

Hungary  
University of Pannonia  
Faculty of Modern Philology and Social Sciences



**Learning across languages: A multilingual awareness-raising  
project in third language teaching**

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Written by:  
Lilla Pilbauer-Horváth

Supervised by:  
Prof. Ulrike Jessner-Schmid

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## **Abstract**

The benefits of raising multilingual awareness and incorporating students' prior language knowledge in foreign language learning has been extensively studied in various international contexts. Multilingual awareness in the context of this study is acknowledged to be comprised of metalinguistic and cross-linguistic awareness, which are referred to as the ability to focus on the linguistic form and the ability to switch focus between linguistic form and meaning, as well as the explicit knowledge of similarities and differences between languages.

Despite the guidelines of European and Hungarian language policy concerning the promotion of multilingualism and language contact in the curriculum, in Hungary, monolingual instructional assumptions are still upheld in most schools with the optimal instruction being characterized by the extensive use of the target language even in third language teaching. This dissertation aims to highlight the importance of multilingual awareness-raising in third language teaching with focus on teaching German after English in the Hungarian educational context.

This paper examines whether multilingual training addressing cognates and similar structures between English and German affects the linguistic development and motivation of 9<sup>th</sup> grade students. The participants included 13 students in the intervention and the control group during the pilot year, and 29 students in the intervention and the control group respectively during the research year, all of whom have learnt English as a second language for four consecutive years in the course of their school career. The research period of one schoolyear concentrates on the first year of learning German as a third language. A test battery of multilingual proficiency tests, which includes metalinguistic and cross-linguistic awareness tasks along with the collection of writing samples, as well as a motivational questionnaire including attitudinal scales were administered on a monthly basis.

The results revealed significant differences between the linguistic development of the intervention and the control group, as well as concerning the motivational and attitudinal changes in the groups. Considering the linguistic development evidenced by the writing samples, the participants in the intervention group were able to use the target language more creatively, attempting to include more complex structures, employ a wider range of vocabulary, use more sophisticated words, and produce longer meaningful texts appropriate to the given topic. Furthermore, the multilingual training affected the motivational patterns of the intervention group in an overall positive way by helping the students regain the experienced motivational loss and maintain a significantly higher level of motivation and more positive attitudes towards learning German after English as opposed to the control group.

The findings prove that multilingual awareness-training as a teaching method which builds on learners' previous language knowledge and focuses on raising meta- and cross-linguistic awareness facilitate the linguistic development in writing, as well as enables the students to stay motivated and maintain a positive attitude towards learning German after English.

## **1. The situation of foreign language education in Hungary**

According to the language policy of the European Union, promoting language knowledge and preserving linguistic diversity are among its key priorities. One of the European Union's goals is for its citizens to obtain knowledge of at least two languages in addition to their native language (Eurobarometer, 2012: 2). In Hungary, the official language is spoken by approximately 99% of the population, as reported by the 2012 Eurobarometer survey. The most commonly taught languages in instructional settings are English and German (Eurobarometer, 2012: 10, 21), which are considered to be the most beneficial languages for personal development and future job prospects (Eurobarometer, 2012: 100).

The *Hungarian National Core Curriculum* (5/2020 Kormányrendelet) aligns with the European Union's language policy by prioritizing the development of cross-cultural and cross-linguistic perspectives within institutional institutions. The role of teachers is emphasized in this process, as they are expected to build upon their students' existing language knowledge and help them recognize similarities between different foreign languages, thereby facilitating future language learning. Overall, the curriculum strives to prepare students with the linguistic skills and cultural awareness necessary to navigate in an increasingly globalized world (5/2020 Kormányrendelet, 2020: 314).

The teaching of foreign languages is a crucial part of education in many countries, including Hungary, where English and German are the most commonly taught foreign languages. However, it is pivotal to take into account the etymology of these languages in connection to the official language of Hungary, which is a member of the Finno-Ugric language family. While a wide range of research (Golubović, 2016; Gooskens et al., 2015, 2018; Heuven et al., 2015; Swarte, 2016) reports on the rate of mutual intelligibility resulting from shared similarities between languages belonging to the same language family, the rate of mutual intelligibility between languages that do not belong to the same language family has not been researched. However, it is reasonable to assume 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 English as a second language (henceforth L2) for many Hungarian students, would be a useful asset during the teaching process of German as a third language (henceforth L3). By considering the linguistic origins of these languages and the rate of mutual intelligibility between them, educators could make informed decisions about language teaching and learning strategies that are likely to be the most effective.

However, a significant challenge remains in the Hungarian education system, as only a small percentage (5.6%) of foreign language teachers are qualified to teach two Western languages (Imre, 1998) and are, therefore proficient and trained enough to exploit the pedagogical benefits that derive from the similarities of these Germanic languages in L3 teaching. Although the situation has improved since 1998 with more students 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 Core Curriculum is overshadowed by the reality in the L3 classroom where, even though the students already possess prior knowledge of a Germanic language, English or German as L3 is taught in reference to the learners' first language (henceforth L1), Hungarian.

Furthermore, the *integrated didactic approach* (Candelier et al., 2012) which emphasizes the importance of establishing links between the L3 and the language(s) the students already know (Gutiérrez, 2017: 35-38) has not been widely implemented in Hungary. According to the integrated didactic approach, L1 should serve as a steppingstone in L2 learning, and the learning of a second foreign language should be based on the knowledge of both L1 and L2. Although pluralistic approaches that emphasize the involvement 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, in the Hungarian L3 classroom, traditional L2 pedagogy including grammar translation or various communicative approaches highlighting the extensive use of the target language (Gutiérrez, 2017: 35-38) is still the norm. The *White Paper on the National Strategy for the Development of Foreign Language Teaching from Kindergarten to University* (EMMI, 2012) recommends that language learners and parents prioritise the learning of German as a L2 followed by English as a L3. This recommendation is based on the fact that German has a more complex grammatical structure. However, if the learner is introduced to foreign languages in the reverse order, starting with English as L2 followed by German as L3, the student may experience a considerable loss of motivation to learn the additional language (EMMI, 2012). Experienced teachers of German as L3 often report facing challenges in motivating their students at the secondary level. The White Paper (EMMI, 2012) underscores the importance of language learning order and highlights the need for educators to consider the pedagogical benefits of introducing languages in a specific sequence to enhance students' language learning experiences. By adopting a strategic approach to language learning, educators can better support their students' motivation and success in mastering foreign languages.

The significance of incorporating students' prior language knowledge in foreign language learning has been extensively studied in various international contexts. Several studies (Allgäuer-Hackl, 2017; Allgäuer-Hackl et al., 2021; Hofer, 2015; Hufeisen, 1998, 2011; James, 1996; Jessner, 2006, 2008b; Kemp, 2007; Traxl, 2015) have emphasized the benefits of utilising learners' pre-existing linguistic knowledge in facilitating the learning process. Despite these findings, there is a lack of research exploring the application of multilingual awareness-training in the Hungarian educational context.

## **2. Theoretical framework**

### **2.1. The Dynamic Model of Multilingualism**

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 DMM recognises the effects of individual cognitive factors such as motivation and self-esteem on the stability of the multilingual system (Herdina & Jessner, 2002: 138). In recognition of the dynamics, complexity and interdependence of the linguistic and cognitive factors outlined in this section, and in alignment with the holistic perspective advocated by the

DMM, the present empirical research includes the exploration of motivational and attitudinal changes over time.

## **2.2. The Directed Motivational Current**

The significance of motivation in the language learning process is a widely accepted concept in the academic world. The dynamic approach to foreign language learning emphasizes that the diverse language systems present in a multilingual mind have a significant impact on both the learning process, the development of additional languages, as well as on the overall multilingual system of the learner (Dörnyei, 2009). Despite numerous studies, Dörnyei et al. (2016) articulate the need an integrated and holistic analysis of the motivational background of sustained behaviour in language learning. The Directed Motivational Current (henceforth DMC) framework is considered an optimal approach for engaging in a continuous and longitudinal project (Dörnyei et al., 2016). The DMC framework highlights that motivation is not static, but rather dynamic and an ongoing process that is influenced by various contextual factors. The DMC is theorised to operate within a facilitating behavioural structure, where the learner experiences heightened emotionality resulting from the perception of ongoing progress towards a clearly envisioned and personally significant goal, with a set of sub-goals leading to positive feedback, which in turn increases the energy level and momentum of the behaviour (Dörnyei et al., 2014). This novel construct is rooted in several motivational theories such as the goal-setting theory (Locke & Latham, 1990), the self-determination theory (Deci & Ryan, 1985), the flow theory (Csíkszentmihályi, 1990), the theory of planned behaviour (Ajzen, 1988), as well as future time perspective (Zimbardo & Boyd, 2015).

The rationale behind the choice for the framework of the DMC was the attempt to consider the combined impact of various factors that influence the learning process, along with the aim to enquire whether a novel teaching method (see Horváth & Jessner, 2023) may trigger the intense motivational drive that helps students to override the complications they can face when they are confronted with learning a grammatically more complex language as L3.

## **3. The teaching project**

Given the longitudinal nature of the research, a whole school year was dedicated to develop the teaching materials as well as some of the instruments from month to month, while conducting the pilot study itself. The process of development of the teaching and testing materials was always one month ahead of the actual teaching process. This way, by the end of the pilot year, not only all teaching materials were completed, but an array of data from eight points of testing were available for analysis.

The project, encompassing one schoolyear was designed for a group of Hungarian 9<sup>th</sup> grade secondary grammar school students in a Hungarian town. The project was piloted in the schoolyear 2019/2020. The pilot period was intended as an initial small-scale implementation of the research project in order to prove the viability of the design. During this time span the teaching materials were developed on a monthly basis, along with the construction of the questionnaires, which were piloted and validated during this period as well.

The teaching project focused on the first year of learning German as L3 with special attention to the sensitisation of the students towards 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).

### **3.1. Participants**

For the purposes of the research special attention was paid to similar initial conditions, including secondary school students of the 9<sup>th</sup> grade (mean age: 15 years) 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 groups were actual classes at the same school, where every student participated in the project and monthly testing. However, the tests of those students who did not fulfil the initial conditions were eliminated from the evaluation process. Thus, in the pilot project, the evaluation period included 13 participants in the intervention (with 11 male and 2 female students) and the control group (with 9 male and 4 female students) respectively, and the empirical research was conducted with 29 participants (with 10 male and 19 female students) in the intervention group, and (with 13 male and 16 female students) in the control group.

Both the intervention and control group received the same amount of instruction by participating in 3 German lessons per week. The students started to learn English in the 5<sup>th</sup> grade, with 4 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).

Participants in the intervention group were taught according to third language acquisition (henceforth TLA) principles that acknowledge that the acquisition of an L3 can be affected by both the L1 and L2, as well as that recognizes the special role of the L2 as a bridge language in the process of L3 learning, 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 between English and German.

The intervention group was taught by a multilingual teacher with qualifications in teaching German and English as foreign languages. The control group was educated according to the Communicative Language Teaching (henceforth CLT) approach with making references to the students L1 (Hungarian) by a Hungarian bilingual teacher with qualification in teaching 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 1970, 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 by using it to do things rather than through studying how language works (Khaydarova, 2022). The CLT thus relies on the extensive use of the target language.

The legal guardians of the participants were asked for written consent for the students' participation in the project. Consultation sessions between the teachers of the intervention and control groups were organised on a weekly basis during the project with the aim of ensuring 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 was previously agreed upon by the language teachers of German language in the school. The coursebook provided the basis for the teaching material and served as reference concerning the safeguarding of the teaching pace, the covered topics and grammar as well.

### **3.2. 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 consists of three main parts, a vocabulary and topic, a communication part, and a grammar part. 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 with making references to their English counterparts, with special attention to cognate words and false cognates, the control group dealt with the vocabulary with reference to 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 in 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 teachers of German language in Hungary) (see Imre, 1998) was not qualified enough to make references to the English language.

### **3.3. Multilingual awareness intervention**

The multilingual awareness intervention part consisted of five stages in the intervention group only. A table including examples for the stages are presented in Appendix 1. Firstly, during the reading comprehension tasks, special attention was given to the recognition and discussion of German-English cognate words in order 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). In the second phase, the students were asked to identify words in the texts that looked or sounded familiar by drawing on their English knowledge. After the identification of 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 mostly during a single classroom session, followed by the third and fourth stage in the following lesson.

In the third stage, students received the same text in their L2 (English) in order to confirm and analyse the functional or structural equivalents that were 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 with the aim 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 that were discussed at the previous stages in order to facilitate the recognition and understanding of cross-linguistic similarities.

The intervention method addressed the qualitative differences between second language acquisition (henceforth SLA) and TLA, and therefore builds upon the students' prior language knowledge as advocated by the DMM. The method is based on consciously raising MLA and XLA, which are key factors in catalysing multilingual language learning (Jessner, 2006: 214; Jessner, 2008a: 275).

## **4. Methodology**

### **4.1. Hypotheses and research questions**

Consistent with the objectives of the empirical research presented in the current thesis, this section posits two sets of hypotheses and research questions, pertaining respectively to the linguistic and motivational-attitudinal outcomes of the research. The hypothesis of the linguistic part is concerned with the following:

By raising multilingual awareness and exploiting the resources many of the students already have through their prior language knowledge, the participants in the intervention group would outperform their peers concerning their L3 performance, manifesting in a higher level of language proficiency and communicative competence in writing.

The main research question is formulated as follows:

- (1) To what extent does raising multilingual awareness contribute to the development of multilingual proficiency in writing of multilingual learners?

In order to track the language development of multilingual proficiency in writing, the following sub-questions will be addressed:

- (a) To what extent do participants in the intervention and the control group reveal differences in fluency 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 are participants of the intervention and the control group able to produce grammatically correct sentences in writing?

The hypothesis considering motivational and attitudinal aspects of language learning is formulated as follows:

By teaching across languages, the learners' positive attitude and motivation towards learning German as L3 would undergo a more significant increase than the learners' attitude and motivation in the control group.

The main research question is formulated as follows:

- (2) To what extent can English be used to stimulate the level of motivation and positive attitude towards German as L3?
- (a) To what extent does the participants' motivation undergo positive or negative changes during the project?
- (b) To what extent does the participants' attitude undergo positive or negative changes during the project?

## **4.2. Instruments**

### **4.2.1. The multilingual proficiency test**

The content, language level, tone and length of the multilingual proficiency test was aligned with the interest, bearing strength, and concentration capacity of the subjects (Falus 2004:174-176). In order that the retrieved data could be kept confidential, only a nickname or a monogram were required to be given. The test was presented in a paper and pencil format in order to be manageable in different groups as well as due to the fact that the students were most familiar with this type of testing. It is assumed that the participants are familiar with the item types presented in the test pointing to the fact that the students can see instantly what tasks they are being asked to perform. In order to avoid the problematic issues of directness, occurring frequently in language testing due to the fact that "language is both the object and the instrument of our measurement" (Bachman 1990:287), the test framework and the instructions were presented in the participants' native language.

Appendix 2 includes the first test, administered in October, after the first month of the students' learning process. Special attention was given to the fact that a secondary school classroom session is limited to 45 minutes. The multilingual proficiency test is divided into two parts. Thus, the first 10 minutes were dedicated to check the level of multilingual awareness in the first part of the test, and 35 minutes were dedicated to the writing task in the second part.

The first part is intended to check the level of multilingual awareness. The first task requires out-of-context word recognition in the form of a multiple-choice test presenting 10 cognate words. Students have to distinguish between e.g. *coffee*, *Caffe*, *Kaffee*, *Kafee*. The participants are asked to identify the correct German words. As a distractor the English counterpart word is included in the task along with two other incorrect versions based on commonly occurring

errors made by learners in the initial stage of learning German on morphological and orthographic level. The second task is a judgement task including the lexical and syntactic levels with intuitional questions followed by correction. For instance, the students have to decide whether the sentence *Who ist das Oktoberfest* is correct or not. The errors in the presented sentences result from the incorrect use of cognates and false cognates. After judging the items, the students are asked to write their own version of the sentences they had rejected. The corrections serve as a check on whether judgements of ‘not correct’ sentences had in fact targeted the relevant aspect of a sentence, and not something extraneous.

The second part of the test includes a language production task. The task itself was to answer the question: “*What can you say about yourself and your environment in German?*”, and was included with the intention to provide an extended contribution from the part of the students in order to test their communicative writing skills in German, and to provide an opportunity to demonstrate their knowledge in actual language performance (Canale and Swain 1980) in order to measure the participants’ discourse competence (Bachman 1990:85). The 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 as possible during the provided time frame.

It has to be noted that during the project, due to the Covid 19 pandemic, online teaching was imposed in Hungary from the 9<sup>th</sup> 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, 10 people at a time, to do the test.

Since no word limit was given in the task instruction of the writing samples, the length of the retrieved texts is expected to vary to a great extent, providing information about the students’ abilities concerning the construction of a meaningful text. For this reason, the average number of produced words and sentences are measured indicating the students’ fluency, i.e. the amount of text students were able to write within the given time frame (DeAngelis & Jessner, 2012: 53). 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* (in order to avoid interferences with the German word *Name*) with the aim of ensuring that these words do not conflict with data of word number, lexical diversity or lexical complexity.

For the purposes of the present study, the variables presented in Appendix 3 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). Taken into consideration that calculations of vocabulary range may be sensitive to text length (McCarthy & Jarvis, 2010), the complex calculation of MTLT was applied in the present research. MTLT is calculated as the mean length of sequential word strings in a text that maintain a given type-token ratio value (McNamara et al., 2011). MTLT is argued to represent accurate measures of lexical variability regardless of text length (McCarthy & Jarvis, 2010: 138).

In the present study, lexical complexity is defined 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*. As reported by the Goethe Institute (Perlmann-Balme, 2004; Hennemann et al., 2016; Glaboniat et al., 2016), the examples above belong to the 650 most commonly used words. Accordingly, the current thesis asserts that word length does not serve as an appropriate construct 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. These word lists were established in alignment with the Common European Framework of Reference (henceforth CEFR) and include the 650 most frequently used words at A1 level, 1300 words at A2 level, and 2400 words at B1 level (Council of Europe, 2001). 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 as an indicator for lexical complexity (Penris & Verspoor, 2017).

Syntactic complexity 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 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 amount of compound sentences was observable between the intervention and the control group. Therefore, a clause containing a finite verb was taken into consideration as a production unit and thus the mean clause length is regarded in the current doctoral thesis as an indicator of syntactic complexity. Considering grammatical accuracy, lexical errors, spelling errors, verb errors, grammatical errors, mechanical errors, and word order errors, as represented in Appendix 4, 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.

#### **4.2.2. Motivational questionnaire**

In order to obtain data about the participants' attitude and motivation an initial questionnaire and follow-up questionnaires on a monthly basis were planned to be administered throughout the first schoolyear of the participants' learning process. The content, language level, tone and length of the questionnaire was established in alignment with the interest, bearing strength and concentration capacity of the participants (as advocated by Falus, 2004: 185). The language of the questionnaire was the students' L1, Hungarian. Considering the length of the questionnaire, special attention was given to the fact that a secondary school classroom session is limited to 45 minutes. 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. The tasks were designed in a paper and pencil format, taken into consideration that the students were most familiar with this type of testing in a controlled environment.

The validation process for the motivational questionnaire was designed in alignment with the stages proposed by Dörnyei (2007, 2010) for the piloting of questionnaires. After the pooling of the items from relevant literature (Ajzen, 1988; Csíkszentmihályi, 1990; Deci & Ryan, 1985; Dörnyei, 2009; Dörnyei et al., 2014; 2016; Lasagabaster et al., 2014; Ushioda, 2014), the questionnaires went through an expert judgement process with the inclusion of academics who are qualified in the field. The process resulted in the rewording and clarification of specific items. The final questionnaire was distributed to teachers of German as a foreign language (henceforth GFL), who administered it to 97 students in the 9-12<sup>th</sup> grade in a secondary school in a Hungarian town. In order to safeguard anonymity, participants were required to give a nickname or initial.

The first part of the questionnaire (see Appendix 5) was included only in the initial questionnaire. Here, the first four major open- and closed-ended questions as well as the three minor questions were intended to elicit information about (a) the background of the students concerning their language use and (b) their choice of L3. The fifth major question was aimed at revealing (c) the perception of possible future problems of students starting to learn German. The second part of the questionnaire focused on the motivational level and attitude of the respondents concerning learning German as L3. In order to estimate the motivational level of the participants, 24 positive statements were formulated, to which the responses had to be marked on a five-point Likert scale each. The students were asked to mark their opinion for

each of the 24 statements on a five-point scale ranging from “*strongly agree*” to “*strongly disagree*”. The questions of the motivational questionnaire are presented in English and Hungarian in Appendix 6.

In order to specify the information about the subjects’ attitude concerning this particular object, Osgood attitude scales were included. The subjects were provided with a set of bipolar adjectival scales against which they could characterize the presented concept. The task of the individual was to indicate his or her association of each item. A small set of 8 bipolar adjectives and statements were established. In order to keep the data to a manageable size each adjective pair was presented at the opposite ends of a seven-point scale the meaning of which (*definitely, very, a bit* towards both ends, with *cannot decide* as a resting point in the middle) were included in the table itself. In order to ensure that the items included in the scale reflect the disposition of interest, 45 students were asked to compile a list of adjectives related to learning languages. The attitude scale was constructed from the responses considered to be good representatives of the dispositional domain (Ajzen, 1988: 13).

The informants had to mark their attitudes along eight scales: interesting-boring, simple-difficult, useful-not useful, comprehensible-complicated, I like it-I do not like it, clear-unclear, important-unimportant, and contemporary-old-fashioned. Three of the bipolar adjectives (useful-not useful, important-unimportant, contemporary-old fashioned) aimed to reveal the students’ perceived prestige of the German language, which may also influence their language choice as well as their attitude towards learning this additional language (Lasagabaster & Huguet, 2007).

Once the initial motivational factors were elicited, the follow-up questionnaires focused on the levels of motivation and attitudes of the respondents concerning learning German as L3.

#### **4.2.3. Questionnaire about the classroom setting**

In order to ensure that the linguistic improvement of the participants along with the attitude and motivational changes is due to the involvement of multilingual awareness-raising activities, a questionnaire about the classroom setting (presented in Appendix 7) was administered concerning (a) the level of creating basic motivational preconditions through appropriate teacher behaviour, creating of stimulating, enjoyable and supportive classroom atmosphere as well as establishing appropriate group norms, (b) the level of generating initial motivation by establishing realistic learner beliefs and the inclusion of relevant materials.

The questionnaire development process was conducted in accordance with Dörnyei's (2007, 2010) proposed stages for piloting questionnaires. The final questionnaire was handed out to teachers of GFL, who collected responses from 92 students at secondary school level.

The informants were asked to mark their opinion to five positive statements concerning teacher personality, feedback, classroom atmosphere, teacher goal setting, instruction, and content on a five-point Likert-scale ranging from "*strongly agree*" to "*strongly disagree*".

#### **4.2.4. Competence tests**

The nationwide testing of mathematical and perceptive competences in the L1 (Hungarian) and L2 (English or German) in institutional setting was introduced in 2001 in Hungary. The aim of the procedure is to provide objective indicators that aid the institutions in the self-assessment process and outline ideas for its further development. Data elicited from the tests contribute to the external assessment of the institutions and serve as a relevant basis for education policies. During the initial school years, the mathematical and L1 perceptive skills were tested in 5<sup>th</sup> and 9<sup>th</sup> grade. After this introductory period, the testing process was modified, and since the school year 2003/2004 the measurement methodology has focused on the 6<sup>th</sup>, 8<sup>th</sup> (where L2 perceptive skills testing was introduced at A1 and A2 levels, respectively) (110/2012 Kormányrendelet, 2012: 10682) and 10<sup>th</sup> grade (with testing only mathematical and L1 perceptive competences). The content and framework of the tests are in alignment with international measurement trends. Detailed procedure protocols ensure that the tests are administered under the same conditions at national level (Balázs, et al. 2014: 7-8; OECD, 2013; Mullis et al., 2009).

The L2 competence tests measure receptive skills in 6<sup>th</sup> grade at A1 level, and in 8<sup>th</sup> grade at A2 level according to the CEFR (Council of Europe, 2001). The focus of the test is not the linguistic form but the meaning, and the use of language in real-life situations. The framework of the test emphasizes the use of authentic, near-authentic excerpts, as well as materials adapted from authentic sources (Oktatási Hivatal, 2017). The first part of the test focuses on testing the ability of the students to understand short and straightforward texts that employ simple, everyday language, as well as elicit required information from the content. The overall text length for the three tasks is 600-800 words. The second part measures the understanding of everyday phrases, and the ability to elicit required and essential information. The short recordings employ slow and comprehensible speech. The overall length of the recordings are 7-9 minutes. Both parts consist of 3 tasks (20 items), respectively. Instructions are given in the L2 (Oktatási Hivatal, 2017).



## 5. Results of the research year

The research year was designed with a comprehensive set of objectives to gain a deeper understanding of the effectiveness of the teaching project on students' multilingual proficiency in writing in L3 German, as well as their motivational and attitudinal changes over one school year. One of the key aims of the research was to increase the sample size in order to obtain more robust and reliable results than the pilot study.

The first part of the results section is concerned with the linguistic outcome of the research year. This part of the study aimed to confirm whether the findings of the pilot year were replicable. To this end, the computed results of the research year were compared with those of the pilot year to ascertain whether they were consistent. In addition, the research sought to conduct a more detailed analysis of plots to provide a deeper understanding of the developmental processes of the two groups.

Motivation and attitude are important factors considering any learning process. The second part of the section pertains to the results obtained from the motivational questionnaires. The research year aimed to elicit motivational and attitudinal patterns and possible differences between the intervention and the control group as well as to determine whether the rate of progress between the two groups was significant.

The statistical analysis of the competence tests confirms that the data were normally distributed. The results of the paired sample t-tests report that the differences between the competence levels of the intervention and the control group considering mathematical  $t(28) = .84, p = .40$ , L1 text comprehension  $t(28) = .40, p = .69$ , and A2 level L2 receptive competences  $t(28) = -.42, p = .68$  were not significant.

Data from the multilingual awareness tests and the writing samples were analysed by applying Repeated Measures Analysis of Variance (henceforth RM-ANOVA) with moments of testing as within-subjects factor and group as 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 1.

*Table 1 Statistical analysis of the multilingual proficiency tests*

	<b>Time factor F(7;392)</b>	<b>p (Sig.)</b>	<b>Time and group interaction F(7;392)</b>	<b>p (Sig.)</b>	<b>Group factor F(1;56)</b>	<b>p (Sig.)</b>
<b>Multilingual awareness</b>	95.43	<.001	5.37	<.005	25.02	<.005
<b>Text length</b>	268.49	<.005	39.68	<.005	164.43	<.005
<b>Lexical diversity</b>	149.86	<.005	15.76	<.005	134.22	<.005

<b>Syntactic complexity</b>	69.14	<.005	4.49	<.005	14.56	<.005
<b>Grammatical accuracy</b>	37.71	<.005	4.32	<.005	61.69	<.005

The statistical analysis reveals significant differences between the two groups concerning all variables. The profile plots presented in Appendices 8-13 indicate that participants of the intervention group had a higher level of multilingual awareness even after the first month of the starting the project, produced significantly longer texts consisting of longer clauses with a higher level of lexical complexity, using words exceeding the proficiency level that would be expected at the current stage of language acquisition (EMMI 2012). It has to be asserted, that the vocabulary utilised by the intervention group at A2, B1, B2, and C1 levels primarily comprised of cognate words discussed throughout the project, extended by the vocabulary requested by the students in order to be able to effectively communicate their individual thoughts.

Considering the level of grammatical accuracy (Appendix 14), since the errors in the clauses with a finite verb were elicited from the writing samples, data are to be considered in regard with the specification that the lower the error level, the higher the grammatical accuracy of the clauses.

With the aim of quantifying data elicited from the Likert scales considering the motivational and the classroom setting questionnaire, the following calculations were made. The most positive response (i.e. *“I strongly agree”*) was quantified by five points, with four, three and two points ranging to the least positive answer (i.e. *“I strongly disagree”*), which was marked with one point. The motivational level for each participant was elicited by adding the points for each statement.

In order to manage the responses in the Osgood attitude scale, which allowed the participants to mark their opinion in a seven-point scale, the most positive attitude was marked with 3, whereas the most negative attitude was marked with -3, with the response *“cannot decide”*, marked with 0. The attitude level for each participant was elicited by summing the responses to all the bipolar adjectives.

Responses to the first and second open-ended questions about the participants’ language use confirm that every participant uses Hungarian in the home domain and with their friends. Data retrieved through the third mayor question about the institutional linguistic background of the responders reveal that every participant in the intervention and control group have learnt English as a second language in the school context.

In the intervention and the control group respectively, the majority of the students claimed to have chosen German as L3 themselves, underpinned by their background knowledge of the language and culture. The main motivational aspect in both groups (Appendix 15) were the usefulness of the German language for the participants' future. A considerable amount of responses (7 in each group respectively) claim that learners have made their choice to study German as L3 considering the other foreign language offered by the school (French) with the assumption that learning German would be more useful or easier to learn than French. A relatively low number of students were aware of the similarities between English and German, assuming that due to cross-linguistic similarities German would be easy to learn after English. In the case of 3 participants in each group, the choice of which L3 to learn was made by the parents of the students based on language prestige.

The participants' assumptions about the problems they would face during the learning process of German as L3 are presented in Appendix 16. As a preconception of the learning process, the complex grammar, and the overall complexity of German – as opposed to the participants' L2, English – were the main factors considered to cause problems and difficulties that the students may encounter during the process of learning German as L3. A relatively high number of the responses refer to the phonetic and phonological aspect of the German language as a possible obstacle in the learning process. It has to be noted that only one student in the control group claimed not to expect any problems considering L3 German learning.

The results elicited from the motivational questionnaires are presented in Table 2.

*Table 2 Statistical analysis of the motivational and attitudinal variables*

	<b>Time factor F(8;448)</b>	<b>p (Sig.)</b>	<b>Time and group interaction F(8;448)</b>	<b>p (Sig.)</b>	<b>Group factor F(1;56)</b>	<b>p (Sig.)</b>
<b>Motivation</b>	12.91	<.005	8.16	<.005	9.35	<.005
<b>Goal orientedness</b>	3.61	.01	5.52	<.005	12.16	<.005
<b>Facilitative behavioural routine</b>	62.15	<.005	.897	.467	.547	.463
<b>Positive emotional loading</b>	11.57	<.005	6.48	<.005	9.97	<.005
<b>Perceived behavioural control</b>	33.45	<.005	56.39	<.005	2.59	<.005
<b>Perception of progress</b>	68.22	<.005	6.73	<.005	10.48	<.005
<b>Vision orientedness</b>	2.23	.08	1.98	.17	5.87	<.005
<b>Attitude</b>	9.27	<.005	14.53	<.005	14.64	<.005

The statistical analysis reveals significant differences between the two groups considering most of the variables with higher levels of the motivational and attitudinal variables in the intervention group (presented in Appendices 17-23). With similar changes over time according to the plot for facilitative behavioural routine (Appendix 24), differences between the two groups considering this motivational variable is found not to be significant.

The paired samples t-test of the questionnaire about the classroom setting confirms that there are no significant differences between the intervention and the control group regarding the variables of the questionnaire (Appendix 25).

## **6. Discussion**

The present study investigated the effects of a multilingual awareness training at 9<sup>th</sup> grade on the development of multilingual proficiency in writing as well as on motivational and attitudinal changes over the first year of L3 German learning. In the current doctoral thesis it was hypothesised that by a multilingual awareness-training and building on the students' knowledge of their L2, (1) the participants in the intervention group would outperform the students in the control group considering their multilingual proficiency in writing, and (2) participants in the intervention group would display more elevated motivation and more positive attitudes towards learning German as L3 as learners in the control group.

Regarding certain external variables, the analysis of the questionnaire about the classroom setting indicated no significant differences between the two groups confirming that the external factors could be maintained at the same level. The results confirmed that the differences between the two groups considering the linguistic, motivational and attitudinal outcome of the research were not caused by teacher personality, feedback, classroom atmosphere, teacher goal setting, instruction or content.

The most striking outcome of the study was the significantly higher ability of the participants in the intervention group to recognise cross-linguistic similarities even after one month of launching the project. This outcome confirms the results of Allgäuer-Hackl (2017) regarding the fact that multilingual awareness training can lead to a significant positive influence on the development of multilingual skills despite limited exposure.

The linguistic results of the research year confirm that the study is replicable, as the results of the writing samples' analysis in the research year are in alignment with the linguistic outcome of the pilot year considering all analysed variables. Referring to research question 1a, the results revealed that the intervention group was able to create texts incorporating a higher number of words to a given topic.

At the lexical level, the intervention group managed to create texts characterised by a higher level of lexical complexity to describe their immediate environment as opposed to the control group. In addition, participants in the intervention group included more sophisticated words exceeding the expected proficiency level. The control group on the other hand, showed a more restricted tendency to incorporate higher CEFR level words as A1.

Regarding syntactic complexity, the outcome of the research confirmed that the participants in the intervention group managed to employ longer clauses containing a finite verb. The analysis of the grammatical accuracy of the clauses showed that the participants of the intervention group tried to use grammatical structures that exist in the English and German language. Since participants in the intervention group were encouraged to employ the strategy of using cross-linguistic structural similarities, the main source of grammatical errors occurred due to the fact that grammatical structures from English interfered with the German structures. In general, it can be stated that cases with the lack of one-on-one structural relationship between English and German led to occurrences of grammatical errors in the intervention group. At clause level, the intervention group showed a lower error rate as opposed to the control group. Considering research questions 1b and 1c, it can be stated that the results account for a higher level of language proficiency in the intervention group not only at lexical, but at syntactic level as well. According to the results of the project, the hypothesis for the linguistic part of the research is considered to be confirmed as multilingual awareness-raising and exploiting students' existing knowledge about their L2 would lead to a significantly better L3 proficiency that is manifested in a higher level of performance, and communicative competence in writing. The outcome of the linguistic part of the research highlights the positive effects of the current DMM-based holistic approach in language learning, that recognises the interconnectedness of the languages known by the students (Herdina & Jessner, 2002: 161). Due to the multilingual awareness intervention applied during the teaching project, students in the intervention group proved that they are explicitly aware of the similarities and differences between the languages they know (Jessner 2006, 2008a), and are able to make comparisons in a conscious way. Significant differences between the two groups even after a relatively short period of time are in alignment with the results of Allgäuer-Hackl (2017), who found evidence for the effectiveness of multilingual training with minimal lessons. Significantly higher levels considering the variables of multilingual proficiency support Hofer's, and Allgäuer-Hackl's (Jessner et al., 2016) findings regarding the facilitating effect of extensive contact with multiple languages in the classroom along with MLA training during the acquisition process of additional languages.

During the research year, the impact of the multilingual awareness-training on motivation and attitude of the students was investigated as well. In regard of research question 2a, considering the overall motivational levels, the intervention and the control group experienced a boost in motivation, which was later lost. The decrease in motivation can be linked to the introduction of grammatical structures of the German language, such as accusative and dative forms of nouns and the conjugation of verbs, which are more complex than in English. However, the intervention group showed an increase in motivation in the following months, regaining the level of the initial boost of motivation, whereas the motivational levels in the control group continued to decrease.

The plots and statistical analysis of the motivational variables reveal significant differences between the intervention and the control group regarding goal orientedness, positive emotional loading, perception of progress, and vision orientedness. The similar plot of facilitative behavioural routine in both groups suggests that the intervention program did not introduce a significant change in this aspect. In order to interpret the results of the analysed motivational factors in detail, it has to be emphasised that the DMC framework highlights the dynamic interaction between the various components, which constantly influence each other (Dörnyei et al., 2014).

The fluctuating levels of perceived behavioural control suggest the struggles the students experience during learning a more complex language as their L2. Perception of control can affect the students' motivation to engage in a behaviour. The overall increasing levels of perceived behavioural control in the intervention group inform that by the end of the project, the students in this group think that they have good skills to acquire German, and these skills would enable them to tackle obstructive factors during the learning process. As the amplitude of perceived behavioural control decreases in the intervention group, positive emotional loading, perception of progress, vision orientedness begin to increase steadily from month to month in the second half of the project. This may occur because perceptions of control can affect an individual's self-efficacy beliefs, which in turn can influence their confidence in their ability perform a behaviour (Bandura, 1982; McAuley et al., 1991). In the control group, the opposite tendency was observable, with an overall decreasing level of perceived behavioural control, which affected the other motivational factors negatively, generating a downward spiral of low goal- and vision orientedness, and a constant decrease of positive emotional loading.

Regarding the future-oriented factors of motivation namely goal- and vision orientedness (Zimbardo & Boyd, 2015), the students in the intervention group remained highly motivated in achieving the short-term goal of getting good grades in German, which would enable them

to fulfil their long-term goals of taking the final exam or a B2 level language exam in German. The high goal-oriented motivation was accompanied by stronger and clearer visions and imaginations of becoming a successful language user of the German language in the personal or professional domains of life. The control group did not manage to maintain high levels of these future-oriented factors which are interconnected with the perceived difficulty of the task (in this case, learning German) (Ajzen, 1991), and low self-efficacy. The results are in alignment with the findings of Moritz et al. (1996), and Weinberg et al. (1993) considering the significant role of mental self-imagery in strengthening self-efficacy beliefs, and therefore in displaying motivated behaviour. The results indicate that future oriented motivational factors are strongly interconnected with the perception of progress, where personally significant (sub-) goals and self-images act as the desired endpoint, and perception of progress serves as feedback during the process of achieving these goals.

An interesting outcome of the plots is that similar levels of facilitative behavioural routine in the two groups do not lead to similar levels of perception of progress in the intervention and the control group. After a boost in the first month in the two groups, the perception of progress levels in the control group begin to decrease, and this tendency continues throughout the remainder of the project. Participants in the control group reveal significantly higher levels of perception of progress, a feeling, which assures the participants that the invested time and energy in establishing and maintaining a facilitative behavioural routine is sufficient to reach their goals.

Considering the relatively high level of positive emotional loading elicited from the first questionnaire, it can be stated that both groups engaged in the process of learning German as L3 with positive feelings, which were then affected by the perception of ongoing progress (Dörnyei, et al., 2014), resulting in a constant decrease of positive emotional loading in the control group, whereas participants in the intervention group managed to regain positive emotionality from December, when the level of perception of progress began to increase as well.

Referring to research question 2b, the attitudinal levels reveal similar patterns in the intervention group by displaying an initial boost, which was lost and regained, whereas in the control group a steady shift towards negative attitudes was observed throughout the whole project. The findings of the attitude scales are by no means surprising, since motivational factors are reflected in the attitude-pairs at the two ends of the scales, therefore the results elicited from the attitude scales confirm the responses that were obtained from the motivational statements.

In accordance with the outcome of the motivational questionnaire, the hypothesis for the motivational part of the research is confirmed as motivational factors as identified by the DMC (Dörnyei et al., 2014) in the intervention group underwent a significant increase, as well as the participants in this group revealed a significantly more positive attitude as the students in the control group.

We believe that the DMM-based teaching project presented in this thesis imposed a positive effect on student motivation. Through building on the students existing knowledge about their L2, thus emphasizing the role of the linguistic basis they already have, as well as consciously encouraging them to recognise cross-linguistic similarities between German and English, which would make the learning process of German as L3 more straightforward, the self-efficacy beliefs and confidence of the students were strengthened, which again influenced other motivational factors such as goal- and vision-orientedness, perception of progress, and positive emotional loading.

## **7. Limitations**

While the present study provides valuable insights into general trends of L3 writing development in a group exposed to extensive cross-linguistic sensitisation there are a number of limitations to be considered. Firstly, the sample size used in this study was relatively small, which may affect the generalisability of the results to a larger population.

Moreover, the current thesis focused on the writing development of two groups of participants and did not delve into individual differences in language learning strategies or motivation. Taking into consideration that ergodicity, denoted as a group consisting entirely of similar individuals (Lowie & Verspoor, 2018; Molenaar & Campbell, 2009) does not entirely apply to any human group, it is not the intention of this study to predict exactly how development takes place in each individual participant in what order or at what specific time, the current doctoral thesis focuses rather on gaining insight into general trends of L3 development in a group exposed to extensive cross-linguistic sensitization.

Other factors that may have affected the results to some extent issue from the researcher/experimenter effect (Kintz, et al. 1965), which occurs when a researcher consciously or unconsciously acts in a way to support the hypothesis. In order to minimise this effect, some variables (Dörnyei, 2001) were controlled by the questionnaire about the classroom setting, and careful consideration was given to the fact that teachers with similar habitus were teaching the two groups.



Online teaching introduced due to the Covid-19 pandemic in Hungary between 2019 and 2021 affected both the pilot and the research year of the project and imposed new challenges to teachers and students as well. However, by the time of the research year, online teaching was not a novelty. In order to engage the students to the greatest possible extent, the lessons in both groups were held in form of video conferences. Due to the situation of switching from personal attendance to online teaching, different results might have arisen if the research could have been conducted entirely with personal attendance. Notwithstanding, since effort and careful consideration were devoted to ensure similar conditions in both groups, the circumstances of online teaching are not considered to have affected the differences in the results of the two groups.

## **8. Conclusions and outlook**

The objective of the current doctoral thesis was to provide evidence considering the differences in linguistic development, motivational and attitudinal changes between an intervention group participating in a L3 teaching project, which focused on raising cross-linguistic and metalinguistic awareness, and a control group, where the L3 was taught according to SLA principles.

The study concludes that students exposed to multilingual awareness-training were able to use a wider range of vocabulary, employ a more sophisticated lexis, create more complex sentences, and generate longer meaningful texts to describe their environment as students who were taught according to SLA principles. The results obtained through the motivational questionnaire indicate that the multilingual awareness intervention was successful in helping the participants of the intervention group regain and maintain a significantly higher level of motivation and significantly more positive attitudes towards learning German after English as opposed to the control group.

The outcome of the research suggests that exposure to multilingual awareness-raising activities can enhance the communicative competence in writing, target language proficiency in the initial phase of L3 learning. Moreover, multilingual awareness-training enables the learners to stay motivated and develop more positive attitude towards learning a more grammatically complex L3 as their L2. The research findings support the European Union's goal of individuals learning at least two languages apart from their L1 (Eurobarometer, 2012: 2).

Moreover, exploiting the existing language knowledge of the students about their L2 may trigger an intense motivational drive in L3 learning by strengthening the learners' self-efficacy and perceived behavioural control concerning their engagement in learning a more complex

language than their L2. In this sense, a multilingual teaching approach contributes to the development of more confident and enthusiastic learners who make their own individual connections and comparisons and develop their language repertoire further. Using multiple languages in the classroom does not only improve the flexibility of the students to switch and adapt to situations and their communication partners, but also seems to provide a better insight into how languages work, or more interest in languages. Therefore, the teaching method developed for the current doctoral thesis represents a valuable asset in overcoming the motivational loss that is characteristic for L3 German learning in Hungary (EMMI, 2012).

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## Appendix

### Appendix 1 Example for the process of the multilingual awareness intervention

#### Stage 1. Presentation of the text

The main condition in the selection process of the texts was to ensure that the topic and length of the texts correspond with the texts in the coursebook that were covered by the control group.

Mein Name ist Anna. Ich komme aus England und ich lebe seit drei Jahren in Deutschland. Meine Haare sind braun und meine Augen sind blau. Ich bin 15 Jahre alt und ich habe eine Schwester und einen Bruder. Ich bin kreativ und freundlich. Ich gehe in die Schule; mein Lieblingsfach ist Mathematik. Mein Vater, meine Mutter, mein Bruder, meine Schwester und ich leben in München. Wir haben eine Katze und vier Goldfische. Meine Hobbys sind Volleyball spielen und tanzen.

As a comparison: the text with the topic *Introduce yourself* from the coursebook (Maros 2016: 31)

„Ich bin Niklas, ich bin 15 Jahre alt und suche eine Brieffreundin. Ich bin 1.70 groß, habe dunkelbraune Haare, bin ein bisschen faul, aber sehr nett und sportlich. Aber in der Schule bin ich nicht so gut. Ich habe 2 Geschwister, einen Bruder und eine Schwester. Ich möchte später auch mal selbst Kinder haben und heiraten. Ich wohne in München, dort gehe ich auf das Alt-Ötting-Gymnasium. Meine Hobbys sind Fußball, am PC und und X-Box spielen.“

**Stage 2.** Students look for words that they consider as familiar, process of clarifying the meaning of the words, and clarifying the overall meaning of the text (introduction, personal data)

possible Examples:

*Name (name), komme (come), England (England), Jahren (year), Haare (hair), braun (brown), blau (blue), Schwester (sister), Bruder (brother), kreativ (creative), freundlich (friendly), ich (I), habe (have), Schule (school), leben (live), mein (my), Mutter (mother), Vater (father), Goldfische (goldfish), Hobbys (hobbies)*

**Stage 3.** The text is presented in English – the students have the opportunity of finding additional cognates, and to check the meaning of the Words in the English version of the text.

*My name is Anna. I come from England, and I live in Germany since three years. My hair is brown, and my eyes are blue. I am 15 years old, and I have a sister and a brother. I am creative and friendly. I go to school; my favourite subject is mathematics. My father, my mother, my sister, and I live in München. We have a cat and four goldfish. My hobbies are playing volleyball and dancing.*

**Stage 4.** Discussion of structural similarities, such as definite and indefinite articles, word order, position of the subject and predicate in the sentence, possessive pronouns *mein/e (my)*, *haben (have)* und *sein (ist) (is)* as main verbs.

**Stage 5.** Translation activities from English into German.

*My brother is four years old.*

*My eyes are brown.*

*My mother is creative.*

*We live in Budapest.*

*My cat is friendly.*

## Appendix 2 Example for the multilingual proficiency test

### 1. Szerinted melyik a helyes szó, amit a német nyelvben használnak? Karikázd be a szerinted helyes szó betűjelét.

- |              |               |               |              |
|--------------|---------------|---------------|--------------|
| a) coffee    | b) Caffé      | c) Kaffee     | d) Kafée     |
| a) Bier      | b) Bear       | c) Beer       | d) beer      |
| a) muzik     | b) music      | c) musik      | d) Musik     |
| a) tea       | b) Tee        | c) Tea        | d) tee       |
| a) Conzert   | b) Concert    | c) Konzert    | d) concert   |
| a) chocolate | b) Schokolade | c) Schokolade | d) Chocolate |
| a) Gitarre   | b) Guitar     | c) gitarre    | d) guitar    |
| a) tancen    | b) dance      | c) tanzen     | d) dancen    |
| a) trinken   | b) drinken    | c) trink      | d) drink     |
| a) maken     | b) make       | c) macken     | d) machen    |

### 2. Szerinted helyes a mondat, vagy hibás? Ha hibás, javítsd ki!

Was drinkst du?

<input type="checkbox"/> szerintem helyes	<input type="checkbox"/> szerintem hibás Írd le a szerinted helyes mondatot .....
---	---

Wer wohnt in Zimmer 5?

<input type="checkbox"/> szerintem helyes	<input type="checkbox"/> szerintem hibás Írd le a szerinted helyes mondatot .....
---	---

Wie heißt der man?

<input type="checkbox"/> szerintem helyes	<input type="checkbox"/> szerintem hibás Írd le a szerinted helyes mondatot .....
---	---

Who ist das Oktoberfest?

<input type="checkbox"/> szerintem helyes	<input type="checkbox"/> szerintem hibás Írd le a szerinted helyes mondatot .....
---	---

Wie old bist du?

<input type="checkbox"/> szerintem helyes	<input type="checkbox"/> szerintem hibás Írd le a szerinted helyes mondatot .....
---	---

### 1. Mit tudsz elmondani magadról és környezetedről németül?



<b>fluency</b>	text length	the total number of words divided by the number of participants in each group
<b>lexical diversity</b>	measurement of textual lexical diversity (henceforth MTLD)	the total MTLD value for each text divided by the number of participants in each group
<b>lexical complexity</b>	distribution of lemmas according to CEFR levels	percentage of lemmas (with the number of occurrences) assigned the accurate proficiency level
<b>syntactic complexity</b>	clause length	total number of tokens divided by the number of clauses containing a finite verb in each group
<b>grammatical accuracy</b>	grammatical accuracy	total number of errors divided by the number of clauses containing a finite verb in each group

#### Appendix 4 Organisation of the errors for eliciting grammatical accuracy

<b>Error type</b>	<b>Problem</b>
<b>lexical error</b>	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
<b>spelling error</b>	incorrect spelling due to L1 or L2 interference, phonetic spelling, homophone spelling of target language words, typos
<b>verb error</b>	incorrect predicate form or predicate use
<b>grammatical error</b>	incorrect use of articles, word class, number, masculine/feminine forms, declination of adjectives, prepositions
<b>mechanical error</b>	incorrect use of capital letters, spaces
<b>word order error</b>	incorrect word order

#### Appendix 5 Open and closed-ended questions in the initial questionnaire

1. Milyen nyelven beszéltek otthon? What language do you speak at home?
2. Milyen nyelven beszélsz a barátaiddal? What language do you speak with your friends?
3. Milyen nyelvet tanultál eddig az iskolában? What language(s) have you studied at school so far?

4. Te választottad a németet második idegen nyelvnek? Was it you, who has chosen German as your second foreign language?
- ☐ igen ☐ nem
- a. Ha igen, mi motivált a választásod során? If so, what motivated your choice?
- b. Ha nem, ki segített a döntésben? If not, who helped you make this decision?
- c. Milyen érvek alapján döntöttetek? What arguments did you base your decision on?
5. Szerinted lesznek kihívások vagy problémák a német nyelv tanulása során? Do you think there will be challenges or problems in learning German?
- ☐ igen ☐ nem
- Kérlek, indokold a válaszodat. Please explain your answer.

**Appendix 6** Motivational questions (strongly agree... strongly disagree)

	English	Hungarian
<b>Long- and short-term goals</b>		
1.	Among my short-term goals it is relevant, that I obtain good grades in the German lessons.	Rövid távú céljaim között meghatározó, hogy jó jegyeket szerezzek a német nyelvi tanórákon.
7.	Taking the B2 level language exam in German language is among my long-term goals.	Hosszú távú céljaim között szerepel, hogy középfokú (B2) nyelvvizsgát tegyek német nyelvből.
13.	Spending a longer period of time in a German-speaking country (as an employee or as a tourist) is among my long-term goals.	Hosszú távú céljaim között szerepel, hogy német nyelvterületen töltssek el hosszabb időt (munkavállalóként, turistaként).
19.	Taking the final exam in German language as an optional subject is among my long-term goals.	Hosszú távú céljaim között szerepel, hogy érettségi vizsgát tegyek német nyelvből választható tantárgyként.
<b>Facilitative behavioural routine</b>		
2.	I spend time every day learning German and improving my German language skills.	Minden nap foglalkozom a német nyelv tanulásával és német nyelvi képességeim fejlesztésével.
8.	I regularly devote time to obtain new information in German about things I am interested in.	Rendszeresen fordítok időt arra, hogy német nyelven szerezzek új információkat az engem érdeklő dolgokról.
14.	I practice German voluntarily, besides the compulsory tasks.	A kötelező feladatokon kívül önállóan is gyakorlom a német nyelvet.
20.	I have managed to include learning German into my daily routine.	A német nyelv tanulását sikerült szokásként beépítenem a napirendembe.
<b>Positive emotional loading</b>		
3.	I learn German with joy.	Örömmel tanulom a német nyelvet.
9.	Learning and practicing German make me feel good.	Jól érzések töltenek el, amikor a német nyelvet tanulom, gyakorlom.

15.	I look forward to the upcoming German lesson with excitement.	Pozitív izgalommal várom a következő németórát.
21.	Acquiring new skills through learning German enthuses me.	Lelkesít, hogy a német nyelv tanulásán keresztül egy új képességre tehetek szert.
<b>Perceived behavioural control of participant</b>		
4.	I can achieve the expected level at the quizzes and tests in the German lessons with ease.	Könnyen tudom teljesíteni az elvárt szintet a német tanórai számonkéréseken.
10.	I feel that I have good skills to acquire German.	Úgy érzem, hogy jó képességekkel rendelkezem a német nyelv elsajátításához.
16.	Completing the tasks in the German lesson does not cause difficulties.	Nem okoz nehézséget az egyes feladatok teljesítése a németórán.
22.	There are no obstructive factors concerning learning German that I could not tackle.	Úgy érzem, hogy nincs olyan akadályozó tényező a német nyelv tanulásával kapcsolatban, amit ne tudnék legyőzni.
<b>Perception of progress</b>		
5.	I am making good progress in acquiring my goals concerning German.	Jó úton haladok a német nyelvvel kapcsolatos céljaim eléréséhez.
11.	I am able to express myself in German better all the time.	Egyre jobban tudom kifejezni magam német nyelven.
17.	I feel that my German language skills are getting better all the time.	Érzem, hogy a német nyelvi képességeim egyre jobban fejlődnek.
23.	I feel that I am able to meet the challenges during German language acquisition successfully.	Úgy érzem, hogy sikerrel teljesítem a kihívásokat a német nyelv tanulása során.
<b>Vision-orientedness</b>		
6.	I can imagine, that I will work in a German speaking country in the future.	Elképzelhetőnek tartom, hogy a jövőben német nyelvterületen dolgozzam.
12.	Next time when I visit a German speaking country, I will be able to get along well with using the German language.	Szerintem amikor legközelebb német nyelvterületre utazom, jól el tudok majd igazodni a német nyelv használatával.
18.	In case of having German friends, I will be able to keep in touch with them using the German language.	Elképzelhetőnek tartom, hogy ha német barátaim lesznek, akkor jól fogom velük tudni tartani a kapcsolatot németül.
24.	I can imagine that I will often use the German language in the future.	Elképzelhetőnek tartom, hogy a jövőben gyakran fogom használni a német nyelvet.

#### Appendix 7 Questions about the classroom setting (strongly agree...strongly disagree)

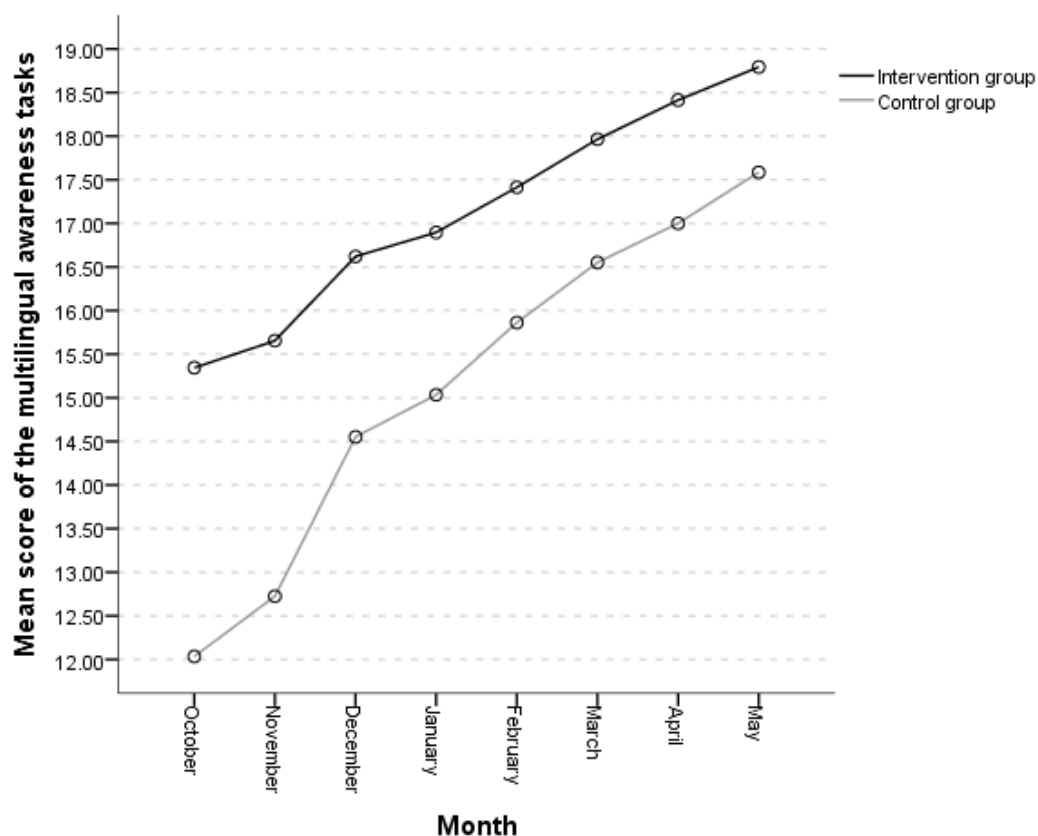
	English	Hungarian
<b>Teacher personality</b>		
1.	The teacher has a good sense of humour.	A tanárnak jó humorérzéke van.
7.	The teacher always comes to the class well-prepared.	A tanár mindig jól felkészülten jön órára.
13.	The teacher is concerned with our language needs.	A tanárt érdeklik a nyelvi szükségleteink.

19.	The teacher shares his/her interest about the German language.	A tanár megosztja velünk a saját érdeklődését a német nyelvvel kapcsolatban.
25.	The teacher shows his/her enthusiasm about the language.	A tanár kimutatja lelkesedését a német nyelv iránt.
<b>Feedback</b>		
2.	The teacher evaluates our work along clear criteria.	A tanár világos értékrend szerint értékeli a munkánkat.
8.	The teacher regularly gives feedback about our work.	A tanár rendszeresen ad visszajelzést a munkánkról.
14.	The teacher gives us guidelines on how to correct our mistakes and errors.	A tanár útmutatást ad, hogy hogyan tudjuk javítani a hibáinkat.
20.	The feedback is comprehensible.	A tanár visszajelzése érthető.
26.	The teacher encourages us to contribute to the given topic in class.	A tanár bátorít minket, hogy aktívan hozzászóljunk az adott témához a tanóra során.
<b>Classroom atmosphere</b>		
3.	It is natural, that we make mistakes in class.	Az órán természetes, ha hibákat vétünk.
9.	The teacher corrects our linguistic errors patiently	A tanár türelmesen javítja a nyelvi hibáinkat.
15.	The classroom atmosphere is tolerant.	A tanóra hangulatára a tolerancia jellemző.
21.	The teacher encourages us to cooperate in group- or pair-work.	A tanár biztat az együttműködésre a csoportos vagy páros feladatok során.
27.	The teacher regularly gives us tasks to be completed in small groups.	A tanár rendszeresen ad kis csoportban végzendő feladatokat.
<b>Teacher goal setting</b>		
4.	The teacher regularly determines short-term goals.	A tanár rendszeresen határoz meg rövid távú célokat.
10.	The short-term goals determined by the teacher are accomplishable.	A tanár által meghatározott rövid távú célok elérhetőek.
16.	The short-term goals are challenging.	A tanár által meghatározott rövid távú célok pozitív kihívást jelentenek.
22.	The teacher explains, how we can achieve the determined short-term goals.	A tanár elmagyarázza, hogy hogyan érhetjük el a tanár által meghatározott rövid távú célokat.
28.	It is clear to me, how the short-term goals contribute to the achievement of my long-term goals concerning the German language.	Számomra világos, hogy a rövid távú célok hogyan járulnak hozzá a német nyelvvel kapcsolatos hosszú távú céljaim megvalósításához.
<b>Instruction</b>		
5.	The teacher explains everything in a comprehensible way in the class.	A tanár érthetően magyaráz az órán.
11.	The instructions of the teacher are clear.	A tanár utasításai világosak.
17.	After the explanation, the teacher gives us time to ask questions about the given material.	A tanár a magyarázat után ad időt arra, hogy kérdéseket tegyünk fel az adott tananyagrésszel kapcsolatban.

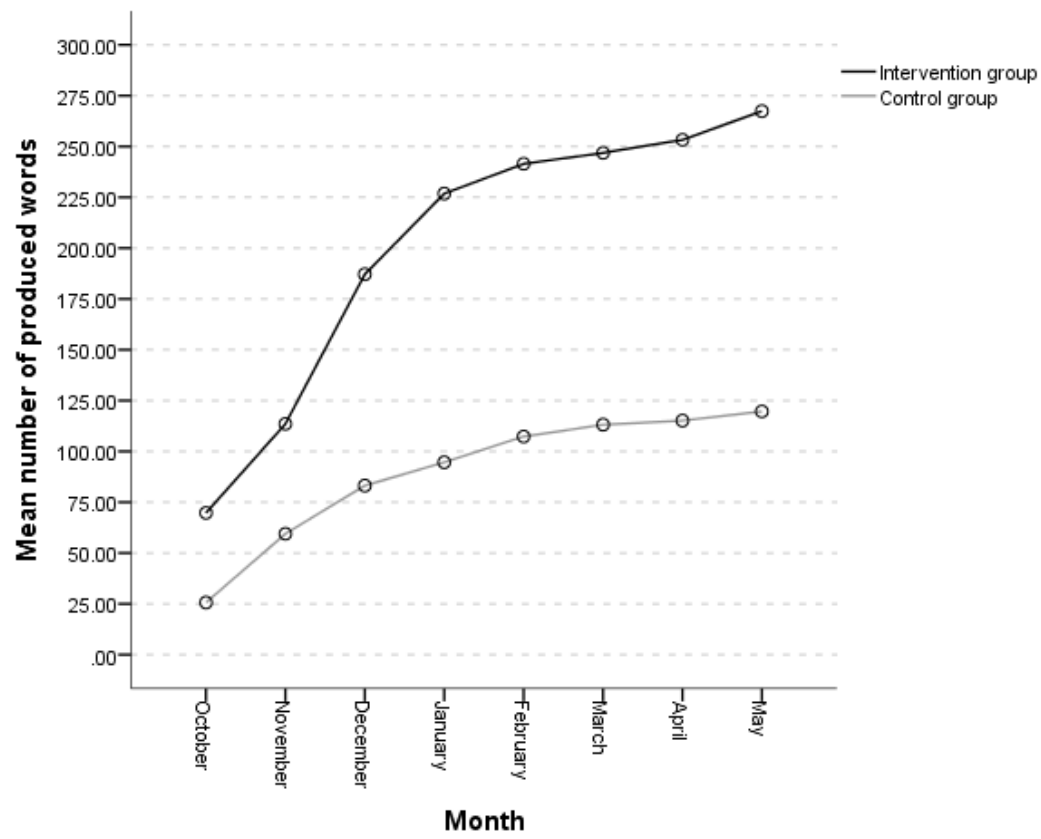


23.	The teacher uses examples to illustrate the given linguistic structures.	A tanár példákat használ, hogy illusztrálja a tanított nyelvi struktúrákat.
29.	The teacher gives us guidelines on how to do the assigned tasks.	A tanár útmutatást ad abban, hogy hogyan csináljuk meg a feladott munkát.
<b>Content</b>		
6.	The pace of teaching is convenient for me.	A tanítás sebessége megfelelő a számomra.
12.	The teacher teaches material that is relevant to us.	A tanár olyan tananyagot tanít, ami releváns a számunkra.
18.	The tasks concerning the teaching material are challenging.	A tananyaghoz kapcsolódó feladatok pozitív kihívást jelentenek a számunkra.
24.	The tasks concerning the teaching material are interesting.	A tananyaghoz kapcsolódó feladatok érdekesek.
30.	The teacher encourages us to conduct our own research (e.g. on the internet) considering things related to German language.	A tanár bíztat minket, hogy saját magunk is kutatást végezzünk (pl. interneten) a német nyelvvel kapcsolatos dolgokról.

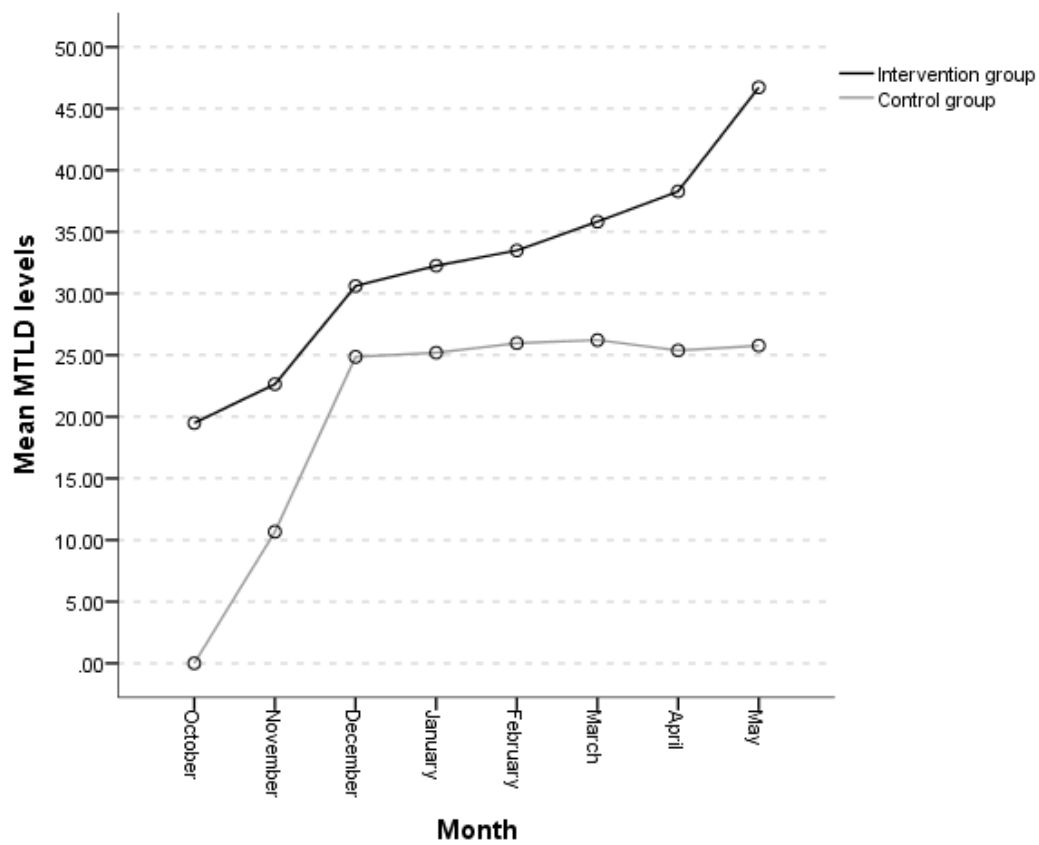
**Appendix 8** Plot for the level of multilingual awareness



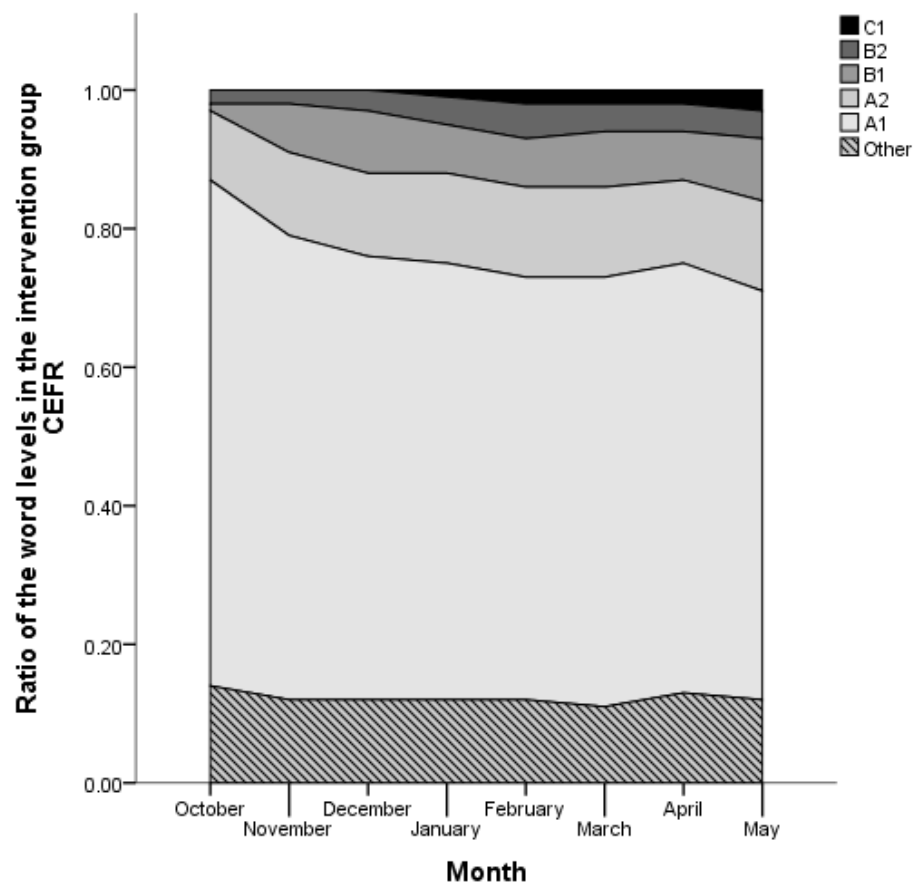
**Appendix 9** Plot for fluency



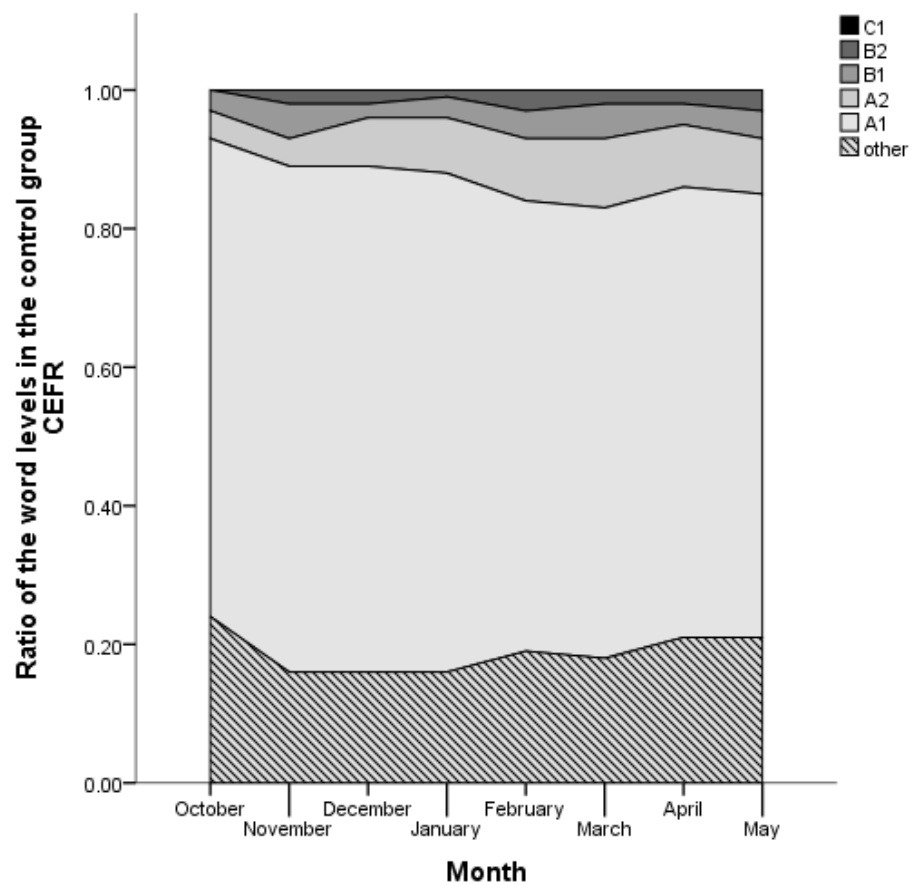
**Appendix 10** Plot for lexical diversity



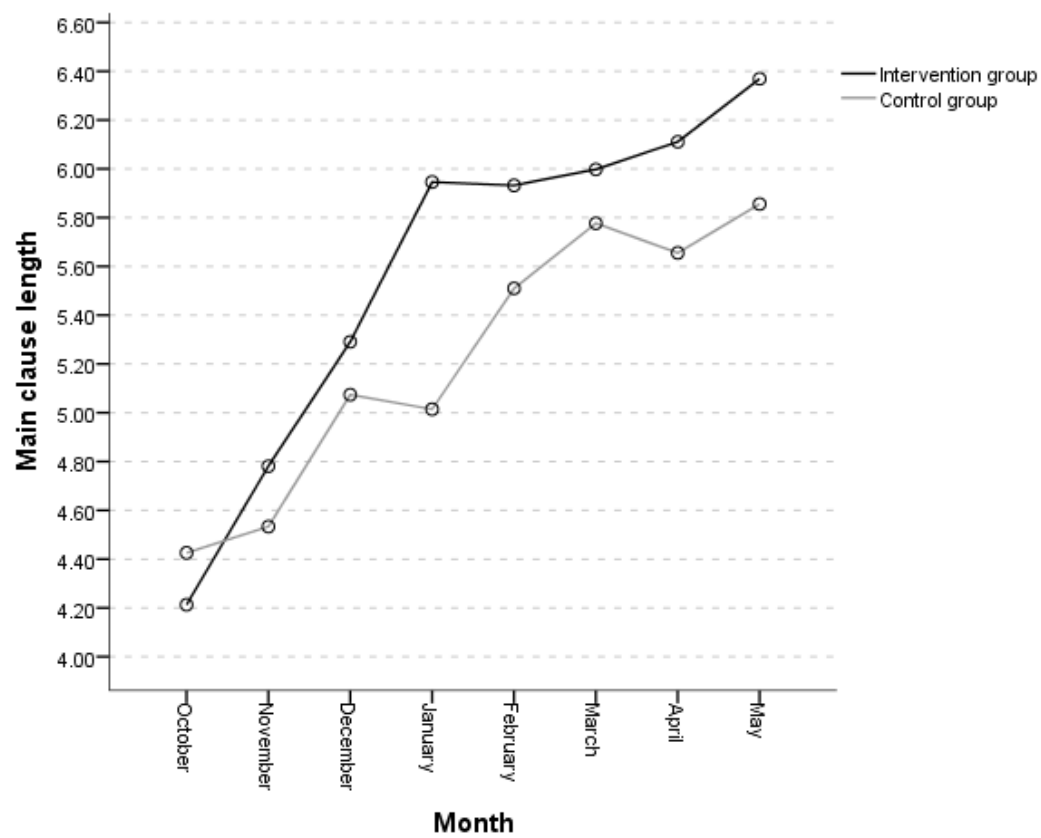
**Appendix 11** Ratio of the word levels in the intervention group as a variable for lexical complexity



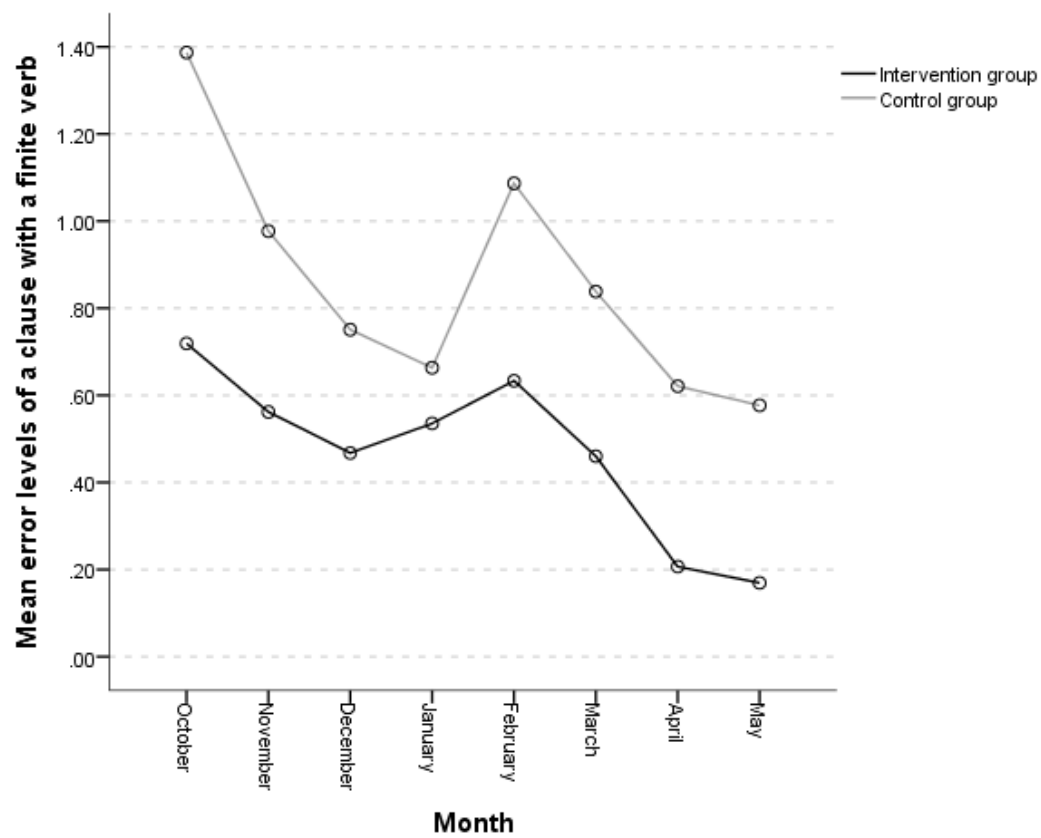
**Appendix 12** Ratio of the word levels in the control group as a variable for lexical complexity



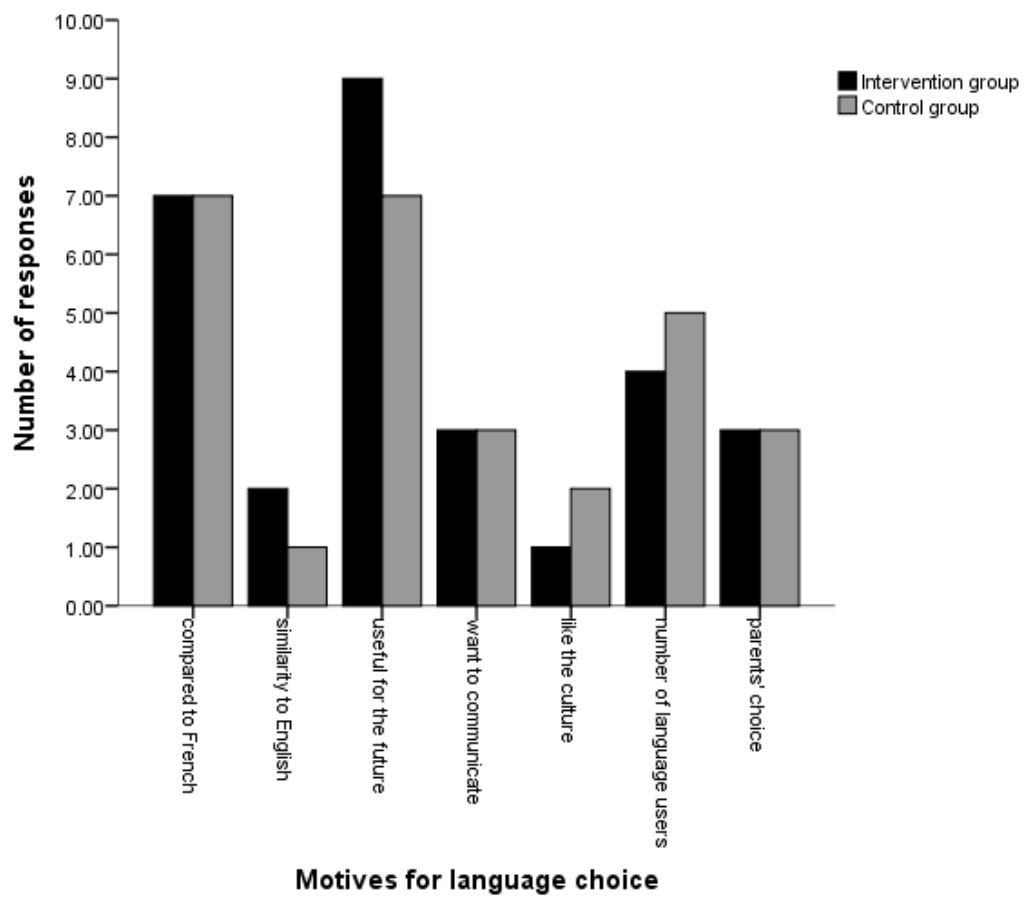
**Appendix 13** Plot for syntactic complexity



**Appendix 14** Plot for grammatical accuracy

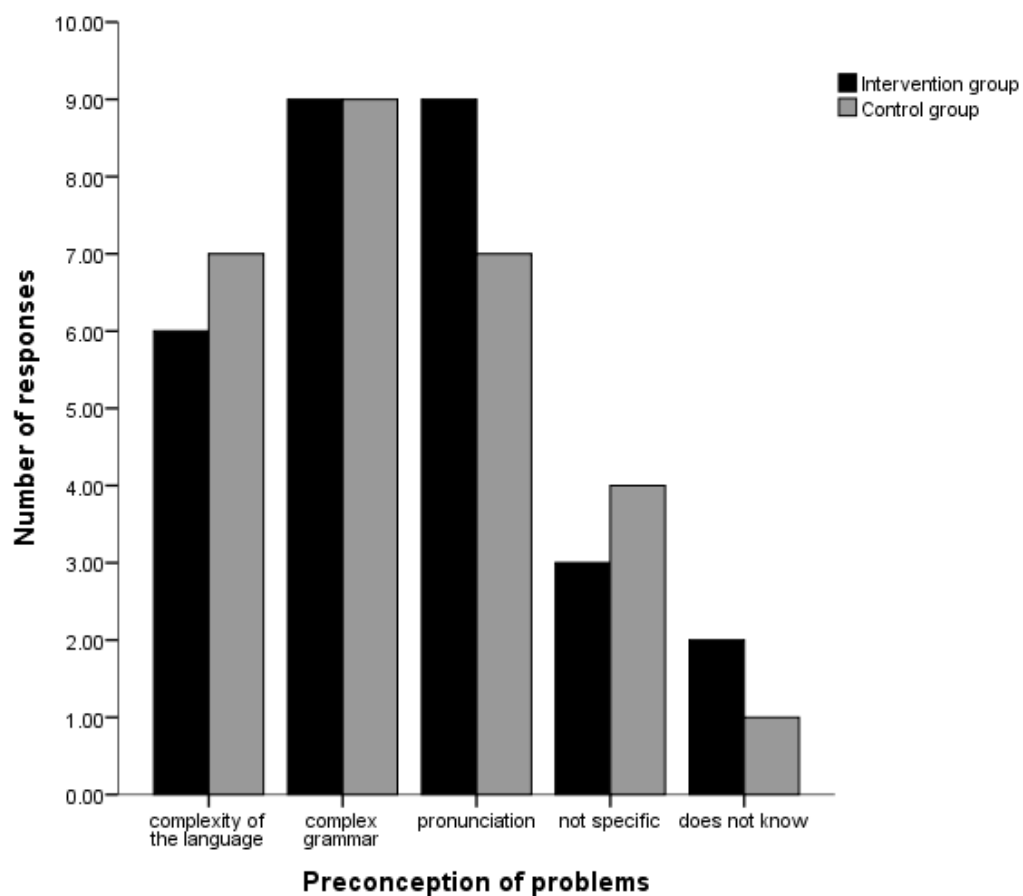


## Appendix 15 Motives for language choice

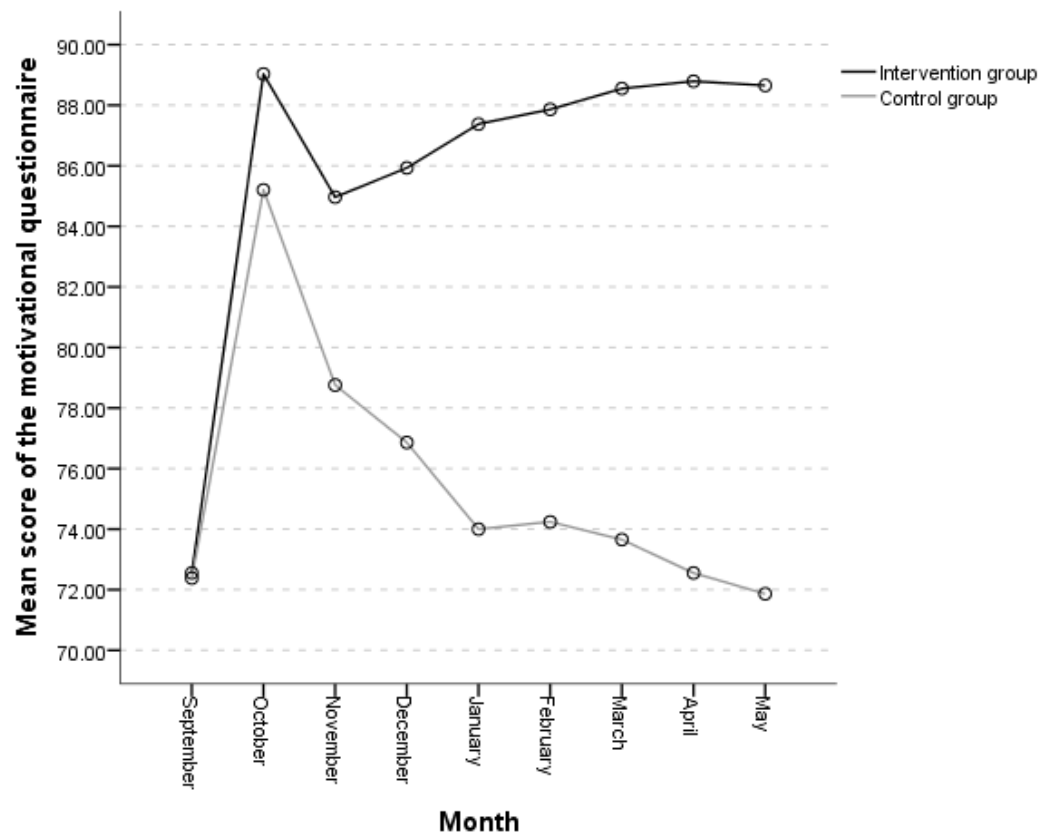


## Appendix 16 Preconception of problems during the learning process

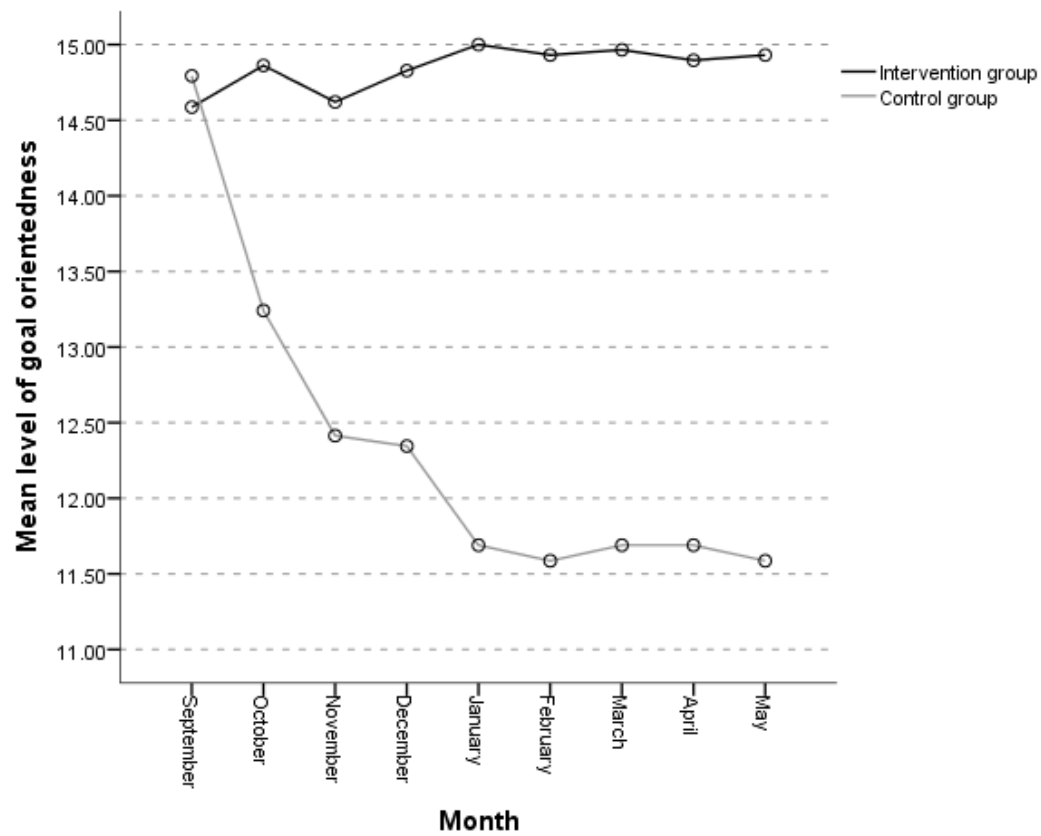




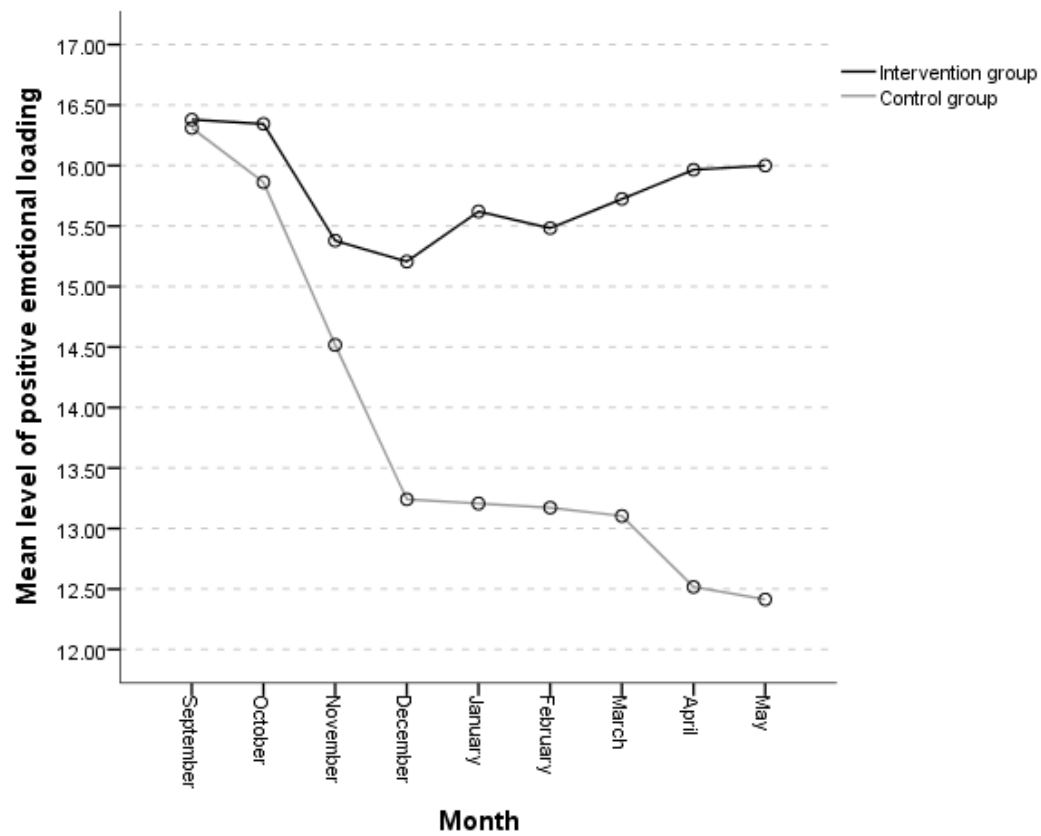
**Appendix 17** Plot for the level of motivation



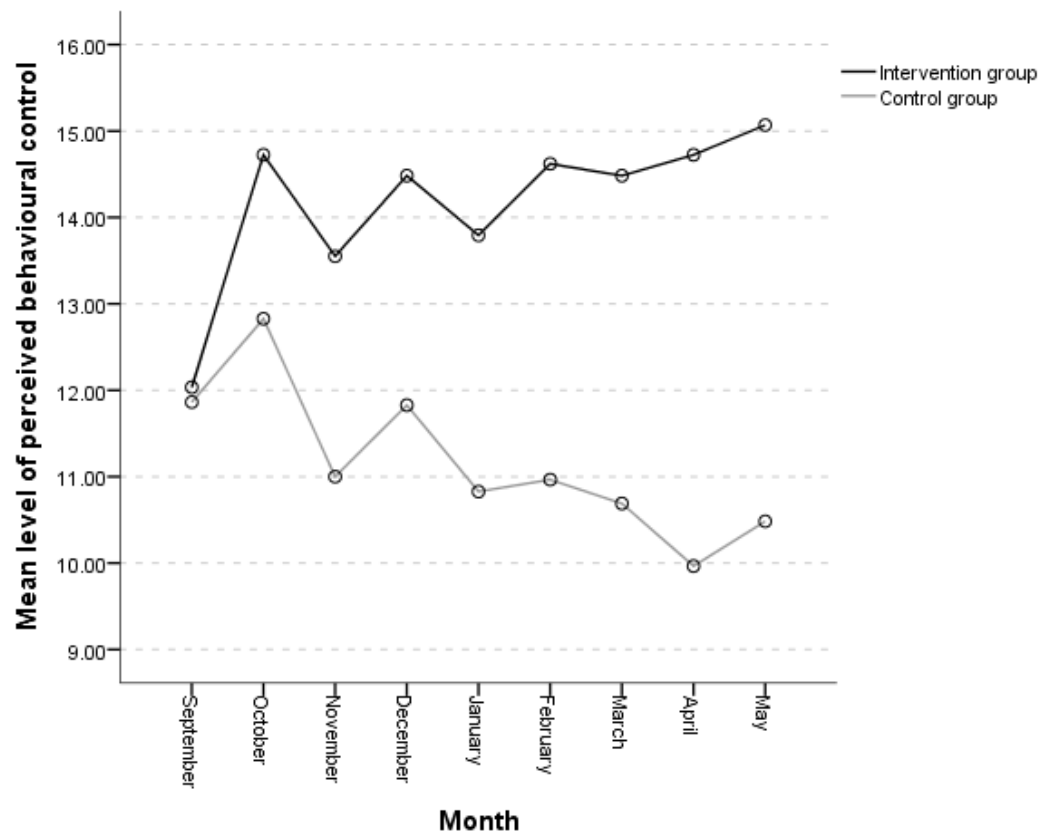
**Appendix 18** Plot for the level of goal orientedness



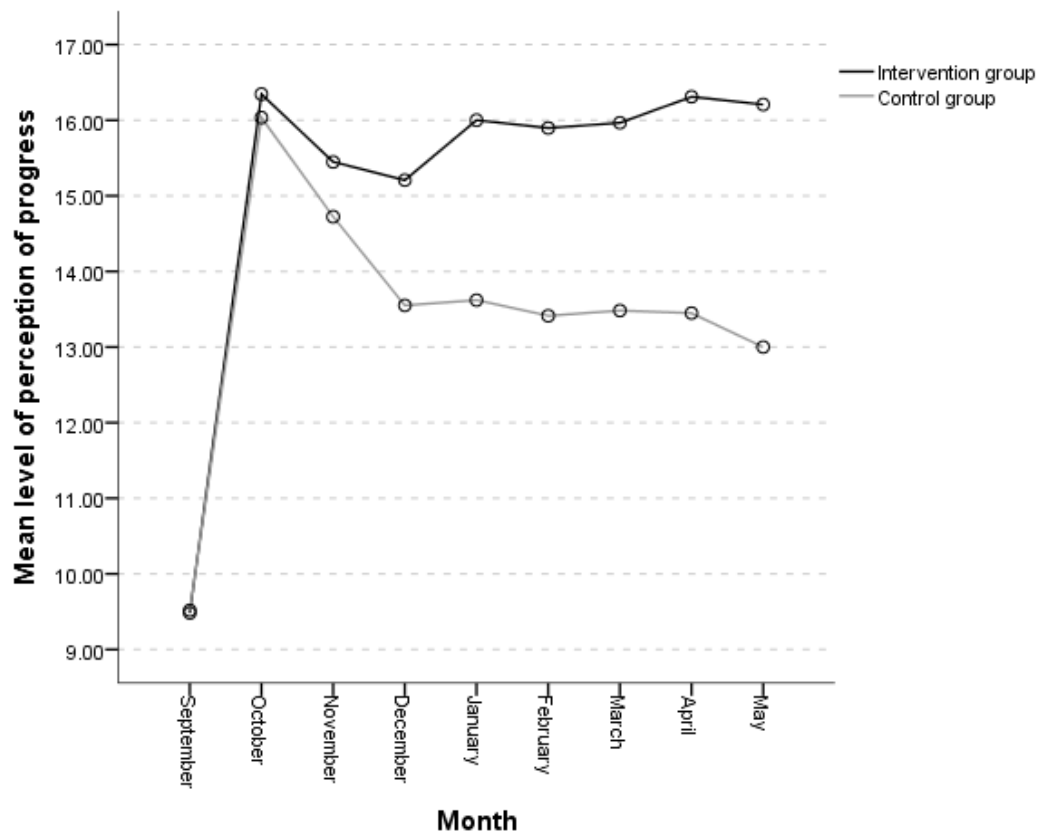
**Appendix 19** Plot for the level of positive emotional loading



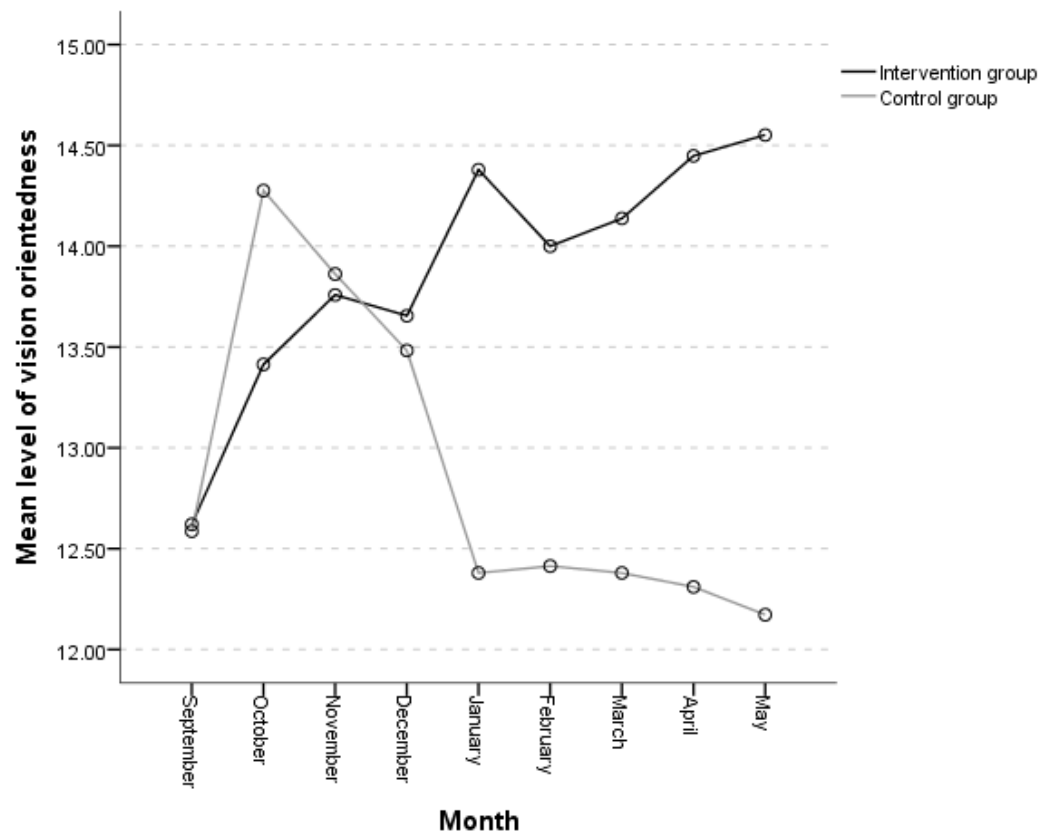
**Appendix 20** Plot for the level of perceived behavioural control



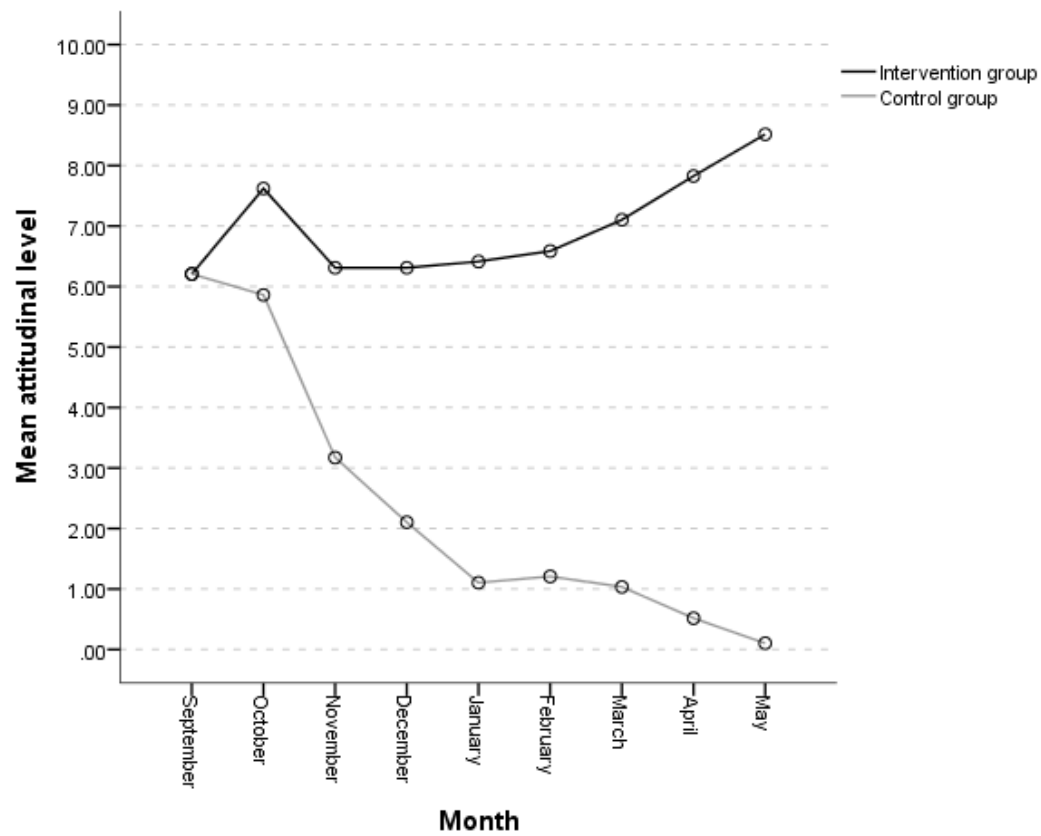
**Appendix 21** Plot for the level of perception of progress



**Appendix 22** Plot for the level of vision orientedness

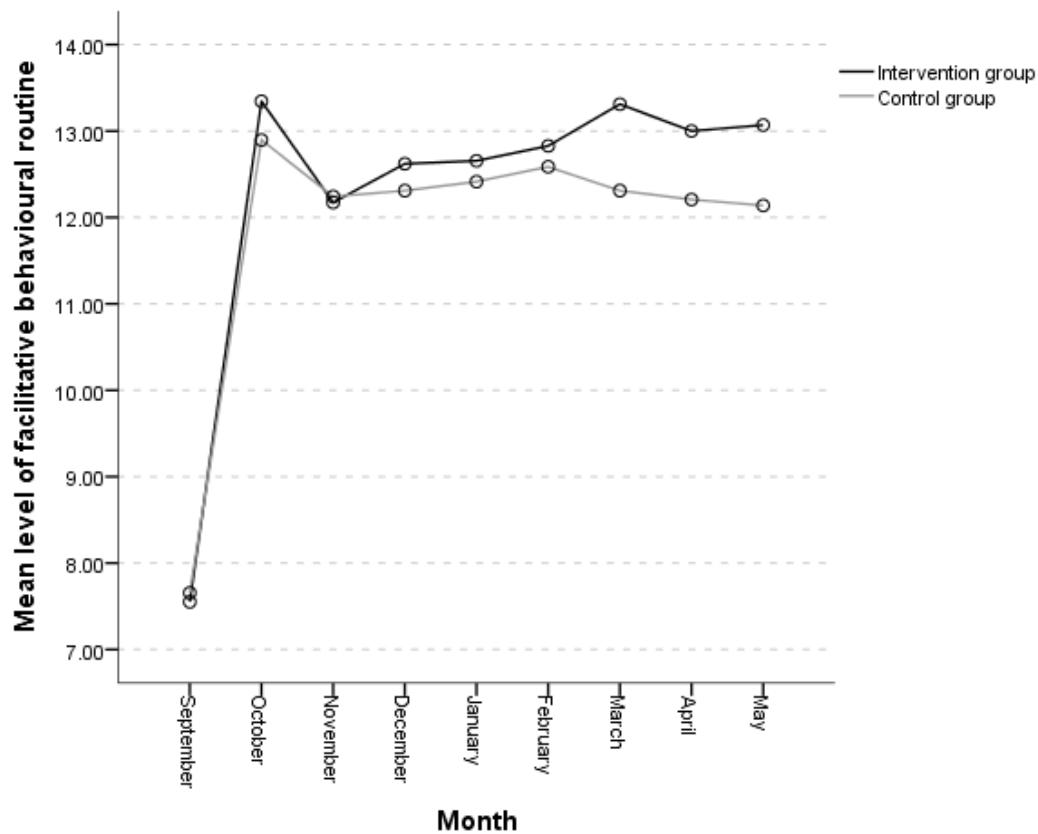


**Appendix 23** Plot for the attitudinal level



**Appendix 24** Plot for the level of facilitative behavioural routine





## Appendix 25 Statistical analysis of the questionnaire about the classroom setting

	Means		t(12)	<i>p</i> (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

Note: N = 29