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

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Thesis for obtaining a PhD degree at the Multilingualism Doctoral School of the University of Pannonia

in the branch of Linguistics

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Supervised by:

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Table of Contents

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 9th 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.

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Disclaimer: Gender neutral language

Throughout the thesis, all pronouns are meant to be gender neutral, unless otherwise specified.

List of acronyms

CEFR ..... Common European Framework of Reference

CLI ..... Cross-linguistic influence

CLIN ..... Cross-linguistic interaction

CLT ..... Communicative language teaching

DMM ..... Dynamic Model of Multilingualism

CDST ..... Complex Dynamic Systems Theory

DyME ..... Dynamics of Multilingualism with English

EuroCom ..... Eurocomprehension

FLAM ..... Foreign Language Acquisition Model

IC ..... Intercomprehension

KMO ..... Kaiser-Meyer-Olkin measure

K-S test ..... Kolmogorov-Smirnov test

L1, L2, L3, Ln ..... First language, second language, third language, n^{th} language

LME ..... Language maintenance effort

M-factor ..... Multilingualism factor

MICReLa ..... Mutual Intelligibility of Closely Related Languages

MLA ..... metalinguistic awareness

MTLD ..... Measurement of textual lexical diversity

PCA ..... Principal component analysis

RM-ANOVA ..... Repeated measures analysis of variance

SLA ..... Second language acquisition

TL ..... Target language

TLA ..... Third language acquisition

XLA ..... cross-linguistic awareness

List of tables

List of figures

Part I:

Theoretical background

1. Introduction and overview

Europe represents a complex linguistic landscape rooted in historical, political, and geographical factors, making multilingualism a universal and multifaceted reality. The European Union's commitment to multilingualism is reflected in various documents (EMMI, 2012; European Commission, 2007) and initiatives that emphasise linguistic diversity, language learning, and language use across its member states. The European Union's language policies aim to promote communication, cohesion, and cultural exchange within the Union, thus contribute to understanding and peace in Europe, while respecting the linguistic rights and identities of its citizens. Promoting multilingualism is argued to enhance economic and job opportunities, as well as professional mobility (Heller & Duchene 2011 cited in Jessner & Kramsch, 2014).

This study draws on research of bi- and multilingualism, multiple language acquisition language use, and various theories of motivation and individual behaviour. The study itself presents two focal points: on one hand, the significance of multilingual awareness and its role in language teaching and learning in educational settings, on the other hand, motivational and attitudinal changes during the initial phase of language acquisition are discussed.

The present doctoral thesis consists of two parts: Part I contains a theoretical discussion on bi- and multilingualism, the role of mutual intelligibility between (closely related) languages, theories of multiple language acquisition with particular focus on multilingual awareness and multilingual education from the dynamic systems/complexity theory perspective and on the Dynamic Model of Multilingualism, which provides the framework for the linguistic part of the research. Part I further provides a review of theories of individual behaviour and motivation, highlighting the dynamic approach of the Directed Motivational Current, which is regarded as a comprehensive approach to understanding motivation of language learners. These focal points are reflected on from the perspective of European and Hungarian educational and language policies in Part II, which covers the pilot year and the research year of the empirical study carried out by the author in a Hungarian secondary school. Part II leads into the discussion of the results

and provides a conclusion for a possible change in German as a third language teaching in institutional context in Hungary.

Part I begins with Chapter 2, which provides an overview of the definitions used in bi- and multilingualism research, as well as psycholinguistic and sociolinguistic aspects of the study of multilingualism. This chapter ends with a discussion of the language policies of the European Union emphasizing its commitment at institutional level to promote linguistic diversity in Europe. Chapter 3 reviews research on the mutual intelligibility of languages with a focus on lexical and structural similarities between English and German, which are the languages involved in the processes discussed in the thesis. Chapter 4 is dedicated to various theories of multiple language acquisition with special attention to the Dynamic Model of Multilingualism and its implications for language education. Furthermore, the chapter gives insight into existing research on the role of multilingual awareness in language teaching and learning. Chapters 2, 3, and 4 lead into detailed discussions of the linguistic theoretical perspectives adopted in this work, while chapter 5 explores various theories of motivation which provide the basis for the Directed Motivational Current.

Part II of this thesis presents the educational background of the study and the study itself. Chapter 6 explores the situation of foreign language education in the Hungarian educational context focusing on the difficulties of learning and teaching German after English.

Chapter 7 provides a description of the teaching project encompassing the first year of learning German as a third language. The project includes an instructional and a multilingual awareness intervention designed for 9th grade Hungarian students. Chapter 8 contains a detailed outline of the methodological issues concerning the hypotheses and research questions, the instruments used for the research and to safeguard the measures. Chapter 9 presents the results of the pilot year as well as the validation process of the questionnaires that were intended to be used in the research year. After the discussion and conclusion drawn from the results of the pilot year, the detailed analysis of the results in the research year are presented and discussed. Chapter 9 ends with the limitations of the empirical research that have to be taken into consideration when interpreting the results.

The final section of the thesis in Chapter 10 culminates in a comprehensive conclusion that can be deduced with regards to the theoretical perspectives embraced and the

outcomes of the research. This concluding segment serves as a critical element that provides a final perspective on the overall findings of the research, while also serving as a summary of the critical arguments presented in the thesis. The conclusion encompasses a holistic analysis of the data gathered and the research process, thereby allowing the author to demonstrate the coherence and validity of the research. This concluding section also aims to provide a starting point for future research by highlighting potential avenues for further exploration and expanding the scope of knowledge in the field. The conclusion consolidates the author's position and adds to the wider academic discourse.

2. Terminological discussion of bi-and multilingualism

This chapter aims to explore the notion of bi- and multilingualism by analysing different approaches to define and understand this phenomenon. The concept of bi- and multilingualism is a complex area of research that involves various theoretical and practical approaches, emphasizing different factors that influence learning and using languages. Inconsistencies in the terminology used to define bi- and multilingualism have led to questions regarding to which extent bilingualism and multilingualism are similar or different phenomena. The chapter will consider various definitions of bi- and multilingualism and examine the factors that contribute to the inconsistencies in the terminology used. Furthermore, this part is dedicated to the examination of psycholinguistic and sociolinguistic aspects of multilingualism and how the phenomenon has been approached by different scholars. Special attention is devoted to the language policy of the European Union highlighting the acknowledgement of societal- and promoting linguistic diversity.

2.1. Definitions of bi- and multilingualism

A vast body of research exists regarding the notion of bi- and multilingualism, the definition of which is rooted in various theoretical and practical approaches, emphasizing the diverse factors of learning and using languages.

Bi- and multilingualism research requires the inter- and transdisciplinary approach of distinct fields of science regarding the observations, recognitions, insight and methods of neuro-sciences, psycho- and sociolinguistics, social and political sciences, pedagogies,

speech-psychology, second- and third-language-acquisition studies, foreign language didactics and teaching research (House, 2004).

Considering the distinction between bi- and multilingualism, certain inconsistencies can be observed in the terminology. Kemp (2009) asserts that the incongruency of the definitions results from the differing research traditions, the complex situation of the research participants regarding the use and the very nature of their languages as well as in the researchers' varying backgrounds, purposes and interests (Kemp, 2009: 12). Terminological discussions raise questions regarding whether and to what extent bilingualism and multilingualism are different or similar phenomena, whether the definition of multilingualism excludes bilingualism, as realised by researchers who work within the Complex Dynamic Systems Theory (henceforth CDST) framework (Aronin & Jessner, 2015; Hufeisen & Jessner, 2018), or whether the term bilingualism is encompassed in multilingualism regardless of the differences.

The concepts of bi- and multilingualism are discussed by some approaches synonymously, others represent the standpoint that multilingualism can be defined as a proficiency in more than two languages (Edmondson, 2004: 39). Bausch (2007) argues "dass sich echte Mehrsprachigkeit mit dem Erwerb einer dritten modernen Sprache, bzw. mit dem Lernen einer zweiten Fremdsprache auszuformen beginnt" (Bausch, 2007: 439), that real multilingualism is beginning to be established only with third language acquisition, respectively by the acquisition of a second foreign language.

Considering definitions connected with the number of languages, a number of definitions of bilingualism explicitly refer to the use of more than two languages (Cenoz et al., 2003; Dijkstra, 2007a; Grosjean, 1992: 51; Herdina & Jessner, 2002). Therefore, bilingualism is either adopted as an umbrella term that covers multilingualism or consider multilingualism as the general notion that encompasses bilingualism (Hoffmann, 2001).

Insights of the linguistically oriented multilingualism research contribute significantly to establishing a definition of multilingualism. However, it has to be revealed that a consensus concerning the terminology has not been attained so far (Perge, 2018: 33).

Several researchers agree on the use of the notion multilingualism as an umbrella term for referring to the ability of speaking more than one language, thus defining bi-, tri- or plurilingualism as specific forms of multilingualism with the emphasis on the level of proficiency (see Lyons, 1981 cited in Okal, 2014: 223). As opposed to early research of

bilingualism which concentrates on second language acquisition and using bilingualism as a term encompassing multilingualism, recent studies regard bilingualism as a variant of multilingualism (Haarmann, 1980; Herdina & Jessner, 2002: 52). Arguing that third language acquisition differs from second language learning in several aspects, Hufeisen (1998) suggests employing the term multilingualism with respect on learning more than two languages.

Distinguishing between mono-, bi-, and multilinguals as individuals who use one, two, and three or more languages, Kemp (2009) argues following recent research of psycholinguistic and educational traditions and defines multilingualism as the individual's ability to use three or more languages in various domains at various levels of proficiency (Kemp, 2009: 13-16). Concerned with the criteria of counting an individual's languages such as the degree of proficiency and functional capability, mutual intelligibility, political criteria, literacy and issues of self-report, she points to the importance to incorporate a detailed definition of multilingualism as well as its relation to existing literature into each study (Kemp, 2009: 24).

Herdina & Jessner (2002: 52) perceive bilingualism as a variant or subtype of multilingualism. Jessner (2008c) asserts that an increasing number of scholars essentially distinguish second language acquisition (henceforth SLA) from third language acquisition (henceforth TLA) (Jessner, 2008c: 15), thus support the position that bilingualism and multilingualism cannot be used synonymously. Deriving from its holistic viewpoint, the most inclusive definition of multilingualism at the individual level concerning the involved languages is presented by the dynamic model of multilingualism. Jessner (2008a: 271) offers the dynamic systems approach regarding multilingualism announcing a definition which integrates all kinds of language acquisition, focusing on the "qualitative changes in language learning related to an increase in the number of languages involved in multilingual development and use" (Jessner, 2008b: 18).

In addition to the term multilingualism various other notions such as heteroglossia (Creese & Blackledge, 2010: 64), polylingualism or heteroglossia (Jessner, 2015) are considered in research literature to refer to the use of multiple languages. European Council documents distinguish between multilingualism as a societal phenomenon, and plurilingualism, which is used to describe the knowledge and use of two or more languages at individual level (Council of Europe, 2001: 30).

2.2. Multilingualism

Multilingualism has been subject to extensive research since the early 20th century and has been defined through various approaches, with regard to multiple language development and use of the individual at psycholinguistic level, and at sociolinguistic level, referring to the "collective and societal practice of using several languages in various domains of social and institutional life (Jessner & Kramsch, 2015: 1), as well as by numerous language acquisition theories focusing on different aspects of this widely discussed field.

Multilingualism can be considered as an independent field of research which is approached by various sciences differently. Numerous attempts on classification can be observed regarding this notion, aiming at the diverse apprehension of the phenomenon of multilingualism (Hufeisen, 2010: 346; Legutke, 2004: 121; Perge, 2018: 32; Quetz, 2004: 181).

Considering the individual values of multilingualism, psychological, cognitive and social aspects in research have to be taken into consideration, covering the identity-establishing function of language, including a higher level of communicative competence, language awareness and creativity as well as recognizing the behavioural patterns of specific language communities (Perge, 2018: 45; Riehl, 2014: 55).

2.2.1. Psycholinguistic aspects

Linguistic definitions are rooted in bilingualism research, analysing language processes of bilinguals and have affected multilingualism research (Boócz-Barna, 2007: 19). Conditions in the research of SLA including the level of proficiency and communicative use of languages of bilinguals are interpreted differently and these various interpretations can be observed concerning the definitions of multilingualism. In the early years of multilingualism research, the idea was commonly accepted that those individuals can be considered multilingual, who obtain a high level of proficiency in both of their languages (Boócz-Barna, 2007: 19). Braun (1937) argues that the "aktive, vollendete Gleichbeherrschung zweier oder mehrerer Sprachen" (i. e. the active, balanced, perfect proficiency in two or more languages) (Braun, 1937: 115 cited in Jessner, 2008b :16) can be acquired from birth in a natural way or can be learnt, in which case active balanced proficiency can thoroughly be attained as well though in scarce cases and under specific circumstances. Vildomec (1963) investigates multilinguals' learning styles emphasizing

the importance of the discrepancies between bi- and multilingualism the first being defined as the mastery of two- whereas the latter being associated with the expertise in more than two languages (Vildomec, 1963: 68). Terminological problems concerning multilingualism research have been addressed highlighting the benefits of multilingualism opposed to other researchers of that particular era (Jespersen, 1922; Laurie, 1890; Saer, 1923; Weisgerber, 1929). The aspect of treating multilingual individuals as incompetent speakers of their own languages has had a long-lasting impact on the acceptance and assessment of multilingualism in Europe in the 21st century.

Commenting the work of Braun (1937), Königs (2001) interprets multilingualism not as a somewhat balanced and perfect proficiency concerning more than one language but as a competence that enables successful actions for the language user in relevant situations. This approach highlights the relevance of various social roles the speaker has to take actions in. Boócz-Barna (2014) defines the aim of multilingual development as the achievement of a high level of multilingual competence, whereby the learners gradually develop the ability to act adequately in their present and future domains of life (Boócz-Barna, 2014: 33). Emphasizing the importance of the identification of the learners' multilingual form, Königs (2001) introduces the distinction between prospective multilingualism, meaning that the learners build their multilingualism through learning in tutored instruction; retrospective-prospective-, denoting the process of third language acquisition of the already bilingual learners; as well as retrospective multilingualism, when the bilingual learners are already bilingual (Königs, 2001: 263). According to these didactic definitions of multilingualism, it is not crucial to acquire a "mother-tongue-like" (Perge, 2018: 29) proficiency concerning foreign languages, the emphasis is on the acquisition of multilingual competencies enabling the learner to fulfil adequate actions in various situations according to the language user's social role. The fostering of multilingualism on institutional level requires the identification of the specific form of multilingualism. It is of uttermost importance whether the learner is already able to employ his/her multilingualism in the foreign language classroom or the student already obtains knowledge in the second language and one of his/her languages is taught in the foreign language lesson, or eventually the already multilingual learner establishes his/her multilingualism through foreign language learning in a third language without any of his/her language being the curricular material, or respectively if multilingualism is established merely via foreign language teaching. The integration of foreign language

information into the already existing language knowledge presents an essential aspect of fostering multilingualism and determining the "quality of multilingualism" (Königs, 2001: 263).

Representing another standpoint Haider (2010) defines multilingualism as a state where an individual or a social or institutional system has a repertoire of multiple languages available for the purpose of fulfilling various actions denting that the language user is able to act using multiple languages at the same time an is able to activate these languages in order to reach specific communicative objectives (Haider, 2010: 207; Hufeisen, 2004: 77).

Reflecting on the works of Bukus (2014) Hägi (2014) and Jakus (2014), Feld-Knapp (2014b) outlines a wide and narrow perspective, indicating that every person can be regarded as multilingual, for they have more than one language variant (e.g., a regional variant or the standard language) in their repertoire to choose from concerning the different domains of communication. However, in her article she adopts a more restricted concept highlighting the distinction between the language user's first language, that is the mother tongue, and second-, third-, fourth- etc. language as additional languages in the multilingual development (Feld-Knapp, 2014b: 15). This approach reveals the complexity and extensive character of multilingualism. The proper treatment of various typologies and classifications of this notion, including the form of acquisition, social conditions, language competencies or language status is required in order to establish a definitional differentiation and confinement (Riehl, 2014: 13). By taking these aspects into consideration the wide spectrum of the phenomenon of multilingualism can be revealed (Perge, 2018: 30). Multilingualism is defined in the current doctoral thesis from a functional point of view, emphasizing the learner's ability to use the activated language according to the communicative aim and situation in order to fulfil the speaker's communicative needs (Feld-Knapp, 2014a: 93). In this respect, it is not needed to speak each language with absolute correctness, it is sufficient to acquire specific competencies e.g. the ability to act competently in the diverse domains of life (Perge, 2018: 28). Considering that the empirical research presented in this doctoral thesis encompasses a classroom learning situation, the communicative aims and situations are applied in a language learning context.

2.2.2. Sociolinguistic aspects

Highlighting the societal aspect, multilingualism is argued to dominate in areas where a coexistence of several – official, unofficial, international, national, foreign or native - languages in a society can be observed, creating a multilingual setup (Lyons, 1981, cited in Okal, 2014: 223).

Concentrating on the issues of affective re-socialization, language embodiment and language choice, Pavlenko (2006) proposes to include emotions as essential factor into the studies of multilingual practice highlighting the possibility of unique insights into the links between language and emotions (Pavlenko, 2006: 227).

Franceschini (2009) defines multilingualism as a term referring to the use of more than one language in individual, institutional and social contexts of contact including individual as well as group competence with diverse individual and social forms of language acquisition highlighting minority languages regional languages, migration languages and dialects. With the increase in migratory movements throughout Europe being the underlying factor of numerous sociolinguistic problems and issues as well as enhanced level of sensitivity towards socio-cultural diversity are revealed as the driving forces behind the reinterpretation of the notion 'language diversity' towards a more beneficial and positive definition (Franceschini, 2009: 28-30).

Historic evidence of trade and cultural exchanges being identified as multilingual exchanges are presented as distinctive features of societies with the intention of having contact with each other. Despite the existence of language contact between various societies from previous centuries onward as well as studies of multilingualism consisting of isolated case studies (see e.g., Leopold, 1949; Taeschner, 1983; Weinreich, 1953), bilingual individuals were generally considered as representing the linguistic exception rather than the norm. Findings that half of earth's population can be regarded as bilinguals from a functionally-based perspective (Grosjean, 1982) brought an elementary change with respect to multilingualism. Earlier research highlighted the negative effects of language contact on the language of origin or mother tongue resulting in retention and loss (Fase et al., 1992; Fishman, 2000). As a result of more recent aspects in research of linguistic enclaves and historical minority languages as well as the effects of their interaction with the dominant languages in the area and with each other, new theoretical

and conceptual distinctions and more refined definitions can be observed concerning phenomena of language contact (Franceschini, 2009: 31).

Examining the multiple status of the term multilingualism deriving from the fundamental, indispensable and socially natural character of people contact, Franceschini (2011) highlights the importance of examining "the various forms of social, institutional and individual ways" (Franceschini, 2011: 344) along with its characteristics concerning an "intrinsically social way of life and cultural practice" (Franceschini, 2011: 345), including minority and regional languages, dialects, migrant and sign languages. Language is defined as a habitual communication code that is socially agreed upon. Referring to the distinguished aspects of multilingualism rather as dimensions, with societal dimension deriving from a macro view, examining societies with consistent historical language groups e.g. the Belgian or Swiss, the institutional emphasizing the communication forms in- and acts of institutions as well as the individual dimension of multilingualism focusing on the language user and their abilities and competencies, Franceschini (2011) highlights that a fourth, discursive dimension has to be considered as well when observing multilingual practices, with focus on the construction of sense in various dialogues (Franceschini, 2011: 347).

Cenoz (2013) pertains to the use of multiple languages within a given society regarding multilingualism as a social phenomenon by differentiating between additive multilingualism that entails the acquisition of an additional language while the development of the first language is maintained, in contrast with subtractive multilingualism occurring when the process of learning a new language results in the displacement or replacement of the speaker's initial language (Cenoz, 2013: 5). Highlighting the necessity of a holistic understanding of multilingualism, (Cenoz (2015) advocates the recognition of the dynamic interplay between multilingual speakers and the communicative context in which they interact. Becoming a competent multilingual entails the acquisition of the necessary skills to be recognised and accepted as a member of a specific community (Kramsch & Whiteside, 2007). Through their engagement in language practices, multilingual speakers actively shape the communicative context in which they operate (Canagarajah, 2007; Kramsch, 2010). Pointing out that in recent decades, the communicative context has become increasingly multimodal, incorporating diverse elements such a visuals, sound, texts, or other symbolic systems Cenoz (2015) argues for recognising that multilingual competence is intricately connected to the social

context in which language practices occur. Within these contexts. the boundaries between languages and various semiotic devices often become blurred, allowing for complex and dynamic forms of communication (Cenoz, 2015:13).

Describing various trends that contribute to multilingualism (e.g. immigration, the recognition of indigenous linguistic minorities, or education), Stavans and Hoffmann (2015) define and interpret the notion language by taking sociopolitical and sociocultural indicators into consideration and distinguish between the language varieties *vernacular* and *standard* (Stavans & Hoffmann, 2015: 39). A vernacular is referred to as a regionally associated spoken variety of a language commonly used in everyday speech. It is often contrasted with a more formal written form of the language used in educated contexts. Due to their informal nature and the absence of standardised grammars and lexicon, vernaculars are typically regarded as less prestigious compared to standard languages. However, this perception may change when a vernacular undergoes *standardisation*, or when a vernacular preciously limited to regional usage is elevated to the status of a common national language. A standard language on the other hand, is characterised by the development of a written system as part of the standardisation process. This standardisation involves the establishment of grammar codification, vocabulary, pronunciation and orthography. The role and functions of the standard variety are firmly established through its usage in administration, education, and the media (Stavans & Hoffmann, 2015).

Aronin (2018) refers to societal multilingualism in terms of engagement in organised and unorganised language practices involving three or more languages, as well as the use of multiple languages by some or all members of a society, thus considers multilingualism on spectrum characterised by varying degrees of integrativeness. One endpoint of this spectrum represents the proximate form of multilingualism that is attributed to the coexistence of multiple languages within a territory, without requiring to be used by all citizens. On the other end, the integrative form denotes a situation in which individual not only encounter other languages in their environment but actively engage in their use. Furthermore, Aronin (2018) asserts that language use is the manifestation of various underlying factors such as attitudes, language behaviour with its underlying assumptions as well as the management of language policies.

2.2.3. Multilingualism in the European context

A rapid increase of linguistic interest in multilingualism can be observed in the last decade of the 20th century after the proposition of the European Union to ensure multilingualism denoting it as a fundamental factor in the development of European identity (EMMI, 2012). Despite the commitment of the European Union at an institutional level, the attitude of its citizens towards multilingualism still reveals negative aspects. Jessner (2008b) claims that the biased mindset can be regarded as a consequence of both the misunderstanding of the notions *multilingualism* and *multilingual* by the general public, according to which multilinguals are viewed as "multiple monolinguals in one" (Jessner 2008b: 15) and treated as incompetent users of their own languages, as well as the traditionally widespread prejudice concerning the harmful effects of multilingualism (Jessner 2008b:15). These powerful variables are argued to co-determinate the development of multilingual language use in various ways e.g., through the negative effect on individual opinions, can act as a hindrance concerning language acquisition (Franceschini 2011:346).

Multiple language acquisition being regarded as a sub-form of second language acquisition lead researchers of third-, fourth-, etc. language acquisition researchers to take their own path and based on Hufeisen's workshops between 1992 and 1997, an international conference was organized by Jessner, Cenoz and Hufeisen in 1999 at Innsbruck University in Austria, intending to establish an association for researchers interested in the field of multiple language learning, acquisition and multilingualism. As a consequence of the biannual organized conferences, the International Association of Multilingualism was formed in 2003 by Hufeisen, Jessner, Cenoz, Ó'Laoire, Aronin, Bayona, De Angelis, Dewaele and Ecke, followed by the launching of the International Journal of Multilingualism in 2004 by Cenoz and Jessner with the publication language being explicitly English. To overcome the boundaries of having only one publication language, a multilingual book series was launched in 2005 under the name of Multilingualism and Multiple Language Learning with the first quadrolingual issue in 2008 (Aronin & Hufeisen 2009: 3).

European societies have exhibited various trends over the last years. Firstly, political changes, such as those witnessed in former Soviet countries, have resulted in the renegotiation of the linguistic balance created by Russian as a lingua franca of the former Russian empire and the USSR (Pavlenko, 2008). Additionally, minority language policies

implemented in European countries, exemplified by Spain (Gutierrez, et al., 2007; Huguet, 2007; Lasagabaster, 2007), Brussels (Mettewie & Janssens, 2007), Ireland (Ó Laoire, 2007), and Wales (Laugharne, 2007), have played a significant role in revitalising endangered languages. Moreover, a phenomenon associated with regionalisation has emerged, namely an increasing inclination towards the utilisation of dialects or variations, observed in Austria (Soukup & Moosmüller, 2011), and Switzerland (Kuzelewska, 2016). Conversely, processes of internalisation and globalisation have fostered a diverse linguistic landscape, featuring individuals from different parts of the world who possess numerous non-indigenous languages. Furthermore, young Europeans now enjoy extensive opportunities to travel, work abroad, and engage in multilingual communication through new social media platforms. Consequently, owing to the dual forces of globalisation and regionalisation, multilingualism has become commonplace occurrence in Europe.

Within the framework of European policies aimed at acknowledging, safeguarding, and facilitating the acquisition and use of minority languages (EU, 2012), the concept of linguistic diversity is regarded as a valuable prospect from personal, economic, and social perspectives. In regions characterised by bilingualism, multilingualism encompasses the utilisation of both minority and national languages, alongside a commonly adopted international language, often being English (Dijkstra, 2007b).

In recent decades, diversity is denoted as one of the most fundamental factors for a prosperous future development in European society. Franceschini (2009) affirms the key role of acknowledging diversity in facing new challenges in the culturally and linguistically complex societies of Europe. Pointing out the functional contrast of heterogeneous societies on linguistically homogeneous terms, diversity is argued to represent an essential factor in multilingual societies, which requires both cultural and economical development, whereby multilingualism is presented as an entity with measurable and concrete historical foundation, with cultural sensitivity being the key underlying factors for the maintenance and development of a multilingual Europe (Franceschini 2009:28).

The European Union's deliberate choice to prioritise the preservation of linguistic diversity derives from its recognition as a political necessity for the successful attainment of shared objectives for the member states. The European Union adopts the firm belief that integrity can only be achieved by upholding and respecting diversity. Given that

language is a fundamental element of national identity, the European Union's regard for each of its member state's language and the consequent principle of linguistic equality can be seen as expressions of respect for national identity, a demonstration of commitment to the principle of political equality among citizens, and a clear indication of the determination to prevent linguistic discrimination that could undermine the European integration project (Athanassiou, 2006).

3. Mutual intelligibility of languages

This chapter explores the concept of intercomprehension (henceforth IC), i.e., the ability to comprehend related languages belonging to the same language family (Perge, 2014: 265), and mutual intelligibility among closely related languages in Europe, particularly within the Germanic language family. The EuroComprehension (henceforth EuroCom) and Mutual Intelligibility of Closely Related Languages (henceforth MICReLa) projects are discussed as pioneering efforts to provide a linguistic basis for understanding related languages and elicit cross-linguistic intelligibility among written and spoken forms of closely related languages. As one of the focal points of the empirical research is the lexical similarity between English and German, particularly cognate vocabulary, the importance of cognate awareness in language learning is discussed regarding the learners' perception and production of the target language. This part highlights the facilitative role of cognate words in foreign language acquisition and emphasizes the need to raise learners' language awareness to maximise the facilitating effect of cognates.

The idea that bi- and multilingual language users make use of their existing knowledge when facing language input of an unknown language is quite indisputable. Looking for similarities between new information and existing language knowledge in the mind is the most straightforward strategy to make sense of new language input to the greatest possible extent.

IC is concerned with receptive multilingualism referred to as "the ability to understand multiple languages on the basis of their interlinguistic transparency or/and previous knowledge of languages of the same linguistic family" (Melo-Pfeifer, 2015: 100), without having acquired or learnt them in a social or formal context (Meißner, 2017). The process of intercomprehensive language learning necessitates the recognition and understanding of forms, meanings, and functions of the TL, as well as the correlations between the bridge language(s) and the TL. These recognitions lead to the development of a

hypothetical or temporary grammar that incorporates elements from the languages involved (Meißner, 2017). However, the impact of this process extends beyond grammar alone. Empirical studies in the field (Bär, 2010; Meißner, 2012) demonstrate that the essential comparison between the mentally accessible linguistic structure of the bridge languages and the forms and function of the TL stimulates awareness-raising mechanisms, which integrate linguistic knowledge with language learning-related knowledge. Consequently, the IC method enhances overall learning competence (Meißner, 2017).

The pedagogical approach of IC serves the purpose of fostering plurilingualism within individuals and upholding language policies that support multilingualism. It presents a communicative framework where individuals engage in communication using their own respective languages, while also cultivating the necessary competencies for effective interaction. While objectives and techniques may vary across different methodologies, all IC-based approaches share a set of fundamental principles that form the foundation of IC teaching. These principles include a plurilingual approach, utilisation of partial competences, emphasis on comprehension, reflection on language(s), cultivation of strategic and metacognitive knowledge and competences. In most IC-based teaching projects, the primary goal is to enhance learners' awareness of the processes involved in comprehension, thereby enabling them to develop specific strategies related to analogy, tolerance for ambiguity, transfer, interference, association, and metalinguistic knowledge (Bonvino et al., 2018).

A vast array of studies in the scope of two major projects *EuroCom* (Arntz, 2011; Berhele et al., 2011; Reissner, 2011; Perge, 2014, 2018) and *MICReLa* (Mutual Intelligibility between Closely Related Languages) (Heuven et al., 2015; Golubović, 2016; Swarte, 2016; Gooskens et al., 2015, 2018) exist reporting on IC, and mutual intelligibility among closely related languages in Europe supported by the proclamation of the High-Level Group on multilingualism encouraging the improvements in multilingualism management and the acquisition of multilingual competence (European Commission, 2007).

The EuroCom project is aimed at providing European citizens with a solid linguistic basis for understanding related languages with focus on receptive skills regarding written language input. The method composed for the pioneering project of EuroComRom

concerning the Romance language family (Klein & Stegmann, 2000) served as a basis for the following projects including Slavic languages in the project EuroComSlav (Zybatow, 2003), and Germanic languages in EuroComGerm (Hufeisen & Marx, 2007). Organizing text material into what is called the *Seven Sieves*, which includes international vocabulary, vocabulary knowledge common to the language family, sound correspondence forms, spelling and pronunciation, syntactic structures concerning nine basic sentence types, morphosyntactic elements, and lists of Greek and Latin prefixes and suffixes, the EuroCom projects show learners how language knowledge of one language opens the door for understanding other languages within the same family (Jessner, 2008b).

Based on the principle of receptive multilingualism i.e. a strategy in communication, where "each participant speaks his/her native language, which the other person understands sufficiently well to sustain a meaningful exchange of information" (Heuven et al., 2015: 2), the MICReLa project intends to elicit the level of cross-language intelligibility among written and spoken forms of closely related languages in the Germanic, Slavic and Romance language families, as well as identifying factors that influence the degree of intelligibility between the language pairs belonging to one language family. With the current doctoral thesis focusing on the Germanic language family, the most striking outcome of the MICReLa project is that in the case of this language group, shared vocabulary is identified as the crucial factor of "cracking the code" (Heuven et al., 2015) of a non-native language in cross-language communication.

Studies concerned with the quantification of language distances visualized by cladistic trees report on a relatively low intelligibility between Germanic languages (Gooskens et al., 2018; Swarte, 2016). However, Gooskens et al. (2018) found cophenetic tree distances highly correlated with the genealogic tree distances.

3.1. Lexical similarities between languages

Cross-linguistic similarities (i.e., the existence of common lexical and structural patterns between the languages) are argued to be present even across typological boundaries of different language families (Otwinowska, 2016: 59), and are characterized by the degree of congruence between the involved languages (Jarvis & Pavlenko, 2007). Language contact, may it be considered on the macro-scale at societal level, or on the micro-scale at individual level (Otwinowska, 2016: 60; Winford, 2010) is manifested in formal and

structural parallels considering grammatical patterns at the syntactic level, and in shared forms at lexical level (Hall et al., 2009: 157).

Lexical similarities in meaning and form are in the focus of numerous psycholinguistic studies presenting various definitions of cognates from the broad viewpoint focusing on words with similar meaning and form (de Bot, 2004:19), to the strict consideration of the notion with focus on a common ancestor language, excluding cases of borrowing and coincidental resemblance from the definition (Whitley, 1986: 324). Other interpretations emphasize the phonologically and/or orthographically similar translation equivalents (de Groot & Comrijs, 1995; Otwinowska, 2016: 78), or highlight solely the orthographic overlap (Schepens et al., 2012).

The current doctoral thesis is concerned with lexical similarities between English and German at the individual level from the psycholinguistic perspective, with focus on cognates between the two West-Germanic languages with easily identifiable similarity on orthographical and phonological level, accompanied by direct or partial semantic correlation (Wełna, 1977: 79).

Although the facilitating role of cognate words in foreign language acquisition has long been recognised (Lado, 1957; Weinreich, 1953) the research of cognate awareness is a multifaceted and recent topic. The students' awareness of the existence of cognate vocabulary is of uttermost importance in order to exploit the facilitating effect in language learning (Ringbom, 1987; 2007a; Singleton, 2006; Singleton & Aronin, 2007). Research of classroom implication of cognates strategy and instruction focus on the analysis of the learners' perception and production of the target language.

The effect of raising language awareness of cognate vocabulary on the learners' vocabulary learning strategies is examined by Otwinowska-Kasztelanic (2009). The study involving advanced learners of English with the first language (henceforth L1) Polish reveals the enhanced level of second language (henceforth L2) vocabulary mastery among students engaged in cognate awareness-raising activities.

Otwinowska-Kasztelanic's (2011) paper is concerned with the effects of bilinguals' engagement in awareness-raising tasks focusing on sensitisation towards cross-linguistic similarities. The results reveal a change in the participants' attitudes in appreciating the positive role of cognates in the language learning process, as well as changes in their vocabulary learning strategies and strategies in speech production towards ones used by

successful multilingual learners. Dressler et al. (2011) report on the high success rate of cognate strategy in resolving the meaning of unknown English words that have Spanish counterparts among fifth-grade Spanish students. Enhanced level of cognate awareness is documented among fifth- and sixth-grade English learning Francophone students in Quebec after receiving awareness training (White & Horst, 2012). Further evidence of the facilitating effect of cognate instruction concerning reading comprehensions of fourth-grade Spanish students is reported by García et al. (2020).

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

Though vocabulary building is argued to be aided by cognates in foreign language learning, lacking awareness of false cognates defined as words with similar form but different meaning, may lead to errors and confusion in language use (Lengeling, 1996: 4-6).

3.2. Structural similarities of the involved languages

Several studies concerned with the effect of cross-linguistic similarities in foreign language learning (Gibson & Hufeisen, 2003; Singleton and Aronin, 2007; Singleton and Little, 1984) confirm that in the process of making sense of an unfamiliar text the learners rely on facilitating similarities between the languages. Moreover, studies assert that a language that is 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 totally 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) in order to understand the structure of the target language.

Ringbom (2007a) highlights the importance of functional cross-linguistic similarities in the process of learning grammar, whereby the learner attempts to identify one-to-one correspondences between grammatical elements of the target- and already known languages. The effort that has to be put in this process largely depends on the degree of congruence as well as the similarity between the functions of grammatical categories of the involved languages. Ringbom (2007a) argues that considerably more effort is needed on the part of the learner in the process of acquiring knowledge that entail different structures in the target language (Ringbom, 2007a).

Montrul et al. (2010) argue that the typological proximity (i.e., how structurally related the already languages to the target language are) of the involved languages plays a potential role in the initial stage of learning a third language. In their study including learners of Brazilian Portugese as third language (henceforth L3) in two groups, one with L1 English and L2 Spanish and the other with L1 Spanish and L2 English, the researchers found that in the case of object expression, transfer occurred from Spanish both as L1 and L2. Therefore, they concluded that structural relatedness of the languages played a more prominent role in L3 acquisition than the order of acquisition (Montrul et al., 2010).

4. Theories of multiple language acquisition

This chapter focuses on the role of previously learned languages in the acquisition of an additional language, specifically the learning of a L3. The aim of this section is to describe models of multiple language acquisition and use that are considered as relevant to this thesis. The selected models explain psycholinguistic, sociolinguistic and individual processes that are involved in the learning of multiple languages. The chapter draws upon diverse studies in applied linguistics that outline the beneficial effects of exploiting students' prior language knowledge in foreign language learning. The findings indicate the combination of extensive language contact in the classroom and multilingual awareness training can promote the development of metalinguistic skills and facilitate the learning process of additional languages. The current doctoral thesis advocates the holistic approach imposed by the Dynamic Model of Multilingualism (henceforth DMM), which takes all the languages in the multilingual learner's mind into consideration.

4.1. The Foreign Language Acquisition Model

Groseva (2000) was one of the first researchers who addressed the specific role of an L2 in the learning process of an L3 or an n^{th} language (henceforth Ln). Her Foreign Language Acquisition Model (henceforth FLAM) was developed in the Bulgarian context of German L3 learning with English as an L2. The FLAM highlights that during the learning of an L3, new elements and rules are constantly compared to the L2. The recognition of a language used as a reference in the process highlights the interconnectedness and interdependence of multiple languages in the process of language learning. By emphasising the importance of considering the interplay between multiple languages and the potential influence of the L2 on the learning of an additional language, Groseva's FLAM provides a valuable framework for understanding the dynamics of multilingual language acquisition. The FLAM served as a basis for subsequent models, which further explore the role of the language that is used as a reference for the learning of an additional language, and is referred to in Hufeisen's Factor model (Hufeisen, 1991, 2010, 2020, Hufeisen & Gibson, 2003; Jessner, 2008b: 23) and in Meißner's Multilingual Processing Model (Meißner, 2002) as *bridge language*.

4.2. The Multilingual Processing Model

The Multilingual Processing Model was developed within the framework of *EuroCom* (Meißner, 2002, 2003) and describes processes that are involved in the perception of written or oral texts in a foreign language that is typologically related to other languages in the learner's repertoire. The model indicates that learners continuously draw upon at least one related language, while at the same time, they formulate hypotheses about the TL that serve as a basis of a *spontaneous* (or *hypothetical*) grammar for the new system. The spontaneous grammar is constructed according to the learner's knowledge about previously learnt languages and is constantly developed and adjusted to progressively resemble the target language (henceforth TL) structure. The progress of spontaneous grammar formation allows for the comparison of the known and the TL structures. The activation and development of spontaneous grammar is optimal under specific conditions including a certain proficiency in the bridge language(s) and the existence of etymological relationship between the involved languages as well as instruction on how to use these for text comprehension. The process of spontaneous grammar building covers four steps (Meißner & Senger, 2001: 41-43). First, a hypothetical grammar is built in the TL with the help of the bridge language. This process is argued to be highly dynamic. During the

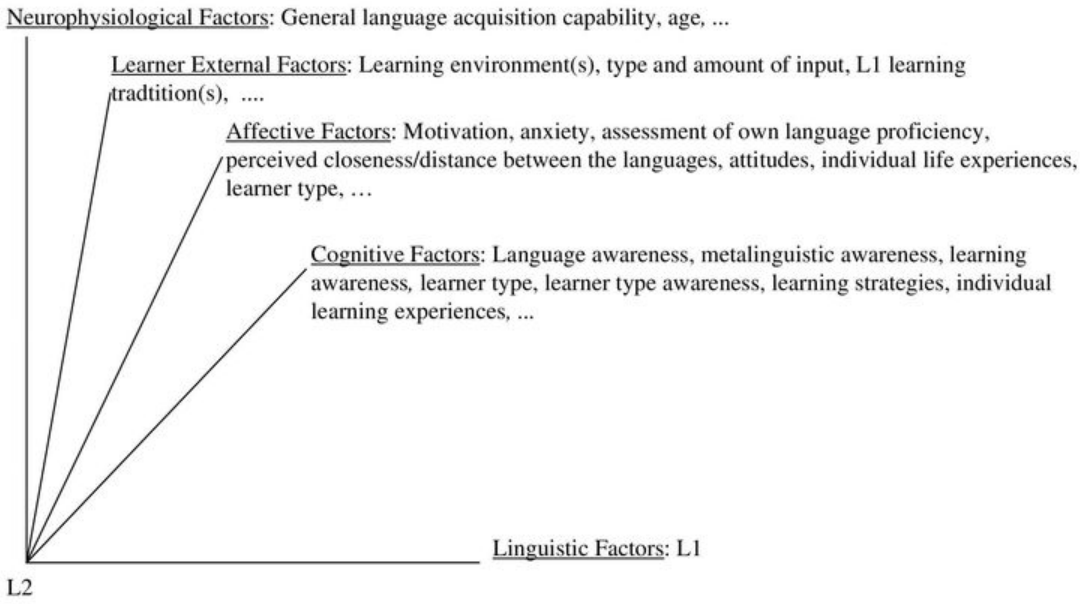
second step, an interlingual correspondence grammar is constructed, which includes interlingual correspondence rules. As a third step, a plurilingual inter-system is built, which encompasses successful and unsuccessful transfer processes, transfer bases and knowledge about the involved languages. The model lists six transfer bases of interest, namely communicative strategy transfer, transfer of interlingual processing procedures, transfer of cognitive principles, transfer as pro- or retroactive overlapping, learning strategy transfer, and transfer of learning experiences. In the fourth step a metacognitive strategy collection is built that covers the learning experiences in the TL.

The main limitation of the model is that it is only concerned with the way how total beginners decode an unknown language. The model does not assert how learners continue to learn or what processes take plat when instruction or training is available.

4.3. The Factor Model

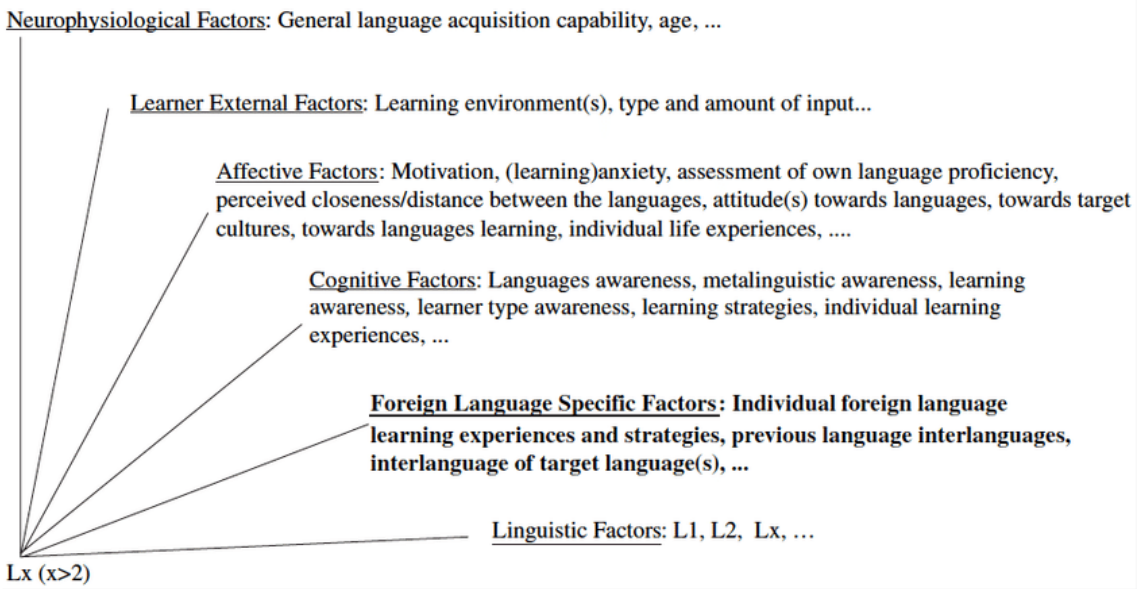
Hufeisen's Factor Model accounts for the diverse factors that control and influence the learning process of an L1, L2, L3 or Ln (Hufeisen, 1998, 2000, 2003, 2005, 2011). Thus, the model consists of four parts, each accounting for one stage of language learning, where each distinct stage covers the initial learning phase. According to the model, L1 learning is controlled by (a) neurophysiological factors such as age and general language acquisition capabilities, as well as (b) learner external factors including environment and time and amount of input. In the process of L2 learning, on the one hand the existing neurophysiological and learner external factors are extended by L1 learning traditions, and on the other hand, new sets of affective, cognitive and linguistic factors come into play as explicated in Figure 1 (Hufeisen, 2010).

Figure 1 *Learning of an L2*



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 additional foreign language specific factors influence the learning process that include individual foreign language learning experiences and strategies (e.g., the ability to compare and transfer) (Hufeisen & Gibson, 2003), as illustrated in Figure 2 (Hufeisen, 2010) [bold in the original].

Figure 2 *Learning of an L3*



Foreign language specific factors such as the ability to make interlingual comparisons and use transfer possibilities play a decisive and crucial part in L3 learning, since the

learners can build upon their individual foreign language learning experiences in the learning of an additional language. During this process, the learner who has been in contact with two languages, can build upon two linguistic systems, the interlanguages of the previously learn languages as well as that of the TL, and conscious or subconscious knowledge about their learning styles (Jessner, 2008b: 23).

The model highlights that the factors interact with each other and changes in one factor might cause changes in other factors. The model asserts that some factors may become dominant and/or unimportant in certain situations. The models outlined above highlight that the learning or acquisition of a third, fourth, etc. language is a far more complex process than the acquisition of a second language. This viewpoint is supported by the DMM as well. However, while the discussed psycholinguistic models focus on the function of previously learnt languages and on various transfer processes, the DMM describes language development over time (Herdina & Jessner, 2002: 74).

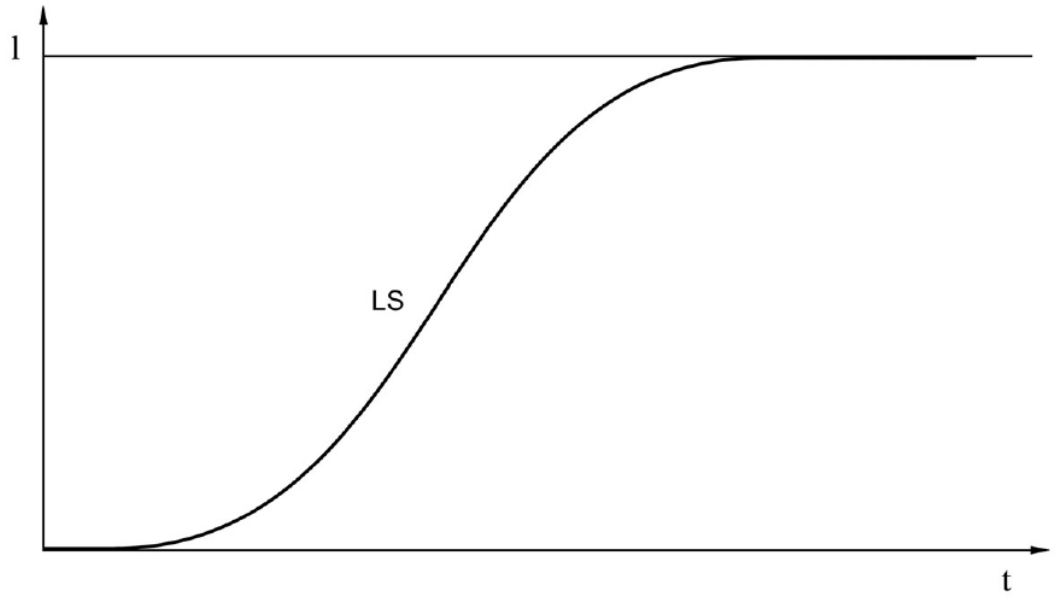
4.4. The Dynamic Model of Multilingualism

The complex and dynamic character of language development is captured by the DMM, which builds on the CDST, initially developed in sciences such as mathematics, meteorology, and neurology. Fundamentally, the DMM argues that human beings are to be reflected on as complex systems and should be explained and studied holistically through complexity theory and chaos theory.

The main tenet of complexity theory is that every system is part of a greater whole and at the same time constituted of smaller systems. Moreover, all these systems re ever changing and interacting, thus contributing to larger and larger systems towards a "system that ultimately encompasses whatever we mean by order and chaos – the universe itself" (Briggs & Peat, 1989: 147-148). The CDST provides a new approach of thinking about language development or new metaphors (Aronin & Jessner, 2014; Larsen-Freeman & Cameron, 2008: 253) that aid in describing learners' multiple language acquisition and use. From the DMM viewpoint, tenets of the dynamic systems such as non-linearity, reversibility, stability, interdependence, complexity and change of quality (Herdina & Jessner, 2002: 89; Jessner, 2013) apply to language development and multilingual systems.

According to its non-linear tenet as advocated by the DMM, the process of language development resembles a sine curve representing biological growth as delineated by Figure 3 (Herdina & Jessner, 2002: 90).

Figure 3 *Biological growth*



LS = language system; t = time; l = language level (Herdina & Jessner, 2002: 90)

In the DMM, language development has two possible directions, namely positive resulting in language growth, and negative which leads to language attrition and loss. The direction of language development depends on the language maintenance effort (henceforth LME) of the language learner or user. Although the term language maintenance is generally referred to as a social process, in the DMM LME is defined as the effort the language learners or users invest in the process in order to maintain their language systems (Herdina & Jessner, 2002: 98-99). LME and the growth of the language system are interdependent. If the level of LME remains constant or decreases, a language attrition process ensues. As individuals' time, energy and resources are limited, LME cannot grow without constraint, thus LME represents a restrictive factor to language growth. Gradual language loss is seen as a reversal of language growth resulting from the lack of sufficient language maintenance (Herdina & Jessner, 2002: 92).

The DMM asserts that the stability of the psycholinguistic system is dependent on various factors such as LME, the time frame of language maintenance, the number of involved

languages, as well as the age of acquisition and level of proficiency, at which a certain level of stability is reached (Herdina & Jessner, 2002: 92).

From the dynamic systems perspective, language systems are interdependent, indicating that the behaviour of a system is determined by the behaviour of previous and subsequent systems, which themselves are not fixed but subject to constant change (Herdina & Jessner, 2002: 92). For describing the interactions between the involved language systems, the DMM proposes the notion of cross-linguistic interaction (henceforth CLIN), extending the tenet of cross-linguistic influence (henceforth CLI) that was introduced by Kellerman and Sharwood-Smith (1986) as an umbrella term for transfer occurrences (i.e. the bidirectional influence of L1 and L2, and in the case of multilinguals, the multidirectional influence between L1, L2 and L3) (Herdina & Jessner, 2002: 66). In addition to the influence indicated by CLI, the DMM recognises a range of other transfer phenomena such as code-switching and borrowing as part of the interaction between the language systems, thus CLIN is seen as a wider concept than CLI (Herdina & Jessner 2002; Jessner, 2006, 2008a; 2008b). The DMM distinguishes between transfer and interference, and reconsiders transfer as "the transfer of structures of L1 to L2" (Herdina & Jessner, 2002: 29) that can be termed as either positive (based on the structural similarity of the involved languages and has a positive effect on language development), or negative (based on the structural differences of the languages and leads to deviations from the expected target language norms). In the DMM, the notion interference is related to language processing, and refers to phenomena that are "irreducible to either of the language systems involved" (Herdina & Jessner, 2002: 29).

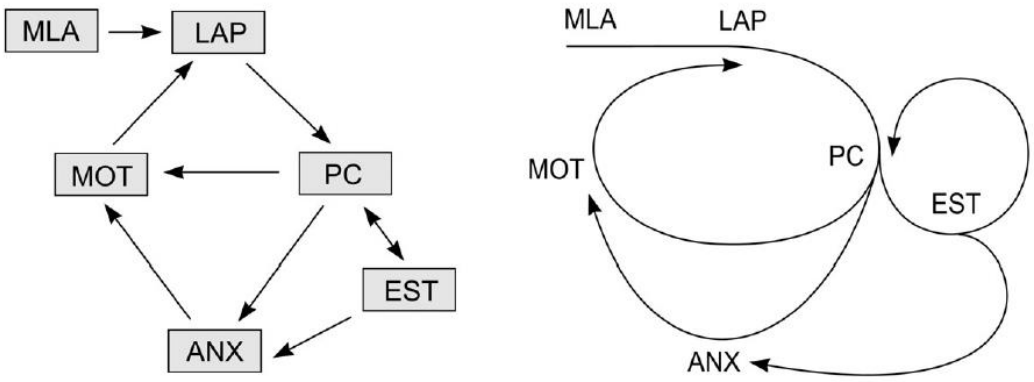
The DMM views the multilingual system as a flexible one which is subject to constant change, adapting and developing new properties to the altered conditions (Herdina & Jessner, 2002). Such emergent properties are argued only to be present in open systems and include language learning skills, language maintenance skills and language management skills that contribute to enhanced multilingual and metacognitive awareness. These competences and skills are covered by the term multilingualism factor (M factor for short). The M factor emerges through the constant interaction of multiple languages in the multilingual mind and 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 during the learning of an additional language (Jessner, 2006, 2008a). MLA and XLA form 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 language(s) that support the acquisition of an additional language are chosen by the learner and influence the multilingual system, which is argued to be sensitive to the initial state, and various emergent effects that result from language interaction. Therefore, the multilingual system is regarded by the DMM as a complex, dynamic system characterised by non-linear development (Jessner et al., 2016; 160).

The DMM regards multilingual proficiency as a mediating component between competence denoted as knowledge of a language and the observed performance which is defined as the actual language production of the language user that may be influenced by stress factors. Thus, the notion of multilingual proficiency is defined as the consistent result of the language user's knowledge on how to use a language, which presupposes the presence of the implicit knowledge of the language (Herdina & Jessner, 2002).

The models mentioned in this section highlight the complexity of L3/Ln acquisition and learning that differs qualitatively from the acquisition of an L2. The DMM recognises the effects of individual cognitive factors such as motivation and self-esteem on the stability of the multilingual system as outlined in Figure 4 (Herdina & Jessner, 2002: 138).

Figure 4 *Some individual factors*



MLA = metalinguistic abilities; LAP = language acquisition progress; MOT = motivation; ANX = anxiety; PC = perceived language competence; EST = self-esteem. (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. The following section is devoted to the consideration of diverse theories of motivation.

4.4.1 Implications of the DMM for language education

The consideration of languages as complex and dynamic systems is argued to promote the reinterpretation of second and multiple language acquisition theories (Larsen-Freeman 1997: 152). The DMM perspective advocates to provide a connection between linguistics and language education and contribute to a better understanding of multiple language development over time at the individual level by presenting new metaphors of language acquisition and use (Herdina & Jessner, 2002). This section highlights the importance of cross-linguistic influence as well as the more complex character of TLA as opposed to SLA, which are adopted by the dynamic view of multiple language development.

A DMM-based approach to language learning highlights the crucial role of the M-factor and focuses on its constituents in the process of language learning. The DMM integrates the cognitive perspective by highlighting the importance of language maintenance and management skills along with multilingual awareness, as well as the communicative aspect by focusing on the training of language management skills (Herdina & Jessner, 2002: 161).

Considering the most effective sequence of languages in the school curriculum, the notion that there is a difference between learning a second and a third language as shown by TLA research (e.g., Hufeisen, 1998, 2005, 2010; Hufeisen & Neuner, 2003) indicates that the first foreign language taught in the school context, which is English in most Hungarian schools, has a significant role and function for learning a second foreign language. According to Jessner (2006, 2008c: 9) this multilingualism with English highlights the specific role of English as a bridge or a doorstep to multilingualism. The holistic approach to language teaching as advocated by the DMM provides the students with the essential input and guidance to make use of their individual resources in the process of developing their languages.

Jessner (2006) points out the need for developing teaching methods with the intention of raising multilingual awareness in language learning and their application in the classroom. She argues for the inclusion of other languages than the target language that

can be employed as a basis for language maintenance and further language learning (Jessner, 2006: 122). The integration and activation of the students' prior language knowledge as well as instructions that encourage them to make comparisons and connections represent a multilingual approach that would enhance students' multilingual awareness (Herdina & Jessner, 2002: 161). The fundamental role of the language teacher in this process lies in providing support with training language learning strategies and encouraging the learners to report on distinct strategies already employed during former language learning.

Focusing on the similarities between the language systems is argued to be particularly helpful in the process of language learning. Thus, the DMM perspective to language teaching advocates the holistic view of the languages in the students' repertoire and highlights the educational advantages of building bridges between them instead of teaching them in isolation (Herdina & Jessner 2002: 161).

4.4.2. Research on multilingual awareness

Diverse studies in applied linguistics (e.g., Hufeisen, 2011; James, 1996, 1999; Jessner, 2006, 2008b, 2015; Kemp, 2007) outline the beneficial effects of exploiting students' prior language knowledge in foreign language learning, contributing to the creation of synergy effects. Such effects are argued not to be observable in monolingual classes (Jessner, et al. 2016: 161).

Multilingual awareness as a crucial element of multilingual competence, i.e., the "knowledge of more than one language in the same mind" (Cook, 2002: 10) as well as the DMM are focal points in research papers of the DyME (Dynamics of Multilingualism with English) research group, formed around Ulrike Jessner at the University of Innsbruck, which reports on the beneficial effects of multilingual approaches in the school context in Austria and South-Tyrol (Allgäuer-Hackl et al. 2021).

Hofer's (2015) study in South-Tyrol analysed the level of competence in children exposed to extensive L2 and L3 input as opposed to children receiving limited input in their L2, as well as differences in the learners' metalinguistic awareness and abilities in the two groups. The findings reveal benefits resulting from the extensive use of the L2 along with other additional languages manifesting in a more thorough knowledge in the subjects' L1 and an enhanced level of metalinguistic awareness and skills, as well as better results in their L2 and L3 tests. Therefore, the study provides evidence on how linguistic and

metalinguistic awareness facilitate the learning process of additional languages (Jessner et al., 2016: 66). In her intervention study, Allgäuer-Hackl (2017) concludes that multilingual training even with minimal lessons contributes enormously to the development of multilingual skills and abilities, with significant differences between the participants of the multilingual seminar as test group and the control group. Hofer's and Allgäuer-Hackl's study provide evidence on the heightened metalinguistic and linguistic awareness (Jessner, & Allgäuer-Hackl, 2016), facilitating the acquisition of additional languages as a consequence of extensive contact with multiple languages in the classroom combined with MLA training (Jessner, et al. 2016: 166). 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 which have been regularly exposed to multilingual intervention.

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 international literature. Hofer's first results from her most recent wide-scale study (see Allgäuer-Hackl et al. 2021) concerning learners (N=209) 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 affects the development of the language proficiency beneficially in the test group. Thus, Hofer delivers substantial evidence for the advantage of multilingual approach in foreign language teaching.

An outstanding example for the view of language learning as a complex and dynamic process is presented in a study by Malzer-Papp (in preparation, see Allgäuer-Hackl et al., 2021). She investigates English as a bridge language in the process of learning German in adult evening classes in Innsbruck among participants from 14 different countries. The multilingual teaching process focused on the activation and support of multilingual awareness. First results of the project point to the beneficial effects of teaching across languages in adult learners, as well as the supportive role of English used as the language of instruction in learning German.

Only a small number of studies (Angelovska, 2018; DeAngelis & Jessner, 2012; Kecskés & Papp, 2000) are concerned with the analysis of multilingual proficiency in writing by taking the interaction of the languages in the multilingual learner's mind into consideration. These studies report mostly on the transfer of grammatical and lexical elements, or individual writing strategies (Cenoz & Gorter, 2011). DeAngelis & Jessner (2012) provide evidence for the influence of the dynamic interaction of the involved language systems on the writing performance of 8th grade students by analysing L1 Italian, L2 German, and L3 English written compositions. Angelovska (2018) highlights that L3 learners make conscious use of 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 writing performance of the learners is the only study that is concerned with writing processes in the Hungarian school context from the multilingual perspective.

Multilingual writing is argued to be positively affected by the extensive contact with two or more languages in the classroom as well. Multilingual awareness is regarded to represent a distinctive feature of multilingual writing systems that regulate the thinking processes of multilingual learners (DeAngelis & Jessner, 2012). Thus, the complex process of multilingual writing should be viewed from the holistic aspect, with the aim of gaining detailed insight into the complex processes of multilingual writing.

All the models concerning multiple language learning presented in this section underline the complexity of L3/Ln acquisition and learning. The FLAM focuses on the specific role of the L2 in the process of acquiring and L3, while the Factor Model enumerates and outlines the external and internal factors that accompany and affect the process of learning an additional language. The DMM models language development with taking the time dimension into consideration, and gives account on features such as language maintenance and attrition. The discussed research results provide evidence for the beneficial effects of multilingual training through metalinguistic awareness-raising on language development in foreign language teaching (Allgäuer-Hackl et al., 2021). Although in theory, a cross-linguistic and cross-cultural approach in foreign language teaching has been welcomed in Hungary, its application as well as its effects on language development or student motivation have not been researched extensively in the Hungarian school context. Since the current doctoral thesis deals with a classroom learning situation, it remains essential to examine the motivational factors involved in implementing a

multilingual training in context. By linking theories of multiple language acquisition and motivational aspects, a more comprehensive understanding of language learning can be attained.

5. Theories of motivation and individual behaviour

Taking the underlying mechanisms of language learning into consideration, various theories and aspects of motivation are discussed in the following section in order to gain insight on how motivation influences the process. In this regard, a range of theories and perspectives have been proposed and discussed in research literature, with particular emphasis on the role of motivation in shaping individual behaviour. Scholars have investigated various aspects of energisation that motivate learners, including both innate needs and environmental factors that influence desires and goals (Deci & Ryan, 1985).

According to Deci & Ryan (1985: 3-4), who have extensively studied individual behaviour and motivation, motivational theories can be categorised into mechanistic and organismic perspectives. Mechanistic theories propose that behaviour is solely driven by environmental and physiological factors, leaving organisms as passive recipients of external influences. On the other hand, organismic theories argue that individuals play an active role in their own motivation, with psychological and intrinsic drives as key determinants of their behaviour.

Given the importance of motivation in language learning, a multitude of motivational theories and models have emerged in the research literature, offering different explanations for the ways in which learners are motivated to acquire language skills (Dörnyei, 1996).

5.1. The Time Perspective Model

Lewin's (1951) Time Perspective Model underpins the temporal foundation of human life and highlights the significance of an individual's views of their physiological past and future in shaping their present behaviour. Zimbardo and Boyd (2015) argue that important decisions, actions and judgements are dynamically influenced by two factors: recalling analogous situations along with their related advantages and disadvantages, and hypothetical decisions stemming from expectations and anticipations. In the context of education, planning for and achieving future goals is a key focus for both learners and

educators, and as such, the educational environment is considered to be future-oriented. Future time perspective is suggested to influence behaviour, decisions and actions through the predicted relationships of behaviour with considerations of consequences, anticipation of rewards, conscientiousness, and preference for consistency (Zimbardo & Boyd, 2015). Thus, the individual's orientation towards the future plays a crucial role in their behavioural responses and decision-making processes. This theoretical framework is considered to be particularly useful in educational settings, as it sheds light on how learners' perceptions of the future can motivate and influence their behaviour towards achieving long-term goals (Zimbardo & Boyd, 2015).

The identification and understanding of these motivational components can provide valuable insights into the factors that influence foreign language learning and can help educators develop effective strategies to foster motivation and confidence among language learners. Thus, language teaching should not only focus on the development of linguistic competence but also on the cultivation of learners' motivation and confidence, which are crucial for successful foreign language learning.

5.2. The Self-Determination Theory

The Self-Determination Theory, developed by Deci and his colleagues, is a comprehensive motivational theory that aims to explain the underlying mechanisms of human behaviour in terms of the sense of choice and volition. According to this theory, two types of motivation: extrinsic and intrinsic motivation influence individual behaviour. Extrinsic motivation is associated with external factors such as rewards, grades, or other incentives that are used to encourage individuals to engage in a particular behaviour. In contrast, intrinsic motivation is driven by and individual's innate curiosity, interest, and enjoyment in a particular activity, which leads to a sense of competence and self-determination (Deci & Ryan 1985: 34).

According to Connell and Ryan (1984), extrinsic motivational incentives are necessary in educational settings because they reflect the values and conditions of social life through choices made by individual in their surroundings. These extrinsic motivational incentives are included in school agendas as learning processes are believed to require various extrinsic principles to facilitate and energise them (Connell & Ryan 1984). However, it has to be noted that the process of learning can be greatly enhanced by the central intrinsic

motivator of natural curiosity and interest, which is an innate desire to understand, explore, know or discover, which have been observed in human behaviour from an early age. Intrinsic motivation manifests through experiences of interest and enjoyment, the perception of competence and self-determination, and an internal causality for an individual's behaviour that does not require reinforcements for its maintenance. These manifestations of intrinsic motivation allow individuals to completely interact with their environment, utilising their capacity and engaging their interests (Deci & Ryan 1985).

Another important aspect of the Self-Determination Theory is the concept of internalisation, which refers to the process of transforming external regulations into internal regulations. This process involves the gradual assimilation of external behavioural regulations, attitudes or beliefs into an individual's personal organisation of goals and values. Internalisation is a critical component of intrinsic motivation, as it allows individuals to take ownership of their behaviour and to engage in volitional activity that is aligned with their personal goals and values. To internalise external demands, individuals must demonstrate the competence to master them, as well as the flexibility to adapt their values and reorganise their internal propensities (Deci & Ryan 1985). This process of internalisation involves various conscious processes, including the ability to imagine future outcomes, which facilitates a broad range of volitional activities. Self-determination represents the central factor in this process, which refers to how attitudes become manifested in direct actions aimed at effectively achieving and individual's goals (Deci & Ryan 1985). In other words, the extent to which individual has control over their own actions and choices and is able to align their behaviour with their personal values is crucial to the process of internalisation. Overall, the ability to internalise external demands and manifest attitudes through self-determined actions is important for personal growth and development.

The Self-Determination Theory of motivation presents a distinctive perspective for language instructors, emphasizing that the classroom's focal point should not be solely on the teacher's ability to motivate students, but rather on the collective efforts of the learning group to create an environment that fosters intrinsic motivation among learners.

5.3. The Socioeducational Model

One of the most notable contributions to the field of language learning motivation is the Socioeducational Model, which was introduced by Gardner (1985). This model distinguishes between two types of motivation, namely instrumental and integrative, based on learners' immediate goals for learning a foreign language. Instrumental motivation is driven by practical reasons such as improving job prospects or earning a higher salary, while integrative motivation is characterised by a desire to integrate oneself into the culture and community of the target language, for example, by being able to read a book in the target language (Gardner & Lambert, 1972). Despite its significant impact on the field, the dichotomy of the Socioeducational Model has been reviewed by Gardner and McIntyre (1991) to be overly restricted and static . The authors point out that motivation is a complex and dynamic construct that cannot be easily reduced to a binary framework. In fact, motivation is influenced by a multitude of factors that interact in complex ways, including learners' beliefs and attitudes as well as their prior experiences with language learning (Gardner & McIntyre, 1991).

To address these limitations, scholars have proposed alternative models and frameworks that intend to capture the complexity and dynamic nature of motivation in language learning. The models discussed below have contributed to a more nuanced and comprehensive understanding of the intricate interplay between motivation and language learning.

5.4. The Theory of Mental Self-Imagery

Paivio (1985) proposed that Mental Self-Imagery plays a critical motivational role in enhancing efficiency, frequency, and persistence of performance, which in turn contributes to motivated behaviour. While the concept of self-imagery has not received much attention in psychology literature, it has been shown to positively influence intrinsic motivation through a number of mechanisms such as self-efficacy (McAuley et al., 1991), self-evaluative (Moritz et al., 1996) and goal setting mechanisms (Weinberg et al., 1993). Self-efficacy, a concept first introduced by Bandura (1982), refers to an individual's belief in their ability to achieve a desired goal and overcome challenges that may arise along the way. Self-efficacy has been found to be an important predictor of motivation, as individuals with higher levels of self-efficacy are more likely to engage in goal-directed behaviour, persist in the face of difficulties and achieve their desired outcomes (Bandura,

1982). The use of mental self-imagery has been found to enhance self-efficacy by allowing individuals to visualise themselves successfully performing a task, thus strengthening their belief in their ability to perform the task in real-life situations (McAuley et al., 1991). When individuals engage in self-imagery, they are able to evaluate their own performance and compare it to their favourable outcomes, which can help them identify areas for improvement and increase their motivation to continue practicing (Moritz et al., 1996). Moreover, mental self-imagery has been shown to be an effective tool for goal setting, as it allows individuals to create a mental image for their desired outcome, and visualise the steps needed to achieve it (Weinberg et al., 1993). This process can help individuals focus their attention on the task at hand and increase their motivation to achieve their goals.

5.5. The Theory of Planned Behaviour

The Theory of Planned Behaviour (Ajzen, 1988) is an extension of the Theory of Reasoned Action (Ajzen & Fishbein, 1977) and was developed to overcome the limitations of the original model concerning behaviours with incomplete volitional control, i.e., the person's decision at will to perform or not to perform the behaviour (Ajzen, 1991). The theory proposes that behaviour is regulated by two main factors: motivation and ability, in other words, intention and behavioural control. The Theory of Planned Behaviour emphasizes that it is not the actual behavioural control but the perception of behavioural control that has an impact on the intentions and actions of the individual. Therefore, the perceived behavioural control, which represents the individual's belief about how difficult or easy it is to perform the behaviour, along with behavioural intention, is argued to be a direct predictor of behavioural achievement (Ajzen, 1991). In addition to the Theory of Reasoned Action, the Theory of Planned Behaviour incorporates two other determinants of intention: attitude towards the behaviour and subjective norm. Attitude towards the behaviour refers to the individual's evaluation and appraisal of the behaviour as either positive or negative, while subjective norm indicates the perception of social pressure for performing or not performing the behaviour. The theory proposes that these factors contribute to the formation of an individual's intentions and have a direct impact on their behaviour (Ajzen, 1991).

According to Fishbein and Ajzen (1975), attitude is denoted as a "learned predisposition to respond in a consistently favourable or unfavourable manner with respect to the given

object" (Fishbein & Ajzen, 1975: 10). By identifying conditions necessary to arouse or modify an attitude and positing that such conditions would vary in accordance with the motivational basis of the attitude (Ajzen, 1988), The Theory of Planned Behaviour suggests that motivation precedes attitude and that the former influences the latter. A person's overall attitude toward an object can be determined by the subjective value of the object's attributes in interaction with the strength of the association between the object and the attributes (Ajzen, 2001).

The Theory of Planned Behaviour has been found to be remarkably useful in understanding the underlying factors of behaviour and implementing interventions to change the behaviour in question. The theory has been subject to empirical testing and has demonstrated its ability to predict various behaviours such as physical activity, smoking, and drug use, among others. However, some critics have argued that the theory has limitations, particularly regarding its ability to predict behaviours that are not under conscious control or those that are influenced by external factors such as addiction and habit (Armitage & Conner, 2001). Despite these limitations, the Theory of Planned Behaviour remains a valuable framework for understanding human behaviour and designing effective interventions.

5.6. The Goal-Setting Theory

The Goal-Setting Theory (Locke & Latham, 1990) focuses on the purposes that individuals perceive and strive for as goals in order to achieve them, emphasizing that goals serve as the purpose for human action. According to Locke and Latham (2002), goals affect and individual's performance in several ways. Firstly, goals direct effort and attention towards relevant activities. Secondly, they help regulate one's efforts in alignment with the difficulty of the task. Thirdly, they have a positive effect on persistence, and fourthly, they lead to the discovery and use of task-relevant knowledge (Locke & Latham, 2002). In the context of language learning, personal goal-setting is of utmost importance, as the learning process requires long-term engagement and commitment, as well as the establishment of short-term targets hat are essential for maintaining the initial motivation. The theory suggests that when students have clear and specific goals, they are more likely to be motivated and perform better (Ushioda 2014). Although goal-setting is crucial for sustained motivation in language learning, it cannot guarantee persistence on its own. Rather, it is the interaction of language learning

experiences, target language experiences, and other types of experiences that contribute to metacognitive processes when learners encounter difficulties or challenges during the learning process (Ushioda, 2014). The learner's motivation is supported by a timeline of past and ongoing experiences as well as future directions towards individual pragmatic, cultural, and social goals (Ushioda, 2014: 33-34). Setting "proximal self-motivators" (Bandura & Schunk 1981: 595 cited in Ushioda 2014: 36), denoted as meaningful short-term goals can assist learners in developing their metacognitive awareness of their abilities, skills and knowledge in relation to the motivation rationale set by their long-term targets (Ushioda, 2014).

5.7. The Flow Theory

The Flow Theory, originally proposed by Csíkszentmihályi (1990), has been widely accepted by practitioners as a means of fostering positive experiences, particularly in formal educational settings. This theory characterises optimal experience as a state of flow, which is a dynamic equilibrium that involves clear goals, immediate feedback, and the complete focus of all senses, intentions, thoughts, and feelings on the task at hand. In this state, the activity becomes intrinsically rewarding, or autotelic, and requires no extrinsic reward. The optimal experience, or flow, refers to the sensation that accompanies the state of task resolving (Csíkszentmihályi, 1990). The conditions necessary for achieving flow include a balance between the perceived challenges and perceived action capacities, where the individual engages in challenges that stretch their capacities at an appropriate level. Processes that enable the effortless flow of psychic energy include awareness of the process itself, information input, as well as the congruence with personal goals. These processes aid in integrating the self (Csíkszentmihályi, 1990). Research on flow emphasizes the dynamic system of the individual and the environment in which the flow experience is created and developed. This theory highlights that each action at any moment is highly responsive to the immediate previous action, with emergent motivation resulting from the dynamic interaction in an open system. (Nakamura & Csíkszentmihályi, 2014).

5.8. Dörnyei's (1994) motivational framework

In the field of second language acquisition, Dörnyei's (1994) motivational framework is a comprehensive and widely accepted approach that incorporates various dimensions of motivation. The framework integrates two crucial aspects of motivation, that is the

integrative-instrumental aspect, which considers the learning goals and the choice of the target language, as well as the intrinsic-extrinsic character of motivation. According to Dörnyei, motivation is a complex, eclectic and multifaceted construct in the foreign language classroom, and its components can be identified on three levels. The language level addresses motives that align with the conveyed culture and community of the target language, as well as the potential usefulness of learning the language. This level includes the learning goals and the choice of the target language. The learner level focuses on various cognitions and affect that form personality traits. The learner situation level involves course-, teacher-, and group specific extrinsic and intrinsic motives (Dörnyei, 1994). At language level, the restricted and static orientation of integrative and instrumental motivation (Gardner & MacIntyre 1993) is incorporated as subsystems into the dynamic motivational framework of foreign language learning. Specifically, the integrative motivational subsystem pertains the learners' general interest in the target language, appreciation of sociocultural matters related to the language, and favourable attitudes towards the target language group. The instrumental motivational subsystem refers to the learners' focus on the practical advantages of attaining proficiency in the target language (Dörnyei, 1990; 1994). The motivational components at the learner level encompass the need for achievement and self-confidence, which are both considered to be relatively stable personality traits affecting various aspects of an individual's life. The need for achievement relates to the individual's drive to succeed and excel, while self-confidence refers to one's belief in their own abilities to accomplish tasks, produce results, and perform competently. Self-confidence is comprised of both cognitive and affective aspects, with the cognitive aspect relating to one's self-evaluation of language proficiency and the affective aspect being linked to language anxiety. It needs to be asserted that self-confidence is often used interchangeably with the concept of self-efficacy, which refers to an individual's judgement of their own abilities to perform a specific action. However, self-confidence is generally used in a broader sense in the literature (Dörnyei, 1994). Understanding the relationship between these motivational components at the learner level can provide insights into the factors that influence foreign language learning and can help educators develop effective strategies to foster motivation and confidence among language learners. At the learning situation level, Dörnyei (1994) distinguishes between course-specific, teacher-specific, and group-specific motivational components. Course-specific motivational components include interest, relevance, expectancy, task-type familiarity, and satisfaction. Interest refers to a person's inherent

curiosity and desire to increase their knowledge about themselves and their environment. Relevance encompasses the perceived connection between instruction and personal needs, goals and values. Expectancy includes the perceived likelihood of success, the perceived task difficulty, the required effort, and the amount of available guidance and assistance. Task-type familiarity is denoted as the degree to which a task is familiar to the student. Satisfaction refers to the enjoyment or pride students feel when considering the outcome of the activity (Dörnyei, 1994). Teacher-specific motivational components encompass affiliative drive, teacher authority type, and the teacher's systematic socialisation of student motivation. Affiliative drive indicates the student's performance in order to please the teacher, which is appreciated by the students. Teacher authority type manifests in the teacher behaviour which can be either autonomy-supporting or controlling. The teacher's systematic socialisation of student motivation involves task presentation, informational or controlling feedback, and the model role of the teacher's attitudes and orientations in forming the students' attitudes towards learning (Dörnyei, 1994). Group-specific motivational components encompass group dynamics, which can influence the students' cognitions and affects. Group dynamics include the group's goal-orientedness, its norm and reward system, group cohesion, and the competitive, cooperative, or individualistic goal structures in the classroom (Dörnyei, 1994).

5.9. The Directed Motivational Current

The study of motivation on language learning is a dynamic and multifaceted field that continues to evolve as new theories and perspectives emerge. By exploring the underlying mechanisms of motivation and their practical implications for language teaching and learning, researchers and educators can help create a more effective and engaging learning experience for all learners.

The significance of motivation in the language learning process is a widely accepted concept in the academic world, Researchers have shown great interest in language globalisation and the increasing popularity of learning English as a foreign language (Csizér & Dörnyei 2005; Csizér & Lukács 2010). 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 framework also points out the importance of considering individual differences in motivation and the need to tailor motivational strategies to the specific needs of the learners. The construct of the DMC is comprised of various motivational structures, including the Dynamic Systems Theory, Motivational Self System, and Future Time Perspective, and is regarded as a useful pedagogical tool for motivating language learners (Lasagabaster et al., 2014). As a pedagogical tool, the DMC proposes that motivation can be enhanced through the creation of optimal learning conditions, such as providing learners with a sense of control and autonomy over their learning process, setting clear goals and expectations, and offering positive feedback and rewards. The importance of creating a supportive and inclusive learning environment that fosters a sense of community and belonging among learners is among the main tenets of the framework (Dörnyei et al., 2014). 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 DMC's multidimensional nature allows it to provide a comprehensive and inclusive approach to understanding motivation and its role in language learning. It can be considered an important tool for language teachers and learners alike, as it can provide a practical framework for fostering sustained and effective motivation in language learning contexts. By harnessing the power of the DMC, learners van push beyond their limits and achieve long-term learning goals (Dörnyei et al., 2014).

The dynamic systems approach emphasizes the key tenet of the DMC concerning the emerging behaviour of a system out of the interaction of its various and constantly

changing components. However, the characteristic feature of dynamic systems, namely its non-predictability does not seem to apply to the DMC, taking the goal-oriented pathway of this regulatory process in consideration (Dörnyei et al., 2014).

The key tenet of the DMC is highlighted by the dynamic systems approach, which posits that the behaviour of a system emerges from the interactions between its constantly changing components. Despite the fact that dynamic systems are characterised by their unpredictability, the DMC appears to deviate from this feature considering the goal-oriented pathway of this regulatory process. In addition, the dynamic systems approach emphasizes the importance of examining the system as a whole rather than simply focusing on individual components and acknowledges that even small changes in one component may lead to significant changes in the entire system. This perspective has implications for the study of motivation and language learning, as it suggests that motivational factors cannot be examined in isolation but must be considered in the context of the larger system in which they operate (Dörnyei et al., 2014).

In conclusion, the role of motivation in language learning cannot be underestimated, and the DMC framework provides a comprehensive approach to understanding and enhancing motivation in language learners. By considering the dynamic and individual nature of motivation and creating optimal learning conditions and a supportive learning environment, educators can better engage learners in a continuous and successful language learning journey. 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.

Part II

6. The situation of foreign language education in Hungary

The following chapter focuses on foreign language education in Hungary in the context of the European Union's language policy. While promoting linguistic diversity and multilingualism is a key priority for the European Union, Hungary is last place among the member states regarding foreign language knowledge (EMMI, 2012). The most

commonly taught foreign languages in Hungary belong to the Germanic language family, while Hungarian belongs to the Finno-Ugric language family. This chapter explores the linguistic origin of these languages, the rate of mutual intelligibility, and the role of teachers in promoting multilingualism and cross-cultural perspectives. The chapter also discusses the need for specialized knowledge and methodology for L3 teaching, in order to develop multilingual learners and increase students' motivation for L3 German learning.

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). However, compared to the preceding Eurobarometer survey conducted in 2006 (Eurobarometer, 2006), the 2012 report reveals noticeable setbacks concerning the ability of the population of speaking one foreign language, including 35% of the community, which is 7 points less as reported by the previous survey. Furthermore, only 13% of the population is able to speak two languages apart from their mother tongue, which is regarded as 14 points decrease compared to the preceding state (Eurobarometer, 2006: 9; 2012: 5).

The *Hungarian National Core Curriculum*, as outlined in the 5/2020 Kormányrendelet (2020), places significant emphasis on the acquisition of functional language knowledge that can be applied not only in daily life but also in higher education and professional contexts. Language learning is viewed as an important component of personal and professional development, and contributes to the development of national and European identity (5/2020 Kormányrendelet, 2020: 314). The National Core Curriculum 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 crucial 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 an L2 for many Hungarian students, would be a useful asset during the teaching process of German as a L3. This way, students could build on their existing knowledge of English to facilitate the acquisition of German, a language that is not related to Hungarian. 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' 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. To promote the development of multilingual learners and increase the level of the students' multilingual awareness, multilingual teachers should have specialized knowledge of L3 teaching and its methodology, complemented by linguistic knowledge of other genetically related languages (preferably in alignment with the students' foreign language knowledge) and their own language learning experience (Jessner, 2008b; Gutiérrez, 2014: 82).

The *White Paper on the National Strategy for the Development of Foreign Language Teaching from Kindergarten to University* (EMMI, 2012) a significant document issued by the Ministry for Human Resources intended as a guideline to raise awareness of the problems in foreign language education asserts the severe situation of Hungary occupying the last place in the list of the member states of the European Union regarding foreign language knowledge. The document 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. By introducing foreign languages in this order, the learner is most likely to have positive experiences with learning English as L3 due to its simpler grammatical structure and the higher language prestige of English. 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. The current doctoral thesis aims to address this gap by proposing a method that highlights the importance of multilingual awareness-raising, specifically through the identification of cognates and similar structures between L2 English and L3 German by providing evidence on the effects of multilingual awareness-raising on the writing performance of Hungarian L3 learners. Furthermore, the effectiveness of this method addressing the issue of decreasing motivation in learning German as L3 in a school setting will be examined. By shedding light on the potential benefits of multilingual awareness-training, this thesis seeks to contribute to the ongoing discussion on foreign language teaching and learning in the Hungarian context.

7. The teaching project

This chapter provides a description of the research design. 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. After an overview, the section presents the sampling process with special attention to the initial conditions for the research, the instructional intervention based on TLA principles in the intervention group and communicative language teaching (henceforth CLT) principles in the control group, along with the multilingual intervention method highlighting cross-linguistic and metalinguistic awareness-raising.

The project, encompassing one schoolyear was designed for a group of Hungarian 9th grade secondary grammar school students in a Hungarian town. The project was piloted in the schoolyear 2019/2020. Due to the longitudinal nature of the research, 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).

7.1. Participants

According to the regulation imposed by the National Core Curriculum (EMMI, 2012), students should start learning a L2 in 5th grade, and a L3 in 9th grade. The main aim of the research was to obtain data concerning the development of the L3, which in Hungary most commonly begins in 9th grade. For the purposes of the research special attention was paid to similar initial conditions, including secondary school students of the 9th 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. The main reasons for exclusion were previous knowledge in German, an extended learning period of English (more than 4 years), or the existence of learning disabilities. 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 5th 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 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.

German-English cognate word pairs were on one hand pooled from the vocabulary section of the coursebook, and on the other hand from the suggestions of more experienced language learners of the 11th and 12th grade. These learners were given the task to collect as many words that they found similar in German and English as possible. The lists were then analysed according to the Levenshtein distance, which is a string metric for measuring the difference between two sequences by eliciting the minimum number of necessary operations in order to transform one word into another by substitution, insertion, or deletion of a single character (Serva & Petroni, 2008). As a first step, word pairs with more than 50% similarity (e.g. *Mutter*-mother = 67%, *Vater* – father = 67%, *Schule*-school = 50%, *freundlich*-friendly = 50%) were included on the project. Since the similarity values were elicited on an orthographic basis, as a second step, word pairs with less than 50% similarity went through a judgement process considering their inclusion into the project based on similarities in pronunciation (e.g. *Jahr*-year, *Tanz*-dance, Fuß-foot). It has to be noted that false cognates such as *Gymnasium*~gym (in German meaning *secondary school*), *bekommen*~become (in German meaning *to get*, or *streng*~strong (in German meaning *strict*) were discussed with the intervention group with the aim to avoid confusion or errors in language use (Lengeling, 1996).

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 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.

7.2. 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 GFL teachers in Hungary) (see Imre, 1998) was not qualified enough to make references to the English language.

7.3. 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). 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 the process of 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 out the German word provides the students with 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 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.

It has to be noted that the students in both groups have not been specifically trained for writing. 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 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).

8. Methodology

This chapter provides an overview of the research methodology of the empirical study. After the presentation of the hypotheses and research questions, the chapter leads into the detailed description of the research instruments According to the longitudinal nature of the research, the multilingual proficiency tests were constructed to elicit the linguistic development, and the motivational questionnaire was intended to collect data about the motivational and attitudinal patterns of the groups on a monthly basis. The questionnaire about the classroom setting and the competence tests were administered in order to safeguard external factors as well as to ensure similar initial conditions for choosing the participants. With the exception of the competence tests, all research instruments were developed specifically for the purposes of the current doctoral thesis.

8.1. Hypotheses and research questions

Based on existing research concerning the role of cross-linguistic similarities in language teaching in 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.

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?

8.2. Instruments

8.2.1. 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.

During the assembly of the multilingual proficiency tests, the complexity of performance was given special attention beginning with tasks that require less contribution from the part of the participants towards those that require more complex responses.

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.

The compilation of writing samples as data collection method is underpinned by theoretical as well as practical reasons. From the theoretical perspective on one hand, in writing, communication is achieved only through the combination of words as a result of a conscious and deliberate analytical work (Vygotsky, 1962). From the practical

perspective on the other hand, 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.

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, 10 people at a time, to do the test.

Analysis and quantification of data

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 Table 1 were identified, operationalized, and analysed.

Table 1 *Variables and operalisation of the linguistic data*

Name	Variable	Operalisation
fluency	text length	the total number of words divided by the number of participants in each group
lexical diversity	measurement of textual lexical diversity (henceforth 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

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 serves as a valid measure of linguistic development (Malvern et al., 2004).

Taken into consideration that calculations of vocabulary range may be sensitive to text length (McCarthy & Jarvis, 2010), the complex calculation of MTLD was applied in the present research. MTLD 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). MTLD 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 Table 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.

Table 2 *Organisation 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

8.2.2. 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 GFL, who administered it to 97 students in the 9-12th grade in a secondary school in a Hungarian town. In order to safeguard anonymity, participants were required to give a nickname or initial. Results of the statistical analysis for the validation process are presented in Chapter 9.1.1.

The first part of the questionnaire (see Appendix 3) 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 4.

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 or 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.

8.2.3. 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 6) 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. Results of the validation process are presented in Chapter 9.1.1.

Responses in the questionnaire provide information about the students' perception of teacher personality, feedback, goal setting, learning environment and classroom content (Dörnyei, 2001), the overall motivational classroom setting.

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"*.

8.2.4. 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^{th} and 9^{th} 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^{th}, 8^{th} (where L2 perceptive skills testing was introduced at A1 and A2 levels, respectively) (110/2012 Kormányrendelet, 2012: 10682) and 10^{th} 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 (Balázsi, et al. 2014: 7-8; OECD, 2013; Mullis et al., 2009).

Effective L1 text comprehension is considered to represent an essential skill of students for participating in institutionalised education and for navigating through the social support system later in life. In addition, text comprehension skills provide a basis for making informed decisions concerning the individual's own life. High levels of text comprehension skills are argued to promote a person's interest as well as affect a community's development. Therefore, citizens' knowledge about and the effective

implementation of text comprehensions skills in everyday life situations represent an overall interest of society. L1 text comprehension skills include the ability to understand and reflect upon written texts as well as to use these skills in order to achieve one's goals, develop knowledge, and successfully participate in and adapt to everyday communicative situations (Balázsi et al., 2014: 11-13). In the test, special attention is given to the diversity of genres that model reading and information processing tasks of real-life situations. The genres include excerpts from novels, newspaper articles, advertisements, simple tables, travelogues, and short stories. Considering the text types, experiential, explanatory and data-conveying texts are included in the test. Experiential texts focus on telling a story, report on an event, or describe an object with the aim of emotionally engaging the reader. Explanatory texts are aimed at conveying knowledge and encompass scientific, informative texts, or the explanation of phenomena in a factual and placid style. Data-conveying texts disclose solely data without explanation, where the reader has to interpret the data in order to make sense of the input. Throughout the test, students have to engage in simple and complex comprehension tasks that require skimming (i.e., grasping the main idea and overall meaning), scanning (i.e., reading for gist), and identifying logical correlations and the interpretation of specific content elements or style (Balázsi et al., 2014: 15-17).

Mathematical knowledge and its implementation play a fundamental role in society, the world of work and everyday life. Therefore, mathematical competence is considered to be one of the cornerstones of institutional education (Balázsi et al., 2014: 33). The focal points of measuring mathematical competence in Hungary are the extent of which the learners are capable to apply their knowledge (that they have acquired in institutional setting) in real life situations. Mathematical competence includes the ability to understand the role of mathematics in the world, to do mathematical operations, to apply mathematical skills and knowledge in everyday life, and during cooperations with others. Content areas of the competence test encompass a) arithmetical calculations, where students have to do operations with numbers, quantities and measurements; b) correspondences and connections, where learners need to establish connections and realise regularities; c) shapes and directions, where the ability of planar and spatial orientation is tested; and d) statistical attributes and probability, where learners have to read and interpret data presented in tables and graphs, choose the appropriate presentation form for the given data sets, make decisions concerning with which assumptions and

probability the data sets can be applied to specific situations, as well as understand and use the proper terminology for logical operations (e.g., *and, or, if*). Tasks are presented as multiple-choice, true-false, closed-ended, as well as open-ended (requiring short answers, complex problem-solving with multiple steps, or a more elaborate discussion) items (Balázsi et al., 2014: 34-40).

The L2 competence tests measure receptive skills in 6th grade at A1 level, and in 8th 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).

9. Analysis and results

This chapter aims to report on the outcomes of the pilot and research years, respectively. The statistical analyses conducted with the data of the instruments are followed by an overall discussion of the results. The conclusion section of the pilot year draws attention to the manageability of the teaching project as well as the effectiveness of the intervention. The research year allowed for a more detailed analysis of the data with a larger sampling size and with a greater variety of instruments.

The current doctoral thesis employs various quantitative analyses with the aim of obtaining information regarding the research questions. In order to elicit whether the differences between the intervention and the control group were significant, paired sample t-tests were employed concerning the measurements with one point of testing. Whenever data were collected at multiple points in time, repeated measures analysis of variance (henceforth RM-ANOVA) was administered with moments of testing as a 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. Considering the statistical validation of the motivational questionnaire as well as the questionnaire about the classroom setting, a principal component analysis (henceforth PCA) was conducted with oblique rotation. Sampling adequacy was verified through the Kaiser- Meyer-Olkin measure (henceforth KMO).

9.1. Pilot year

The goals of the pilot year were (a) to elicit whether the differences between the linguistic development of the participants in the intervention and control group are significant, (b) to develop, pilot and validate a questionnaire about the classroom setting in order to control for non-linguistic variables, and (c) to develop, pilot and validate a thorough and adequate instrument for the measurement of the motivational and attitudinal level of the participants in the two groups. The detailed analysis and validation process of the questionnaire about the classroom setting and the motivational questionnaire are reported in this section as well.

9.1.1. Results

Data from the competence tests are presented in Table 3.

Table 3 *Descriptive statistics of the competence tests*

		Min.	Max.	Mean	Std. D.	Variance	Skewness		Kurtosis	
							Stat.	Std. Err.	Stat.	Std. Err.
Intervention-group	**Mathematics**	82	95	87.77	3.63	13.19	.55	.62	.05	1.19
	L1 Hungarian	87	97	91.54	3.04	9.27	.21	.62	-.81	1.19
	L2 English	85	100	92.77	4.46	19.86	-.05	.62	-.75	1.19
Control group	**Mathematics**	84	93	87.92	2.87	8.24	.09	.62	-.94	1.19
	L1 Hungarian	87	95	91.15	2.58	6.64	-.06	.62	-.92	1.19
	L2 English	88	100	93.31	3.73	13.89	.42	.62	-.88	1.19

Note: N = 13

The statistical analysis reveals that the data were normally distributed. The results of the paired sample t-tests reveal that there were no significant differences between the competence levels of the intervention and the control groups concerning mathematical $t(12) = -.12$, $p = .91$, L1 text comprehension $t(12) = .38$, $p = .71$, and A2 level L2 (English) receptive competences $t(12) = .33$, $p = 75$.

Considering the level of multilingual awareness, Table 4 reveals data concerning the mean scores on the out-of-context word recognition task as well as the grammaticality judgement task. The maximum score that could be achieved was 19.

Table 4 *Mean and standard deviation values of the multilingual awareness tasks*

		Mean		**Standard Deviation**	
		Intervention-group	**Control-group**	**Intervention-group**	**Control-group**
Multilingual awareness-level	October	15.08	12.08	2.14	2.48
	November	15.69	12.69	1.39	1.65
	December	16.69	14.62	1.89	1.72
	January	16.92	15.08	1.80	2.01
	February	17.62	16.23	1.83	2.21
	March	18.23	16.92	1.49	2.68
	April	18.62	17.39	1.01	2.44
	May	18.85	18.00	.599	2.25

The RM-ANOVA demonstrates that the differences between the two groups concerning the time factor $F(7;168) = 49.25$, $p < .005$, and the group factor $F(1;24) = 10.03$, $p = .004$ are significant, whereas time and group interaction $F(7;168) = 2.59$, $p = .053$ is not significant. This suggests that the intervention had a positive effect on improving multilingual awareness and that this effect was consistent across time. Overall, the data suggest that the intervention was successful in improving multilingual awareness in the intervention group.

Considering the evaluation of the writing samples, the exact mean and standard deviation values concerning the variables and points of testing are presented in Table 5.

Table 5 *Mean and standard deviation values of the writing samples*

		Mean		**Standard Deviation**	
		Intervention-group	**Control-group**	**Intervention-group**	**Control-group**
Text length (number of produced words)	October	70.54	24.15	15.29	7.90
	November	110.92	61.15	40.97	19.80
	December	190.54	79.61	54.46	20.79
	January	228.00	90.46	56.61	19.11
	February	239.08	104.00	52.32	22.99
	March	245.69	106.08	51.62	20.13
	April	248.92	108.31	60.23	24.56
	May	270.69	112.54	54.71	20.65
MTLD values	October	19.48	0.00	7.65	0.00
	November	22.37	8.67	4.87	9.16

	December	30.28	25.37	4.88	6.84
	January	33.26	23.51	3.87	2.55
	February	35.27	24.26	4.35	3.50
	March	37.02	23.76	4.01	6.11
	April	39.01	23.85	5.62	5.37
	May	48.04	24.25	12.46	5.78
Clause length	October	4.19	4.65	.38	.63
	November	4.66	4.63	.68	.58
	December	5.30	4.96	.46	.73
	January	6.01	4.83	.67	1.08
	February	5.96	5.44	.89	.72
	March	5.96	5.57	.48	.58
	April	6.15	5.64	.49	.75
	May	6.44	5.76	.61	.65
Grammatical accuracy (Number of grammatical errors per clause with a finite verb)	October	.67	1.72	.21	.89
	November	.53	1.04	.20	.39
	December	.47	.79	.22	.27
	January	.54	.69	.13	.37
	February	.58	1.01	.18	.34
	March	.45	.77	.20	.52
	April	.22	.59	.11	.37
	May	.17	.55	.06	.31

Note: N = 13

Results of the statistical analysis considering the variables of the writing samples are presented in Table 6.

Table 6 *Statistical analysis of the multilingual proficiency tests in the pilot year*

	Time factor F(7;168)	***p* (Sig.)**	**Time and group interaction F(7;168)**	***p* (Sig.)**	**Group factor F(1;24)**	***p* (Sig.)**
Text length	107.29	<.005	19.13	<.005	94.61	<.005
Lexical diversity	66.07	<.005	7.15	<.005	125.24	<.005
Syntactic complexity	25.91	<.005	4.03	<.005	7.97	<.05
Grammatical accuracy	20.26	<.005	5.11	.006	27.15	<.005

According to the RM-ANOVA, differences between the intervention and the control group were reported as significant with the exception of individual differences between the subjects considering clause length as variable for syntactic complexity, which were found to be not significant.

Figures 5 and 6 reveal the distribution of word levels in the produced writing samples.

Figure 5 *Ratio of word levels in the intervention group as a variable for lexical complexity*

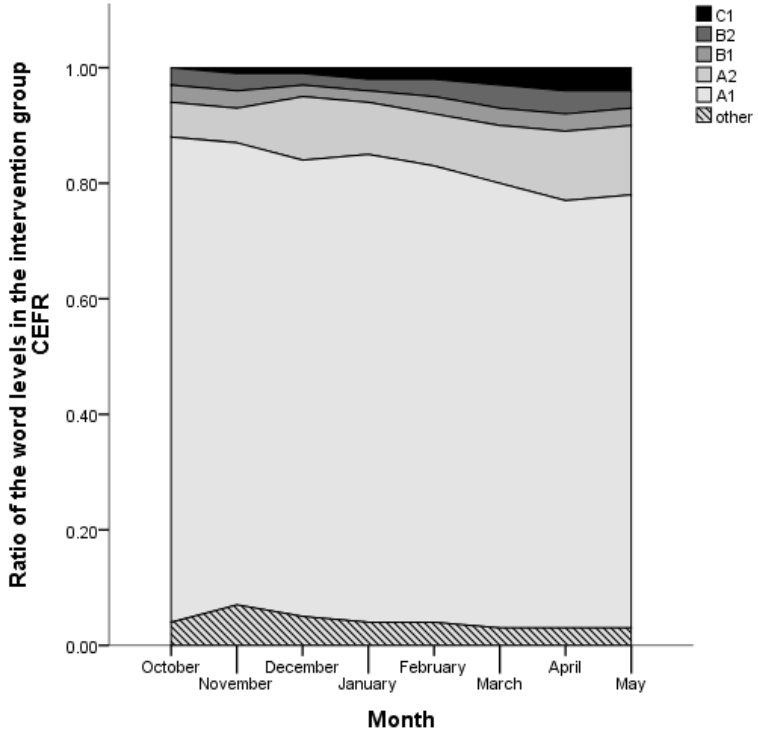
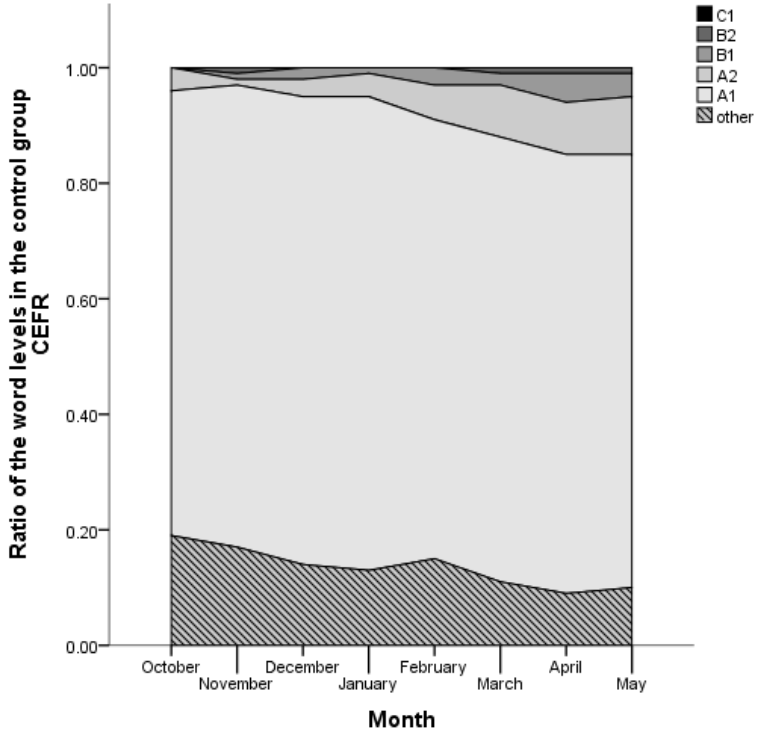


Figure 6 *Ratio of word levels in the control group as a variable for lexical complexity*



Regarding the word levels the dominance of A1 level words in the collected writing samples are undisputable in both groups. The tendency to incorporate words with a higher CEFR level into the texts is observable in each group. However, in the control group this tendency is more restricted on levels A2 and B1 as opposed to the intervention group, where the ratio of the word levels reveal a more balanced picture. Another notable difference between the two groups has to be pointed out considering the ratio of words labelled as "other". Words belonging to this category include proper names, geographic names as well as numbers, and were employed by the control group at a considerably higher rate as in the intervention group.

The pilot year provided the time frame for developing the motivational questionnaire as well as the questionnaire about the classroom setting. Results of the statistical validation process are presented in the following section.

In the motivational questionnaire, since the statements were of positive nature, the scales for each item were converted to values 5 (*"strongly agree"*), 4 (*"partially agree"*), 3 (*"neither agree nor disagree"*), 2 (*"partially disagree"*), 1 (*"strongly disagree"*). The number of responses in each of the scale positions for each item is presented in Table 7.

Table 7 *Number of responses in the motivational questionnaire broken down by question and scale position*

Motivational questionnaire	strongly disagree	partially disagree	neither agree nor disagree	partially agree	strongly agree
Q1	0	0	25	11	61
Q2	0	12	0	13	72
Q3	0	23	36	13	25
Q4	0	25	22	14	36
Q5	10	34	4	35	14
Q6	0	23	44	16	14
Q7	0	12	17	54	14
Q8	11	24	22	37	3
Q9	0	22	37	38	0
Q10	0	35	13	48	1
Q11	0	12	2	45	38
Q12	12	12	24	36	13
Q13	0	0	22	49	26
Q14	0	11	25	48	13
Q15	0	11	3	47	36

Q16	0	0	35	50	12
Q17	1	23	11	60	2
Q18	1	0	24	46	26
Q19	0	0	24	57	16
Q20	0	11	14	60	12
Q21	0	34	14	36	13
Q22	0	0	46	36	15
Q23	0	12	25	35	25
Q24	0	23	47	13	14
total	**35**	**359**	**536**	**897**	**501**

Note: N = 97

In order to test for the normal distribution of the responses, the Kolmogorov-Smirnov test (henceforth K-S test) was administered. Checking for normal distribution means to exert the normal behaviour of the variables, that is to what extent data tend to cluster around the mean. The K-S test reports that the distribution of the responses in each of the scale positions is significantly non-normal D (120) = .15, $p < .05$. The histogram shows a skewness of .757 and a kurtosis of -.199. It has to be noted that the sampling size is fairly big. When running the K-S test for each item separately, the distribution of responses is significantly non-normal only for items 2 and 20.

Both items *"I spend time every day learning German and improving my German language skills"* (item 2) and *"I have managed to include learning German into my daily routine"* (item 20) are concerned with the engagement with the target language on a daily basis and both items are negatively skewed above a value of 1.9, as well as reveal fairly high values of kurtosis over 4.08. This result is likely to reflect that the majority of the students manage to learn and practice German daily. However, data retrieved from these two items do not represent an unexpected outcome, since the participants were chosen from 9th to 12th grade meaning that most of them have learnt German for more than one year in institutional context on a regular basis. The course schedule with 4 lessons per week plays a significant role in this outcome as well, since participating in the lessons as well as doing homework as well as practicing for upcoming tests or presentations require (almost) daily engagement with the language.

To determine the conceptual validity of the chosen items, i.e., that the items were reliable measures of the constructs they were intended to measure, a PCA was conducted on the 24 items with oblique rotation (Direct Oblimin). The Kaiser-Meyer-Olkin measure

verified the sampling adequacy for the analysis, KMO = .89. Bartlett's test of sphericity χ^2 (276) = 4325.34, $p < .001$, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component. The scree plot of the PCA was slightly inconclusive and showed inflexions that would justify retaining 6 or 8 components. The ambiguity of the scree plot is explained by the dichotomy of short- (item 1) and long-term goals (elicited by items 7, 13, and 19) as well as by the difference between items eliciting instrumental- (item 6) or integrative motivation (items 12, and 18) to learning German as L3, which added two more linear components to be considered within the data. In order to arrive at a justified decision on how to treat the problem, Kaiser's criterion was employed that requires eigenvalues above 1 for each underlying dimension in order to be considered as statistically important. Only six out of the eight components had eigenvalues over Kaiser's criterion of 1. Given the convergence of the scree plot and Kaiser's criterion on 6 components, this is the number of components that were retained in the final analysis. The retained components in combination explained 94.88% of the variance.

After analysing the factor loadings of each item for the components, all 6 components were labelled. The factor loadings for each item are presented in Appendix 5. Table 8 reveals a comprised overview of the eigenvalues and the % of variance explained along with the alphas for each component.

Table 8 *Validity of the components in the motivational questionnaire*

Component	**Eigenvalue**	**% of variance**	**α**
Goal orientedness	8.478	39.237	.766
Facilitative behavioural routine	3.101	14.353	.797
Positive emotional loading	4.246	19.652	.823
Perceived behavioural control	2.136	9.884	.816
Perception of progress	1.010	3.855	.867
Vision-orientedness	1.490	6.895	.730
total		94.835	

Since all the alpha values are above the recommended .70, the Likert-scales were considered to be internally consistent. The alpha value for the whole questionnaire computed over 24 items was .691. The alpha values confirmed the internal consistency and thus, the reliability of the questionnaire.

According to the statistical analyses of the dataset, it is confirmed that investigating long-term motivation of German as L3 in the framework of the DMC can be operationalised

through the present questionnaire that focuses on the constantly changing underlying dimensions of emerging behaviour of a system. After the K-S test and PCA, items 1, 2, 6, and 20, were considered to be excluded from the questionnaire. However, when eliciting the alpha values of the responding components did not significantly increase. After careful consideration concerning the issues addressed by the items in question it was decided to retain these items in the questionnaire, which according to the statistical analyses was confirmed to represent a valid and reliable tool for eliciting motivation considering German as L3. For reference to the statements of the questionnaire, see Appendix 4, which includes the original statements in Hungarian as well as the English translation. Future development of the questionnaire may welcome additional statements in order to elicit the underlying factors of the DMC in more detail.

In the questionnaire about the classroom setting, the responses to verbal categories were converted to numerical information the same way as in the case of the motivational questionnaire with values 5 (*"strongly agree"*), 4 (*"partially agree"*), 3 (*"neither agree nor disagree"*), 2 (*"partially disagree"*), 1 (*"strongly disagree"*). The number of responses in each of the scale positions for each item is presented in Table 9.

Table 9 *Number of responses in the questionnaire about the classroom setting broken down by question and scale position.*

Questionnaire about the classroom setting	strongly disagree	partially disagree	neither agree nor disagree	partially agree	strongly agree
Q1	4	5	25	20	38
Q2	0	12	40	35	5
Q3	12	0	22	44	14
Q4	0	20	23	27	22
Q5	0	10	19	51	12
Q6	0	4	17	39	32
Q7	4	22	13	31	22
Q8	6	1	18	44	23
Q9	6	0	23	31	32
Q10	0	9	17	22	44
Q11	8	20	23	27	14
Q12	12	8	19	39	14
Q13	0	25	29	33	5
Q14	4	17	23	43	5
Q15	0	6	26	42	18

Q16	7	7	26	29	23
Q17	0	7	33	33	19
Q18	0	12	15	53	12
Q19	0	4	45	28	15
Q20	0	11	18	28	35
Q21	8	4	25	24	31
Q22	0	15	16	48	13
Q23	8	8	17	38	21
Q24	0	8	21	25	38
Q25	0	8	26	26	32
Q26	0	0	40	28	24
Q27	0	3	19	59	11
Q28	0	4	30	46	12
Q29	6	10	31	33	12
Q30	0	15	7	52	18
total	**85**	**275**	**706**	**1078**	**616**

Note: N = 92

Checking the normal distribution of the responses, the K-S test reports that the distribution of the responses in each of the scale positions is significantly non-normal D (150) = .098, $p < .05$. The histogram shows a skewness of .563 and a kurtosis of -.397. Note that the sampling size is fairly big, just as in the case of the motivational questionnaire. When running the K-S test for each item separately, the distribution of responses is significantly non-normal only for items 4 and 22.

Both items *"The teacher regularly determines short-term goals"* (item 4) as well as *"The teacher explains how we can achieve the determined short-term goals"* (item 22) cover the short-term goal setting from the side of the teacher. Both items are negatively skewed with values over 1.5 and reveal relatively high values of kurtosis over 3.12. The results are likely to reflect that the teachers of the language groups participating in the administration of the questionnaire put fairly strong emphasis on regularly examining and checking the German knowledge of their students with clear instructions on what part (e.g. which vocabulary, which grammatical part) is going to be on the written or oral tests or exams along with instructions how to best prepare for them. Imposing these "checkpoints" as explicitly set short-term goals are prescribed by the local syllabus, and clear instructions aid in reducing exam anxiety as well as create transparency for the parents as well. Due to the subjective norm according to regulations of the local syllabus as well as resulting from parental expectations, the majority of teachers employ the tactics

of giving previous notice on upcoming tests and guide their students towards the successful achievement of which the students are explicitly aware.

Conceptual validity was elicited through conducing PCA on the 30 items with oblique rotation (Direct Oblimin). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .67. Bartlett's test of sphericity χ^2 (435) = 3657.84, p < .001, indicated that correlations between items were significantly large for PCA. The initial analysis revealed that six components had eigenvalues over Kaiser's criterion of 1 and in combination explained 79.78 % of the variance. The scree plot showed inflexions that justified retaining 6 components. After analysing the factor loadings of each item for the components (see Appendix 7), all 6 components were labelled. Table 10 reveals a comprised overview of the eigenvalues and the % of variance explained along with the alphas for each component.

Table 10 *Validity of the components in the questionnaire about the classroom setting*

Component	**Eigenvalue**	**% of variance**	**α**
Teacher personality	5.024	16.705	.779
Feedback	1.088	3.619	.879
Classroom atmosphere	2.295	9.727	.830
Teacher goal setting	5.345	17.774	.860
Instruction	7.317	24.329	.908
Content	2.293	7.626	.817
total		79.781	

Since all the alpha values are above the recommended .70, the Likert-scales were considered to be internally consistent. The alpha value for the whole questionnaire (containing all 30 items) was .721. The statistical analyses reported above confirm that the questionnaire about the classroom setting is a valid and reliable tool for measuring the underlying external factors of motivation in the classroom.

After the validation of the questionnaire about the classroom setting, the instrument was applied in the intervention and control group of the piloting year as well. The following section presents the outcome of the questionnaire in the actual groups.

Data elicited from the questionnaire about the classroom setting are presented in Table 11.

Table 11 *Statistical analysis of the questionnaires about the classroom setting*

	Means		**t(12)**	***p*** **(Sig.)**
	Intervention group	**Control group**		
Teacher personality	4.32	4.23	.37	.72
Feedback	4.46	4.25	1.15	.27
Classroom atmosphere	4.08	4.15	-.29	.78
Teacher goal setting	3.92	4.07	-.81	.44
Instruction	4.38	4.31	.25	.81
Content	4.31	4.15	.62	.55

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

9.1.2. Discussion

The pilot year study, the effects of a specialised multilingual awareness intervention on the development of language skills and multilingual awareness among learners in comparison to a control group with 13 participants, respectively.

The statistical analysis of the competence tests aided the assembling of the groups and ensured that the participants in both groups had similar mathematical, Hungarian and English perceptive competences.

The intervention group reached higher levels of multilingual awareness than the control group even after the first month of the intervention. Furthermore, the statistical analysis revealed that the intervention group outperformed the control group in various writing variables, including text length, lexical diversity, lexical complexity, and grammatical accuracy. The evaluation of the writing samples confirmed that both groups had a dominance of A1 level words, but the intervention group shows a more balanced ratio of word levels, with a tendency to incorporate words with higher CEFR levels into their texts.

No significant differences were found between the two groups in terms of classroom setting. The validation process of the questionnaire about the classroom setting provided a useful measurement instrument to control for external influential factors concerning the research setting and environment.

9.1.3. Conclusion

In conclusion it can be stated that the goals set at the beginning of the pilot year have been accomplished. The time span of the pilot year allowed for the development of the teaching materials for the intervention as well as valid instruments to control for non-linguistic variables. The results of the nationwide competence tests enabled to create groups with a similar baseline for the project.

The pilot year demonstrated that the multilingual proficiency tests were on one hand comprehensible for the students, on the other hand that the amount of produced data was manageable from month to month considering the longitudinal nature of the research.

The results reveal that although multilingual awareness develops during L3 learning to a specific rate as a result of students looking for similarities between the target language and the languages they already know in a conscious or not conscious way in order to facilitate their learning (Ringbom 2007a: 1-2), the intervention had a positive effect on the development of multilingual awareness, and the effect was consistent over time.

Overall higher levels considering all writing variables with significant differences between the intervention group and the control group confirm a higher rate of linguistic development in the intervention group and highlight the potential of the intervention to enhance multilingual proficiency in writing in L3 German learning. The results of the questionnaire about the classroom setting support the comparability of the two groups and confirmed that the observed linguistic differences between the two groups are due to the intervention and not external factors.

The period of the pilot year implemented the establishment of a motivational questionnaire. The instrument can provide valuable insights into the learners' motivation and attitudes towards L3 German learning.

The main limitation of the pilot year study was the small sampling size. Due to the fact that the number of participants in foreign language classes are advised to be kept around 15 people in order to facilitate effective language teaching and learning (EMMI, 2012a), data presented in this small-scale study should be carefully considered in terms of generalisation.

Overall, the study conducted in the pilot year presented promising results in term of the effectiveness of the intervention in improving linguistic and multilingual awareness

outcomes. The successful development of the questionnaires and instruments used in the study further add to its credibility and can serve as a basis for future research.

9.2. 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 findings will contribute to the understanding of the variables that are involved in the teaching and learning processes of L3 German.

9.2.1. Analysis and results

Data from the competence tests are presented in Table 12.

Table 12 *Descriptive statistics of the competence tests*

		Min.	Max.	Mean	Std. D.	Variance	Skewness		Kurtosis	
							Stat.	Std. Err.	Stat.	Std. Err.
Intervention-group	**Mathematics**	74	97	87.45	6.48	42.04	-.23	.434	-.70	.845
	L1 Hungarian	82	98	89.66	4.30	18.52	.11	.434	-.77	.845
	L2 English	82	100	91.83	4.99	24.86	-.26	.434	-.69	.845
Control group	**Mathematics**	74	95	86.28	6.55	42.85	-.19	.434	-.73	.845
	L1 Hungarian	80	97	89.17	4.95	24.50	.06	.434	-.99	.845

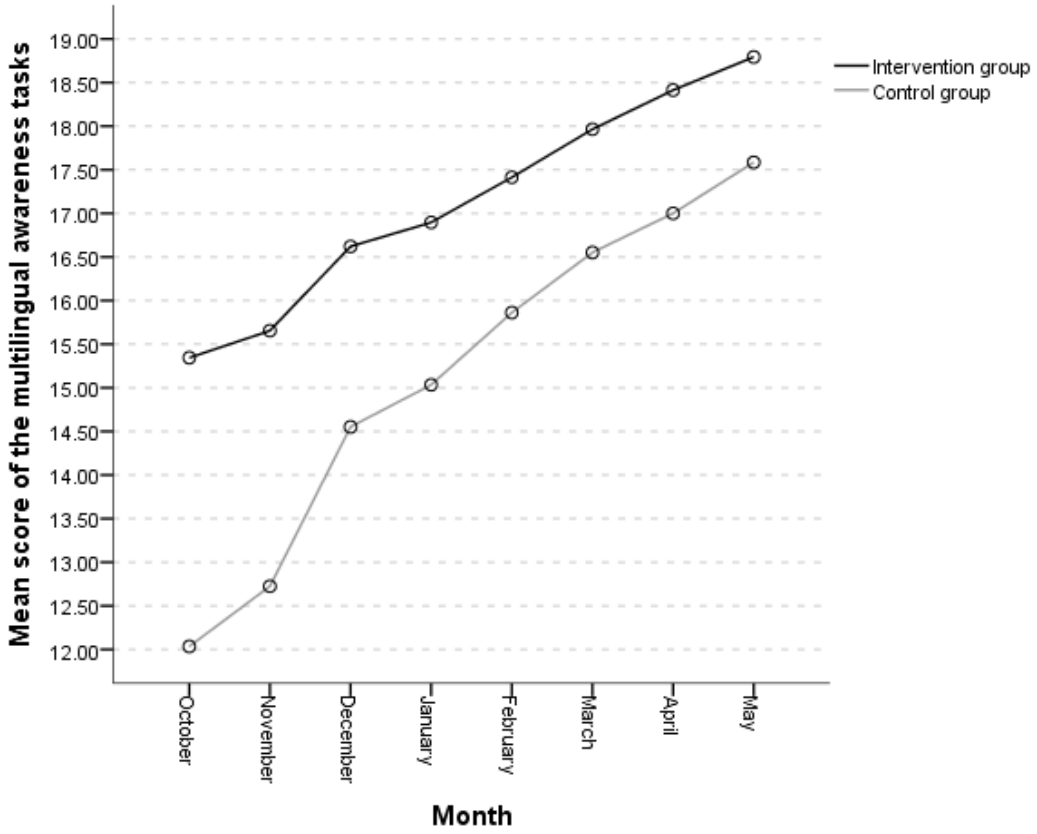
	L2 English	82	100	92.34	5.11	26.16	-.47	.434	-.69	.845

Note: N = 29

The statistical analysis of the competence tests confirms that the data ware 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.

The plot for the multilingual awareness-level of the intervention and the control group is displayed in Figure 7.

Figure 7 *Plot for the level of multilingual awareness*



The most striking outcome of the plot is that the greatest difference between the multilingual awareness-level of the intervention and the control group can be observed after the first month of launching the project. During the following months, especially in the first term of the school year, the difference between the two groups decreases, and in the second term the difference slowly decreases from 1.55 in February to 1.2 in May. It has to be noted that the multilingual awareness- level of control group reaches the initial

level of the intervention group only between January and February, after the first term of the project. The RM-ANOVA demonstrates that the differences between the two groups concerning the time factor $F(7;392) = 95.43$, $p < .001$, time and group interaction $F(7;392) = 5.37$, $p = .001$, and the group factor $F(1;56) = 25.02$, $p = .001$ are significant.

The descriptive statistical analysis of the writing samples is presented in Table 13.

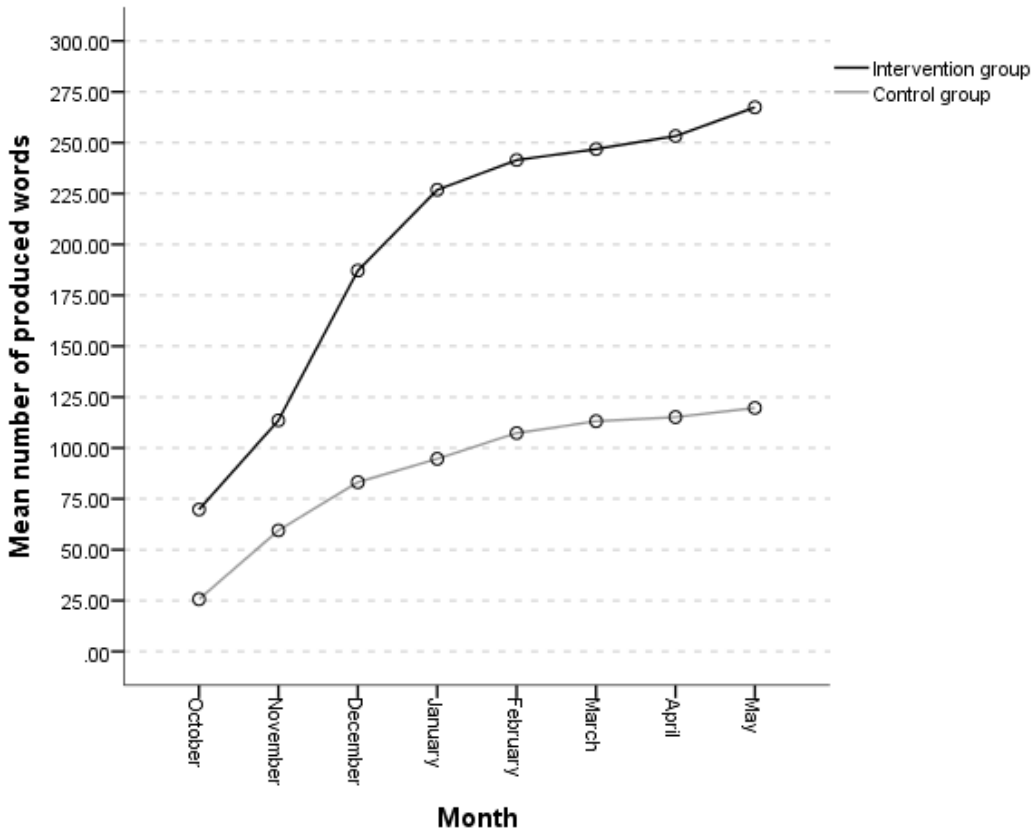
Table 13 *Mean and standard deviation values of the writing samples*

		Mean		Standard Deviation	
		Intervention-group	**Control-group**	**Intervention-group**	**Control-group**
Text length (number of produced words)	October	69.76	25.66	14.72	6.59
	November	113.52	59.48	47.47	17.17
	December	187.14	83.17	56.20	21.92
	January	226.83	94.66	57.41	18.42
	February	241.48	107.31	58.82	20.17
	March	246.86	113.14	56.86	19.76
	April	253.28	115.14	61.23	22.69
	May	267.41	119.66	58.44	20.88
MTLD values	October	19.49	.00	8.24	.00
	November	22.64	10.67	4.57	9.33
	December	30.61	24.86	6.53	6.30
	January	32.25	25.19	4.92	3.89
	February	33.49	25.97	6.63	4.13
	March	35.82	26.22	5.90	5.45
	April	38.28	25.38	6.00	4.92
	May	46.73	25.77	12.35	5.09
Clause length	October	4.21	4.43	.36	.51
	November	4.78	4.53	.52	.46
	December	5.29	5.07	.42	.85
	January	5.94	5.01	.81	1.06
	February	5.93	5.51	.87	.63
	March	5.99	5.78	.49	.55
	April	6.11	5.66	.51	.62
	May	6.37	5.86	.64	.64
Grammatical accuracy (Number of grammatical errors per clause with a finite verb)	October	.72	1.39	.26	.70
	November	.56	.98	.23	.40
	December	.47	.75	.21	.23
	January	.54	.66	.14	.33
	February	.63	1.09	.23	.35
	March	.46	.84	.19	.52
	April	.21	.62	.11	.32
	May	.17	.58	.06	.28

Note: N = 29

Concerning fluency, Figure 8 reveals data regarding the mean number of produced words in the intervention and the control group.

Figure 8 *Plot for fluency*



The most apparent outcome considering the writing samples were the differences in produced text length between the intervention and the control group. Although the number of the produced words increased from month to month in each group, a more intensive development can be observed in the intervention group especially in the first term of the project. The RM-ANOVA affirms that the differences between the two groups regarding the time factor $F(7;392) = 268.49$, $p < .005$, time and group interaction $F(7;392) = 39.68$, $p < .005$, and the group factor $F(1;56) = 164.43$, $p < .005$ are significant.

The mean MTLD values for each month of testing are displayed in Figure 9.

Figure 9 *Plot for lexical diversity*

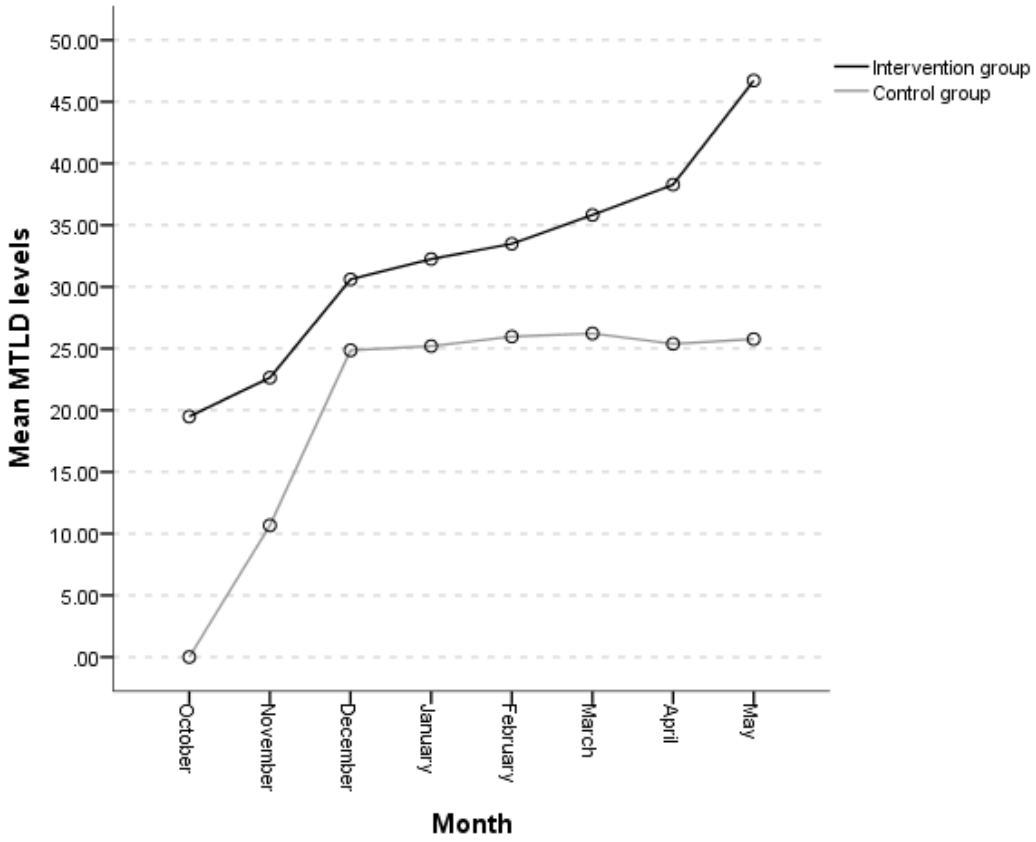
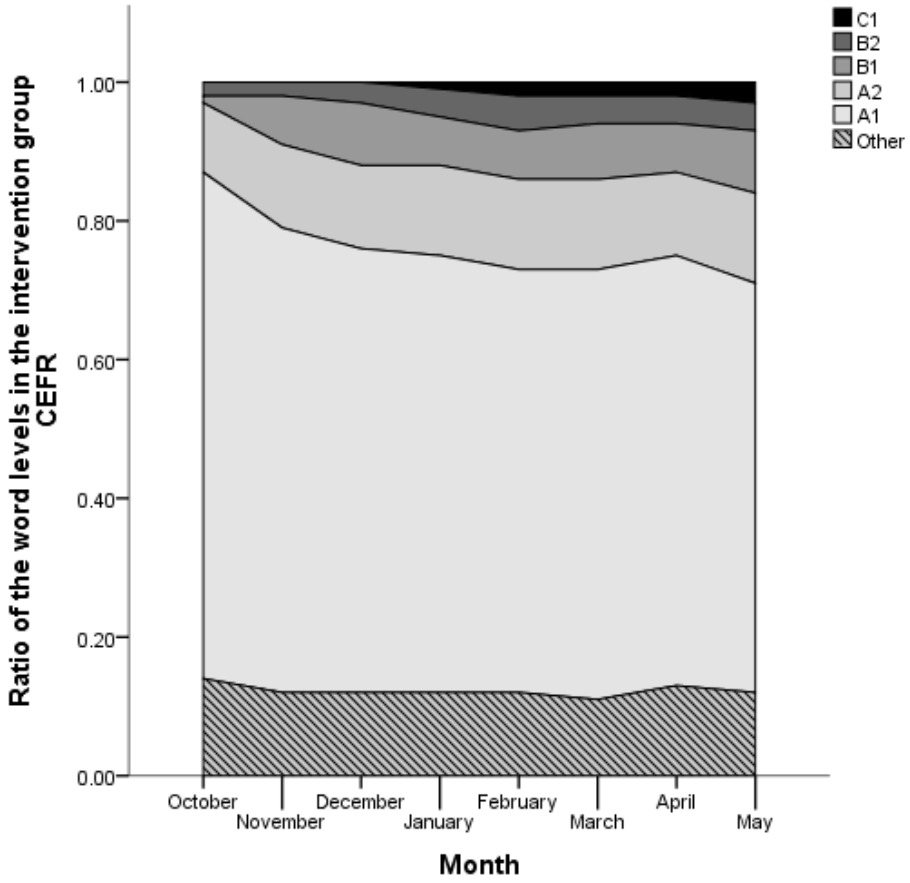


Figure 9 reports on different patterns of development regarding the level of lexical diversity in the two groups. Whereas in the intervention group the MTLD levels increase in each month, the lexical diversity level of the control group reaches a plateau by the end of the first term. The level of the plateau is set between 25.19 and 26.22. The intervention group exceeds this level by the second month of testing, that is, the third month of the teaching project. The RM-ANOVA presents that the differences between the two groups concerning the time factor $F(7;392) = 149.86$, $p < .005$, time and group interaction $F(7;392) = 15.76$, $p < .005$, and the group factor $F(1;56) = 134.22$, $p < .005$ are significant.

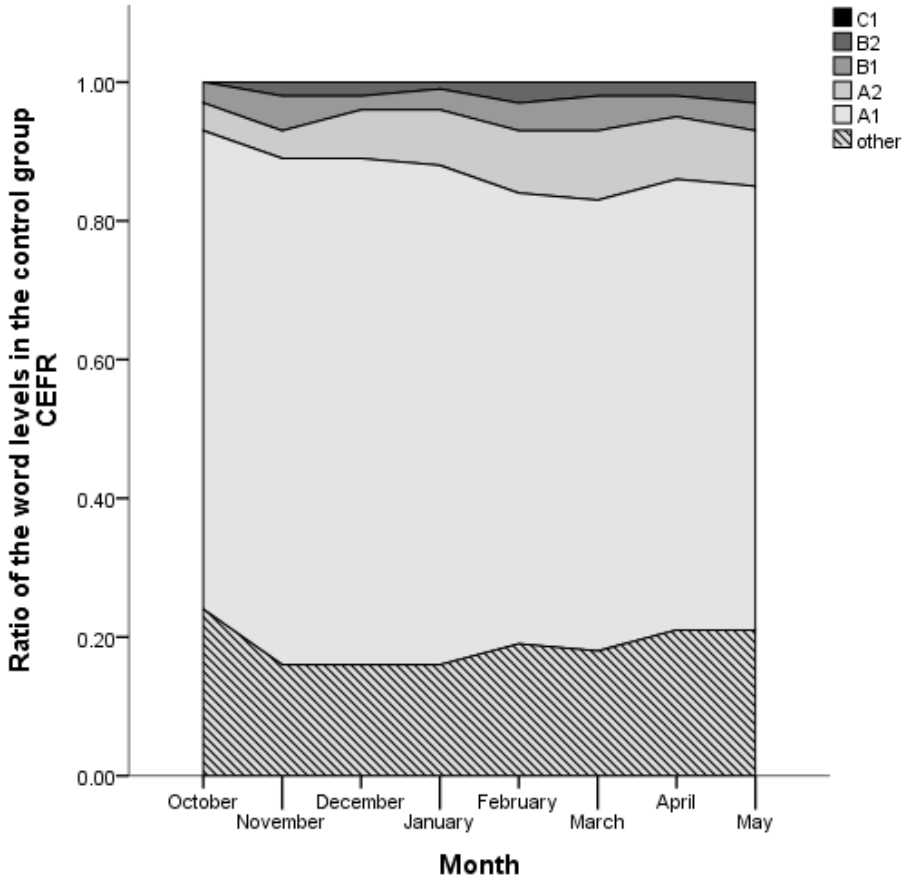
Figures 10 and 11 reveal the distribution of word levels in the produced writing samples.

Figure 10 *Ratio of the word levels in the intervention group as a variable for lexical complexity*



The results indicate that participants of the intervention group produced texts with a relatively high 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.

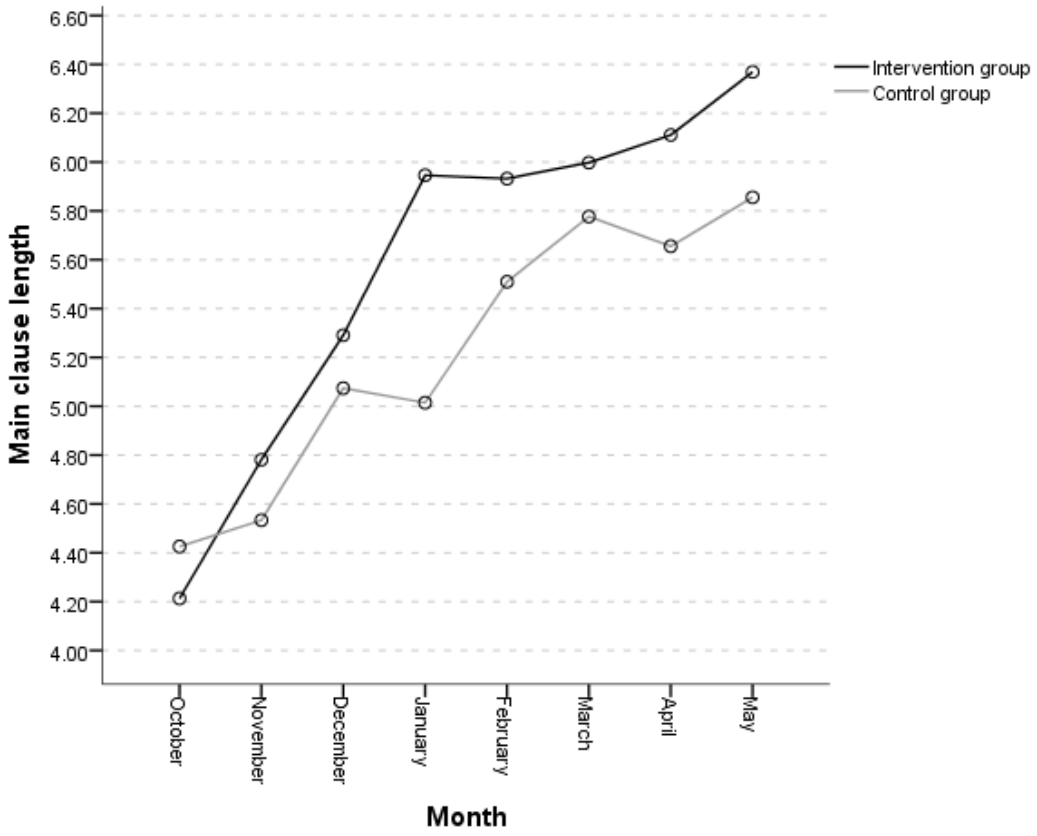
Figure 11 *Ratio of the word levels in the control group as a variable for lexical complexiy*



Considering the distribution of the word levels in the collected writing samples, it is apparent that A1 level words are predominantly used in the intervention and the control group. Additionally, there is a noticeable inclination towards the integration of words at higher CEFR levels in both groups. The control group exhibits a more restricted tendency to include words at A2, B1, and B2 levels in comparison to the intervention group. The findings suggest that the intervention group has attained a more balanced usage of words belonging to diverse levels considering the written language production.

Syntactic complexity measured by the mean clause length is presented in Figure 12.

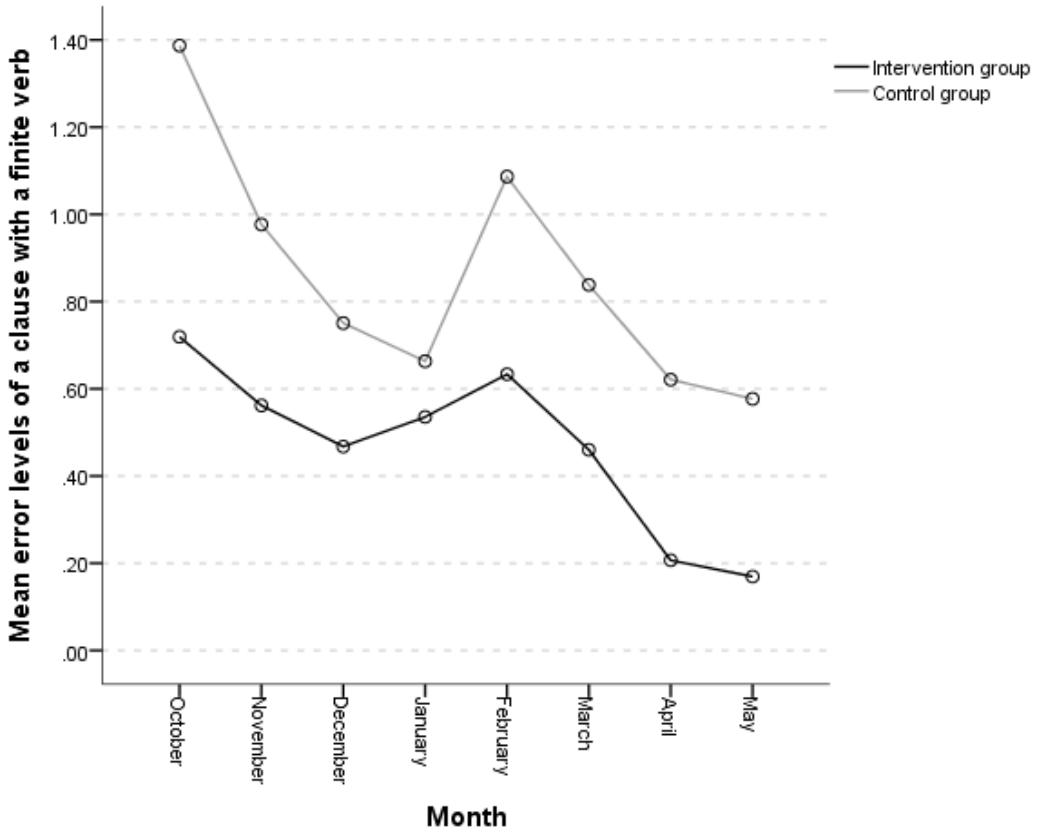
Figure 12 *Plot for syntactic complexity*



Considering syntactic complexity, Figure 12 reveals different patterns in the two groups. In the initial months, participants in the intervention group used shorter clauses as opposed to the students in the control group. It has to be noted that the intervention group used simple linking words such as *"und (and), aber (but), oder (or)"* for linking clauses that contain a finite verb, and therefore produced longer sentences in the writing samples elicited in October. These linking words were explicitly discussed in December according to the syllabus. The attempt of producing compound sentences by linking clauses resulted in the decrease of clause length in the control group concerning the writing samples collected in January. Such a setback cannot be observed in the intervention group, since the participants employed the strategy of linking clauses containing a finite verb in text production since the beginning of the project. The RM-ANOVA reports that the differences between the two groups concerning the time factor $F(7;392) = 69.14$, $p < .005$, time and group interaction $F(7;392) = 4.49$, $p < .005$, and the group factor $F(1;56) = 14.56$, $p < .005$ are significant.

Figure 13 is concerned with the grammatical accuracy of the writing samples and displays the mean number of errors in a clause containing a finite verb, therefore showing how grammatically accurate a clause was on average. Since longer texts provide more room for grammatical errors, the numbers of errors increases in both groups from month to month considering the entirety of the texts. In terms of compound sentences in each group it was found that participants in the intervention group produced more compound sentences than the students in the control group. A more straightforward picture concerning grammatical errors was obtained by dividing the number of errors by the number of clauses containing a finite verb, thus taken as a unit for observation.

Figure 13 *Plot for grammatical accuracy*



Considering the level of grammatical accuracy, 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.

The detailed analysis of the grammatical errors reveal that the participants of the intervention group tried to use grammatical constructs (e.g. a noun phrase containing adjectives) that exist in the English and German language but in German the correct form

includes a specific grammatical structure (e.g. strong, weak and mixed adjective declension) that is not represented in the English language. To be able to produce the correct construct, a more advanced level of grammatical knowledge is required, which cannot be expected from the learners at such an early stage of language learning. The same can be stated concerning the case marking of personal pronouns, with the German language distinguishing four cases of personal pronouns i.e. nominative, accusative, dative, and genitive as opposed to the English language operating with two categories of subjective and objective personal pronouns (Hawkins, 2015). The distinction between the three forms of personal pronouns in the German language is not included in the curriculum at the current stage of language learning, therefore the correct forms cannot be expected from the learners.

The RM-ANOVA demonstrates that the differences between the two groups regarding the time factor $F(7;392) = 37.71$, $p < .005$, time and group interaction $F(7;392) = 4.32$, $p < .005$, and the group factor $F(1;56) = 61.69$, $p < .005$ are significant.

Table 14 presents the summary of the statistical analyses considering the linguistic outcome of the intervention.

Table 14 *Statistical analysis of the multilingual proficiency tests in the research year*

	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

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*

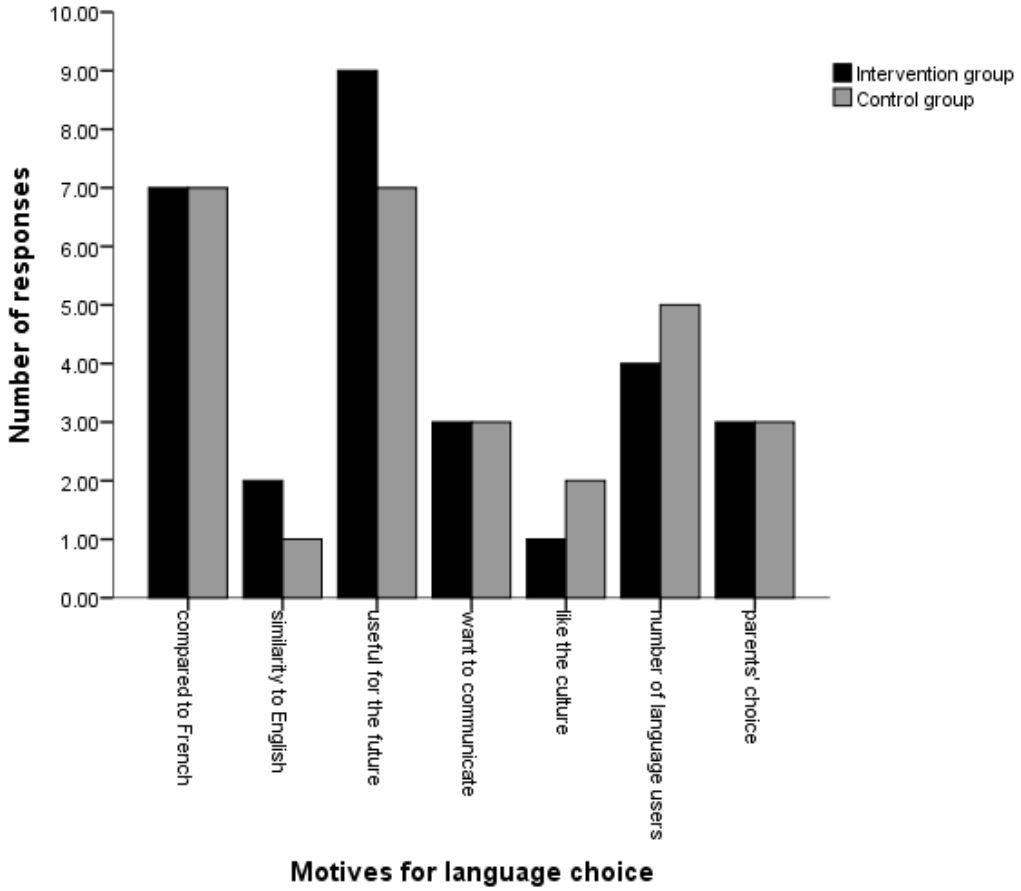
disagree"), which was marked with one point. The motivational level for each participant was elicited by adding the points for each statement.

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 major 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.

The distribution of the motives is displayed in Figure 14.

Figure 14 *Motives for language choice*

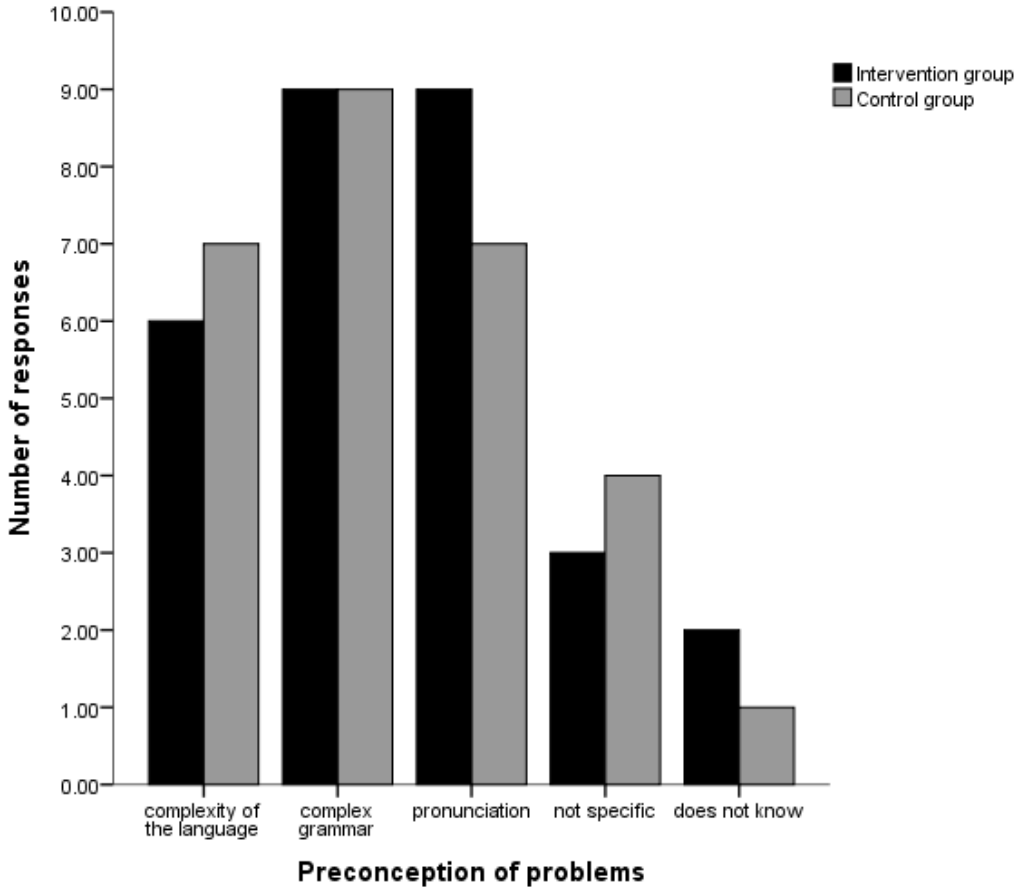


In the intervention and the control group respectively, the majority of the students claimed to have chosen German as L3 themselves, underpinned by their background knowledge

of the language and culture. The main motivational aspect in both groups 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.

Figure 15 presents the participants' assumptions about the problems they would face during the learning process of German as L3.

Figure 15 *Preconception of problems during the learning process*

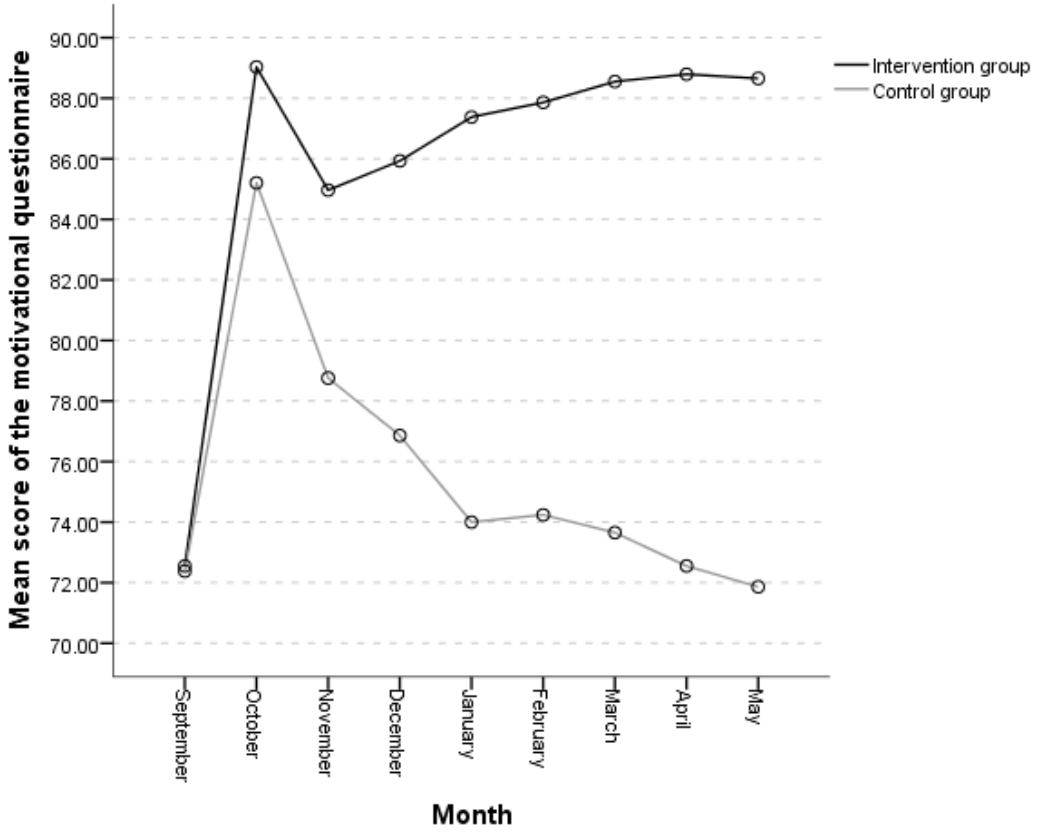


As a preconception of the learning process, the complex grammar, and the overall complexity of German – as opposed to the participants' L2, English – were the main factors considered to cause problems and difficulties that the students may encounter during the process of learning German as L3. A relatively 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 overall motivational level of the intervention and the control group is displayed in Figure 16.

Figure 16 *Plot for the level of motivation*



The motivational levels in the two groups reveal a similar pattern in the initial three months, however not to the same extent. After similar levels in September (with 72.55 points in the intervention group and 72.38 points in the control group) both groups demonstrate an increase in motivation followed by a decrease from October to November. The loss of motivation continues in the control group throughout the whole schoolyear, whereas in the intervention group the level of motivation increases in the months following the decrease in November. By the end of the schoolyear the overall motivational level intervention group reaches a plateau with levels of 88.55 in March, 88.74 in April, and 88.65 in May. The level of the plateau is similar to the level of the motivational boost in October (89.03). The RM-ANOVA affirms that the differences

between the intervention and the control group regarding the time factor $F(8;448) = 12.91$, $p < .005$, time and group interaction $F(8;448) = 8.16$, $p < .005$, and the group factor $F(1;56) = 9.35$, $p < .005$ are significant.

Regarding the evaluation of the motivational questionnaires, the exact mean and standard deviation values concerning the variables and points of testing are presented in Table 15.

Table 15 *Mean and standard deviation values of the motivational questionnaires*

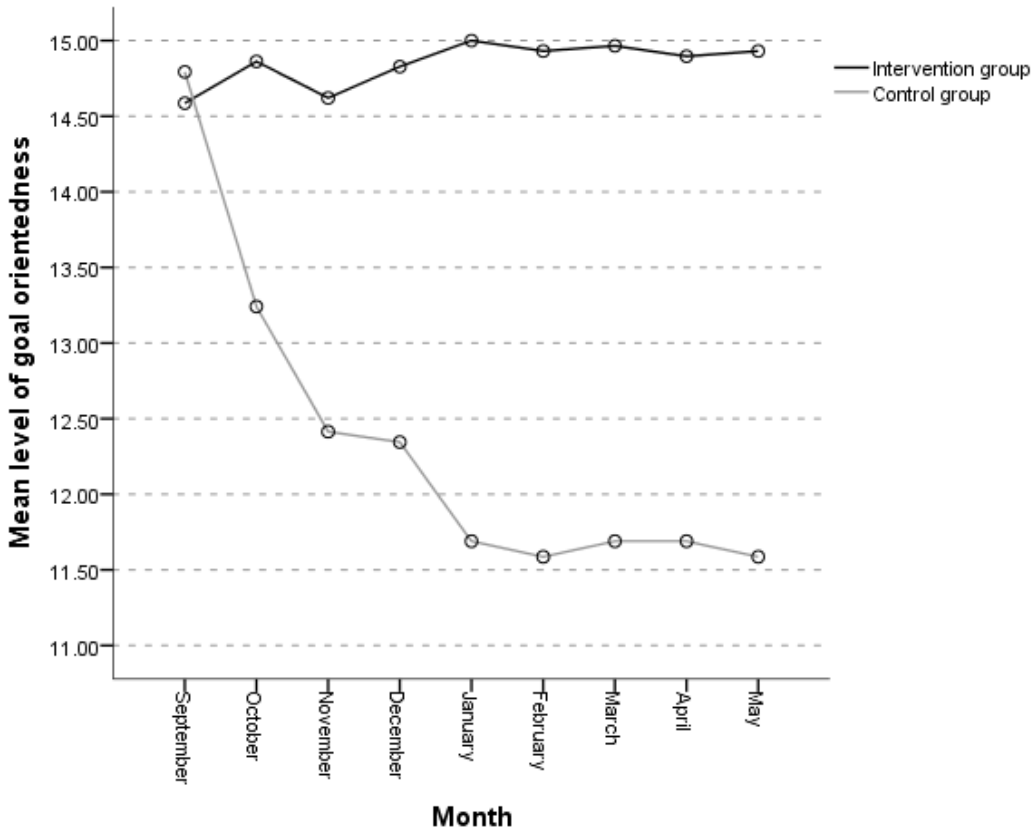
		Mean		Standard Deviation	
		Intervention-group	**Control-group**	**Intervention-group**	**Control-group**
Goal orientedness	September	14.59	14.79	2.97	3.13
	October	14.86	13.24	2.01	4.36
	November	14.62	12.41	2.71	4.03
	December	14.83	12.34	3.19	4.00
	January	15.00	11.69	2.69	3.83
	February	14.93	11.59	3.21	3.84
	March	14.97	11.69	2.46	3.72
	April	14.89	11.69	2.02	3.72
	May	14.93	11.59	2.15	3.73
Facilitative behavioural routine	September	7.55	7.66	1.18	1.49
	October	13.34	12.89	2.47	2.39
	November	12.17	12.24	1.98	2.71
	December	12.62	12.31	3.65	2.38
	January	12.66	12.41	2.68	3.50
	February	12.83	12.59	2.11	3.63
	March	13.31	12.31	2.30	3.21
	April	13.00	12.21	2.02	3.05
	May	13.07	12.14	2.31	3.26
Positive emotional loading	September	16.38	16.31	2.91	3.22
	October	16.34	15.86	3.03	2.61
	November	15.38	14.52	2.41	2.35
	December	15.21	13.24	3.65	2.99
	January	15.62	13.21	2.93	3.48
	February	15.48	13.17	2.57	3.54
	March	15.72	13.10	2.42	3.37
	April	15.97	12.52	2.29	3.09
	May	16.00	12.41	2.49	3.43
Perceived behavioural control	September	12.03	11.86	3.06	3.41
	October	14.72	12.83	2.45	3.33
	November	13.55	11.11	2.59	3.09
	December	14.48	11.83	3.47	2.93
	January	13.79	10.83	2.76	3.43
	February	14.62	10.97	2.35	3.60
	March	14.48	10.69	2.21	3.27
	April	14.72	9.97	2.02	3.15
	May	15.07	10.48	1.53	3.18
Perception of progress	September	9.48	9.52	2.01	2.76
	October	16.37	16.03	2.36	2.23
	November	15.45	14.72	1.92	2.56
	December	15.21	13.55	3.41	2.78
	January	16.00	13.62	2.92	3.29
	February	15.89	13.41	2.74	3.13
	March	15.97	13.48	2.49	3.17

	April	16.31	13.45	1.79	2.82
	May	16.21	13.00	1.87	2.80
Vision orientedness	September	12.62	12.58	3.28	3.73
	October	13.41	14.28	2.16	3.94
	November	13.75	13.86	2.65	3.65
	December	13.66	13.48	3.53	3.60
	January	14.38	12.38	3.21	3.80
	February	14.00	12.41	2.63	3.76
	March	14.14	12.38	2.34	3.71
	April	14.45	12.31	2.20	3.54
	May	14.55	12.17	1.94	3.84

Note: N = 29

Figure 17 reveals the level of goal orientedness regarding the long- and short-term goals of the participants.

Figure 17 *Plot for the level of goal orientedness*



Considering short- and long-term goals of the students, the plot presented in Figure 17 reveals different patterns in the intervention and the control group. While the level of goal orientedness is overall maintained in the intervention group, participants of the control group experience a dramatic loss of this motivational factor especially in the first term of

the project. While the perception of meaningful short- and long term goals settles in the intervention group at around 14.9, this value in the control group reaches only a level around 11.6.The RM-ANOVA presents that the differences between the two groups concerning the time factor $F(8;448) = 3.61$, $p = .01$, time and group interaction $F(8;448) = 5.52$, $p < .005$, and the group factor $F(1;56) = 12.16$, $p < .005$ are significant.

The levels of facilitative behavioural routine are displayed in Figure 18.

Figure 18 *Plot for the level of facilitative behavioural routine*

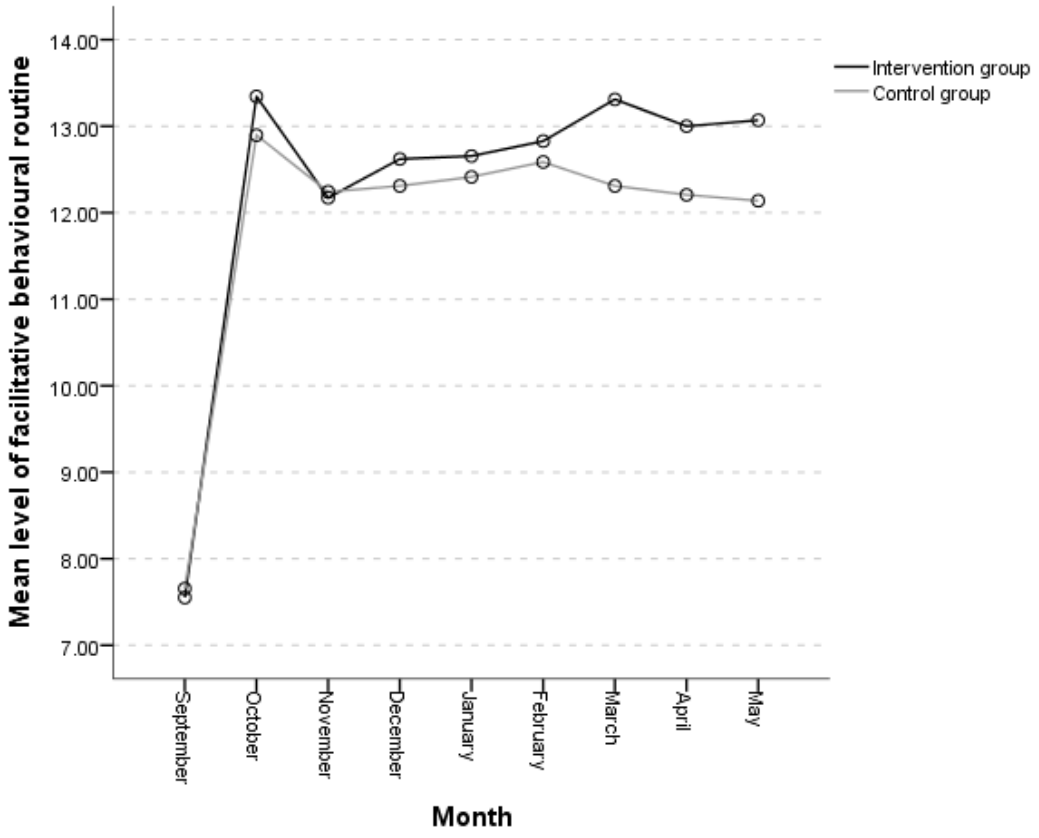


Figure 18 gives account of the extent to which the participants were able to establish a (daily) routine that facilitates L3 German learning and improves the students' language skills. The plot elicited from the data presents a considerably similar pattern in both groups. The level of facilitative behavioural routine is relatively low at the beginning of the process since establishing a routine takes time with consideration of the learners' own perceived skills, the expected difficulty of the tasks as well as individual time-management issues. After an increase during the first month followed by a setback in the

second month, the level of facilitative behavioural routine shows a slowly increasing tendency in the intervention group, and a decreasing pattern in the control group.

The RM-ANOVA confirms that the differences between the two groups concerning the time factor $F(8;448) = 62.15$, $p < .005$ is significant, whereas time and group interaction $F(8;448) = .897$, $p = .467$, and the group facor $F(1;56) = .547$, $p = .463$ are not significant. With similar changes over time according to the statistical analysis, differences between the two groups considering this motivational factor are found to be not significant.

Figure 19 reveals the level of positive emotional loading.

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

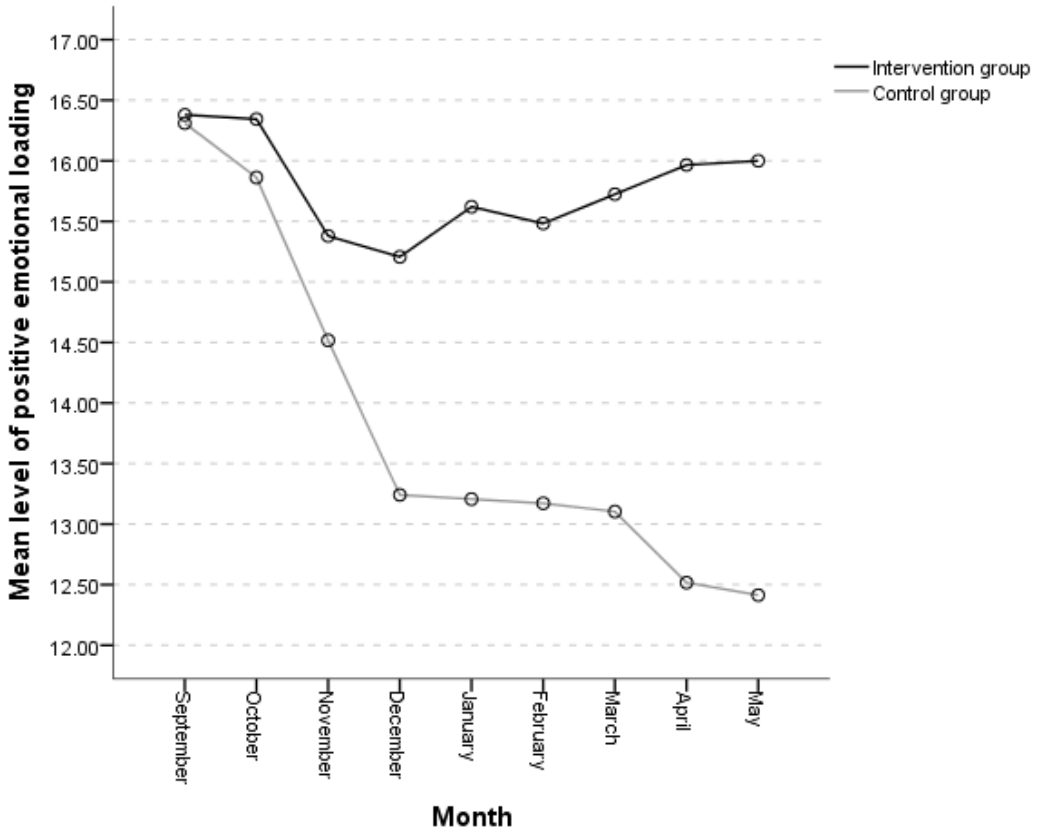


Figure 19 reports on the level of elevated emotions that were experienced by the participants during the project. During the first term of the schoolyear, the loss of positive emotional loading can be observed in both groups to a differing extent. Whereas the loss of this motivational factor continues in the control group from month to month during the whole project, the participants in the intervention group report on regaining elevated emotions such as joy, enthusiasm, and excitement towards learning German as a L3

during the second term of the schoolyear. The RM-ANOVA reports that the differences between the two groups considering the time factor $F(8;448) = 11.57$; $p < .005$, time and group interaction $F(8;448) = 6.48$, $p <. 005$, and the group factor $F(1;56) = 9.97$, $p < .005$ are significant.

Figure 20 is concerned with the level of perceived behavioural control.

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

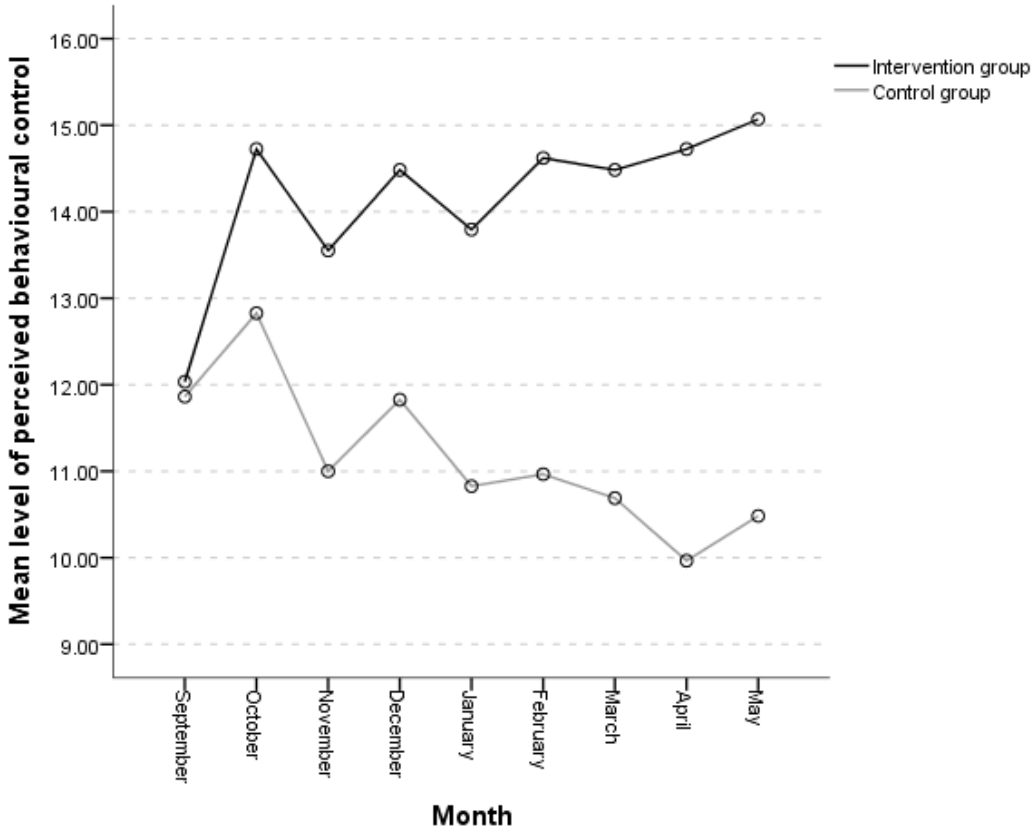


Figure 20 discloses the extent to which the students believe that they have good skills for meeting the expected level during the German lessons imposed by the tasks they are given. Lower levels of perceived behavioural control inform about the level of difficulty as experienced by the students. The plot of this motivational factor depicts a fluctuating design until the beginning of the second term of the schoolyear in February. In the last three months of the project, data of the intervention group report on an overall perceived ease of learning and meeting the institutional requirements, whereas in the control group the level of perceived behavioural control remains lower at the end of the project as in the beginning.

The motivational factor depicted in Figure 20 gives account on the struggles of the students when facing the task of learning German after English. The outcome of the plot is reflected on in more detail in the Discussion section of the paper.

The RM-ANOVA demonstrates that the differences between the two groups concerning the time factor $F(8;448) = 33.45$, $p < .005$, time and group interaction $F(8;448) = 56.39$, $p < .005$, and the group factor $F(1;56) = 2.59$, $p < .005$ are significant.

The level of perception of progress is presented in Figure 21.

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

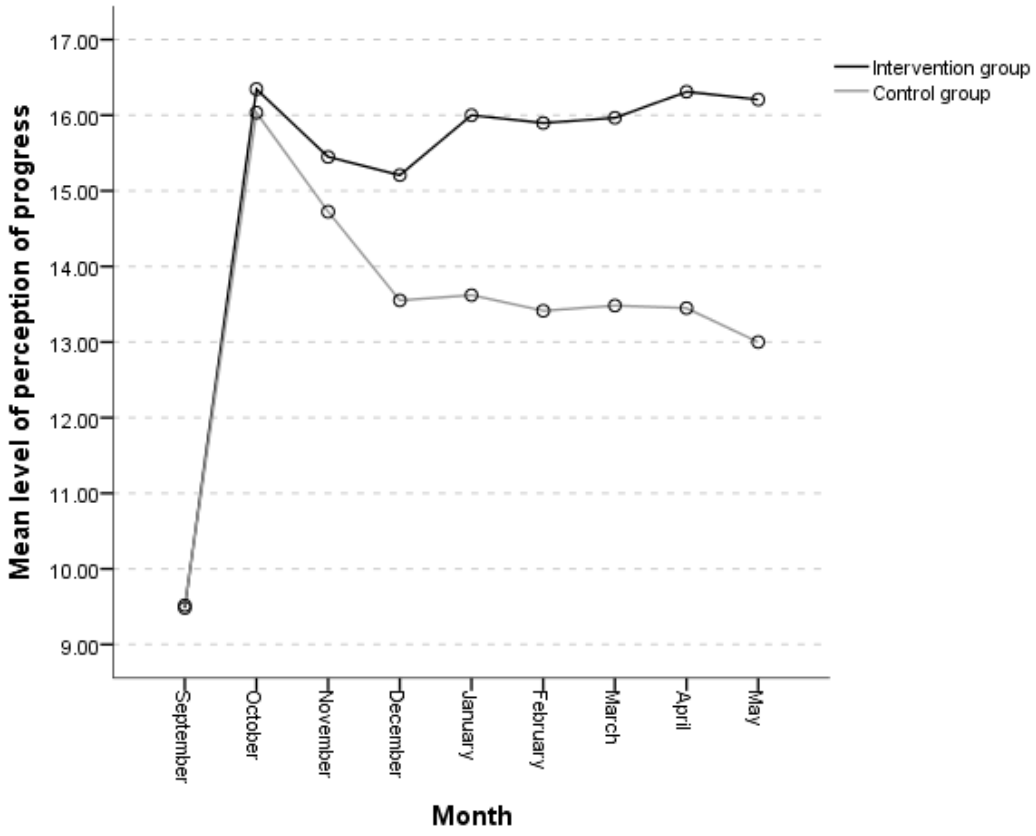


Figure 21 reports on the extent to which participants feel that their German language skills improve over time. During the first four months of the project both groups experience an initial burst followed by a lapse of 1.13 points in the intervention group, and 2.48 points in the control group by the month of December. The differences in tendency appear in the following months where the values in the intervention group increase, and the values in the control group decrease. The pattern implies that participants of the intervention group are convinced that their German language skills constantly improve whereas students in

the control group are not as confident concerning this motivational factor. The RM-ANOVA affirms that the differences between the two groups regarding the time factor $F(8;448) = 68.22$, $p < .005$, time and group interaction $F(8;448) = 6.73$, $p < .005$, and the group factor $F(1,56) = 10.48$, $p < .005$ are significant.

Figure 22 reveals the level of vision orientedness.

Figure 22 *Plot for the level of vision orientedness*

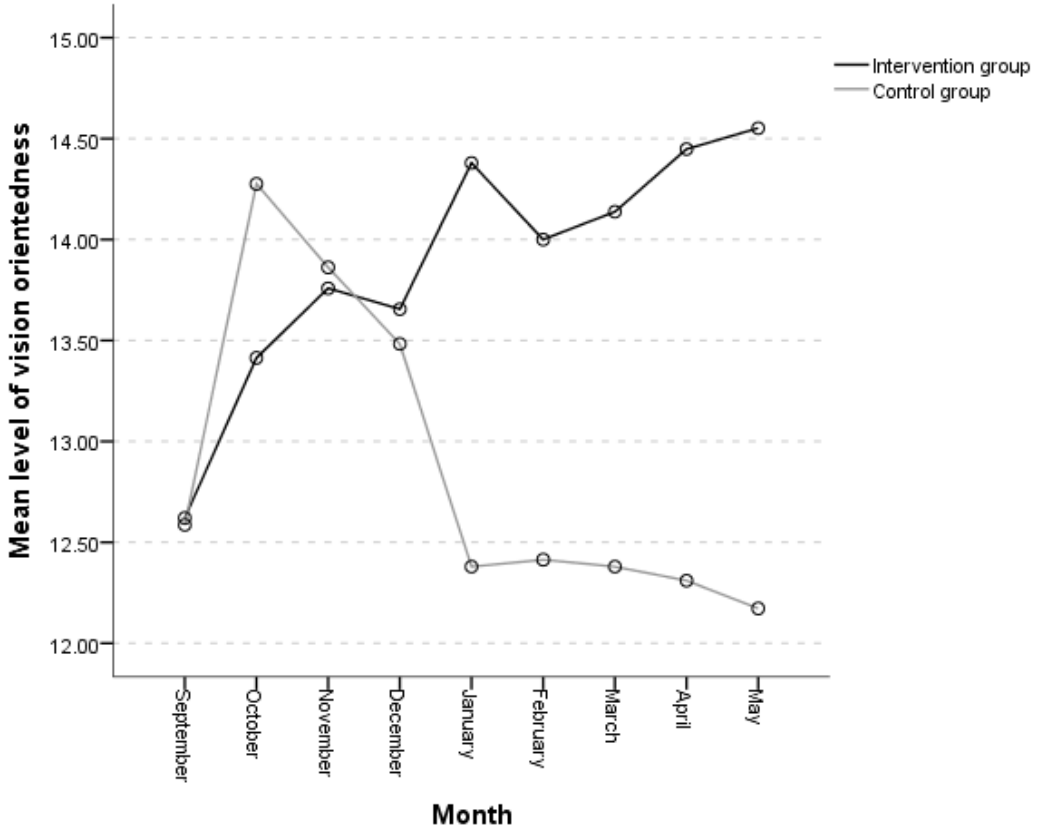


Figure 22 presents the extent to which participants in the two groups are able to visualise themselves as successful language users. The plot reveals a certain fluctuation in the intervention group with an overall increasing tendency which implies that by the end of the project, the visions of the intervention group become stronger. Students in the control group develop strong visions during the first month of the learning process after which the levels of vision orientedness decrease intensively in the first term, followed by a more gradual decrease, which inform about how the initial relatively strong visions about being a successful language user in the control group fade over time. The RM-ANOVA confirms that the differences between the two groups considering the time factor $F(8;448) = 2.23$, $p = .08$, and the group factor $F(1;56) = 1.98$, $p = .17$ are not significant, whereas

the difference regarding time and group interaction F(8;448) = 5.87, $p < .005$ is significant.

Considering the statistical analysis of the attitudinal scales it has to be noted that the responses represent the participants' overall attitude only in their totality. The attitude score computed by summarizing responses to all items, reflects the informants' overall attitude (Ajzen, 1988: 12-13).

The exact mean and standard deviation values elicited from the attitude scales are presented in Table 16.

Table 16 *Mean and standard deviation values of the attitudinal scales*

		Mean		**Standard Deviation**	
		Intervention-group	**Control-group**	**Intervention-group**	**Control-group**
Atitude level	September	6.21	6.21	4.44	3.89
	October	7.62	5.86	4.71	4.27
	November	6.31	3.17	4.54	3.76
	December	6.31	3.17	4.54	3.76
	January	6.41	1.10	3.77	6.58
	February	6.59	1.21	4.08	7.00
	March	7.10	1.03	4.68	7.07
	April	7.83	.52	5.31	6.95
	May	8.52	.10	3.60	6.44

Note: N = 29

The overall attitudinal levels in the intervention and control group are displayed in Figure 23.

Figure 23 *Plot for the attitudinal level*

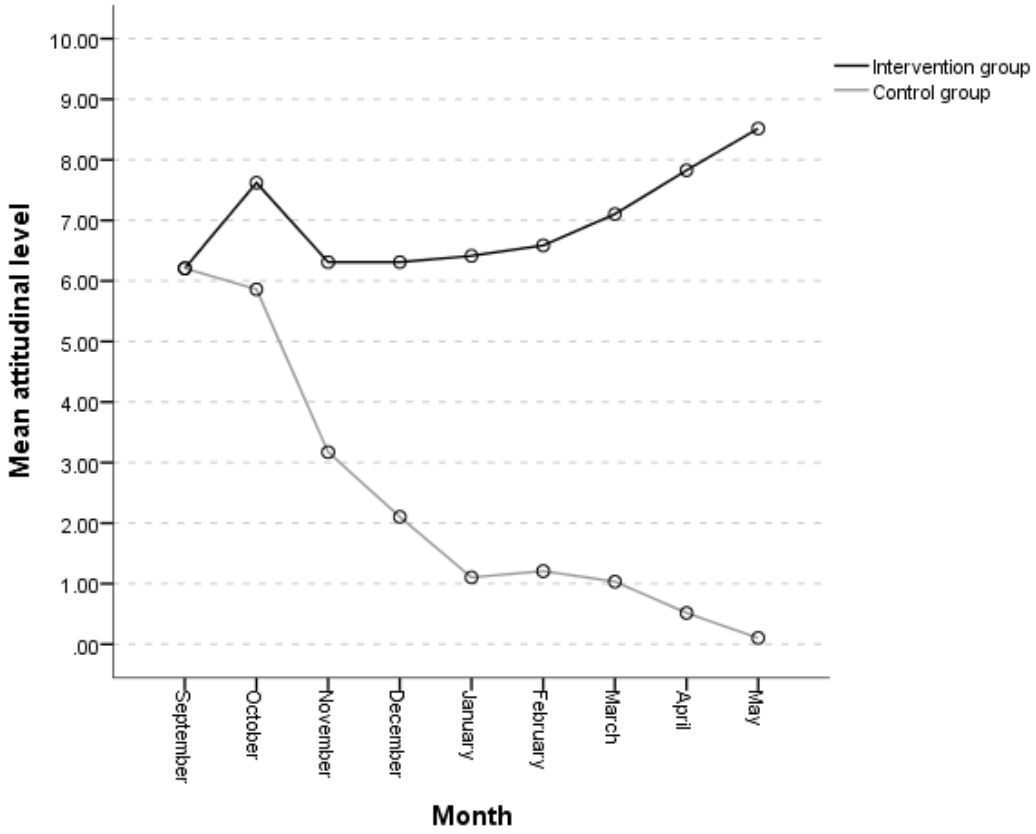
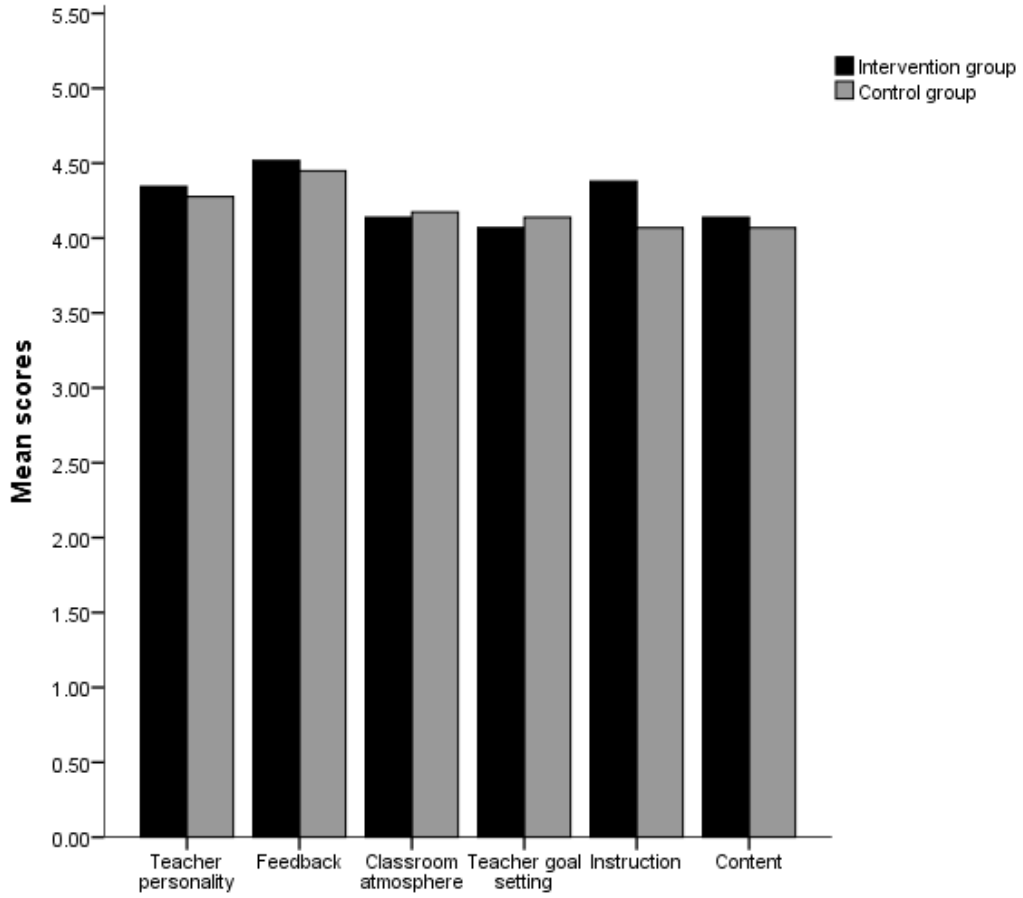


Figure 23 gives account on the changes in the overall attitudinal levels of the groups. After an initial boost followed by a decrease, the plot of the intervention group reports on constantly increasing levels of positive attitudes throughout the remaining time span of the project, whereas the mean attitudinal levels of the control group present a constant decrease throughout the nine months of testing. The RM-ANOVA reports that the differences between the two groups concerning the time factor $F(8;448) = 9.27$, $p < .005$, time and group interaction $F(8;448) = 14.53$, $p < .005$, and the group factor $F(1;56) = 14.64$, $p < .005$ are significant.

The results elicited from the questionnaire about the classroom setting are presented in Figure 24.

Figure 24 *Mean scores of the questionnaire about the classroom setting*



The statistical analysis of the data elicited from the questionnaire about the classroom setting is revealed in Table 17.

Table 17 *Statistical analysis of the questionnaire about the classroom setting*

	Means		**t(12)**	***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

Note: N = 29

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

9.2.2. Discussion

The present study investigated the effects of a multilingual awareness training at 9th 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 an 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 end 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.

9.2.3. 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.

Therefore, the results of this study may not be representative of the entire population of language learners. The limitations outlined above should be taken into account when interpreting the results. Further research is required to confirm the generalisability of the results obtained in this study and to explore the impact of individual differences on L3 development.

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 minimalise 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.

10. 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 research findings, retrieved from the monthly multilingual proficiency tests and writing samples of the first year of learning German as L3 indicate higher levels of fluency, and communicative competence in writing in the intervention group. The results were underpinned by significantly higher levels of lexical diversity and complexity, syntactic complexity and grammatical accuracy at clause level among participants of the intervention group as opposed to the control group. 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).

The most efficient sequence in which students should be introduced to foreign languages is a widely discussed issue. However, incorporating multiple languages into foreign language teaching is not solely dependent on the order in which languages are taught in a particular school, but rather hinges on the adoption of multilingual approaches. Such a pedagogical approach allows students to access and cultivate their own linguistic abilities by using their individual resources. By addressing the cognitive benefits of multilingual teaching and learning approaches, the current doctoral thesis proposes that specific L3 teaching methodology should replace SLA methodology in L3 teaching (Gutiérrez, 2017; Jessner, 2008b), and the interaction between the languages, as well as developing

multilingual awareness as one of the cognitive factors of language learning should be aided by the teaching material.

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) Caffe	c) Kaffee	d) Kafee
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) Schokolate	d) Chocolade
a) Gitarre	b) Guitar	c) guitarre	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?

□ szerintem helyes	□ szerintem hibás Írd le a szerinted helyes mondatot …….

Wer wohnt in Zimmer 5?

□ szerintem helyes	□ szerintem hibás Írd le a szerinted helyes mondatot …….

Wie heißt der man?

□ szerintem helyes	□ szerintem hibás Írd le a szerinted helyes mondatot …….

Who ist das Oktoberfest?

□ szerintem helyes	□ szerintem hibás Írd le a szerinted helyes mondatot …….

Wie old bist du?

□ szerintem helyes	□ szerintem hibás Írd le a szerinted helyes mondatot …….

3. **Mit tudsz elmondani magadról és környezetedről németül?**

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Köszönöm a munkád!

Monogramod vagy beceneved:

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Appendix 3 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 4 Motivational questions (strongly agree… strongly disagree)

	English	Hungarian
Long- and short-term goals		
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 töltsek 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.
Facilitative behavioural routine		
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.
Positive emotional loading		
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.
Perceived behavioural control of participant		
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.
Perception of progress		
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.
Vision-orientedness		
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	Szerintem amikor legközelebb német nyelvterületre utazom, jól el tudok majd igazodni a német nyelv használatával.

	along well with using the German language.	
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 5 Factor analysis of the items concerning the motivational questionnaire. Factor loadings below .50 not included

Motivational questionnaire	1	2	3	4	5	6
Q1	.65					
Q2		.52				
Q3			.77			
Q4				.72		
Q5					.82	
Q6						.74
Q7	.75					
Q8		.72				
Q9			.60			
Q10				.78		
Q11					.57	
Q12						.62
Q13	.85					
Q14		.56				
Q15			.55			
Q16				.58		
Q17					.73	
Q18						.71
Q19	.85					
Q20		.73				
Q21			.75			
Q22				.62		
Q23					.72	
Q24						.71

Appendix 6 Questions about the classroom setting (strongly agree…strongly disagree)

	English	Hungarian
Teacher personality		
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 kapcsolatosan.
25.	The teacher shows his/her enthusiasm about the language.	A tanár kimutatja lelkesedését a német nyelv iránt.
Feedback		
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.
Classroom atmosphere		
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 bíztat 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.
Teacher goal setting		
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.
Instruction		
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.
Content		
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 7 Factor analysis of the items concerning the questionnaire about the classroom setting. Factor loadings below .50 not included.

Questionnaire about the classroom setting	1	2	3	4	5	6
Q1	.91					
Q2		.51				
Q3			.84			
Q4				.55		
Q5					.82	
Q6						.52
Q7	.72					
Q8		.84				
Q9			.95			
Q10				.78		
Q11					.91	
Q12						.92
Q13	.53					
Q14		.81				
Q15			.52			
Q16				.61		

Q17					.71	
Q18						.72
Q19	.56					
Q20		.58				
Q21			.54			
Q22				.62		
Q23					.63	
Q24						.66
Q25	.87					
Q26		.55				
Q27			.51			
Q28				.75		
Q29					.66	
Q30						.94