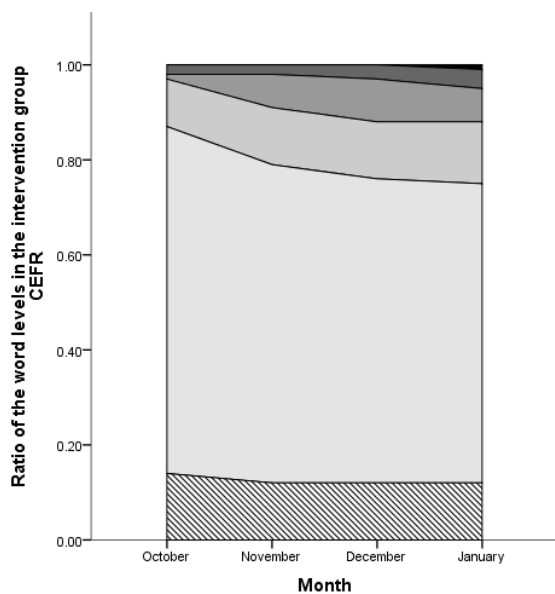Figures 1 and 2 show the distribution of the word levels in the produced writing samples.

Figure 1. Ratio of word levels in the intervention group as a variable for lexical complexity
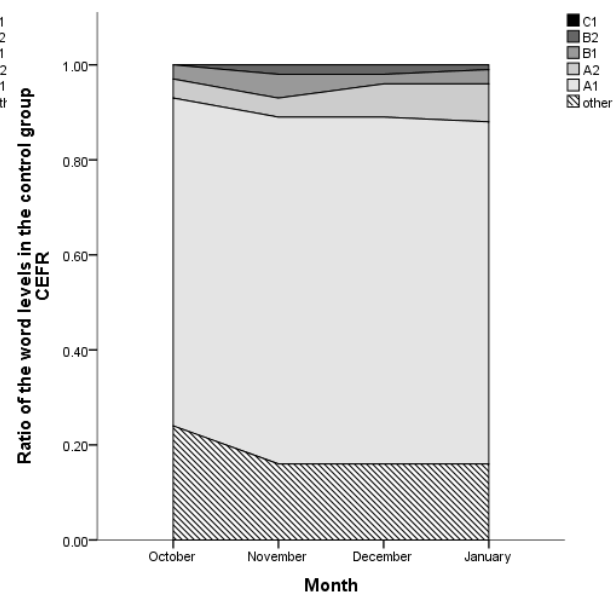
Figure 2. Ratio of word levels in the control group as a variable for lexical complexity

Considering lexical complexity, the ratio of word levels reveals a more balanced picture in the intervention group at the end of the first term of the project as opposed to the control group, where the use of A1-level words was still more dominant. The students in the intervention group could use higher CEFR level words to a greater extent revealing a more sophisticated vocabulary than in the control group.

Discussion

In the current paper, the hypothesis was assessed that by raising students' multilingual awareness in the initial period of learning German as L3 and incorporating their previous knowledge of L2 English, the participants in the intervention group would outperform their peers, considering their linguistic performance in writing in German. Since the teaching project was based on multilingual awareness-raising in the intervention group, heightened levels of multilingual awareness as an outcome were not surprising. The results' most striking outcome was the text length differences between the two groups. The intervention group created writing samples including a significantly higher number of words on a given topic.

Significant differences were observable concerning lexical diversity and complexity at the lexical level. It can be noted that participants in the intervention group were able to use a broader range of words and include more sophisticated words than students in the control group. Along with the lower level of grammatical errors at the clause level, these results account for a higher level of language proficiency in the intervention group. Since participants in the intervention group were encouraged to think of the English counterpart of the expressions the students wanted to use during the multilingual awareness-raising activities, grammatical structures from English interfered with the German structures. In general, it can be stated that structural interference occurs where there are no one-to-one relationships between the target and the supporter language, and the lack of such relationships leads to grammatical errors.

Results confirming enhanced levels of L3 German proficiency and grammatical competence in writing in language groups exposed to extensive multilingual awareness-raising activities correspond with previous research on higher levels of target language skills in classes exposed to multilingual training (Jessner et al., 2016). The overall outcome of the analysed months of the multilingual teaching project highlights the positive effects of raising learners' awareness regarding the similarities and differences between the languages (Gabryś-Barker & Otwinowska, 2012) emphasizing cognate relations (White & Horst, 2012) as well as stimulating them to exploit their "multilingual monitor" (Jessner et al., 2016: 171) by consciously comparing languages.

The results of the questionnaire about the classroom setting affirm that since there were no significant differences between the variables of the classroom setting, the differences in the linguistic development between the intervention and the control group are to be accounted for solely by the multilingual awareness intervention.

Limitations

The main limitation of the project was the relatively small sample size. Since the number of participants in foreign language classes is advised to be kept around 15 people to facilitate effective language teaching and learning (EMMI, 2012), data presented in this study should be carefully considered in terms of generalisation.

Concluding remarks

The present research aimed to provide evidence concerning the differences between an intervention group exposed to intensive multilingual awareness training and a control group learning L3 according to SLA principles.

The current paper reports on the results retrieved during the first four months of L3 learning. Data obtained through writing samples collected monthly from the intervention and the control group revealed heightened grammatical competence in writing in the intervention group, underpinned by higher lexical diversity and complexity and grammatical accuracy at the clause level as language proficiency variables. The variables mentioned above were confirmed to be significantly higher in the intervention group than in the control group.

In conclusion, it can be stated that participants of the intervention group were able to use a broader range of vocabulary to produce texts with attempts to include more complex grammatical structures and, therefore, to use the target language more creatively, resulting in longer meaningful texts appropriate to the presented topic. Students exposed to multilingual awareness-raising activities demonstrated a higher level of grammatical competence in writing and target language proficiency in the initial phase of learning German as L3.

In alignment with the European Union targets for its citizens concerning the knowledge of at least two languages apart from the L1 (Eurobarometer 2012: 2), the present study supports the replacement of SLA methodology in L3 teaching with specific L3 teaching methodology, thereby addressing the cognitive benefits of multilingual learning and teaching approaches. (Gutiérrez 2017; Jessner 2008b).

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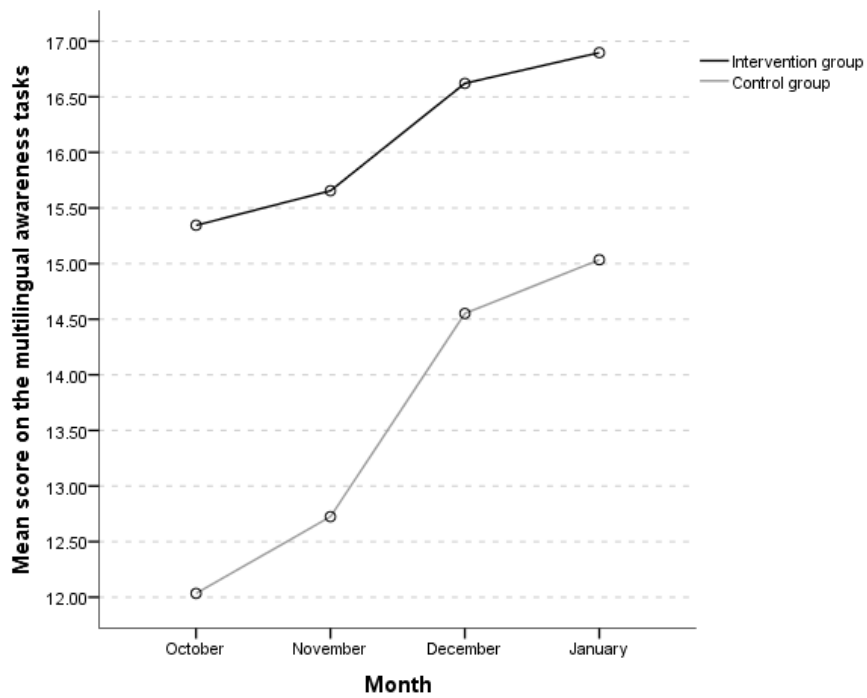
Appendix

Appendix 1. Variables and operalization of the linguistic data

| Variable	Name	Operalization
student performance	text length	the total number of words divided by the number of participants in each group
lexical diversity	measure of textual lexical diversity (MTLD)	the total MTLD value for each text divided by the number of participants in each group
lexical complexity	distribution of lemmas according to CEFR levels	percentage of lemmas (with the number of occurrences) assigned the accurate proficiency level
syntactic complexity	clause length	total number of tokens divided by the number of clauses containing a finite verb in each group
grammatical accuracy	grammatical accuracy	total number of errors divided by the number of clauses containing a finite verb in each group

Appendix 2. Organization of the errors for eliciting grammatical accuracy

| Error type	Problem
lexical error	incorrect word use, errors caused by the incorrect use of a word semantically related to the target form, lexical interference caused by cognate words of English and German
spelling error	incorrect spelling due to L1 or L2 interference, phonetic spelling, homophone spelling of target language words, typos
verb error	incorrect predicate form or predicate use
grammatical error	incorrect use of articles, word class, number, masculine/feminine forms, declination of adjectives, prepositions
mechanical error	incorrect use of capital letters, spaces
word order error	incorrect word order

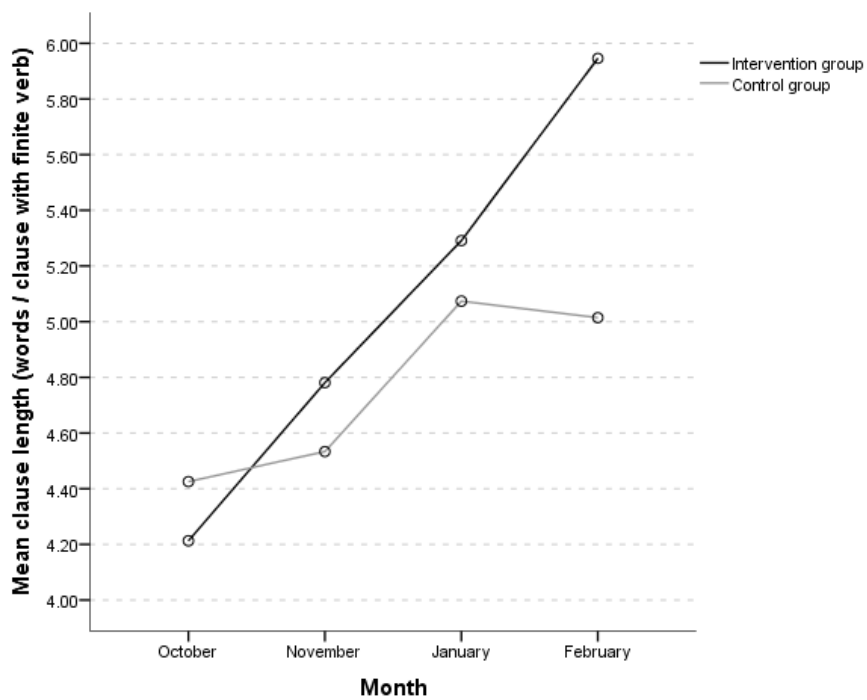Appendix 3. Plot for multilingual awareness-level

Appendix 4. Plot for text length
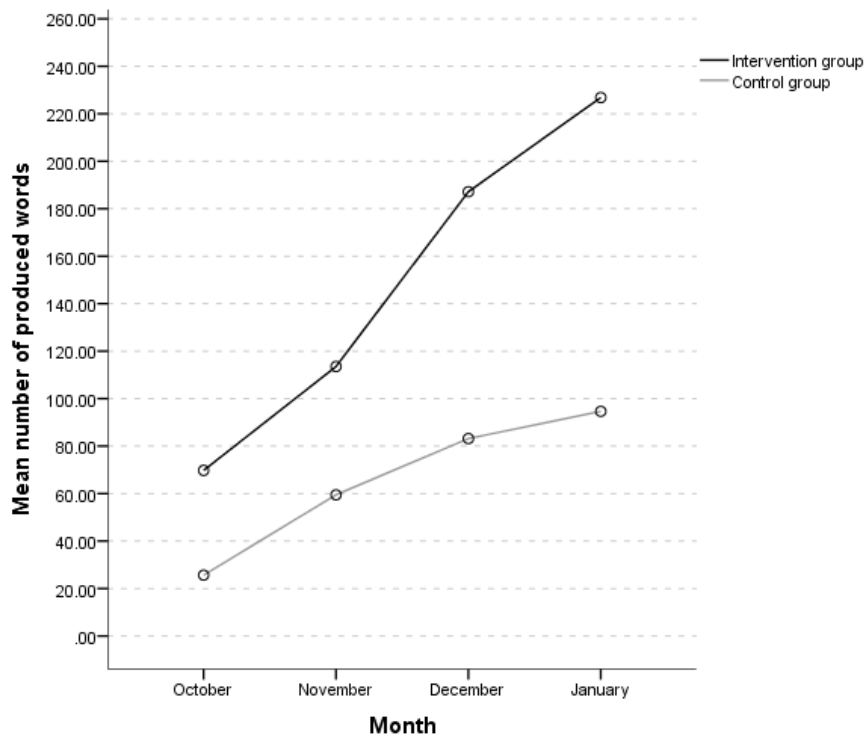
Appendix 5. Plot for lexical diversity
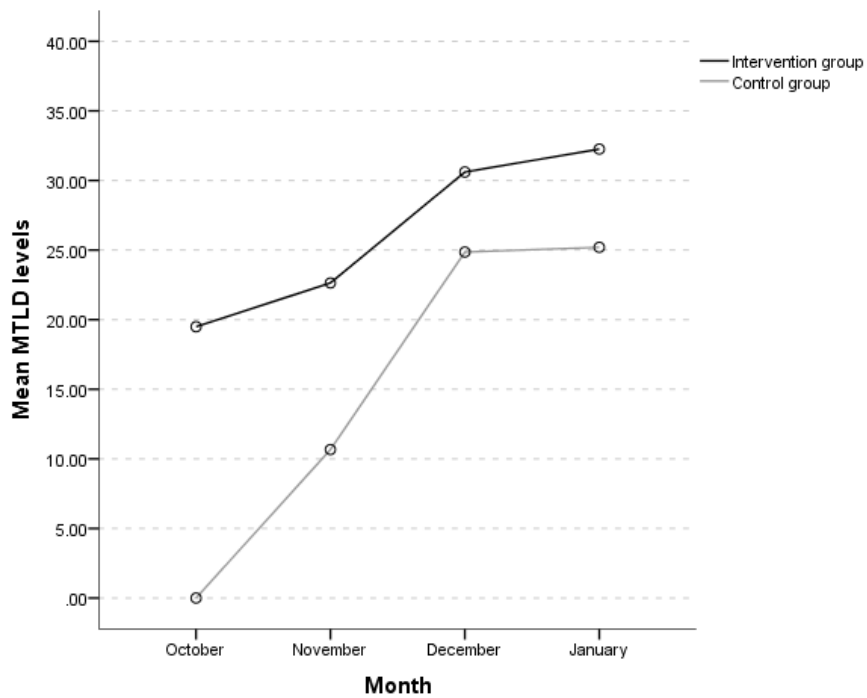
Appendix 6. Plot for clause length

Appendix 7. Plot for grammatical accuracy