A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL
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A systematic review of the impact of multiple language teaching, prior language experience and acquisition order on students’ language proficiency in primary and secondary school
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Foreword

This is the full report on the systematic review of the international empirical research on the impact of multiple language teaching, prior language experience and acquisition order on students’ language proficiency in primary and secondary school. The report offers an analysis of the research which investigates factors and impacts on third language acquisition.

The project was commissioned by The Swiss Council for Educational Research (CORECHED). Work on the project was carried out in the period 01.05.2014-01.05.2015. Clearinghouse is grateful for the work done by the Review Group. The Review Group not only accepted our invitation to participate in the project, they actively took up the challenge as reviewers of all the relevant international research and the overall project. Finally, Clearinghouse wishes to thank The Swiss Council for Educational Research (CORECHED), and especially Director & Professor Stefan C. Wolter and Dr.sc. pol. Stefan Denzler for the commissioned research.

This report was completed in May 2015.

Camilla Brørup Dyssegaard
Copenhagen, May 2015.
1 Introduction

1.1 Background
This systematic review was commissioned by the Swiss Council for Educational Research (CORECHED) and was conducted by Danish Clearinghouse for Educational Research. CORECHED’s overall objective is to strengthen coordination and cooperation amongst researchers, policy makers and administrators involved in educational research in Switzerland.

CORECHED’s primary activities are to survey and document current educational research on a regular basis and commence research projects at the national and international level.

The following six tasks are in particular focus:

- Assessing the current situation and current developments in the field of research
- Identification of problems in the education system that can be addressed or resolved through educational research
- Promotion of national educational research (initiation, coordination and support of research activities)
- Conduct requirements analyses regarding Swiss participation in international projects
- Validation of educational research outcomes (research promotion)
- Ensuring the flow of information between educational researchers and policy makers.

(www.coreched.ch)

This report consists of a systematic review of research that addresses the impact of multiple language experience and acquisition order on students’ language proficiency in primary and secondary school.
1.1.1 General background and problem area
Switzerland has four national languages: French, German, Italian and Romansh. As illustrated in the table below, German is spoken by about 65%, French by 23%, Italian by about 8%, and Romansh is spoken by less than 1% of the total population. In the German part of Switzerland, Swiss-German is used for oral communication whilst German is used for written communication. Romansh is only spoken in one canton: Graubünden. All major cities have language minorities from elsewhere as is evident in the table below. If these non-national languages are combined, they now outnumber both Romansh and French.

Languages declared as main language, 2012

Permanent resident population 15 years or over. Persons interviewed could indicate more than one main language.

Source: FSO – Structural survey (SS) ©FSO, Neuchâtel 2014

1.1.2 Multilingualism in Switzerland
In 2004 the Conference of Cantonal Education Directors decided that all Swiss children have to learn a second Swiss language and English by the fifth year of primary school. The former language is to be taught from the third primary year and the latter from the fifth year. The individual cantons decide which languages to introduce first, e.g. English in the third grade and French in the fifth grade.

Since the decision was made, there has been much debate concerning the introduction of two additional languages in primary school. Many varying attitudes and
opinions exist across cantons, professions and politicians etc. A few of them are mentioned here:

- National cohesion may be threatened if the teaching of French is abolished in primary school
- Primary school children cannot cope with two foreign languages
- English is given higher priority than national languages
- Swiss-German-speaking children will struggle to learn German (as it differs from Swiss-German) on top of two prior languages
- Usefulness of English versus French or German
- Hours available for foreign language teaching in primary schools are insufficient, etc.

The need to gain insight into research on multilingualism forms the basis of the present systematic review. This systematic review will contribute with knowledge about existing research on multilingualism and thus inform the debate.

*Teaching third languages*

According to Jessner (2008: 19) some typical types of third language learners are often mentioned in studies on multilingualism:

- Children growing up with three languages from birth
- Bilingual children learning a third language – in many cases English – at school at an early age, as is the case in the Basque Country
- Bilingual migrant children moving to a new linguistic environment such as Kurdish/Turkish children learning German in Austria.

Research has shown that the learning process of acquiring a second language (L2) differs greatly from that of third language learning (Jessner, 2008). The main difference is that third language (L3) learners can use two languages as base languages in third language acquisition while second language (L2) learners can only use their first language as the base language (Cenoz, 2003). When learning an L2, one can either learn L1 and L2 simultaneously or learn the two languages sequentially, and third language acquisition presents more temporal diversity than second language acquisition. According to Cenoz (ibid.) there are at least four types of acquisition orders when learning an L3:

1. The three languages are acquired simultaneously (L1/L2/L3)
2. The three languages are acquired sequentially (L1→L2→L3)
3. Two languages are acquired simultaneously before the third language is acquired (L1/L2→L3)
4. One language is acquired before acquiring the other two simultaneously (L1→L2/L3)

Furthermore, studies have also shown that learners of an L3 will in some cases end up acquiring the language at a higher skill level than learners who learn the same language as their L2 (ibid.). Some theoretical explanations for this are: 1) L3 learners have developed language learning strategies to a larger extent than L2 learners, 2) L3 learners have a higher level of metalinguistic awareness, and 3) L3 learners can draw on two linguistic repertoires (Jessner, 2008; Haenni Hoti et al., 2011). Still, the results are mixed; for instance some studies involving groups of bilingual immigrants have found no differences between bilingual immigrant students and monolingual students; other studies have even reported results where bilinguals obtained lower results than monolinguals (Cenoz, 2003). It therefore seems highly relevant to produce a systematic review of research that examines the impacts of prior language learning experience on third language proficiency.

Hufesien and Marx (2007) underline six main types of factors that play an important role in influencing third language acquisition:

- Neurophysiological factors that precondition general language learning, production and reception capability. These could be general language aptitude or age.
- Learner-exogenous factors such as the learning environment, type and degree of exposure to input and learning traditions.
- Affective factors such as motivation and attitudes towards learning.
- Cognitive factors including learning strategies, metalinguistic awareness and language awareness.
- Foreign language-specific factors such as ability to make interlingual connections, and crosslinguistic influence.
- Linguistic characteristics of the learner’s L1 and L2.

This systematic review will examine to what extent these factors are explored in the research on multiple language learning and hereby show whether students’ language acquisition depend on the examined factors. The above factors also include students’ background characteristics, choice of language, type and amount of training, order of
acquisition, learner motivation and language awareness. Moreover, the social status of the languages involved and the interaction between the different factors are also relevant for this systematic review.

1.1.3 Aim and review questions

The aim of this systematic review is to produce a rich and detailed account of empirical research into multiple language learning in school, focusing on the role of prior language experience in language learning. The purpose of this is to examine which factors exert influence on students’ language acquisition when learning a third language in school.¹

A systematic review has been carried out in order to provide answers to the following review questions:

- How can the empirical research in the field be characterized in regard to country of origin, frequency, purpose, approach, research design, results and research quality?
- What characterizes interventions, methods and programmes within the field that appear to have a measurable effect on the students?

This systematic review will examine the international empirical research on multiple language learning in school and point towards factors that appear to impact students’ third language proficiency. Research that investigates the acquisition of additional languages in school, i.e. a fourth, fifth or sixth language, are also included based on the assumption that there are no major differences between the acquisition of a third language and the acquisition of additional languages (Cenoz, 2012). The relevant empirical research will be reported with a focus on aim, content, design, results and quality.

1.1.4 Definitions

*Third language acquisition:*

Third language acquisition refers to the acquisition of a non-native language by learners who have previously acquired or are acquiring two other languages (Cenoz, 2003).

¹ Studies that test the impact of multiple language learning on academic performance in other school subjects, for example through content and language integrated learning, are also of interest, although of secondary interest. Hence, these studies are included, however not searched for specifically.
In accordance with Jessner (2008), the terms learning and acquisition are used interchangeably.

*Language proficiency:*
In this systematic review, language proficiency is defined as language knowledge, competencies or abilities related to the skills speaking, listening, reading, writing, vocabulary and grammar that can be measured either by tests and/or be observed in school grades. Both students’ general language ability and more specific competencies such as phonetics and syntax are included in this definition.

*Impact:*
For this systematic review, impact is defined as a probable relationship between an intervention, method, programme or latent language factors or backgrounds and a change in outcomes related to third language proficiency. This is not limited to established causal inference on a quantitative level. This means that studies that utilize both qualitative and quantitative designs and research methods are included.

*School:*
In this systematic review the term school refers to primary and secondary school.

### 1.1.5 Time span, geographical and language delimitations

*Time span limitation*
The scope is delimited in time to studies published between January 1st 1980 and July 17th 2014.

*The geographical and language delimitations of this systematic review*
Geographically this systematic review is delimited to include studies from the EU, Switzerland, Norway, USA, Canada, Australia and New Zealand.

*Languages included in this systematic review*
Studies in English, German, French, and Scandinavian languages (Danish, Swedish and Norwegian) are included. This is based on the expectation that the majority of studies in this field will be published in these languages. It is also based on the prag-
matics point of view that competence in dealing with these languages is available in the systematic review process.

1.1.6 Project organisation
The systematic review has been carried out by staff members from Danish Clearinghouse for Educational Research in collaboration with a review group.

Review group
The following four leading researchers in the field have participated as members of the review group:

- Professor Teresa Cadierno, University of Southern Denmark,
- Professor Jasone Cenoz, University of the Basque Country
- Associate Professor Søren Wind Eskildsen, University of Southern Denmark,
- Professor Ulrike Jessner-Schmid, University of Innsbruck

The review group has carried out a quality assessment of the relevant research in collaboration with staff members from Danish Clearinghouse for Educational Research. The review group has functioned as reviewers of the overall process from scoping, searching, screening and data extraction to the research mapping. Finally, the review group members have reviewed the final systematic review in its entirety.

1.2 Reading guide and terminology explained
This section will explain some of the main concepts applied in the studies included in this systematic review.

First language (L1)
The terminology used in the included studies to refer to the students’ first language (L1) varies greatly. Some studies simply use the term ‘first language’ or ‘L1’. Other terms which have been used to refer to the students’ first language include ‘native language’, ‘mother tongue’, ‘heritage language’, ‘home language’ and ‘minority language’. For that reason, in this systematic review we use a variety of these terms when referring to the students’ first language.
Balanced bilingual
The term balanced bilingual is used about a person who is more or less equally proficient in both his or her L1 and L2. Balanced bilinguals are sometimes contrasted to dominant bilinguals and the term refers to the degree of knowledge of the two languages.

Bilingual by instruction
The term bilingual by instruction is used to refer to a person who acquires his or her first foreign language (L2) in school through formal instruction.

Natural bilingual
The term natural bilingual is used about a person who has learnt two languages at home (and in day care) before starting school. Natural bilingual vs. bilingual by instruction refers to the ‘local’ context in which the two languages are acquired/learned: without and with instruction, respectively.

Majority bilingual
The term majority bilingual is used to refer to a person who acquires his or her first language in a majority language, e.g. Spanish before Basque in the Basque Country.

Minority bilingual
The term minority bilingual is used to refer to a person who acquires his or her first language in a minority language, e.g. Basque before Spanish in the Basque Country. Therefore, minority vs. majority bilingual refers to the status of the two languages in the speech community where the two languages are acquired.

The categories mentioned above refer to different dimensions of bilingualism and are therefore not always mutually exclusive (comparing across types of bilinguals): e.g., one can be a balanced bilingual, a natural bilingual and a minority bilingual.

Linguistic awareness
Linguistic awareness in multilinguals can be defined as an emergent property of multilingual proficiency and as consisting of at least two dimensions in the form of cross-linguistic awareness and metalinguistic awareness (Jessner, 2006 in Jessner, 2008: 30).
Cross-linguistic awareness

Cross-linguistic awareness refers to the learner’s tacit and explicit awareness of the links between their language systems (Jessner, 2008: 30).

Metalinguistic awareness

Metalinguistic awareness consists of a set of skills or abilities that the multilingual user develops due to her/his prior linguistic and metacognitive knowledge. According to Jessner metalinguistic awareness influences the learning of a third language (Jessner, 2008: 26). Metalinguistic awareness allows the individual to step back from the comprehension or production of an utterance in order to consider the linguistic form and structure underlying the meaning of the utterance. Therefore, a metalinguistic task is one which requires the individual to think about the linguistic nature of the message: to attend to and reflect on the structural features of languages. To be metalinguistically aware, then, is to know how to approach and solve certain types of problems which themselves demand certain cognitive and linguistic skills (Malakoff, 1992: 518 in Jessner, 2006: 41). Thus, metalinguistic activities can be viewed as a subfield of metacognition concerned with language and its use – in other words comprising: (1) activities of reflection on language and its use, and (2) students’ ability intentionally to monitor and plan their own methods of linguistic processing (in both comprehension and production) (Gombert, 1992: 13 in Jessner, 2006: 41-42). Accordingly, metalinguistic awareness refers to the ability to focus attention on language as an object in itself or to think abstractly about language and, consequently, to play with or manipulate language (Jessner, 2006: 41-42).

Language learning strategies

Learning strategies can be referred to as some form of mental activity which occurs at a specific stage in the language learning process and are not necessarily problem-oriented and conscious. Moreover, foreign language strategies cover the ability to compare and make interlanguage connections (Jessner, 2008: 30). According to Jessner (2006) metalinguistic awareness plays an important role in the development of language learning strategies in multilingual learners.

Cross-linguistic influence

The term cross-linguistic influence includes different phenomena such as transfer, interference, avoidance, borrowing, code-mixing and L2-related aspects of language loss
(Sharwood Smith & Kellerman 1986 in Jessner, 2008: 26). Apart from contact phenomena such as transfer and code-switching, cross-linguistic influence also covers cognitive effects of transfer (Jessner, 2008: 26). In a multilingual system cross-linguistic influence not only takes place between the L1 and the L2 but also between the L2 and the L3, and the L1 and the L3, not forgetting the fact that the influence can also work vice versa in all cases. In third language acquisition this presents an increase in transfer possibilities (Jessner, 2008: 31). Therefore, the study of cross-linguistic influence in third language acquisition is potentially more complex than the study of cross-linguistic influence in second language acquisition because it implicates all the processes associated with second language acquisition as well as unique and potentially more complex relationships that can take place among the languages known or being acquired by the learner (Cenoz, 2001: 8).

Language aptitude

Originally Carroll and Sapon (1959) described the following four central components of language aptitude: (1) sound ability, that is the ability to identify and remember new sounds in a new language; (2) grammatical coding ability, that is the ability to identify the grammatical functions of different parts of sentences; (3) indicative learning ability, that is the ability to work out meanings without explanation in a new language; and (4) memorization, that is the ability to remember words, rules, etc. in a new language (Carroll & Sapon, 1959 in Jessner, 2006: 64). In second language acquisition models of individual factors language aptitude “is defined as influencing the rate and success of language learning” (Gardner & MacIntyre, 1992 in Jessner, 2006).

Psychotypology

The concept of ‘psychotypology’ was introduced by Kellerman (1986) to highlight the fact that the perceived distance between two languages does not necessarily correspond to the typological distance between them, which is assessed on more objective linguistic grounds. Furthermore, Kellerman suggested that it is psychotypology rather than typology that affects transfer (Kellerman, 1986 in Sayehli, 2013: 15).
2 Multilingualism: concepts and theories

This chapter will outline some of the key concepts and theories related to multilingualism and third language teaching and acquisition in order to shed more light on the nature of third language acquisition.

2.1 Conceptualising multilingualism

In 2004 the Swiss Conference of Cantonal Ministers of Education issued a series of guidelines for foreign language teaching throughout Switzerland (EDK, 2004). Among other things, EDK submitted a recommendation to introduce early foreign language instruction in primary schools. The Conference of Cantonal Education Directors decided that all Swiss children have to learn a second Swiss language and English by the fifth year of primary school. The individual cantons decide which languages to introduce first, e.g. English in the third grade and French in the fifth grade. This decision is certainly linked to the enhanced emphasis on multilingual education and language policy of the European Union, whose aim is to foster multilingualism as an important aspect of European identity.

However, before one can look for possible factors that may influence students’ language acquisition when learning a third language in school, the phenomenon and concept of multilingualism must be defined and further elaborated.

2.1.1 Definitions and terminology

The term ‘multilingualism’ covers a range of meanings, but is commonly used to refer to the learning and societal use of more than two languages. The fact that research on multilingualism focuses on more than two languages has resulted in several terminological issues of which some will be described here.

The word “language” is defined by the Oxford dictionary\(^2\) as “The method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way.” The term “multilingualism” means “many languages” (Latin

\(^2\) [http://www.oxforddictionaries.com/definition/english/language](http://www.oxforddictionaries.com/definition/english/language)
multus=many) (Cenoz 2013), and multilingualism can be defined as a state of general communicative proficiency in more than two languages. This means that a person is considered multilingual when he or she can fulfil his or her communicative goals in at least three languages. Thus, bilingualism and trilingualism are considered subtypes of the concept of ‘multilingualism’ and not vice versa (Marx & Hufeisen, 2004). Moreover, it is relevant and productive to make one specific distinction between individual and social dimensions of multilingualism (Cenoz, 2013) and the distinction between multilingualism and plurilingualism. Whereas multilingualism refers more to social organisation, plurilingualism refers to an individual’s repertoire of linguistic competence.

According to the Council of Europe (2007), plurilingualism should be understood in a dual sense as it constitutes 1) a conception of the speaker as fundamentally plural, and 2) a value in that it is the basis of linguistic tolerance an essential element of intercultural education. Thus, on the one hand plurilingualism should be understood as the ability to use languages for the purposes of communication and to take part in intercultural action, where a person, viewed as a social agent, has proficiency of varying degrees in several languages and experience of several cultures. This ability is concretised in a repertoire of languages a speaker can use. The goal of teaching is to develop this competence (hence the expression: plurilingualism as a competence). On the other hand, plurilingualism should be understood as an educational value that is the basis of linguistic tolerance, in other words, positive acceptance of diversity: speakers’ awareness of their plurilingualism may lead them to give equal value to each of the varieties they themselves and other speakers use, even if they do not have the same functions (private, professional or official communication, language of affiliation, etc.). But this awareness should be assisted and structured by the language of schooling since it is no sense automatic (hence the expression: plurilingualism as a value).

According to the Council of Europe, multilingualism refers merely to the presence of several languages in a given space, independently of those who use them: for example, the fact that two languages are present in the same geographical area does not indicate whether inhabitants know both languages, or only one (Council of Europe, 2007: 17-18).

The term ‘third language acquisition’ (TLA) is used to highlight that there are differences between acquiring a second and a third language. The term is regarded as a reaction against the use of the term ‘second language acquisition’ (SLA) as a general term for the acquisition of any language other than the first. Even though the term TLA is used more and more, it is not always clearly defined. According to Cenoz, TLA can refer to the language acquired chronologically after the first and the second or after the two first languages in the case of early bilinguals, or to any language acquired after the
second language. The use of the term ‘third language acquisition’ for even a fourth, fifth, or sixth language is related to the perception that there are important differences between learning a second language and learning a third language, but presumably not between learning a third language and learning additional languages (Cenoz, 2012, Cenoz, 2013).

To quote Marx & Hufeisen (2004: 142): “The term TLA represents the prototypical concept of the acquisition or learning of any language after the second language, whether the L3, L4 or even L7, as there is not merely a quantitative difference between SLA and TLA, but also a qualitative one. This difference is so fundamental that it needs to be covered by a new and different theoretical framework, or a substantially extended SLA model.”

Hence, several multilingualism researchers advocate a clear distinction between second language learning (SLA) and third language learning (TLA) based on the view that learning a third language (L3) differs from learning a second language (L2) in many respects.

According to Cenoz (2003), the main difference between L2 learners and L3 learners is that L3 learners can use two languages as base languages in third language acquisition while L2 learners can only use their first language as the base language. As stated earlier there are only two kinds of routes of acquisition in SLA, whereas in TLA there are several routes of acquisition (Jessner, 2008). When learning an L2, one can either learn L1 (first language) and L2 simultaneously or learn the two languages sequentially, whereas there are at least four types of acquisition orders when learning an L3 (Cenoz, 2003):

1. The three languages are acquired simultaneously (L1/L2/L3)
2. The three languages are acquired sequentially (L1→L2→L3)
3. Two languages are acquired simultaneously before the third language is acquired (L1/L2→L3)
4. One language is acquired before acquiring the other two simultaneously (L1→L2/L3)

Four broad perspectives can be identified within research on multilingualism: a linguistic, a psycholinguistic, a sociolinguistic and an educational one. Moreover, individual themes appear and various research methodologies are applied in each of the four perspectives (Jessner 2008, Wei 2008: 5). The main characteristics of the linguistic perspectives relate to the learners’ knowledge of language, acquisition of language and use of language (Wei 2008: 5). The psycholinguistic perspective differs methodologically from the linguistic perspective. From this perspective the focus is on underlying
cognitive mechanisms such as receiving and producing multilingual speech (Jessner 2008: 29, Wei 2008: 9). The sociolinguistic perspective fundamentally concerns multilingualism in society. Sociolinguistic researchers regard multilingualism as a socially constructed phenomenon and the multilingual learner as a social actor (Jessner 2008: 27, Wei 2008: 13). As stated by Jessner (2008), multilingualism as a concept does rely on more than one of these perspectives: “study of multilingualism has to be placed at the crossroad of socio- and psycholinguistics, in particular with regard to multilingual planning and education.” (Ibid: 27). Finally, the educational perspective concerns the aspects of third language learning in an educational system or setting. Recently a trend fostering multilingualism in school, either through the introduction of a foreign language at an early age or the introduction of one or two second languages in secondary school, has found breeding ground (Jessner, 2008: 33, Eurydice/Eurostat, 2012)

2.2 Theoretical models of third language acquisition

Several multilingualism researchers have proposed theoretical models to explain multiple language learning. Most of these models have been developed from a psycholinguistic perspective (e.g. De Bot, 1992; Herdina & Jessner 2002; Williams & Hammarberg, 1998; Grosjean, 1998), but sociolinguistic models have also been proposed (e.g. Clyne, 2003; Aronin & Ó Laoire, 2004). Some of these models are based on earlier monolingual speech production models, whereas others expand on bilingual models, but they have all contributed to the theoretical foundations of the field of multilingualism. However, because the overall focus of this systematic review is on the educational aspects of multilingualism, the psycholinguistic and sociolinguistic models mentioned above will not be elaborated further. Instead, we concentrate on models that attempt to describe the entire system of multilingualism which can be used in educational contexts. The following two models capture the complex nature of third language learning as they have been developed to explain the process of learning and acquiring more than one foreign language in an instructed context: the ‘Multilingual Processing Model’ (Meißner, 2004), and the ‘Factor Model’ (Hufeisen, 2005). Whereas the first model provides insights into the process of multiple language acquisition from a multilingual

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3 Some scholars also refer to Groseva’s (1998) ‘Foreign Language Acquisition Model’ (FLAM) as a model that can be used in an educational setting. However, since this model can be described as a smaller-scale hypothesis (cf. Hufeisen, 2005), and because it is less developed, it will not be discussed here.
didactics perspective, the second model focuses on the factors that influence language acquisition processes (Jessner, 2008).

2.2.1 Meißner’s Multilingual Processing Model: Spontaneous Learner Grammar

Meißner’s Multilingual Processing Model (Mehrsprachenverarbeitungsmodell) (Meißner, 2004; Meißner, 2003; Meißner & Senger, 2001) was developed to explain which processes take place during the reception of written and oral presentations of texts in a language unknown to the learner. It must be made clear that this model concentrates exclusively on receptive skills in a foreign language and should be applied accordingly.

The Multilingual Processing Model provides a description of the processes of learning a language that is typologically related to a language already known by the learner. Hence, the main focus of this model is on which underlying processes are involved when trying to understand the structure of a new language and on how a learner deciphers a text in an unknown, but typologically closely related language.

With the Multilingual Processing Model, Meißner proposes the assumption that, when trying to make sense of a text in a new foreign language, learners regularly rely on patterns known from other related languages. That is, they rely systematically on at least one bridge language, which is the previously acquired foreign language closest to the target language, in order to formulate hypotheses about the new language and through this, to construct a type of ‘spontaneous (or hypothetical) grammar’ in this target language. In other words, this model proposes that, if a learner has acquired Spanish as a foreign language, the learner should be able to develop receptive skills in all other Romance languages. For instance, an L1 German speaker will rely on his L2 Spanish (rather than his L1) when learning L3 Portuguese (Meißner, 2004: 43).

According to Meißner “spontaneous grammar covers the linguistic knowledge of a target language still ‘unknown’ to the learner, even with the first encounter of the lexical, morphematical and syntactical structures.” (Meißner, 2003: 40). At first, spontaneous grammar is constructed less upon the system of the target language than upon the patterns of one or more previously acquired closely related foreign languages, i.e. the bridge language(s). This presupposes that the learner knows a closely related foreign language, allowing him to compare structures of the bridge language and the target language.
However, in order for the learner to construct a spontaneous grammar, certain conditions need to be met. First, there should be an etymological relationship between the bridge language(s) and the target language. Second, the learner should have reached a certain degree of competence in the bridge language(s), and third, the learner has to be instructed in how to use the knowledge of a previously acquired language as a bridge language. Only when all three conditions are met can the learner develop a spontaneous grammar (Jessner, 2008).

The Multilingual Processing Model consists of four phases or stages:

1. At the first stage after the first encounter with the target language, the learner constructs a spontaneous grammar in the target language. The learner’s initial understanding of the target language is facilitated by the bridge language(s). The spontaneous grammar recognizes interlingual regularities through the process of systemising and generalizing the target language input.

2. During the second stage, the learner constructs an interlingual correspondence grammar through the spontaneous grammar, which again constructs interlingual correspondence rules. These rules lie somewhere between the learner’s linguistic knowledge of the bridge language and his growing knowledge of the target language system. Important features of the interlingual correspondence grammar are transfers between the bridge language(s) and the target language.

3. At the third stage, the learner constructs a plurilingual inter-system which stores and saves all successful (and some unsuccessful) interlingual transfer processes. The plurilingual inter-system is composed of transfer bases which provide the learner with a general framework for decoding the target language. In this model, six transfer bases are included: communicative strategy transfer, transfer of interlingual processing procedures, transfer of cognitive principles, transfer as pro- or retroactive overlap, learning strategy transfer, and transfer of learning experiences.

4. At the fourth and final stage, the learner develops a metacognitive strategy collection, in which learning experiences in the target language are stored and saved.

As proposed in this four stage model, the learner will gradually develop plurilingual system knowledge, which he can use when reading or listening to texts in the target language. With the addition of each new language in the learner’s repertoire, he adds to this ‘plurilingual intergrammar’. This means that the plurilingual system knowledge

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4 Etymology means the origin of a word and the historical development of its meaning.
can be changed, modified and extended when the learner is introduced to another language system (Meißner, 2004; Jessner, 2008; Hufeisen & Marx, 2007; Marx & Hufeisen, 2004).

In the context of the present systematic review the educational aspects of the Multilingual Processing Model are especially interesting and important. With his theory Meißner argues that the learner’s ability to employ transfer can be substantially increased if he is instructed in how to utilise the knowledge of a previously acquired language as a bridge language. This instruction should organize the spontaneous grammar constructed by the learner, and make the learner sensitive to the different transfer bases (both the intra- and interlanguage bases) in the bridge language(s) as well as the target language. Furthermore, the instruction should be designed to initiate comparisons and contrasts between the languages and in this way enhance not only the learner’s language awareness, but also his learning awareness (Meißner, 2004: 44; Balla, 2012).

2.2.2 Hufeisen’s Factor Model
In her Factor Model, Hufeisen (Hufeisen, 2000; Hufeisen, 2005; Marx & Hufeisen, 2004; Hufeisen & Marx, 2007) offers a developmental model of TLA that emphasizes the importance of the distinction between SLA and TLA. With this model Hufeisen seeks to describe the prototypical language learning process and to explain the factors which exert an influence on the learning of different languages in specific multilingual learning situations. Hufeisen describes four stages of language acquisition, beginning with the factors involved in the acquisition of a first language (L1), then turning to the learning of a second language (L2), the learning of a third language (L3), and the learning of additional languages (Lx). Hufeisen thus proposes that the more languages that are involved, the more factors come into play in the language acquisition process, showing why the learning of each new language is more complex than that of first foreign language learning. Hufeisen thus proposes that the addition of further languages changes the language acquisition process both quantitatively and qualitatively. Compared to the processes of learning a first language, individual new factors which exert substantial influence on the language learning process are added at each stage. The model assumes that the largest qualitative jump in this systematic-dynamic learning process occurs between the learning of the second (L2) and the third language (L3). In other words, according to Hufeisen (2000), it is important to recognize that there is a considerable difference between learning an L2 and an L3, and much less of a distinction between learning an L3 and an L4.
Potentially, there are many factors that may play a role in the process of learning a third language. However, in the Factor Model Hufeisen underlines the following six main types of factors: neurophysiological factors, learner external factors, affective factors, cognitive factors, foreign language-specific factors and linguistic factors.

According to Hufeisen, **neuropsychological factors** precondition general language learning, as these factors provide a necessary basis for language learning that makes the learner capable of language production and reception. These factors could be general language acquisition capability or age. **Learner external factors** include socio-economic and sociocultural surroundings such as the learning environment, learning traditions and type and degree of exposure to input. If sufficient or qualitatively adequate input is lacking, language learning is more difficult or even impossible. **Affective factors** such as anxiety, motivation and attitudes towards learning the new target language are highly influential in the learning process. For instance, if a learner is anxious to speak the target language, this emotional state slows or even hinders the learning process. **Cognitive factors** include learning awareness, language awareness, metalinguistic awareness, knowledge of one’s own learner type and the ability to employ learning strategies and techniques. **Foreign language-specific factors** include individual second language learning experiences and strategies (explicit or subconscious), the ability to compare, transfer, and make interlingual connections with other learned languages, previous language interlanguages, and interlanguage of target language. And finally, **linguistic factors** include the characteristics of the learner’s L1 and L2 (Hufeisen & Marx, 2007).

Following Hufeisen’s Factor Model, it becomes evident how new factors come into play over the course of learning additional languages. L1 learning could be described as shown in Figure 2.1.
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Figure 2.1: Learning of an L1

Neurophysiological Factor: General language acquisition capability, age...

Learner External Factors: Learning environment(s), type of amount of input...

L1

During the acquisition of a first language the fundamentally decisive influences are the general language acquisition capability given from birth (neurophysiological factors) as well as input from our environment (learner external factors).

According to Hufeisen, L2 acquisition differs from L1 acquisition by involving additional affective and cognitive factors, as well as prior knowledge of L1 (linguistic characteristics of the learners' L1), as shown in Figure 2.2.

Figure 2.2: Learning of an L2

Neurophysiological Factor: General language acquisition capability, age...

Learner External Factors: Learning environment(s), type and amount of input...

Affective Factors: Motivation, anxiety, assessment of own language proficiency, perceived closeness/distance between the languages, attitudes, individual life experiences...

Cognitive Factors: Language awareness, metalinguistic awareness, learning awareness, learner type awareness, learning strategies, individual learning experiences...

L2

L1

The primary focus of attention of Hufeisen’s model is on the factors that can explain the differences between learning an L2 and learning an L3 and additional languages: “Whereas at the beginning of the L2 learning process the learner is a complete novice in the learning process of a second language, the L3 learner already knows what it feels like to approach a new language. She has developed (consciously or unconsciously) certain techniques of learning new words. She knows that a new text is often unclear, and is able to cope with the insecurity of having knowledge gaps.” (Hufeisen & Marx, 2007: 313). In addition, the learner may have intuitively learned about her individual learner style. This means
that, compared to the process of learning an L2, the learning of an L3 must acknowledge a new set of learning factors, namely the foreign language-specific factors. Furthermore, in third language acquisition the linguistic factors must be extended from L1 to L1 and L2, which can function as bridge languages to the L3. Hence, the L3 learner is able to use language specific knowledge and competences that an L2 learner has not yet achieved. It is, however, also important to underline the fact that there is substantial development going on within the field of multiple language learning (especially SLA) and applied linguistics, which is often referred to as “a multilingual turn” (see May (2014) for an overview). Scholars of this “turn” among other issues contest that a L2 learner can be considered a complete language learning novice due to the fact that most L2 learners of the present day are already familiar with and (often partially) use or mix in words from languages other than their L1 in various ways before beginning formal instruction (Ibid.). Thus, they should be considered multi- or bilinguals. In the “multilingual turn” it is also stressed that the vast multilingual diversity of the present globalised and technologically advanced world generally needs to be taken more into consideration in the research field of multiple language learning and applied linguistics.

Figure 2.3: Learning of an L3

In this way, as shown in Figure 2.3, Hufeisen’s model becomes complete by adding foreign language-specific factors, plus prior knowledge of L2. This clarifies not only how L3 acquisition differs from L2 acquisition, but also illustrates the complexity of the influencing factors when learning a third language.
However, it is important to keep in mind that each factor interacts, with and influences the others in the same way as a change in one set of factors may be followed by a change in other sets of factors. This means that some factors can become predominant or unimportant in specific learning situations. Furthermore, it needs to be pointed out that the importance of single factors and their influence on the learning process vary from learner to learner. This means that the influence that the different factors exert can vary across learners because each learner develops a specific factor complex, and therefore some factors may turn out to exert a strong influence on third language acquisition for a specific L3 learner while other factors might be of less importance (Hufeisen & Marx, 2007: 314).

2.2.3 Summary
To summarise, Meißner’s Multilingual Processing Model features the development of a spontaneous learner grammar by learners of a third language, whereas Hufeisen’s Factor Model proposes that new factors come into play over the course of language learning, and the model describes how these factors guide and influence the language learning process. Both models deal with aspects of individual multilingualism, and each model helps to shed light on the different elements and stages of the third language acquisition process. Both Meißner’s and Hufeisen’s models describe L2 as having a certain function in third language acquisition which is called the bridge language or transfer base, and they both propose that a comprehensive theory of language acquisition must be able to take multiple language learning into account (Marx & Hufeisen, 2004). Thus, the two models presented here provide decisive insights with regard to third language acquisition - particularly in an educational context.

Although this systematic review focuses explicitly on models that can be used in educational contexts, it should be pointed out that a number of scholars acknowledge the increasing importance of dynamic systems theory (DST)/complexity theory (CT) perspective in the field of multilingualism (Jessner, 2013).
3 Methods used in the systematic review

This chapter covers the methodological approach of this systematic review. The chapter includes a presentation of the overall approach and the specific methodological choices that underlie the review process. The purpose of the chapter is to create transparency in how the systematic review was carried out.

3.1 Background and approach

This systematic review of the impact of multiple language teaching, prior language experience and acquisition order on students’ language proficiency in primary and secondary school is based on international literature and guidelines for conducting systematic meta-studies as well as specific experiences from systematic research mappings and full systematic reviews carried out by Danish Clearinghouse for Educational Research. Thus, the systematic review is based on a methodological approach which is widely acknowledged in international research (e.g. Gough et al., 2012), and tested thoroughly in a Danish meta-study context.

3.1.1 Research mapping and systematic reviews

The systematic review and research mapping literature covers various methodological approaches, each with an individual set of strengths and weaknesses in regard to trade-offs between time consumption, extent of research field coverage and analytical depth and detail. Therefore, the approaches differ from one another in regards to time frame, number of included studies, how systematic the searches are carried out, database and field coverage, and to what level of detail the research contained in the studies is extracted, analysed, and reported. For illustration purposes the different approaches can be considered as a continuum ranging from literature studies past Rapid Evidence Assessments (REA) to systematic research mappings and finally to the full systematic review. Literature studies can be carried out in a short period of time but are significantly limited in relation to analytical depth and the maximum number of included studies. Whereas the full systematic review at the other end of the continuum covers a much larger number of studies and includes a compressive synthesis of the
knowledge and content in and across the studies as well. A full systematic review, however, also requires a much longer time span to complete. This product is a full systematic review. This type of research design was chosen as it combines a strict systematic research mapping process, aiming to include as many studies of sufficient research quality as possible, with a thick and highly saturated synthesis of results from studies identified in the systematic research mapping.

3.2 Design and process

The systematic research mapping was carried out using the EPPI-Reviewer tool, which is a web-based application for managing and analyzing data in a systematic and transparent way while conducting reviews and research mappings. It contains detailed code sets for classifying educational research and for assessing the quality and relevance of studies. Furthermore, the systematic research mapping was carried out in accordance with general practice at Danish Clearinghouse for Educational Research. The figure below provides an overview of all the different phases in the systematic research mapping and synthesis process:

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5 For a further description of the EPPI-Reviewer tool, see the webpage of the producer: http://eppi.ioe.ac.uk/cms/
Figure 3.1: Overview of the systematic research mapping and synthesis process

The first phase in the systematic research mapping process is the creation of a research protocol including the formulation of review questions and criteria for inclusion and exclusion (cf. Appendix 1), conceptualization, scope limitation (cf. chapter 1) and a general description of the approach, methodology and the phases of the systematic research mapping. The purpose of the research protocol was to act as a management tool by providing both a framework and a point of departure for the entire review process. The review group contributed with suggestions to and reviewed the protocol.
This systematic research review is delimited in time to studies that were published between January 1st 1980 and July 17th 2014.

The second phase is the systematic search process, which was carried out based on an explicit search strategy where scoping, systematic stringency, focus, and transparency were focal points. Furthermore, the strategy was designed in consideration of limitations on time and resources which defined a natural upper limit for the number of studies that could be processed and included in the systematic review (Gough et al., 2012: 60-61). Still, the aim of the systematic research mapping was to identify as many studies which fit the inclusion criteria as possible; thus the searches should be as comprehensive as the given limits allows. In practice, however, exhaustive searching is never possible and there will be gaps in any given search strategy, hence there will always be relevant studies that are not identified (ibid.: 110-113).

The following is a description of the search strategy for this systematic research mapping:

Initially, a search of the world’s largest Education database, ERIC, was conducted using search terms such as “multilingual”, “L3” and “multiple languages” identified from the literature regarding third language acquisition. Titles, keywords and abstracts for the studies found in this search were carefully examined and based upon this additional information, new search terms were added and a final search string was developed. Multiple databases were selected as search sources and the search strings were modified to function in each individual database interface. The databases were chosen based on the scope of the systematic research mapping and included both topic-specific databases regarding education, psychology, language and linguistics, and country-specific databases. A full list of databases and the search strings applied in each database can be found in Appendix 1.

During the search process, it was discovered that a number of studies identified themselves as studies regarding first foreign language or L2 acquisition while they were in actuality about third language (L3) acquisition. To overcome this and other eventual blind-spots, supplementary search strategies were carried out to identify additional studies.

Based on recommendations from the review group, five key field-specific journals were searched manually for relevant studies. They were:

- International Journal of Multilingualism

* July 17th was the date the last search was performed. All databases and journals were searched between June 26th and July 17th.
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- Journal of Multilingual and Multicultural Development
- Multilingual Education
- International Multilingual Research Journal
- International Journal of Bilingual Education and Bilingualism

In addition to this, four literature reviews were also searched manually for relevant studies (Cenoz, 2003; Falk & Bardel, 2010; Lambalet & Berthele, 2014; Wiedenkeller, 2013), and the review group was asked to provide any relevant references not already identified in the searches.

When combined, the different sources provided a pool of 7,114 references. After all of the searches in the databases and the manual searches had been completed, a duplicate check was carried out in the EPPI-Reviewer 4, and 999 references were removed as a result thereof before the screening process. The remaining 6,115 references were screened according to the criteria defined in the research protocol (see also Appendix 1).

In the screening phase, explicit criteria, based on the scope of the systematic research mapping and the review questions, were applied to each reference in order to determine if it should be included or excluded from the systematic research mapping. These criteria cover, for instance, publication time, country of origin, publication type, and whether they focus on third language acquisition. It should be noted that the exclusion criteria are not mutually exclusive and a study could be excluded for several reasons. Research quality was not used as a criterion for inclusion or exclusion of the studies. The figure below gives an overview of the screening process:
The screening phase resulted in 70 included references while 6,045 references were excluded. During the screening phase, it was discovered that 12 references were secondary to studies already included in the sense that they either reported on the same empirical data as other references with an almost similar or completely similar analytical framework, purpose and focus. An example of one such secondary reference could be a chapter of an included dissertation later published independently in a research journal or a published study containing preliminary results that is later updated and published in a final version.

Next, the data extraction phase was initiated. In this phase the final 58 included studies were read in their entirety, relevant data was processed and extracted and the quality of the studies was assessed. The data extraction system in the EPPI-Reviewer 4 contains a general as well as a specific set of questions called “guidelines”, which has the purpose of registering, characterising, assessing, and reporting the content and quality of the studies. The general guideline is intended to extract and register general information that would be relevant to report in any given systematic review, regardless of subject matter and field of research. This includes the purpose of the studies,
their geographical origins, the language in which they were published, and questions concerning design, methodology, transparency and the research quality and relevance of the studies. The **specific guideline**, on the other hand, is designed to extract and register data concerning the specific research field of the systematic review in question, e.g. specific outcomes, type of intervention, and which test and/or indicators, that are utilised in the studies. For the present systematic review the **specific guideline** registers data on order of language acquisition, multilingual background (if stated), language learning starting age, linguistic awareness and other relevant factors related to multilingualism. When combined, the two sets of guidelines ensure that all included studies are processed and registered in a standardised manner. The guidelines are constructed as coding tools with multiple choice questions and expandable text boxes for adding additional information to each answer. An example of a completed guideline can be found in Appendix 2.

At the end of the **data extraction process**, every study was assessed in regards to research **quality** and review question **relevance**. Based on this, the studies were assigned an overall weight of evidence of “high”, “medium”, or “low”. The overall weight of evidence can be characterised as a systematic assessment of to which extent the studies met common scientific standards for empirical research while being relevant in regard to answering the review question of the specific systematic review (see chapter 3 for further details on the weight of evidence assessment).

A total of 43 studies were assigned a medium or high overall weight of evidence and are included in the synthesis in chapter 5.

The last phase of the systematic research mapping was the **characterisation** and **synthesis prospect** phase. In that phase the results of the systematic research mapping were reported and the identified research was characterised. Afterwards, the data was inductively searched for patterns of themes and trends among the 43 included studies, all of which in various ways examined the overall theme of the systematic research mapping: *The impact of multiple language teaching, prior language experience and acquisition order on students’ language proficiency in primary and secondary school*. Following an assessment of the potential of producing a synthesis on the basis of the systematic research mapping, a **narrative synthesis** was conducted. During this last phase, abstracts were made for all included studies of “medium” or “high” overall weight of evidence. All abstracts are included in Appendix 3. Studies that were assigned a “low” overall weight of evidence are included in the **characterisation**, but not in the **narrative synthesis**.
3.3 Overall weight of evidence assessment

The quality and relevance of the studies included in the systematic research mapping were assessed by assigning every study a specific weight of evidence containing categories ranging from “low”, past “medium” to “high”. This assessment method is common for every review done by Danish Clearinghouse for Educational Research although it has been developed, optimized and therefore altered slightly over time. The weight of evidence indicator constitutes the last section of the general guideline and is comprised of three variables: A: the quality and trustworthiness weight, B: the relevance weight and C: the overall weight of evidence (AB combined).

Before going into a more in-depth explanation of A, B and C, it is important to emphasize that the very term “weight of evidence” can be considered misleading because it is often used as a reference to a sort of ranking or hierarchy of research designs. In such a context, studies that apply RCT or meta-analysis-based designs are often considered a superior type of evidence because of their high levels of robustness and the trustworthiness of their statistical power. In the context of systematic review designs, however, the evidence ladder approach can often lead to the exclusion of large parts of research fields where RCT’s, meta-analysis (and even quasi-experiments) are rarely utilized. At Danish Clearinghouse for Educational Research we aim to include as much relevant empirical research as possible in our reviews without risking compromising the review quality.

Therefore an evidence ranking based solely on type of design was discarded and replaced with the current weight of evidence indicator that has the more basic and moderate purpose of simply ensuring the quality and relevance of the included studies and thereby establishing a baseline or standard for studies regardless of research design, but depending on general research standards and study scope.

With the above background as a point of departure, we can now elaborate on and define A, B and C.

- **A: Trustworthiness and research quality.** A is in essence an overall assessment of the quality of the study in question and hence focuses on how high a degree of trustworthiness that can be attributed to the findings of the study. A should be considered a summary variable of questions concerning core research quality standards, primarily related to transparency, reliability and validity found in the general guideline. It is the overall quality imprint the study leaves regardless of research design.
• **B: Study relevance.** B is a rating of how relevant the study findings (which were assigned a degree of trustworthiness to in A) are in regards to answering the review question of the present systematic review. For instance, the study in question may very well only contain a small section that contributes to answering the review question and, unless this small section contains evidence of very high importance, the study should be considered less relevant for the systematic review (and of lesser weight), even though it can be considered very trustworthy in regards to research quality (A).

• **C: Overall and combined weight of evidence.** C is to be regarded as more of a conditional combination where A conditions B, and A and B condition C rather than simply a mean rating approach along the lines of $A + B/2 = C$. The logic behind this is that no study can be considered to be of great evidence weight if it is of low quality and therefore untrustworthy, regardless of how relevant its focus and findings may be. On the other hand a study of very little relevance, but very high trustworthiness, falls in to a similar category. The highest overall weight of evidence (C) must therefore be assigned to studies that are both highly trustworthy and relevant for the systematic review.

C is based on the assessments of A and B and therefore cannot be contributed specific outcome criteria for every eventuality and combination because many A or B assessments can be borderline in nature. For instance, a study can be of high quality (A) and on the verge of being irrelevant and therefore potentially rated “low” in regard to B. In other words, there might be a tipping point that calls for an overall assessment beyond combinations of A and B. Also a research quality-related issue in a study as a whole might yield a “low” assessment, but if only some parts of the study are relevant the systematic review, and the quality issue is related to other parts, it should not result in a “low” combined weight of evidence (C). The following is therefore to be considered a guideline that covers most cases, but not all cases:
In addition to the definitions above, two entire sections of general guideline questions underlie the assessment of the quality variable A. Section D and E. In order to create further transparency, the primary questions in these sections are presented in the tables below, also displaying the frequency distribution of the studies in relation to each question.

The first set of section questions is related to the transparency of the studies:

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the context of the study adequately described?</td>
<td>55</td>
<td>3</td>
</tr>
<tr>
<td>Are the aims of the study clearly reported?</td>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>Is there an adequate description of the sample used in the study and how the sample was identified and recruited?</td>
<td>45</td>
<td>13</td>
</tr>
<tr>
<td>Is there an adequate description of the methods used in the study to collect data?</td>
<td>48</td>
<td>10</td>
</tr>
<tr>
<td>Is there an adequate description of the methods of data analysis?</td>
<td>44</td>
<td>14</td>
</tr>
<tr>
<td>Is the study reported with sufficient transparency?</td>
<td>49</td>
<td>9</td>
</tr>
</tbody>
</table>

N = 58

Overall, the table indicates that the studies meet the general research standards regarding transparency. This is especially true in regard to whether the context of the study is adequately described (55 studies) and in terms of transparent reporting of the study’s aims (57). The studies also exhibit sufficient transparency in relation to how samples are identified and recruited (45) and in terms of data collection methods (48) and what methods were used for analysing the data (49). Lastly, a great majority of the studies (49) were in general found to be sufficiently transparent.

The second set of section questions is more directly related to the reliability and validity of the studies.
Table 3.3: Reliability, validity and research design

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes, completely</th>
<th>Yes, to some extent</th>
<th>No, none</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the choice of research design appropriate for addressing the research question(s) posed?</td>
<td>27</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>Have sufficient attempts been made to establish the repeatability or reliability of data collection methods?</td>
<td>28</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>Have sufficient attempts been made to establish the repeatability or reliability of data analysis?</td>
<td>29</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>Have sufficient attempts been made to establish the validity or trustworthiness of data collection and methods?</td>
<td>28</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>Have sufficient attempts been made to establish the validity or trustworthiness of data analysis?</td>
<td>23</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>To what extent are the research design and methods employed able to rule out any other sources of error/bias which would lead to alternative explanations for the findings of the study?</td>
<td>18</td>
<td>34</td>
<td>6</td>
</tr>
</tbody>
</table>

N = 58

The table above points towards a more mixed level of quality in regard to reliability and validity compared to the transparency section. Generally, there appears to be a pattern among the first four questions that reveals an almost even distribution between the “yes, completely” (27-29), and the “yes, to some extent” (23-26) categories. Thus the general level of validity and reliability can be considered sufficient, but not high. The last question, concerning to what degree the designs and methods employed in the studies were successful in minimizing bias, seems to differ from the general picture by having fewer studies (18) in the “yes, completely” category. The fifth question regarding validity of data analysis lies somewhere in between (23).

Overall, however, the conclusion is that the general level of validity and reliability can still be considered sufficient, but not high.

In order to examine if a connection exists between levels of transparency and reliability among the studies, cross tabulations were made. As displayed below there
appears to be a large consistent group of studies with both sufficient reliability and transparency.

Table 3.4: Reliability by transparency

<table>
<thead>
<tr>
<th>Have sufficient attempts been made to establish the repeatability or reliability of data collection methods?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, completely</td>
<td>28</td>
<td>0</td>
</tr>
<tr>
<td>Yes, to some extent</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>No, none</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

N = 58

The next table below shows a cross tabulation between bias reduction and transparency. It indicates that studies with a high degree of bias reduction also appear to be reported with sufficient transparency.

Table 3.5: Bias by transparency

<table>
<thead>
<tr>
<th>To what extent are the research design and methods employed able to rule out any other sources of error/bias which would lead to alternative explanations for the findings of the study?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lot</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>A little</td>
<td>29</td>
<td>5</td>
</tr>
<tr>
<td>Not at all</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

N = 58

With the sections and questions of the general guideline that underlies the quality variable weight of evidence now made transparent, we arrive at the end of the assessment funnel: the table that displays the frequency distribution between all three weights of evidence among the 58 included studies.
Keeping in mind that weight of evidence C is based on A and B (in the manner that is put forth at the beginning of this chapter), 45 out of 58 studies have been assessed to be of medium or high quality (weight of evidence A). This indicates that 45 studies are of sufficient quality to be included in a synthesis of the research field, 13 were not. In regard to the relevance (weight of evidence B) of the studies, 54 out of 58 can be considered sufficiently relevant for the systematic review. This suggests that a small number of included studies were assessed relevant but did not provide a sufficient level of research quality and were therefore assigned a low overall weight of evidence.

All in all 19 studies were assigned a high overall weight of evidence (C), 24 a medium overall weight of evidence and 15 a low overall weight of evidence. Thus 43 studies are included in and form the basis of the synthesis of the field and 15 studies are excluded.

3.4 Method of the synthesis

The previous chapter identified 43 studies which were found eligible to be included in the synthesis on the impact of multiple foreign language teaching, prior language experience and acquisition order on students’ language proficiency in primary and secondary school. These 43 studies were all assigned an overall weight of evidence of ‘high’ or ‘medium’ in the quality assessment phase of the systematic research mapping, cf. Section 37. The methods of the synthesis will be outlined here followed by a description of the theoretical model for the synthesis.

Gough et al. (2012) describe the systematic synthesis as the specific part of the systematic review process, where one “need[s] to understand the results of individual studies and ascertain what they mean as a collective body of knowledge” (ibid.: 180). Gough et al.

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7 For a further characterisation of these 43 studies, see Appendix 3.
(2012) further state: “The outcome of the synthesis is a narrative that tells a trustworthy story (see Popay et al., 2006) answering the review question and also telling the reader what the findings mean.” (ibid.: 185) Different types of systematic syntheses exist which can be said to relate to different kinds of review questions and to the way the studies have been conducted.

The present systematic review poses two review questions of which one is more descriptive in character: How can the empirical research in the field be characterised in regard to origin, frequency, purpose, approach, research design, results and research quality? The second review question that is posed is more explorative: What characterizes interventions, methods and programmes within the field that appear to have an effect that can be measured at the student level? As such, the latter question “aim[s] to explore a range of possible answers and approaches within a given theoretical framework […]” (ibid.: 181).

An aggregative mode of synthesis, in the sense of statistically combining the findings across the studies available for the synthesis, will often be a fruitful way to approach the possible answers to such explorative questions. An aggregative mode of synthesis requires, however, a certain degree of homogeneity between the studies, for example that they apply similar designs and methods of analysis, and that they work within commensurate conceptual frameworks etc. (ibid.: 182). As will be outlined below, the studies available for this synthesis are quite heterogeneous when it comes to operationalisation of third language acquisition in school, the possible factors having an influence on third language acquisition studied as well as the design and methods of analysis applied across the studies. Hence, the present synthesis is conducted as a ‘narrative synthesis’ (cf. Gough et al., 2012; Popay et al., 2006) which aims at combining the findings across the available studies in a systematic way and analysing how differences between the studies might possibly be explored and explained by working on a higher level than the individual study. A thematic approach is applied in order to draw a broader perspective on the findings of the studies and what constitutes the findings, part of this also being the authors’ conclusions and explanations for their findings (Gough et al. 2012: 195). A thematic analysis is a fruitful way to systematically organise and analyse across quantitative, qualitative and mixed-method studies. As argued by Popay et al. a thematic analysis “can be used to identify systematically the main, recurrent and/or most important (based on the review question) themes and/or concepts across multiple studies” (2006: 18). An advantage of applying a thematic approach is that it opens up the opportunity to summarise and directly reflect the main concepts, findings and conclusions from the included studies, rather than emerging or even trying to emerge new knowledge from the collected and possibly diverse body of studies (ibid.).
Furthermore, on the basis of Popay et al. (2006), the narrative synthesis consists analytically of four distinct elements/phases that are conducted in a sequence. In practice, however, the synthesis process will involve iterative movements between these different elements. The present synthesis is no exception. The four elements of the narrative synthesis can briefly be described as follows:

The first element consists of developing a theoretical model of how the effect(s) observed in the study come about, why they do so and for whom. At this point it might be useful to consider developing a ‘theory of change’ (see Weiss, 1998: 55; Wholey, 1987: 78). The theoretical model can be used to interpret the synthesis findings and can be useful in an assessment of how broad the applicability of these findings is. The theoretical model is presented in Section 3.4.

The second element aims at developing a preliminary synthesis of the findings of the studies available for the synthesis. The means for doing so will be to organise the findings of the studies so as to be able to develop an initial description of the studies, look for possible patterns in the findings across the studies and on that basis to further be able to determine the direction and also the impact on multiple foreign language teaching of each of the investigated factors.

The third element goes a step further and makes the emerging patterns in the findings which have been obtained across the studies subject to interrogation in order to:

a) Identify any (contextual) factors, which might explain the possible differences found with regard to effect and direction of each of the investigated factors across the studies.
b) Understand how and why certain investigated factors are found to have/not to have an impact on students’ language acquisition when learning a third language in school (cf. Popay et al., 2006: 14).

Chapter 5 presents an integrated account of the second and third element of the narrative synthesis.

The fourth element includes an assessment of the robustness of the synthesis. This is a complex task which, somewhat simplified, can be said to consist of four different aspects. Contained herein are aspects regarding both the synthesis as a whole as well as issues in each of the 43 studies which form the basis of/set the premises for the synthesis in the first place. The assessment of the robustness of the synthesis will be given in Chapter 6.

3.4.1 The theoretical model behind the synthesis

As described in section 2.2.2, Hufeisen’s Factor Model, which focuses on the different factors involved when learning a third and additional languages, is currently one of
the most influential theoretical models within the research field of multilingualism, as it describes the complexity and uniqueness of the process of learning a third or additional languages.

Repeating a point from section 2.2.2, according to Hufeisen, the more languages that are involved in the language acquisition process, the more factors come into play, showing why the learning of each new language is more complex than that of first foreign language learning. Compared to the processes of learning a first language, individual new factors which exert substantial influence on the language learning process are added.

Hufeisen’s model has served as inspiration for describing the scope of the research contained in this systematic review. According to Gough et al. (2012: 186), when examining the data available for the synthesis, one can organise the included research studies in terms of, for instance, their different factors and processes present in the studies, or according to the categories in the conceptual framework of the systematic review. The decision to examine the included studies in such a way originates from a desire to understand the similarities and differences in the data available for the synthesis and to examine their patterns. Furthermore, this process helped to identify gaps in the research activity, as well as to identify groups of studies that could support us in answering particular parts of the review question (cf. ibid.: 186-188).

On the basis of the theoretical model by Hufeisen, the following six overall factor categories were identified in the studies available for this synthesis: (1) personal factors, (2) educational factors, (3) social and social psychological factors, (4) cognitive factors, (5) foreign language-specific factors, and (6) linguistic factors. The model by Hufeisen has been operationalised as seen in figure 3.3.
Figure 3.3: Model of factors influencing third language learning in school

This theoretical model functions as the conceptual framework of the present systematic review, and it indirectly informs, the more explorative review question of ‘What characterises interventions, methods and programmes within the field that appear to have an effect that can be measured at the student level?’.

The identified six overall factor categories will be elaborated in the following:

1. **Personal factors**
This first overall factor category, the personal factors, covers neurophysiological elements such as age and gender. Furthermore, the following demographic and family-related factors are added to this overall factor category: socio-economic status, migration status, literacy of the household and parental support and assistance with learning the target language. Moreover, issues like general language aptitude and proficiency in L1 and/or L2 are included in this category. Common for all of the elements in this factor category is that they provide both the basis for and precondition of general learning, production and reception capability (Jessner 2008: 22). As stated by Hufeisen, because neurophysiological factors are factors that constitute the foundation of general
language learning, a consequence of one of these factors being hindered is failed or flawed language acquisition.

2. Educational factors
The second overall factor category includes educational factors identified through the studies available for this synthesis. Many of these factors are, as stated by Hufeisen, learner external factors such as learning environment(s), learning traditions, type of input and degree and/or length of exposure. Also, some studies examine specific school programmes or interventions implemented in order to examine third language learning or aspects related to it. Moreover, factors related to the teachers’ role such as teaching methods, quality of teacher training and teaching materials used in the language instruction are recognized as educational factors. Common for all factors in this overall factor category are that they are of great importance to students’ language learning in general and thus constitute an important input for third language acquisition and learning as well. If sufficient or qualitatively adequate input is lacking, the students’ acquisition process becomes more difficult or even impossible (Hufeisen & Marx 2007: 312).

3. Social and social psychological factors
This third, overall factor category covers social and social psychological factors related to students’ third language acquisition. These are factors that are related to the students’ interpersonal and intrapersonal relations. Hufeisen describe this factor category as emotional factors where affective aspects such as attitude, motivation or acceptance of learning a third language are factors that are exceedingly influential in the learning process. Moreover, anxiety, fear of making mistakes and the feeling of being overburdened are factors included in this category. If a learner is too tense or afraid to speak the target language, this emotional state might slow down or even impede the learning process and success (Hufeisen & Marx 2007: 312). Also, the students’ assessment of their own language proficiency, their self-concept as language learners and their well-being are factors being examined in the studies available for this synthesis. Another factor worth mentioning is psychotypology, which can be described as the students’ perceived closeness/distance between the languages, keeping in mind that this differs from typology as a cognitive factor; the concept of psychotypology shows that the perceived distance between two languages does not necessarily correspond to the typological distance between them, which is assessed on more objective linguistic grounds. In
other words, as described by e.g. Cenoz, psychotypology is “the idea that the perception of linguistic distance and the perception of ‘transferability’ can be more important than objective linguistic distance” (Cenoz, 2001: 16). Moreover, a social factor having an impact on the students’ third language acquisition is to what extent L1, L2 and/or L3 are languages used at home or in other contexts outside school, and this includes private lessons or language instruction in other settings outside school. The language use might be active or passive.

4. Cognitive factors

The overall factor category, cognitive factors, covers the more intellectual and perceptive factors related to language learning such as linguistic awareness and cognitive maturity. Jessner defines linguistic awareness in multilinguals as an emergent property of multilingual proficiency and as consisting of at least two dimensions in the form of cross-linguistic awareness and metalinguistic awareness (Jessner, 2008: 30). Thus, according to this, linguistic awareness is here applied as a collective name for morphological awareness, language awareness, metalinguistic awareness, and phonological awareness. Cognitive maturity refers to the students’ knowledge of their own learner type and the ability to employ individual learning strategies, experiences and techniques (Jessner 2008: 23).

5. Foreign language-specific factors

The fifth overall factor category can, in fact, be seen as a ramification of the cognitive factors above. This category concerns factors specifically related to third language acquisition and learning and is particularly distinctive for foreign language learning unlike linguistic factors. In contrast to learning an L2, the student must recognize a new set of learning factors in the beginning of an L3 learning process, and closely related to the area of linguistic distance/typology of language is the issue of cross-linguistic transfer (Dillon 2009: 185). Hence, foreign language specific factors are factors such as individual second language learning experiences, interlanguages of other learned languages, and foreign language strategies (Hufeisen & Marx 2007:313), more specifically described as cross-linguistic influence, a term that includes phenomena such as transfer, interference, avoidance, borrowing, code-mixing and L2-related aspects of language loss (Sharwood Smith & Kellerman 1986 in Jessner, 2008: 26). Moreover, foreign language strategies cover the ability to compare and make interlanguage connections.
6. Linguistic factors

Finally, the sixth and last overall factor category covers linguistic factors such as linguistic characteristics of the students’ L1 and L2. The more languages a student is acquainted with, the more linguistic factors she/he possesses, as the learning of each new tertiary language is more complex than that of first foreign language learning (Marx & Hufeisen 2004: 145). However, the addition of one more input or variable to the new language learning process taking place after the learning of a third language will never be as significant as the expansion of additional areas between L2 and L3 (Hufeisen 2000: 214).

This model of factors influencing third language learning in school is found to be a very useful way of aiding the process of describing, analysing and looking for patterns within and across the studies available for the synthesis. Therefore, we have used this model to organise and configure the included studies into groups according to the different factors that influence the third language acquisition processes. As a part of this preliminary synthesis we produced ‘narrative descriptions’ of each included study. This was done in a systematic way, including the same information for all studies if possible and in the same order (Popay et al., 2006: 16-17). Thus, data from the studies has been placed alongside one another in order for us to construct a picture of the factors that impact third language learning in school, and to enable the findings from one study to ‘speak’ to another (Gough et al., 2012: 188). According to Gough et al. "the key concept here is translation by examining the themes arising in individual studies, the reviewer identifies common themes between them, even though they may be expressed in different words in different studies." (ibid.). We find that this translation process has been of great value as a way of exploring relationships across the included studies (Popay et al., 2006: 20).
4 Systematic research mapping

A general characterisation of the research regarding impact of multiple language teaching, prior language experience and acquisition order on students’ language proficiency in primary and secondary school included in this systematic research mapping will be described in the following. First, general characterisations such as country or countries where the studies were carried out and research designs used will be presented and then more specific conditions will be accounted for.

4.1 General characterisation of the included studies

The geographical setting of the scope was set to include studies from the EU, Switzerland, Norway, the USA, Canada, Australia and New Zealand. As is evident from the table below, a high number of the 58 included studies are from a southern European context. During the screening process, it became clear that many of the Spanish studies were conducted in a Basque context and it was decided that it would be prudent to isolate these from the Catalan studies, more specifically there are a total of 26 studies from Spain, out of which 17 were conducted in the Basque Country and nine were conducted in Catalonia. In the following characterisation of the included studies, it was therefore decided to distinguish between Catalan studies and studies from the Basque Country. The reason for doing so is that the linguistic situation of the two regions is different both in terms of the typological relation or linguistic proximity of the two languages that are in contact (Basque and Spanish on the one hand, and Catalan and Spanish on the other) and the educational structures or settings that have been adopted in the two areas.

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8 The Basque Country and Catalonia are autonomous communities in Spain.
Table 4.1: Country or countries in which the studies were carried out

<table>
<thead>
<tr>
<th>Country/countries</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain, Basque Country</td>
<td>17</td>
</tr>
<tr>
<td>Spain, Catalonia</td>
<td>9</td>
</tr>
<tr>
<td>Sweden</td>
<td>7</td>
</tr>
<tr>
<td>Canada</td>
<td>6</td>
</tr>
<tr>
<td>Switzerland</td>
<td>5</td>
</tr>
<tr>
<td>Germany</td>
<td>4</td>
</tr>
<tr>
<td>Ireland</td>
<td>3</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>2</td>
</tr>
<tr>
<td>Denmark</td>
<td>1</td>
</tr>
<tr>
<td>The Grand Duchy of Luxembourg</td>
<td>1</td>
</tr>
<tr>
<td>Greenland</td>
<td>1</td>
</tr>
<tr>
<td>Austria</td>
<td>1</td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
</tr>
<tr>
<td>Belgium</td>
<td>1</td>
</tr>
<tr>
<td>USA</td>
<td>1</td>
</tr>
</tbody>
</table>

N = 60 (Some studies are conducted in more than one country)

Additionally, the table shows that the studies’ origins span relatively wide. Looking at the Scandinavian countries, seven studies are conducted in a Swedish setting, compared to two studies from Denmark. No Norwegian studies are included. Among countries officially having two or more languages, Canada and Switzerland, respectively, are well represented in the systematic research mapping. Six Canadian studies and five Swiss studies are included, whereas Ireland and The Netherlands are represented with three and two studies each. From the following countries only one study from each country is included in the systematic research mapping: The Grand Duchy of Luxembourg, Greenland, Austria and Belgium. This is also the case with Australia and the USA, where one study from each country is included. No studies from New Zealand are included.

In this systematic research mapping, studies published between January 1st 1980 and July 17th 2014⁹ have been included. As is clear from the figure below, there has been a large increase in the number of studies published from 2000 onwards when we look at research on multilingualism, which is a tendency that manifests itself in most

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⁹ July 17th was the date the last search was performed. All databases and journals were searched between June 26th and July 17th.
fields within educational research. Hence the research presented in this systematic research mapping can be described as being up to date.

*Figure 4.1: Publication year*

Table 4.2 below gives an overview of the overall research method used in the studies included. As can be seen from the table, most of the studies have a quantitative approach (44) while 11 studies use mixed methods. None of the studies are solely qualitative, which is in line with the scope of this specific systematic research mapping where the focus is also on the impact of interventions, methods, programmes or latent language factors or backgrounds and change in outcomes related to third language proficiency. This, however, is not limited to established causal inference on a quantitative level, which is why studies that utilize both approaches (qualitative and quantitative) are included.
Based on the mixed methods used in the studies included in the systematic research mapping, it is possible to throw light on the multilingual field from more than one perspective.

**Table 4.3: Research method/overall weight of evidence**

<table>
<thead>
<tr>
<th>Research method/ overall weight of evidence</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative</td>
<td>18</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Mixed methods</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

The correlation between research method applied and weight of evidence can be seen in Table 4.3. Respectively, eight and seven studies with quantitative and mixed methods have been assessed as having a low overall weight of evidence. These studies are not trustworthy regarding transparency, results and conclusions. Six mixed methods studies have been assessed ‘medium’ and one is given ‘high’ overall weight of evidence. Looking at the quantitative studies, it appears that these studies have in general been well conducted with trustworthy results and conclusions. In total 43 studies have been assessed as having a ‘high’ or ‘medium’ overall weight of evidence.

Table 4.4 shows how the included studies are distributed according to the overall research design applied. As is evident from the table, almost half of the studies included (27) make use of a cross-sectional design. Studies are characterised as cross-sectional studies when the researchers collect data at one specific point in time across a group of individuals. Furthermore, 14 longitudinal studies have been included, of which 12 are cohort-based studies. No controlled experiments/randomised controlled trials are included; however, 10 experiments with non-random allocation to groups, that is quasi-experiments, are among the included studies. Two case-control studies and respective-ly one action research study and one case-study are included in the systematic research mapping. In sum, the studies included can be characterised as fairly homogeneous regarding research methods used.
Table 4.4: The overall research design used

<table>
<thead>
<tr>
<th>Overall research design used in the study</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-sectional study</td>
<td>27</td>
</tr>
<tr>
<td>Longitudinal study: Cohort based study</td>
<td>12</td>
</tr>
<tr>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
<td>10</td>
</tr>
<tr>
<td>Case-control study</td>
<td>2</td>
</tr>
<tr>
<td>Longitudinal study: Other than cohort based</td>
<td>2</td>
</tr>
<tr>
<td>Case-study</td>
<td>1</td>
</tr>
<tr>
<td>Action research</td>
<td>1</td>
</tr>
<tr>
<td>Other research design</td>
<td>6</td>
</tr>
</tbody>
</table>

N = 61 (multiple answers possible)

The category “other research design” covers studies that either have a design that cannot be recognised as one of the other categories or have an unclear research design, e.g., survey or group comparison test.

When combining the overall research design with overall weight of evidence, it becomes clear that the experimental and longitudinal studies included are generally of high or medium trustworthiness, whereas the cross-sectional studies are of mixed quality. Seven cross-sectional studies are assessed as having a low overall weight of evidence. Table 4.5 below shows overall research design and overall weight of evidence combined.

Table 4.5: Research design/weight of evidence

<table>
<thead>
<tr>
<th>Research design/weight of evidence</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-sectional study</td>
<td>12</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Longitudinal study: Cohort based study</td>
<td>4</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
<td>2</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Case-control study</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Longitudinal study: Other than cohort based</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Case-study</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Action research</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Other research design</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Not stated/unclear</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

N = 61 (multiple answers possible)

As stated earlier, a large group of the included studies were conducted in a Spanish context. It is therefore interesting to see how the studies are distributed in terms of design as well as in terms of geography. As can be seen from the table below, Table 4.6, the experimental studies included are all European studies and only two of these were
conducted outside Spain. The longitudinal studies are almost evenly distributed between central and southern European countries with one exception from a northern European country. The cross-sectional studies are also more or less distributed across all geographical areas; however, 11 studies stem from southern Europe, where five were conducted in a northern European setting and six were conducted in a central European context. Four cross-sectional studies are Canadian.

Table 4.6: Research design distributed across geographical areas

<table>
<thead>
<tr>
<th>Research Design</th>
<th>Northern Europe</th>
<th>Central Europe</th>
<th>Southern Europe</th>
<th>USA</th>
<th>Australia</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment with non-random allocation to groups</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal study: Cohort based study</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal study: Other than cohort based</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case-control study</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case-study</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-sectional study</td>
<td>5</td>
<td>6</td>
<td>11</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Action research</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 62 (multiple answers possible)
(Northern Europe covers Sweden, Finland, Ireland, Denmark and Greenland while Central Europe covers Switzerland, Germany, the Netherlands, the Grand Duchy of Luxembourg, Austria and Belgium. Southern Europe covers studies from Spain only.)

Even though the studies included in this systematic research mapping apply quantitative or mixed methods, most of the studies are small scale studies with a population of up to 100 participants. Figure 4.2 shows the size of the achieved sample sizes, i.e. the number of students who actually participated in each study.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Figure 4.2: Achieved sample size

As can be seen from the figure, the sample sizes in the included studies vary to a great extent. The highest number of participating students is 11,000 in one study, compared to the smallest sample size with 10 participants only. A large amount of the studies (28) are small scale studies with fewer than 100 participating students. The sample sizes also vary regarding participants as this systematic research mapping includes students in both primary and secondary school.

4.2 Specific characterisation of the included studies

The following sections will account for the included studies’ characterisations that are specifically related to third language learning among students in primary and secondary school. Table 4.7 below characterises the 58 studies in relation to their research focus areas.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Table 4.7: Focus/foci of the studies

<table>
<thead>
<tr>
<th>Focus</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>General impact of being natural bilingual on third language learning</td>
<td>17</td>
</tr>
<tr>
<td>General impact of being instructed bilingual on third language learning</td>
<td>11</td>
</tr>
<tr>
<td>General impact of the order in which languages are acquired</td>
<td>1</td>
</tr>
<tr>
<td>Impact of the language proximity of already acquired languages in relation to acquiring a third</td>
<td>7</td>
</tr>
<tr>
<td>Impact of background variables (for instance gender or age) on third language acquisition</td>
<td>19</td>
</tr>
<tr>
<td>Impact of specific methods/interventions/programmes used in foreign language learning</td>
<td>3</td>
</tr>
<tr>
<td>The students are involved in an immersion programme</td>
<td>13</td>
</tr>
<tr>
<td>Other focus</td>
<td>10</td>
</tr>
</tbody>
</table>

N = 81 (multiple answers possible)

The table shows that 17 studies investigate the general impact of being a natural bilingual on third language learning versus 11 studies that look into the general impact of being an instructed bilingual on third language learning. 19 studies examine the impact of background variables such as gender and age. Moreover, 13 studies use data from studies where the participating students are involved in an immersion programme while three studies profoundly study the impact of specific methods, interventions or programmes used in foreign language learning. Seven studies investigate the impact of language proximity of already acquired languages in relation to acquiring a third language and one study only examines the general impact of the order in which languages are acquired. Finally, 10 studies are coded as having another focus than any of those mentioned above. These studies are, among others, studies that focus on cross-linguistic influence on third language acquisition or general impact of being bilingual on third language learning. However, it is not clearly stated whether the students are natural bilinguals or bilinguals by instruction.

Table 4.8 shows the background of the children in the included studies. It is evident that a large proportion of studies examine more than one group of children. As can be seen from the table, 20 studies include monolingual, native-speaking children, 36 studies investigate students who are naturally bilingual while 22 studies include students who are bilingual by instruction. Nine studies include children with an immigrant background. Children who are trilingual by instruction appear in two studies. The “not stated/unclear” category covers bilingual students where it is not clearly stated whether they are natural bilingual or bilingual by instruction.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Table 4.8: What is the background of the children?

<table>
<thead>
<tr>
<th>Background of the children</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual speakers</td>
<td>20</td>
</tr>
<tr>
<td>Natural bilingual</td>
<td>36</td>
</tr>
<tr>
<td>Bilingual by instruction</td>
<td>22</td>
</tr>
<tr>
<td>Immigrants</td>
<td>9</td>
</tr>
<tr>
<td>Trilingual by instruction</td>
<td>2</td>
</tr>
<tr>
<td>Not stated/unclear</td>
<td>11</td>
</tr>
</tbody>
</table>

N = 100 (multiple answers possible)

Furthermore, as stated before, the students participating in the included studies are pupils at either primary or secondary school level. Some studies examine both levels.

Table 4.9: Level of education: primary and secondary school

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary school</td>
<td>14</td>
</tr>
<tr>
<td>Secondary school</td>
<td>25</td>
</tr>
<tr>
<td>Primary and secondary school</td>
<td>15</td>
</tr>
<tr>
<td>Not stated</td>
<td>4</td>
</tr>
</tbody>
</table>

N = 58

As can be seen from the table above, the allocation between primary and secondary school level is rather uneven. 25 studies (43%) investigate secondary school students. 14 studies examine children at primary school level, and 15 studies include both primary and secondary school students. Four studies do not clearly state whether the students participating are primary or secondary school students.

Finally, Table 4.10 accounts for the order in which the students have acquired their first, second and third languages.
Table 4.10: order of acquisition

<table>
<thead>
<tr>
<th>Order of acquisition</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students acquired L1 and L2 at home and learned L3 in school</td>
<td>17</td>
</tr>
<tr>
<td>The students acquired L1 at home and learned L2 and L3 in school sequentially (with no overlap)</td>
<td>4</td>
</tr>
<tr>
<td>The students acquired L1 at home and learned L2 and L3 in school simultaneously (with overlap, learning could start at the same time or at different points in time)</td>
<td>9</td>
</tr>
<tr>
<td>Two or more groups with different sequences</td>
<td>15</td>
</tr>
<tr>
<td>Other order of acquisition</td>
<td>3</td>
</tr>
<tr>
<td>Not stated/unclear</td>
<td>12</td>
</tr>
</tbody>
</table>

N = 60 (multiple answers possible)

The table shows that 17 of the studies include students who are bilingual at home and have learned a third language in school. 13 studies examine students that have learned a second and third language in school with or without overlap. Two or more groups with different sequences are examined in 15 studies. Three studies are coded as “other order of acquisition” as they include students who acquired L1 at home and learned L2, L3 and L4 in school. Nine studies are coded as “not stated/unclear”. A large proportion of these studies do not clearly state whether the students learned both their first language and their second language at home (natural bilinguals) or if they learned a second and a third language in school (bilinguals by instruction). Other studies do not account for whether the students learned their second and third language in school sequentially or simultaneously.
5 The narrative synthesis

Having advanced a theoretical model for the synthesis (see section 3.3.1) we now turn to the next task – developing the actual synthesis. This section comprises the second and the third element of the synthesis process; that is, the task of establishing the synthesis by organising the findings of the studies available for the synthesis in order to develop an initial description of the studies and to look for possible patterns in the findings within and across the studies.

5.1 Factors that influence students’ language acquisition when learning a third language in school

As mentioned earlier, there are, according to Hufeisen’s Factor Model, six overall factors that have an influence on students’ language acquisition when learning a third language. Inspired by this model six overall factor categories are identified in the present synthesis as factors being treated as impact factors or factors having importance in the 43 studies available for the synthesis. These are (1) personal factors, (2) educational factors, (3) social and social psychological factors, (4) cognitive factors, (5) foreign language-specific factors, and (6) linguistic factors.

Figure 5.1 below shows that a wide range of factors have been examined in the studies available for the synthesis. The figure further shows which of the studies have investigated one or more of these six overall factors. For a list of study references in Figure 5.1, consult Appendix 3 ‘References for the studies available for the synthesis’.

Figure 5.1 Operationalised model of factors that influence students’ language acquisition when learning a third language in school. Please notice that references with a ‘+’ between refer to the same study and that secondary references are marked with a star (*)
(1) Personal factors (30 studies):

(2) Educational factors (25 studies):

(3) Social and social psychological factors (15 studies):

(4) Cognitive factors (20 studies):

(5) Foreign language-specific factors (9 studies):
Bardel, 2006; Bild & Swain, 1989; Brohy, 2001; Cenoz, 2001; Cenoz, 2003a; Cenoz, 2003b; Göbel et al., 2010; Lasagabaster & Doiz, 2003; Lindqvist, 2006 + Lindqvist, 2009*

(6) Linguistic factors (10 studies):
Bardel, 2006; Bérubé & Marinova-Todd, 2012; Brohy, 2001; Cenoz, 2001; Cenoz, 2003a; Gallardo del Puerto, 2007; Klawitter Beusch, 2011; Lukas et al., 2012; Swain et al., 1990; van Gelderen et al., 2003 + Schoonen et al., 2002*
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As observed from the figure above, the TLA research field is quite versatile concerning what factors are investigated as having an impact on students’ language acquisition when learning a third language in school. However, it also becomes clear that some factors have been investigated more thoroughly than others. This mostly relates to the neurophysiological element of age as well as learner external elements such as school programmes and methods within the overall factor categories 'personal factors' and 'educational factors'. Apart from this affective aspects such as motivation and attitude as well as more perceptive aspects consisting of linguistic awareness included in the overall factor categories 'social and social psychological factors' and 'cognitive factors' are found to be fairly well investigated, whereas the factors within the overall factor categories 'foreign language-specific factors' and 'linguistic factors' are found to be investigated somewhat more sporadically. Furthermore, the number of factors being examined, to what extent and for how long varies greatly in the included studies.

Of the 43 studies available for the synthesis, 30 of them include one or more aspects within the first overall factor category, the personal factors, in their analyses. Of these 30 studies, 19 studies find results related to age. Thus, many of the studies in this synthesis draw special attention to the effect of introducing third language instruction at different starting ages. For instance, among the Spanish studies, these can be divided into two overall language groups, those related to third language acquisition in the Basque Country where many studies analyse the effect of the age of introduction of English as a third language and studies from the Barcelona Age Factor (BAF) Project which aims at studying the age effect of the learning of English as a third language in Catalonia.

Furthermore, 10 studies examine students’ proficiency in L1 and/or L2, whereas other personal factors such as gender, socioeconomic status, migration background, affiliation and general language aptitude are found to be investigated to a lesser extent. Of the 43 studies available for the synthesis, 25 of them examine one or more educational factors. In total, 12 studies have examined different types of interventions, programmes or methods. Many of these are programmes that take place in educational settings where more than one official language exists, such as Switzerland or Canada. Eight studies have looked at length or amount of exposure to third language instruction, while teaching methods and teaching materials are in focus in six of the 25 studies. Three studies examine other types of input while a single study focuses on learning environment.

In total, 15 of the 43 studies included in the synthesis examine one or more social and social psychological factors. Nine of these focus on motivation, and six studies also investigate the students’ attitudes towards learning a third language. The use of
language, either L1 or the target language, outside school is a theme in five studies whereas three studies look into anxiety and students’ fear of making mistakes.

In total, 20 studies examine one or more cognitive factors, and in nine of these studies cognitive maturity is in focus. One form or another of linguistic awareness is examined in nine of the studies. Moreover, intelligence, lexical inferencing\textsuperscript{10} strategies, learning strategies and test-taking strategies are addressed in respectively one study each.

Of the 43 studies available for the synthesis, nine examine foreign language specific factors consisting of cross-linguistic influence, more specifically transfer, code-switching, word construction and interaction strategies, whereas 10 studies look at linguistic factors, being different aspects of typological phenomena and the characteristics of students’ L1, L2 and L3.

This organisation of the investigated factors across the included studies leads to a first, tentative assessment of which aspects and factors have a possible impact on students’ third language proficiency. Because of the more sporadic focus on foreign language-specific factors and linguistic factors, the evidence base on this matter is therefore rather small compared to the other investigated factors.

\section*{5.2 Thematic analysis}

In this chapter the research findings of the studies available for the synthesis will be presented followed by an assessment of its robustness that focuses on which elements of the synthesis and the foundations of it make its conclusions trustworthy (see Chapter 6).

Based on the previous organisation of the empirical investigation of factors influencing students’ language acquisition when learning a third language in school, the studies available for the synthesis have been inductively grouped into six overall themes in order “to understand how and why interventions have or do not have an effect or why particular barriers and/or enablers to implementation operate” (Popay 2006: 14). Moreover, the purpose of dividing the studies into these themes is to explore relationships within and across the included studies. These relationships can either be identified as those between characteristics of individual studies and their reported findings or those

\textsuperscript{10} Inferences are what students figure out based on an experience. Helping students understand when information is implied, or not directly stated, will improve their skill in drawing conclusions and making inferences. Inferential thinking is a complex skill that will develop over time and with experience (http://www.readingrockets.org/strategies/inference).
between the findings of different studies (Ibid.). During the process of developing a preliminary synthesis some patterns and key aspects emerged from the included studies. These are turned into the following six overall themes: (1) impact of immersion programmes, didactic programmes and school structure, (2) impact of age/early introduction to foreign language instruction in school, (3) impact of bilingualism and/or level of bilingual proficiency, (4) impact of language exposure outside school, (5) impact of the degree of formal language instruction in school, and (6) impact of L1/L2 on L3.

However, the investigated factors can be found across these identified themes which become evident in the following thematic analysis. Also, it should be noted that a single study’s results in many cases are included in more than one of the above mentioned themes; therefore repetitions occur.

This following section gives a short introduction to immersion programmes and larger research projects on the effect of age related to third language instruction in school. This is because these can be considered central issues in the included studies, and they are apparently also central areas in the research field of multilingualism.

*The impact of immersion programmes, didactic programmes and school structure*

Immersion is defined as an approach of second language instruction in which the regular school curriculum is taught through the medium of a second language. Thus, the second language is the language of instruction, not the subject of instruction itself. Total immersion is one programme format among several that range on a continuum in terms of time spent in the second language. In total immersion, all schooling in the initial years is conducted in the second language. Partial immersion differs from total immersion in that only 50% of the school day is conducted in the second language. While the term immersion programme is used only to refer to content instruction in the second language for a minimum of 50% of the school day, immersion concepts and techniques may be incorporated into other forms of second language instruction in school (Met, 1987: 311). In the included studies there are examples of French immersion programmes in Canada where students receive French instruction in kindergarten and begin English instruction in grade 4.

Several of the included studies take place in the Basque Country, Spain. In the Basque educational system, there are currently three linguistic models in which parents can enrol their children. **Model A** is a regular programme in which the students are instructed in the majority language, Spanish, and the minority language, Basque, is taught only as a school subject (for four to five hours per week). Model A is also re-
ferred to as Spanish-medium schools. The L1 of the students enrolled in this programme is Spanish. In Model B, which is an early partial immersion programme, both Basque and Spanish are used to different degrees as means of instruction. Basque may cover 50% of the instruction or more. The L1 of the students enrolled in this programme is usually Spanish. The third model, Model D\textsuperscript{11}, is a total immersion programme for students whose L1 is Spanish and a maintenance programme for students whose L1 is Basque. This model provides instruction entirely in Basque with Spanish as a school subject (taught for three to five hours per week), and is also referred to as Basque-medium schools (Lasagabaster, 2000; Sagasta Errasti, 2003). Moreover, studies that look at didactic programmes and school structure are included in this overall theme.

The impact of age/early introduction to foreign language instruction in school
A growing interest in the so-called ‘age issue’ relates for instance to practical concerns that have to do with questions of when it would be more appropriate to begin instruction in a foreign language. Thus, the age issue is obviously of great interest for language planners (García Mayo & García Lecumberri, 2003).

A great deal of the studies included in the synthesis is research that has been carried out with bilingual students who were learning English as a third language in two bilingual communities in Spain: Catalonia and the Basque Country. Some of these studies have been conducted in the framework of The Barcelona Age Factor (BAF) Project located at the University of Barcelona in Catalonia. The aim of this research project was to investigate the effects of initial age of language instruction on different aspects of language learning, all of which was within a formal language teaching framework. The project was initiated at a time when the changes in the timing of foreign language instruction brought about by the Spanish Educational Reform were being progressively implemented in both primary and secondary schools around Spain, entailing an earlier introduction of English as a foreign language in primary education from grade 6 to grade 3. The replacement of the previous curriculum by the new curriculum took eight years, during which time it was possible to find students who had begun instruction in English as a foreign language at the age of 11 under the previous curriculum and students who had begun English instruction at the age of eight under the new curriculum. The BAF project began in 1995, and data was collected between 1996 and 2002, thus allowing for longitudinal comparisons between early starters and late starters with the

\textsuperscript{11} The letter C does not exist in the Basque alphabet. The first three letters are A, B, D.
same number of hours of instruction. Three phases of comparison between early starters and late starters were used: the first phase after 200 hours of instruction, the second phase after 416 hours and the third after 726 hours. An extensive test battery was used in the BAF Project, as for instance a cloze test, a listening comprehension test, a phonetic discrimination test, oral and written tasks, role-playing tasks, etc. (Muñoz, 2006: 13-17).

Another group of studies included in the synthesis concern the age factor in foreign language acquisition in the Basque Country. These studies are part of a longitudinal research project initiated by the ‘Research in English Applied Linguistics’ (REAL) research group at the University of the Basque Country in order to investigate the effect of the age of introduction of English as a third language on general proficiency in English and on attitudes and motivation towards learning English. As in Catalonia the English language was traditionally introduced at the age of 11 in the Basque Country, but when the Spanish Educational Reform was implemented in 1993, foreign languages were introduced at the age of eight, three years earlier than previously. The Reform also considers important changes at the methodological level, including communicative competence, positive attitudes and metalinguistic awareness as desired goals for foreign-language teaching. However, the most popular project is a specific programme introducing English as a third language in the second year of kindergarten at the age of four. This programme was initiated on an experimental basis in several Basque model D schools, and similar initiatives have been developed in many other Basque medium schools and also in a large number of state schools. Because this programme started in 1991, it provided the possibility of comparing groups of students who had started their English instruction at three different ages (at the age of four, at the age of eight, and at the age of 11) within the same bilingual programme and school curriculum. The data collection in this Basque research project started in 1996 (Cenoz, 2003b: 80-81).

5.3 Theme one: Impact of immersion programmes, didactic programmes and school structure

This theme includes studies that all focus on specific ways of organising schools or specific didactic programmes and their influence on students’ third language acquisition.

The studies included in this theme have been divided into the following three categories: immersion programmes (Bérube & Marinova-Todd, 2012; Bild & Swain, 1989;
Cenoz & Valencia, 1994; Lasagabaster Herrarte, 1998a; Sagasta Errasti, 2003; Sanz, 2000; Valencia & Cenoz, 1992), didactic programmes (Göbel et al., 2010; Lukas et al., 2012) and finally school structure (Engel de Abreu & Gathercole, 2012; Griessler, 2001; Haenni Hotti, 2011).

In total, 12 studies analyse how specific ways of organising schools or specific didactic programmes have an impact on third language acquisition. These studies are presented in Table 5.1 below. For a more detailed description of the studies, see Appendix 3 ‘Abstracts for the studies available for the synthesis’.
<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Focus/foci</th>
<th>Factor(s)</th>
<th>Reception(s)</th>
<th>Vocabulary/grammar</th>
<th>Production(s)</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bérubé &amp; Marinova - Todd (2013)</td>
<td>Canada</td>
<td>Immersion</td>
<td>Personal, educational, social/social psych., cognitive</td>
<td>Reading</td>
<td></td>
<td>Speaking</td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Bild &amp; Swain (1989)</td>
<td>Canada</td>
<td>Immersion</td>
<td>Educational, foreign language specific</td>
<td>Vocabulary/grammar</td>
<td></td>
<td>Speaking, writing</td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Cenoz &amp; Valencia (1994)</td>
<td>Spain, Basque Country</td>
<td>Immersion</td>
<td>Personal, educational, social/social psych., cognitive</td>
<td>Reading, listening</td>
<td>Vocabulary/grammar</td>
<td>Speaking, writing</td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Engel de Abreu &amp; Gathercole (2012)</td>
<td>Grand Duchy of Luxembourg</td>
<td>School structure</td>
<td>Educational, cognitive, reading, listening</td>
<td>Vocabulary/grammar</td>
<td></td>
<td></td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Griesler (2001)</td>
<td>Austria</td>
<td>School structure</td>
<td>Personal, educational</td>
<td>Vocabulary/grammar</td>
<td></td>
<td></td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Göbel et al. (2010)</td>
<td>Germany</td>
<td>Didactic programme</td>
<td>Educational, foreign language specific</td>
<td>Reading, listening</td>
<td>Vocabulary</td>
<td>Speaking, writing</td>
<td>Longitudinal study: Cohort based study</td>
</tr>
<tr>
<td>Haenni Hoti et al. (2011)</td>
<td>Switzerland</td>
<td>School structure</td>
<td>Personal, social/social psych.</td>
<td>Reading, listening</td>
<td>Vocabulary/grammar</td>
<td>Speaking</td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Lasagabaster</td>
<td>Spain, Basque</td>
<td>Immersion</td>
<td>Educational, social/social psych.</td>
<td>Reading,</td>
<td>Vocabulary/grammar</td>
<td>Speaking</td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Herrarte (1998a)</td>
<td>Country</td>
<td>Didactic programme</td>
<td>cognitive</td>
<td>listening</td>
<td>writing</td>
<td>study</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
<td>--------------------</td>
<td>------------------------------------</td>
<td>-------------------------</td>
<td>---------</td>
<td>--------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Lukas et al. (2012)</td>
<td>Spain, Basque Country</td>
<td>Didactic programme</td>
<td>Educational, social/social psych., linguistic</td>
<td></td>
<td>writing</td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
<td></td>
</tr>
<tr>
<td>Sagasta Errasti (2003)</td>
<td>Spain, Basque Country</td>
<td>Immersion</td>
<td>Personal, educational, social/social psych.</td>
<td></td>
<td>Writing</td>
<td>Cross-sectional study</td>
<td></td>
</tr>
<tr>
<td>Sanz (2000)</td>
<td>Spain, Catalonia</td>
<td>Immersion</td>
<td>Personal, educational, social/social psych.</td>
<td>Vocabulary/grammar</td>
<td></td>
<td>Cross-sectional study</td>
<td></td>
</tr>
<tr>
<td>Valencia &amp; Cenoz (1992)</td>
<td>Spain, Basque Country</td>
<td>Immersion</td>
<td>Personal, educational, social/social psych.</td>
<td>Reading, listening</td>
<td>Vocabulary/grammar Speaking, writing</td>
<td>Cross-sectional study</td>
<td></td>
</tr>
</tbody>
</table>
5.3.1 Immersion programmes

The first category within this theme concerns studies that investigate the impact of immersion programmes on third language acquisition. Seven studies are included in this category.

One of the studies looking at immersion programmes is the study by Bérubé & Marinova-Todd (2013) which investigates how sociolinguistic factors, metalinguistic awareness, language proficiency, and literacy skills in the L2 relate to language proficiency and literacy skills in the L3 for bilinguals enrolled in a French immersion programme. All students were enrolled in the immersion programme from an early age and had therefore received French instruction since kindergarten, and began receiving English instruction in grade 4.

The results from the study by Bérubé & Marinova-Todd (2013) showed that oral language proficiency and reading comprehension in L2 English had a positive impact on oral language proficiency and reading comprehension skills in L3 French, when controlling for the amount of reading in French and morphological awareness in English. Motivation to learn French (L3) did not have an impact on neither oral proficiency nor reading comprehension. Moreover, parental SES and the frequency with which the student read independently in French during or outside school significantly correlated with both oral proficiency and reading comprehension in French. However, the total number of books in the household was significantly associated with oral proficiency in French, but not with reading comprehension. The authors also conclude that although the bilingual students received instruction in French (L3) throughout most of the time spent in school, this does not seem to prevent them from developing age-appropriate skills in both their L2 and L3. Also the authors consider that oral proficiency and reading skills in the L2 are almost of equal importance in regard to the impact on L3.

Another study that investigates French immersion programmes is the study by Bild and Swain (1989). The purpose of this is to compare the French proficiency of minority bilinguals to that of monolinguals in a French immersion programme in Ontario, Canada. The study aims to examine whether the bilinguals benefit from acquiring an L3 at an early stage or if it hinders their language skills development and therefore leads to a lower French proficiency level compared to that of the monolinguals. The immersion programme offered instruction almost solely in English from the start of the programme until the end of grade 4 and 50-50 English/French instruction from grade 5 and onwards.
The results from the study by Bild & Swain (1989) show that bilingual students in general acquired a higher level of French proficiency compared to monolingual students. This suggests, according to the researchers, that bilingual students learn French more effectively than their monolingual peers. The authors therefore conclude that bilingual students are well suited for French immersion programmes and that the results point towards bilinguals having a substantial advantage over monolinguals in regard to learning French. The researchers also conclude that the French proficiency of bilingual participants did not seem to suffer as a result of knowing three languages. Rather, the bilinguals seemed to benefit from their additional linguistic knowledge. In conclusion the authors offer metalinguistic awareness and ability to transfer from both the L1 and the L2 as an explanation for the higher proficiency levels among the bilinguals.

Cenoz and Valencia (1994) investigate the effect of bilingualism on the acquisition of a third language, and the effect of instruction in a minority language on third language acquisition. The study is conducted in the Basque country and compares the acquisition of English L3 by high school students in majority (model A) and minority (model D) language programmes12.

The results obtained in the study by Cenoz and Valencia (1994) show that the use of a second language (Basque) as the language of instruction can have a positive influence on the acquisition of a third language (English) for students whose first language (Spanish) is a dominant language in the community. Furthermore, the use of Basque as the language of instruction for native Basque speakers has positive linguistic outcomes in third language acquisition. According to the authors, the advantage of the bilinguals can be explained in terms of their higher level of metalinguistic awareness and their ability to use their knowledge of two other linguistic systems when learning a third language.

Another study that examines the three linguistic programmes offered in the Basque Country is a study carried out by Lasagabaster Herrarte (1998a). The purpose of this study is to examine if there is a correlation between the different linguistic pro-

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12 Model A is a regular programme in which the students are instructed in the majority language, Spanish, and the minority language, Basque, is taught only as a school subject (for four to five hours per week). In Model B, which is an early partial immersion programme, both Basque and Spanish are used to different degrees as means of instruction. Basque may cover 50% of the instruction or more. Model D is a total immersion programme for students whose L1 is Spanish and a maintenance programme for students whose L1 is Basque. This model provides instruction entirely in Basque with Spanish as a school subject (taught for three to five hours per week).
grammes and students’ English proficiency. The author also examines the relationship between the students’ metalinguistic awareness and their English proficiency. The students’ English proficiency was measured using speaking, writing, listening and reading tests and a vocabulary and grammar test. An overall English score was constructed based on the five English tests. Based on their scores, the author constructs three proportional groups of students, with the highest scoring students in group 1, the medium scoring students in group 2 and the lowest scoring students in group 3. Three similar groups are constructed based on the students’ scores in a metalinguistic awareness test.

The results from the study by Lasagabaster Herrarte (1998a) show that the students with a higher degree of bilingual proficiency scored higher on tests of metalinguistic awareness and English proficiency. The students in Basque model D outnumbered the students in model B in group 1 (the highest scoring students) and the students in model B outnumbered the students in model A. This goes for both grades 5 and 8. The opposite picture can be seen in group 3 for both metalinguistic awareness and English proficiency since there were more model A students in this group than model B and model D students. Since the students in model D and model B, according to previous research, had a higher proficiency in Basque than the students in model A, the author argues that bilingual students are better at learning a third language and have a higher metalinguistic awareness than monolinguals.

Following is the study by Sagasta Errasti (2003) which is also conducted in the Basque country. This study examines the influence of bilingualism on proficiency in L3 English writing according to model of schooling. The study also aims to find a possible relationship between Basque, Spanish and English writing skills and to show whether language use patterns influence third language proficiency. The students were all enrolled in a Basque model D school. This model can be defined as maintenance when it involves students who speak Basque at home and immersion when applied to students who only speak Spanish. Half the students had Basque as their first language or spoke mainly Basque at home, at school and in social contexts and are therefore referred to as model D-maintenance. The other half had Spanish as their first language or tended to speak more Spanish than Basque. They are referred to as model D-immersion.

Sagasta Errasti (2003) finds that students in model D-maintenance develop a higher competence in writing skills in Basque than the students in model D-immersion. Both groups have been instructed through the medium of Basque throughout their schooling, but students in model D-maintenance are high users of Basque outside school in comparison to their peers in model D-immersion who are high users of Spanish outside school. These results suggest that use of a minority language (Basque) contributes to a higher level of competence in that language. According to the author,
these findings also show that in a language contact situation, education through the medium of the minority language contributes to fostering high levels of additive bilingualism in the majority and the minority language. Additive bilingualism can be explained as the situation in which a person’s second language is unlikely to interfere with his/her first language. The study also finds that all the students are highly competent in Basque and Spanish but that it is the students with the highest degree of bilingual competence in Basque and Spanish who achieve the best scores in written production in English. Additionally, the results show that the students who mainly speak Basque in school and in social contexts outperform the students who use Spanish most. Overall, the study finds that students who tend to use mainly Basque in school and in social contexts show a higher competence in written English, they are more fluent, their vocabulary is more complex and they make fewer errors. Nevertheless, the study finds that choice of language at home has no effect on proficiency in the writing of English in this sample of students. The author concludes that the language model used in schooling is crucial in developing high levels of language competence, but that the language model used in schooling is not enough. Language use outside the curriculum also plays an important role. Therefore, the study concludes that social factors are as important as educational factors when it comes to understanding bilingual and trilingual development in contexts with two official languages, a majority language and a minority language.

Another study conducted in the Basque Country is the study by Valencia and Cenoz (1992). The overall purpose of this study is to explore the relationship between bilingualism and the acquisition of a third language. The study is, however, included in this theme because half of the students in the sample had Spanish as their vehicular language\(^\text{13}\) and attended a Spanish-medium school (model A); that is, a school where Spanish is the language of instruction and Basque is taught as a school subject (4 to 5 hours per week). The other half used Basque as their vehicular language and attended a Basque-medium school (model D), where Basque is the language of instruction, and Spanish is taught as a school subject (4 to 5 hours per week).

The study by Valencia and Cenoz (1992) shows that students who have Basque as the medium of instruction (model D) present significantly higher scores in L3 English tests of speaking, listening and vocabulary and grammar than students instructed in Spanish (model A). Therefore, the results indicate that when one of the languages

\(^{13}\) Vehicular language is a language systematically (as opposed to occasionally, or casually) used to make communication possible between persons not sharing a native language, in particular when it is a third language, distinct from both native languages.
that the bilingual learner knows (Basque in this case) is a minority language, bilinguals
obtain better results in L3 (English) when their minority language is valued and used
in the family and in education. Thus, the study suggests a relation between linguistic
school programme and third language achievement.

The seventh and last study in this category is by Sanz (2000). In the textbox below a more detailed description of the study by Sanz (2000) is given. This is to give an
example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies
available for the synthesis’.

The purpose of this study by Sanz (2000) is to investigate the relationship between students’
biliteracy in the minority and majority languages (Catalan and Spanish) and the acquisition of
English as a third language. This is done by comparing the English proficiency of high school
students attending a monolingual school in a monolingual area of Spain with their peers in a
bilingual school of similar characteristics in a Catalan bilingual area. Specifically, the study iso-
lates a number of independent variables, including bilingualism, which could contribute to the
acquisition of an L3 in order to answer the following research questions: Does Catalan/Spanish
bilateral bilingualism contribute to more efficient acquisition of English as an L3? Is that con-
tribution independent from that of other predicting factors, such as intelligence, motivation,
or sociolinguistic status?

201 students (77 monolinguals and 124 bilinguals) participated in this cross-sectional study
conducted in two high schools in northern Spain. One school was a bilingual school (immersion
programme) where Catalan was the language of instruction and the students were biliterate in
Spanish and Catalan. In the other school Spanish was the language of instruction, and the stu-
dents were all monolingual Spanish speakers. All students completed questionnaires regarding
personal information such as gender and socioeconomic background, attitudes and motivation
to learn English, as well as formal and informal exposure to English. The students’ intelligence
was measured via the Raven’s Progressive Matrices Test, and their English proficiency was
tested using the Comprehensive English Language Test (CELT) by means of a vocabulary sub-
test and a structure subtest (the listening subtest was not applied). The structure subtest
measures the students’ grammatical knowledge in terms of lexical, morphosyntactic and cohe-
sive form and meaning, whereas the vocabulary subtest measures the students’ general vo-
cabulary knowledge. Multiple regression analysis was applied to assess the relationship be-
tween biliterate bilingualism and English proficiency. The dependent variable was English pro-
ficiency, calculated as the sum of the scores from the vocabulary and structure tests.

The author found a positive relationship between being biliterate in Spanish and Catalan, and
English proficiency, as the results of the study shows that the biliterate students scored higher
in the tests of English proficiency than the monolingual students after controlling for relevant background variables. The author also found a positive relationship between motivation to learn English and formal exposure to English (such as number of English courses and the hours per course at school) and English proficiency, whereas factors such as age and intelligence did not prove to be significant predictors of English achievement. However, according to the author, this might be due to limitations in the testing procedure.

Furthermore, the author concludes that schooling in a minority language (immersion programmes), in this case Catalan, produces more efficient language learners. However, the author also notes that this does not mean that one can assume the same results for all bilingual programmes around the world. According to the author, Catalans expect their children to be better language learners if they attend a bilingual school whose goal is to promote additive bilingualism. Therefore, the author suggests that positive attitudes toward other linguistic communities and expectations about language learning have an effect of motivating students, whether learning a second or third language.

Read more in: Bilingual education enhances third language acquisition: Evidence from Catalonia. (Sanz (2000)).

5.3.2 Didactic programmes

This second category contains two studies that investigate the impact of specific didactic strategies on third language acquisition.

The aim of the study by Göbel et al. (2010) is to investigate whether or not positive influence from immigrant students’ linguistic background is supported by teachers in language instruction, i.e. if similarities, transfer and/or inference to the students’ native languages can be of productive use in teaching. The main focus is language transfer support as a strategy in teaching. Language transfer support strategy includes both the students’ native language as well as foreign language. L1 and L2 are seen as resources in relation to learning an L3 in school. The study examines whether language transfer is systematically supported in English (L2 or L3) and German (L1 or L2) lessons, and to what extent students can benefit from such language support as a strategy in teaching. More specifically this study seeks to answer the following questions: 1) Is language transfer systematically supported during English and German lessons by different teachers? 2) Which factors support the language transfer? 3) Is there any connection between the language transfer support and the students’ performance in German and English? 4) Is there any difference in the connection between the students’
native languages and the language transfer support with regards to the tests in German and English?

Göbel et al. (2010) find that the effects of the language transfer support on students’ achievements are dependent on the language that is being taught. The language transfer support during German (L1 or L2) lessons only had a slightly positive effect on the students’ achievements, no conclusion on the significant correlation between language transfer support and the students’ achievements can therefore be made. During English (L2 or L3) classes there was a significant correlation between linguistic transfer support and the students’ achievements, meaning that the more linguistic language support the students received, the higher they tended to score, in the English test. The multilingual students scored significantly higher in the English test than the German monolingual students, whereas the German monolingual students and the non-German students showed no significant difference when compared. The overall positive effects of the language transfer support in English direct attention to teaching strategies that include language transfer support. It can be concluded that the implementation of the language transfer support in German lessons was more effective when the number of non-German students was high. According to the authors, the use of language transfer support in English lessons depends on the English teachers’ contact with the English speaking countries abroad and therefore relies on the teachers’ own competences and experiences.

The second study in this category is a study by Lukas et al. (2012). In the textbox below a more detailed description of the study by Lukas et al. (2012) is given. This is to give an example of a full abstract as can be found in Appendix 3 “Abstracts for the studies available for the synthesis”.

The purpose of this study by Lukas et al. (2012) is to examine the impact of the IKASYS programme on students’ performance in Basque, Spanish and English in grades 2, 4 and 6. Additionally, the study aims at examining the influence of students’ mother tongue, their use of language at home, their attendance at private classes of English, and how their motivation and participation in the IKASYS programme impacts on the scoring obtained in learning the three languages.

The IKASYS programme is a computer-based learning programme for multilingual learning that enables each student to work at his or her own pace independently and have his or her work corrected immediately, thus making possible the improvement of their learning skills. The programme is based on a didactic contract in which the teacher and the student agree on what work is to be done (the number of exercises, levels of difficulty to reach, time given over to
study etc.). Thus, each student will work on the agreed exercises on the basis on his or her level. The teacher supervises the work and offers any help required. As students do the exercises, the computer programme corrects them simultaneously. Once the work is finished, the teacher and the student carry out an assessment of the activities and the difficulties that may have arisen. And, on the basis of their evaluation, they decide what work commitments are to be established on that basis.

Data for this quasi-experimental study was collected in 19 schools in the Basque Country. The schools each had to have at least two classes from each of the school years studied under the programme (grades 2, 4 and 6 of Primary Education). The IKASYS programme was applied in one of the classrooms (the experimental group), the other being the control group, who continued with their usual school curriculum. A total of 2405 students participated in the study. At the end of the process, data on performance in both groups was collected and compared in order to analyse the possible impact of the programme. All the students completed performance tests to measure their proficiency in Basque, Spanish and English. In addition, they completed a questionnaire which included questions on their mother tongue, use of language at home, attendance at private English lessons and their satisfaction with the IKASYS programme. T-tests and ANOVA analyses were performed on the data obtained.

The results show that students who participated in the IKASYS programme obtained better results in Basque, Spanish and English than those who followed the usual curriculum. This situation was repeated over the three school years studied, although the differences were more marked in grade 2, becoming less so in grades 4 and 6.

Furthermore, the study finds that students participating in the IKASYS programme show themselves to be highly motivated when using a computer as a complement to learning the three languages. Nevertheless, the level of motivation falls as age increases, and this motivation also reduces the influence on performance, thus making the differences between the experimental group and the control group less as students get older.

Independently of whether the students participated in the programme or not, in all the school years studied, the study finds that those students whose mother tongue/home language is Basque, or mixed (Basque and Spanish), obtain better results in the Basque language. According to the authors, this finding can be explained by the fact that these students have greater opportunities of interacting in Basque compared to those whose mother tongue or home language is Spanish and for whom practically the only possibility of using Basque is at school. On the other hand, in terms of the Spanish language, independently of whether the students have participated in the programme or not, no differences are observed in any of the school years. According to the authors, this may be because the mother tongue or home language does not have such a decisive influence, given that all of them have many opportunities for using Span-
ish, both within and outside school.

Further, the results show that students who participated in the programme obtained better scores in English than those who did not take part, independently of whether they attended private English lessons or not. Nevertheless, the results show that the improvement occurring in students participating in the programme is superior amongst those who do not attend private lessons compared to those who do.

Moreover, the results show that, independently of whether the students participated or did not participate in the IKASYS programme, in all the school years studied, students whose mother tongue and/or home language is Basque obtained statistically significant higher scores in English than those whose mother tongue and/or home language is Spanish. Thus, the study indicates that students whose mother tongue/home language is a minority language (Basque) obtain a higher level of bilingualism than students whose mother tongue/home language is a majority language (Spanish). In other words, the study indicates a positive influence of a higher level of bilingualism on third language acquisition.

Read more in: Computer-Assisted Language Learning (CALL) and trilingualism in the Basque Country. (Lukas et al. (2012)).

5.3.3 School structure

The three studies included in this last category focus on either the different ways of organising schools or different education programmes and how this impacts third language acquisition.

The first study in this category is a study by Griessler (2001) which compares the development of two age groups and three different education programmes. The main objective is to investigate the effectiveness of L2 English instruction at three Austrian schools with different approaches to language teaching. Two specific programmes with a linguistic focus and a regular high school are compared: (1) the Linz International School Auhof (LISA), an immersion school employing English as the language of instruction throughout the curriculum, (2) the Lycée Danube, which teaches English according to the traditional high school curriculum, yet introduces French as a third language at an early stage, and (3) a regular Austrian high school, or Bundesrealgymnasium (hereafter referred to by its abbreviation BRG), which is a school with a science focus rather than a language focus. The study examines whether the ambition to learn
a third language (French) has any effect on the students’ proficiency in the second language (English).

The results from Griessler’s (2001) study indicate a positive effect of third language learning on second language proficiency, and the results show positive effects of immersion education on lexical development and grammatical accuracy. Regarding the learning effects over time, the results show that the developmental progress with regard to vocabulary learning was highest within the Lycée group, while hardly any add-on effect is observed in the BRG students. Griessler suggests that the students’ progress faster in their second language when learning a third language. In the case of verbal morphology, the results show that the developmental progress is most pronounced within the BRG group. A possible explanation for this might be that, unlike immersion education (as represented by LISA), traditional language classes still put greater emphasis on formal correctness than on vocabulary development. Griessler offers the use of English as the language of instruction as an explanation for the better performance of LISA students. This is undoubtedly a major factor with very positive effects. However, the significance of other factors in effective foreign language learning becomes especially evident from the analysis of the Lycée students’ performance. While the success of LISA has been largely attributed to input and teaching methods, these factors cannot account for the difference between Lycée and BRG scores. According to the author, the mutual influence between L1 and L2 might explain the enormous progress Lycée students make from grade 6 to grade 9.

In Engel de Abreu & Gathercole (2012) the purpose is to examine the relationship between executive and phonological processes and L1-, L2-, and L3-proficiency in 8-9-year-old learners who follow the same multilingual curriculum. Specifically, the study explores the cross-sectional links between identified factors and proficiency in vocabulary, grammar and literacy across different language gauges (L1, L2, and L3). The study was conducted in the Grand Duchy of Luxembourg, where the education system is trilingual: in kindergarten (compulsory for ages four–six years) the language of instruction is Luxembourgish; no second languages are taught or used by the teachers. In year 1 (age six–seven) students start to learn their second language, German. Luxembourgish and German are used as the media of instruction; however, students learn to read and write in German - not in Luxembourgish. Oral French is introduced as a school subject in the second term of year 2 (age seven–eight) and French literacy starts in year 3. Thus, the study focuses on interplay of factors in an educational system that introduces two foreign languages at an early point.
According to Engel de Abreu & Gathercole (2012), the capacity to discern the sound system of a language might be particularly important in the early stages of acquiring an additional language with an unfamiliar phonology. Hence, the study therefore suggests that language familiarity might be an important factor to consider in third language acquisition: whereas long-term lexical knowledge in L1 appears to play a crucial role in the acquisition of a familiar L2, native language contributions to L2-learning might diminish and basic cognitive processes gain in importance as familiarity with L1 increases. Most notably, basic phonological processing abilities in the native language seem to be an important facilitator to success in the learning of a third language with an unfamiliar phonology. Finally, the study shows that executive processes of working memory make general rather than specific contributions to language learning, possibly in terms of attentional control mechanisms that actively maintain crucial information and regulate controlling processes during complex and effortful learning activities present in many classroom situations.

However, the authors stress that it is a major limitation of the study that the participating students had received instruction in L2 German substantially longer than in L3 French and that they were tested after only four months of L3 French instruction and had not explicitly been taught French phonology (which is not part of the Luxembourgish curriculum). Therefore, it is likely that the students in this study had not yet created stable representations of the different sound units in the French language, which might have shadowed the contribution of short-term storage to vocabulary learning. The authors thus underline that the observed results might be related to length of instruction rather than language typology.

The last study in this category is by Haenni Hoti et al. (2011). In the textbox below a more detailed description of the study by Haenni Hoti et al. (2011) is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’.

The purpose of this study by Haenni Hoti et al. (2011) is to examine whether German speaking students who have been learning English from grade 3 onwards will show higher French proficiency in listening and reading in grade 5 than students who have had no previous English instruction. Following a school reform in Switzerland, some German speaking cantons have implemented a new model where English is the first foreign language (L2) to be learnt at school (from grade 3 onwards), followed by French (L3) as the second foreign language (from grade 5 onwards) (called the 3/5 model). Since the cantons have implemented this school reform at different rates, the 3/5 model is compared to the old model with French instruction only, start-
ing in grade 5 (called the 0/5 model).

The basis of the study is that the same language, French in this case, is learnt more efficiently as an L3 (model 3/5) than as an L2 (model 0/5), because students with previous foreign language experience in English can use their foreign language skills as a resource when learning a third language. Hence, two hypotheses are put forward in the study: 1) Students who have been learning English (L2) from grade 3 onwards will show higher French (L3) skills on average in grade 5 than students who have had no previous English instruction. 2) The higher the students’ English (L2) skills are the higher their French (L3) skills will be. In order to examine if L2 skills (listening and reading) have an impact on third language acquisition on their own, the authors also examine the following individual and contextual factors: age, type of study plan, school class affiliation, motivation, feelings of being overburdened and fear of making mistakes, self-concept as a learner of French, attitudes towards French speakers and countries, metacognitive, cognitive and social learning strategies and language background, German (L1) reading skills, English (L2) listening and reading skills. Furthermore, the following demographic and family related factors are examined: gender, cantonal affiliation, nationality, length of residency in Switzerland, literacy of the household and parental assistance with learning French.

The sample in this quasi-experimental study consists of two groups of students following the two different foreign language learning models. The cantons of Obwalden, Zug and Schwyz introduced the new 3/5 model in the school year 2005/2006 while the canton of Lucerne introduced the model in the school year 2007/2008. In the study 552 students in the new 3/5 model in Obwalden, Zug and Schwyz are compared to 376 students in the old 0/5 model in Lucerne. All students’ French proficiency skills in listening and reading were assessed by the end of grade 5. German reading skills were assessed in grades 3 and 4 for all students while English listening and reading skills for students in the 3/5 model were assessed in grades 3-5. Apart from the achievement tests, the study involved a questionnaire filled in by all students that encompassed demographic variables and questions about learning strategies, motivation and self-concept as a learner of English/French. Multilevel regression analyses were used to compare the French skills of both groups of learners while controlling for a large number of variables which might influence the scores on the achievement tests in French.

The first hypothesis concerning the influence of previous English instruction on the French skills of the students was confirmed as was the second hypothesis concerning what role L2 skills in English play in the prediction of L3 skills. Furthermore, the results show that, apart from previously acquired linguistic skills, specific demographic, social psychological and contextual factors contribute to the explanation of listening and reading skills in the L3 of the students.
The comparison of students with and without English instruction revealed that students with English instruction from grade 3 displayed higher skills in French than students with no English instruction. Consequently, after one school year, students who learned French as an L3 were more successful than students who learned French as an L2. The students learning French as an L2 performed significantly lower in both the French listening and reading tests than the students who were learning English as an L2 and French as an L3. The students’ listening and reading skills in French were also related to other variables, notably their German (L1) reading skills in grade 4 and their self-concept as learners of French (meaning the students’ perception of their French competence, their ease of learning and their expectations for success). The better the students were at reading German and the more positive their perception of their own competence in French were, the better they performed in the French listening and reading test at the end of grade 5. Students’ age also plays a role in French listening and reading. Students who were 12 years old or older in grade 5 scored significantly lower in the French listening test than students who were younger than 11 years. In French reading the group of 12-year olds or older students scored significantly lower than did the younger students.

Moreover, a positive correlation between the number of languages spoken in the family and the students’ French listening skills was also found, indicating that students with a bi- and multilingual family background are at an advantage compared to monolingually raised students when learning French.

For the students in the 3/5 model the authors also examined what role L2 skills in English played in the prediction of their French proficiency skills. The analyses revealed that the better the students performed in the English listening test in grade 3 and grade 4, the better they performed in the French listening test. Equally, the better the students performed in the English reading tests and the German reading test, the better they performed in the French reading test.

Read more in: Introducing a second foreign language in Swiss primary schools: The effect of L2 listening and reading skills on L3 acquisition. (Haenni Hoti et al. (2011)).

5.3.4 Summary on Impact of immersion programmes, didactic programmes and school structure

Seven studies in this theme focus on the impact of immersion programmes, while three studies examine specific school structures on third language acquisition. Furthermore, two studies examine the impact of two specific didactic programmes on the learning of a third language.
A few key points across the ten studies included in the categories *Immersion programmes* and *School structure* are summarised as followed:

- Attending French immersion programmes from an early age does not seem to hinder bilingual students from developing age-appropriate skills in both their L2 (English) and L3 (French).
- The use of L2 as the instruction language can have a positive influence on acquisition of an L3.
- Schooling in a minority language can produce more efficient language learners.
- Immersion programmes can have positive effects on third language acquisition.

The results from the studies under the category *Didactic programmes* are summarized below. It should be made clear that two studies only are included in this category:

- Language transfer support can have positive effects on students’ L3 acquisition in school.
- The effect of language transfer support relies on the teacher’s own competences and experience.
- Students working with IKASYS can obtain better results than of those following the usual curriculum.
- Students are motivated when working with IKASYS as a complement to learning three languages, however the level of motivation falls as age increases.

**5.4 Theme two: Impact of age/early introduction to foreign language instruction in school**

The most frequently studied factor in the category *personal factors* is age, which forms the basis of this second overall theme. This section thus contains the results obtained from the 19 studies available for the synthesis focusing on the *Impact of age/early introduction to foreign language instruction in school*.

As will be made clear in the next section, a great deal of the studies included in this overall theme represent research that has been carried out with bilingual students
who were learning English as a third language in two bilingual communities in Spain: Catalonia and the Basque Country. Some of these studies have been conducted in the framework of The Barcelona Age Factor (BAF) Project located at the University of Barcelona in Catalonia, while others are framed by a longitudinal research project initiated by the ‘Research in English Applied Linguistics’ (REAL) research group at the University of the Basque Country.

Included in this overall theme are studies that investigate starting age in relation to early introduction of a third language in a formal instructional setting (Cenoz, 2001; Cenoz, 2003a; Cenoz, 2003b; Fullana, 2006; Gallardo del Puerto, 2007; García Lecumberri & Gallardo, 2003; García Mayo, 2003; Griessler, 2001; Lasagabaster & Doiz, 2003; Miralpeix, 2006; Mora, 2006; Muñoz, 2003; Muñoz, 2006; Muñoz, 2011; Navés et al., 2003; Ruiz de Zarobe, 2002; Ruiz de Zarobe, 2005; Thees, 1999; Torras & Celaya, 2001). The 19 studies that have been identified as studies that analyse the impact of age/early introduction to foreign language instruction in school are presented in Table 5.2 below. For a more detailed description of the studies, see Appendix 3 ‘Abstracts for the studies available for the synthesis’.
<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Focus/foci</th>
<th>Factor(s)</th>
<th>Reception(s)</th>
<th>Vocabulary/grammar</th>
<th>Production(s)</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cenoz (2001)</td>
<td>Spain, Basque</td>
<td>Starting age and cross-linguistic influence</td>
<td>Personal, cognitive, foreign language specific, linguistic</td>
<td>Speaking</td>
<td></td>
<td></td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Cenoz (2003a)</td>
<td>Spain, Basque</td>
<td>Starting age and cross-linguistic influence</td>
<td>Cognitive, foreign language specific, linguistic</td>
<td>Speaking</td>
<td></td>
<td></td>
<td>Longitudinal study: Cohort based study</td>
</tr>
<tr>
<td>Cenoz (2003b)</td>
<td>Spain, Basque</td>
<td>Starting age and cross-linguistic influence</td>
<td>Personal, educational, social/social psych., cognitive, foreign language specific</td>
<td>Reading, listening</td>
<td>Speaking, writing</td>
<td></td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Fullana (2006)</td>
<td>Spain, Catalonia</td>
<td>Starting age</td>
<td>Personal, educational</td>
<td>Listening</td>
<td>Speaking (imitation pronunciation)</td>
<td></td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Gallardo del Puerto (2007)</td>
<td>Spain, Basque</td>
<td>Starting age</td>
<td>Personal, educational, linguistic</td>
<td>Listening</td>
<td></td>
<td></td>
<td>Case-control study</td>
</tr>
<tr>
<td>Garcia &amp; Gallardo (2003)</td>
<td>Spain, Basque</td>
<td>Starting age and cognitive maturity</td>
<td>Personal, educational, cognitive</td>
<td>Listening</td>
<td>Speaking</td>
<td>Cross-sectional study</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.2: Table illustrating studies within the theme ‘Impact of age/early introduction to foreign language instruction in school’.
<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Variable</th>
<th>Context</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>García Mayo (2003)</td>
<td>Spain, Basque Country</td>
<td>Starting age and cognitive maturity</td>
<td>Personal, educational, cognitive</td>
<td>Longitudinal study: Cohort based study</td>
</tr>
<tr>
<td>Griessler (2001)</td>
<td>Austria</td>
<td>Starting age</td>
<td>Personal, educational</td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Lasagabaster &amp; Doiz (2003)</td>
<td>Spain, Basque Country</td>
<td>Starting age and cross-linguistic influence</td>
<td>Personal, cognitive, foreign language specific</td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Miralpeix (2006)</td>
<td>Spain, Catalonia</td>
<td>Starting age</td>
<td>Personal</td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Mora (2006)</td>
<td>Spain, Catalonia</td>
<td>Starting age</td>
<td>Personal</td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Muñoz (2003)</td>
<td>Spain, Catalonia</td>
<td>Starting age</td>
<td>Personal, educational, Listening</td>
<td>Longitudinal study: Other than cohort based</td>
</tr>
<tr>
<td>Muñoz (2006)</td>
<td>Spain, Catalonia</td>
<td>Starting age and cognitive maturity</td>
<td>Personal, cognitive, Reading, listening</td>
<td>Longitudinal study: Cohort based study + Cross-sectional study</td>
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<tr>
<td>Muñoz (2011)</td>
<td>Spain, Catalonia</td>
<td>Starting age</td>
<td>Personal, educational</td>
<td>Cross-sectional study</td>
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<tr>
<td>Study (Year)</td>
<td>Country/Location</td>
<td>Starting Age and Cognitive Maturity</td>
<td>SEL Factor</td>
<td>Task/Outcome</td>
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<td>Navés et al. (2003)</td>
<td>Spain, Catalonia</td>
<td>Starting age and cognitive maturity</td>
<td>Personal, educational, cognitive</td>
<td>Writing</td>
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<tr>
<td>Ruiz de Zarobe (2002)</td>
<td>Spain, Basque Country</td>
<td>Starting age and cognitive maturity</td>
<td>Personal, educational, cognitive</td>
<td>Speaking, writing</td>
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<tr>
<td>Ruiz de Zarobe (2005)</td>
<td>Spain, Basque Country</td>
<td>Starting age and cognitive maturity</td>
<td>Personal, educational, cognitive</td>
<td>Speaking, writing</td>
</tr>
<tr>
<td>Thees (1999)</td>
<td>Germany</td>
<td>Starting age</td>
<td>Attitude, learning behavior, motivation, self-assessment of workload</td>
<td>Reading</td>
</tr>
<tr>
<td>Torras &amp; Celaya (2001)</td>
<td>Spain, Catalonia</td>
<td>Starting age and cognitive maturity</td>
<td>Personal, educational, cognitive</td>
<td>Grammar</td>
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5.4.1 Impact of age/early introduction to foreign language instruction in school

This theme includes 19 studies that all study the effect of starting age when learning a third language in a school context. The results from the 19 studies in this theme make up a rather stable group of findings, despite some mixed results from a few studies. In general, the findings point towards a tendency of late starters performing better than early starters. Accordingly, the majority of the studies included in this theme suggest a positive relation between age and third language acquisition in school, meaning that the older the students are when they are introduced to third language instruction in a formal educational setting, the better and/or faster they perform/improve on tests of third language proficiency. However, as pointed out by several of the studies included in this theme, these results might be explained by the older students’ greater cognitive ability. Other influential factors, such as teaching methodology, the students’ individual learning strategies and the students’ proficiency in L1 are also pointed out.

The purpose of the first study within the theme Impact of age/early introduction to foreign language instruction in school, a German longitudinal study by Thees (1999) is to investigate the effects of introducing a third (L3) and fourth language (L4) in secondary schools one year earlier than normal. In this study data was extracted every year from grade 5 (approximately 10 years of age) to grade 10 (approximately 15 years of age). The students were tested in respectively Latin, English and French, and the tests were based on grammatical and lexical tasks, as well as writing and reading comprehension tasks. Half of the students became part of a test group and the other half were categorized as a control group. Students in the control group followed the traditional procedure of introducing a third language (L3) in 7th grade (starting age 12) and a fourth language (L4) in 9th grade (starting age 14).

The results from the study by Thees (1999) showed that the students introduced to a third (L3) and fourth language (L4) one year earlier than usually manage to achieve the same results as the students following the traditional curriculum. Finishing one year earlier allows the students to gain better language competences and to develop a deeper appropriation of the languages by the end of secondary school. The students who were exposed to an early introduction of foreign language instruction (L3+L4) were highly motivated and showed no signs of excessive workload. These results apply to the overall performance of the class. Moreover, the learning goals in the curriculum were achieved one year earlier than normally, therefore it is possible to expand the learning goals for the teaching. Finally, the early introduction provides the opportunity for new and expanded teaching processes without causing additional stress or influencing the students’ performance in other school subjects.
The following is an Austrian study, carried out by Griessler (2001), which examines whether the ambition to learn a third language (French) will have any effect on students' second language (English) proficiency. The study compares the development of two age groups which were grades 6 (11-13-year-olds) and 9 (14-16-year-olds), and three different education programmes: two specific programmes with a linguistic focus and a regular high school: (1) the Linz International School Auhof (LISA), an immersion school employing English as the language of instruction throughout the curriculum, (2) the Lycée Danube, which teaches English according to the traditional high school curriculum, yet introduces French as a third language at an early stage, and (3) a regular Austrian high school, or Bundesrealgymnasium (hereafter referred to by its abbreviation BRG), which is a school with a science rather than a language focus. The main objective is to investigate the effectiveness of English instruction in these different school programmes. In order to add a developmental aspect to the study, the two age groups were taken into account. Within this theme only the results concerning the learning effects over time will be presented.

The study by Griessler (2001), which analyses two linguistic domains of vocabulary on the one hand, and grammatical aspects on the other, shows that the developmental progress with regard to vocabulary learning was strongest within the Lycée group, while hardly any add-on effect is observed in the BRG students. According to the author, the mutual influence between L1 and L2 might explain the enormous progress Lycée students make from grade 6 to grade 9. Furthermore, these results suggest that students' progress faster in their second language when learning a third. In the case of verbal morphology, the results show that the developmental progress is most pronounced within the BRG group. According to the author, a possible explanation might be that, unlike immersion education (as represented by LISA), traditional language classes still put greater emphasis on formal correctness than on vocabulary development. However, the author also suggests that further factors such as language aptitude, attitude, motivation, teacher commitment and parental interest (home environment) are taken into consideration.

The next four studies included in this theme report on research that was carried out with Spanish/Basque bilingual students who were learning English as a third language. The first is a study by Gallardo del Puerto (2007). The purpose of this study is to examine whether cognitive advantages associated with the level of bilingual proficiency increase with age. The Spanish/Basque bilingual students were divided into two bilingual groups: the more bilingually balanced group, containing the students who spoke Basque the most and the less bilingually balanced group, consisting of those who spoke Basque the least. Furthermore, each bilingual group was divided into
thirds: one-third of students who had started learning English at the age of four, one-third of students who had started learning English at the age of eight, and one-third of students who started learning English at the age of 11.

**Gallardo del Puerto (2007)** finds that there was no significant difference between the correct identification of English phonemes by the students who exhibited a higher level of bilingual proficiency, and the right discrimination of English phonemes by the students who showed a lower level of bilingual proficiency. Besides, the similarity between the more bilingually balanced students and the less bilingually balanced students was not only evident when analysing the whole sample, but also when looking at the different age groups. The study finds that independently of the kind of sample (all students or different age groups), more balanced bilinguals did not obtain significantly better scores that less balanced bilinguals. Consequently, the assumed better phonological performance on the part of more balanced bilinguals did not turn out to be comparatively better as age increased, since there was no clear pattern related to age, and more balanced bilinguals were not shown to be superior in this study. On the basis of these findings, the researcher concludes that phonological competence in English as a third language does not depend on the participants’ level of bilingual proficiency or their age. According to the researcher, these surprising results can be explained by three different factors: the specific linguistic aspect under study (phonology), interlinguistic distance and type of schooling.

**Ruiz de Zarobe (2002)** also compares the progress of Spanish/Basque bilingual students who started learning English as a third language at different ages (at the age of four, at the age of eight and at the age of 11), but within the same school curriculum, to see the effect of age on third language learning. The study has two main objectives: to examine the students’ development of negation in L3 English, and to examine the rate of third language acquisition by students who have begun English instruction at different ages, but have received the same amount of instruction. All students completed an oral production task and a written task. Another study by **Ruiz de Zarobe (2005)** also examines the rate of acquisition in L3 English of Spanish/Basque bilingual students who have received the same amount of instruction but have started learning English at different ages (at the age of four, at the age of eight and at the age of 11). In this study English proficiency is measured through a test of the students’ use of subject pronouns. Spanish and Basque language allow subject pronoun omissions and, therefore, the students were tested to see whether they omitted these subject pronouns when learning L3 English, and if they did, whether there were any differences related to age.
Ruiz de Zarobe (2002) suggests that older students outperform younger students when the hours of instruction are held constant. This study finds that in both the oral and the written production tasks, younger students produced a high percentage of externally negated constructions and unanalysed negative particles while older students made better use of the full auxiliary system. Thus, the study indicates that the youngest students are still in the early stages of development, displaying a predominant use of preverbal negation, while the oldest students are more advanced in the acquisition of negation. These students appear to have acquired some of the basic properties of negation, showing a more systematic use of the auxiliary and modal system, which implies they are at a later developmental stage. According to the author, the explanation for these results may lie in cognitive maturity. On the basis of these findings, the study indicates that an earlier start does not have a positive effect in the acquisition of negation in English as a third language in a situation of formal instruction. Thus, the author concludes that age will be a predictor of proficiency in formal contexts of language acquisition, at least with regards to speaking and writing skills. However, the author also stresses that the results of this study may have been affected by the fact that the students’ length of exposure to the language was short. Therefore, it may be that older students show superior results because younger learners are still in the early stages of acquisition and require more time to be able to catch up and/or overtake older learners. Furthermore, the results of this study do not seem to indicate that the teaching methodology followed has an impact on the students’ development of negation in L3 English. According to the author, an oral-based teaching approach, which emphasizes communicative skills in the classroom, has mainly been implemented in the case of younger students while older students receive more training in reading and writing skills and in the learning of grammar. Still, the older students show a more advanced knowledge of negation in oral proficiency, whereas the younger students still exhibit a very basic knowledge of negation. In other words, the younger students do not seem to have benefited from the type of input they have received. The results show similar patterns of behaviour in the case of the written test, regardless of the type of input used in the classroom.

The other study by Ruiz de Zarobe (2005) investigating Spanish/Basque bilingual students’ rate of acquisition in L3 English finds that there is a linear decline in subject pronoun omissions as age increases. The study also shows that age seems to be positively related to subject pronoun usage, meaning that the older the students were when they started learning English, the faster they improved on their tests scores in oral and written production in English. However, according to the author, the age-related differences found in this study might be explained by cognitive maturity, as older stu-
students are cognitively more prepared to perform demanding tasks such as writing assignments. Furthermore, instructional considerations may also account for the age differences found in this study. Older students have had more training in reading and writing skills, which are predominantly used with advanced language learning groups, while younger students have had a more communicative approach to language, which falls back on listening and speaking activities. According to the author, this fact may also account for the differences encountered in oral and written production. When these two tasks are compared, it is evident how the errors in the written tasks outnumber significantly those in the oral tasks, which may be due to the oral-based methodology used in the classroom in relation to younger students. As the number of years of instruction increases, a more traditional approach is followed, and, more limited differences between the two productive tasks are found.

Another study carried out in a Basque context is the study by Cenoz (2003a) which aims to investigate the influence of two previously acquired languages on third language oral production. Specifically, the study focuses on cross-linguistic influence by comparing a cohort of Spanish/Basque bilingual students who received English instruction from the age of four. Data was collected at two different points of time (in grade 4 and grade 6 in primary school). The study considers two types of cross-linguistic influence: interactional strategies and transfer lapses.

The results obtained in the study by Cenoz (2003a) indicate that factors such as linguistic typology (Spanish is typologically closer to English than Basque), general sociolinguistic context (Spanish is the majority language in the Basque Country) or individual differences can be important factors when cross-linguistic influence is analysed in relation to third language acquisition. The analysis shows that the total percentage of utterances including elements from other languages increases by the sixth year of primary school. However, the study also shows that it is necessary to distinguish the different types of strategies in oral production (interactional strategies and transfer lapses, respectively) as related to the activation of the base languages (Spanish and Basque). The study suggests that Basque is the default supplier when students use interactional strategies while Spanish is the default supplier in the case of transfer lapses. Moreover, the results show that the two languages have the same functions in grades 4 and 6 and that the main difference is the number of interactional strategies. According to the researcher, this seems to indicate that students in grade 6 are more confident to ask for help from their interlocutor.

The study by García Lecumberri & Gallardo (2003) is conducted in the framework of the previously described research project, which was initiated by the ‘Research in English Applied Linguistics’ (REAL) research group at the University of the Basque
Country. The aim of this study is to find age-related differences in English proficiency for students starting L3 English instruction at three different ages (at the age of four, at the age of eight, and at the age of 11). The study aims to investigate whether an early starting age has a positive effect on sound perception in English. Sound perception is measured as the students’ abilities to discriminate vowels and consonants when listening to words and their degree of foreign accent and their intelligibility.

The findings obtained in the study by Garcia Lecumberri & Gallardo (2003) shows that an early starting age does not seem to have a positive effect on sound perception in English. The authors find the opposite; the students in the oldest group (who had an onset age of 11) scored higher than the students in the intermediate group and the youngest groups (who had an onset age of eight and four) in both tests. In the vowel perception test the oldest group performed significantly better than both the intermediate group and the youngest group. In the consonant perception test the oldest group performed significantly better than the youngest group but not significantly better than the intermediate group. There were no significant differences between the youngest students and the intermediate group. In the test of intelligibility and degree of foreign accent the oldest students performed significantly better than both the youngest and the intermediate group. Again, there were no significant differences between the youngest students and the students in the intermediate group. However, an increase in reading pronunciation proportional to age was found. According to the authors, this finding may be due to a strong correspondence between the students’ L1 and L2, orthography and pronunciation and, clearly, in the oldest groups this correspondence has a stronger establishment since the creation of orthographic images for pronunciation increases with student’s age. This would be native language influence in the wider sense of the term as well as a cognitive maturation effect. Thus, the authors suggest that other influential factors than age could be at work. In other words, factors such as cognitive maturity, individual learning strategies and training methods could be possible explanations for the foreign language pronunciation results.

Another study within the REAL project is the study by Garcia Mayo (2003). This study deals with the issue of metalinguistic awareness and grammaticality judgements by two groups of Spanish/Basque bilingual students who were learning English as a third language. The groups were matched for number of hours of instruction and type of instruction received but, crucially, they differed in the age of first introduction to L3 instruction (8-9 years versus 11-12 years). In this study three research questions were posed: (1) Does length of exposure in a foreign language setting have any influence on target-like performance in a grammaticality judgement task? (2) Does an earlier exposure to the language mean more target-like performance in that type of task? (3) Is
higher cognitive development related to a higher degree of metalinguistic awareness? However, in this theme only the results of the latter two questions will be presented.

The study by Garcia Mayo (2003) shows that the students who started learning L3 English as 11-12 year olds performed better in the grammar test than the students who were introduced to English instruction as 8-9 year olds. Thus, the older students obtained significantly higher scores than the younger students. In regards to metalinguistic awareness the study finds that the older students had a greater sensitivity to deviance; that is, that older students had a greater ability to pinpoint the trouble spot in each sentence and provide a correction for the problems they found. According to the author, the older students’ greater cognitive ability is a possible explanation for their better performance. Based on these results, the author concludes that early introduction of English as a third language will not lead to appropriate results if instructional hours are not used effectively and there is no increase in the number of hours of exposure.

The following three studies were also conducted within the framework of the longitudinal research project initiated by the ‘Research in English Applied Linguistics’ (REAL) research group at the University of the Basque Country. The first of these studies is a study by Cenoz (2001) which investigates the effect of age and language typology in the language learning process relating to a third language. To investigate the effect of age on third language acquisition, Spanish/Basque bilingual students were divided into three groups according to age; the first group consisted of students in grade 2 (with a mean age of 7.3 years), the second group was composed of students in grade 6 (with a mean age of 11.3 years) and the third group consisted of students in grade 9 (with a mean age of 14.2 years). Data for the study was collected when all the students had been learning English for four years, although they had begun to learn English at different ages (at the age of four, at the age of eight or at the age of 11). All participants completed an oral production task. The objective of this study is to examine the amount of lexical transfer (i.e. borrowings and foreignings) of Basque and Spanish to English.

Regarding the relationship between cross-linguistic transfer and age, Cenoz (2001) finds that the amount of lexical transfer (i.e. borrowings and foreignings) is higher in grade 9 than in grade 6 and grade 2, and that older students transfer fewer terms from Basque than younger students. The study thus concludes that older students present more cross-linguistic influence than younger students. According to the author, this could be explained by the older students’ higher metalinguistic awareness, which could make them more aware of the objective linguistic distance between Basque and English. Thus, the author suggests that older students are able to perceive
that Basque and English are typologically more distant than Spanish and English, and that they can use Spanish rather than Basque as a base language when acquiring English. The younger students, on the other hand, seem to be less aware of the objective linguistic distance between Basque and English as they find both Spanish and Basque terms transferable to English. Thus, the results of this study seem to be compatible with the idea that the perception of linguistic distance and the perception of ‘transferability’ can be more important than objective linguistic distance.

The next REAL study included in this theme is conducted by Lasagabaster & Doiz (2003). This study aims to investigate the influence that the starting age of third language learning has on written production in three groups of Spanish/Basque bilingual students with a similar period of time of exposure to English as a third language. The following three hypotheses are put forward: (1) the age factor determines the degree of competence achieved in the students’ written production, (2) the older the students are, the better the results obtained in fluency, complexity and accuracy will be, and (3) the age of the students will influence the kind of errors made by the participants.

In their study Lasagabaster & Doiz (2003) conclude that the older the students are, the better their written competence in L3 English is. In their holistic analysis the authors find that the older the students are, the more developed communicative ability is displayed in their texts. Results show that the differences between the three age groups are significant in regards to content, organisation, vocabulary, use of language, mechanics and the overall score, always in favour of the older group. These results are confirmed by a quantitative analysis which shows that the older the students are the more extended their texts are, the greater lexical, syntactical and discoursal complexity is shown in their texts, and the lower the number of errors are. Thus, the study suggests that the three characteristics of the linguistic development (fluency, complexity and accuracy) evolve simultaneously, as the more competent students produce longer, more complex and more accurate texts than those with a lower degree of competence. In the last type of analysis, the error analysis, three trends stand out which are based on two basic parameters: degree of competence and complexity of the utilised structures. Again, the results show that the age factor has a great impact. In the first trend the younger students (11/12-year-olds) make a higher number of basic errors such as spelling mistakes, misformation of number and gender and omission of the main or the auxiliary verb. According to the authors, poor linguistic competence and lack of experience in foreign-language writing can explain these errors. However, in the second trend it is the older students (17/18 year olds) who make the largest number of errors, with the omission of the infinitive particle ‘to’ (which is not present in the 11/12-year-
old students’ texts), misordering of the constituents within the sentence and misinformation of the word at the semantic level. However, these results have to be interpreted together with the ones obtained in the measures of fluency, complexity and accuracy. Since the older students’ texts are more complex and longer, they are more liable to commit errors of this nature. Finally, in the third trend it is the intermediate group (15/16-year-olds) who make more errors such as the omission of the article or the incorrect use of a particular verb tense. According to the authors, these errors stem from the intermediate students’ poorer linguistic competence when compared to the oldest students and from the lack of these kinds of errors among the youngest students due to their lack of linguistic competence. Moreover, the error analysis finds that, when participants face a lexical gap, the younger students show a clear preference for Basque, whereas the two older age groups resort more to Spanish. According to the authors, the explanation for these code-switching results could be that the older students are more aware of the differences/similarities between the three languages in contact. In other words, the authors suggest that the older students are more aware of the existing typological relatedness between English and Spanish and also of the typological distance between English and Basque, the latter being a non-Indo-European language. However, the authors point out that the age factor cannot be isolated from a series of factors that interact with it, such as the influence of experience and the level of competence achieved in L1 and L2, as well as affective factors such as attitudes and motivation and the students’ cognitive style, personality, etc. Furthermore, the authors underline that, because the present study is part of a longitudinal study, definitive conclusions can only be drawn once all the participating students have reached the age of 17/18 (the oldest group of the sample).

The last study within the framework of the REAL project located at the University of the Basque Country is a study by Cenoz (2003b) which investigates the effect of the introduction of L3 English at different ages on rate of achievement, development of attitudes and motivation and code-mixing.

Cenoz (2003b) finds that older students obtain significantly higher scores than younger students in most of the measures of English proficiency. Even though only the two older groups (students in grades 8 and 11) completed all the tests, the general trend observed after 600 hours of exposure is that the oldest group (grade 11) presents the highest level of proficiency in English followed by the intermediate group (grade 8) and the lowest scores correspond to the youngest group (grade 5). According to the author, cognitive maturity could explain the higher linguistic proficiency of the oldest students and could also be linked to more developed test-taking strategies. Another possible explanation proposed by the author is linked to the type of input. The more
traditional instructional approaches used with older students could explain the higher lexical and syntactic complexity and their higher scores on the written tests. The results show, however, that the youngest students in grade 5 tend to present significantly more positive attitudes and are more motivated than the older students after 600 hours of English instruction. Finally, the findings indicate that students who started learning English at the age of four do not mix codes more often than students who started learning English at the age of eight or at the age of 11. Furthermore, the data shows no clear pattern that can be related to age when all terms and expressions transferred from Basque and Spanish are divided into interactional strategies, code-switching and transfer. In fact, the use of interactional strategies and transfer by the youngest and the oldest groups is very similar and differs from the intermediate group. Nonetheless, the author points out that the present study does not provide a complete picture of the effect of the early introduction of a foreign language as it only includes data corresponding to a specific point in the development of English proficiency.

The purpose of the next study included in this theme, the study by Fullana (2006), is to test the effect of different starting ages (eight, 11 and 14 years) on third language auditory proficiency measured through tests of auditory discrimination and imitation tasks among Spanish/Catalan bilinguals in the school districts of Barcelona. The basis of the study is also to test the Critical Period Hypothesis, which states that native-like phonological language skills can only be acquired if learners start at an early age, against alternative theories that state that this is also possible for late starters. This study is part of the Barcelona Age Factor (BAF) Project.

The study by Fullana (2006) indicates that starting age (eight, 11 and 14 years) is not a strong predictor of the ability to produce L3 English sounds in a native-like manner in a formal language learning context. There was, however, a small tendency towards late starters having slightly higher auditory proficiency levels on some of the measured auditory discrimination and imitation tasks. Therefore the author suggests that the Critical Period Hypothesis can be questioned, since the results indicate that a late starting age of foreign language learning in formal instruction learning settings have a positive effect on third language learning.

Another study, which is also a part of the Barcelona Age Factor (BAF) Project is the study by Mora (2006). The purpose of this study is to examine how early language learning starting age, compared to late starting age, affects L3 English fluency when Spanish/Catalan bilingual students receive the same amount of L3 instruction. The early starter group had an onset age of eight, whereas the late starter group had an onset age of 11. Both groups received a total of 726 hours of L3 English instruction.
The results from the study by Mora (2006) showed that the group of late starters generally outperformed the early starter group on most test measures apart from dysfluency rate and internal clause pausing. These results indicate that late starters have a higher oral L3 competence. The author therefore concludes that in this case there does not seem to be any real advantage in starting language learning early in regard to fluency. The author concludes that this apparently contradictory outcome may be due to the fact that, in highly dysfluent nonnative speech, better performance on oral fluency variables associated with amount of oral production results in an increase in repetitions, restart and pause frequency.

A different longitudinal study included in the Barcelona Age Factor (BAF) Project, the study by Muñoz (2003), investigates whether or not early starters (age eight) learning English as a third language show a similar, poorer or higher performance in English proficiency than late starters (age 11). Additionally, the study examines the relation between length of instruction and English proficiency in students with different starting ages. The students’ listening comprehension and oral skills in English were tested at two different points in time: after 200 hours of English instruction (time 1) and after 416 hours of English instruction (time 2). Another study by Muñoz (2011) also concerns the long-term effects of starting age among Spanish/Catalan bilingual students. Based on the Barcelona Age Factor (BAF) Project, the hypothesis is that in the long term and after similar amounts of L3 English instruction, starting age will not be a predictor of English proficiency: late starters will no longer have a cognitive advantage over early starters, and the latter will not have benefited from their younger age because of the lack of massive exposure needed for their implicit learning mechanisms to operate in the early stages. In this study the students completed three tests of L3 English proficiency: a standardised general proficiency test, a lexical reception test and a phonetic identification test.

The study by Muñoz (2003) shows that the late starters scored higher in the test of oral productive skills than the early starters. No significant differences were found between late and early starters in the test of the students’ listening comprehension. The results indicate that the factor that appeared to explain the highest percentage of variance in the English proficiency scores was “proficiency in L1”. When analysing the students’ different responses in the oral production task, the author found that the 12 year old students exerted a more active role than the 10 year old students. According to the author, active involvement can be harder for younger students to fulfill and this indicates that age difference itself, and not only English proficiency, may help explain the older student’s higher scores in the oral production test. Likewise, the study by Muñoz (2011) did not find a significant relationship between students’ starting age in
English language learning and the three applied proficiency measures (a general proficiency test, a lexical reception test and a phonetic identification test). This was also the case after controlling for age at the time of testing and amount of instruction in English. Thus, the results seem to confirm the hypothesis that no differences will be found due to starting age of learning English as an L3 in the long term. In addition, the findings suggest that, in a typical limited-input foreign language setting, age does not yield the same type of long-term advantage as it does in a naturalistic language learning setting.

The next study within the theme Impact of age/early introduction to foreign language instruction in school is a Spanish study by Miralpeix (2006). Like the four previous studies this study was conducted within the framework of the Barcelona Age Factor (BAF) Project located at the University of Barcelona in Catalonia. This study concerns age effects on vocabulary acquisition as it analyses the productive vocabulary of two groups of Spanish/Catalan bilingual students towards the end of secondary education.

Results from the study by Miralpeix (2006) show that students who started learning L3 English at the age of 11 (late starters) performed better than students who started learning English at the age of eight (early starters) after 726 hours of L3 English instruction. The late starters especially outperformed the early starters in regards to diversity of productive vocabulary, storytelling and in the cloze test. The two groups performed equally in the roleplaying task.

The study by Navés et al. (2003) and the study by Torras & Celaya (2001) are also part of the Barcelona Age Factor (BAF) Project. Both studies investigate the effect of the starting age of third language instruction on written proficiency in L3 English. Two groups of Spanish/Catalan bilingual students were compared: students who started learning English when they were eight years old (early starters) are compared with students who started learning English when they were 11 years old (late starters) after 200, 416 and 726 hours of L3 English instruction. However, the study by Torras & Celaya (2001) only tests students at two points in time: after 200 and 416 hours of instruction. Two hypotheses guided this latter study. The first hypothesis is that students with different starting ages will progress linearly in their acquisition of L3 English writing competence, measured in terms of fluency, complexity (both lexical and grammatical) and accuracy. The other hypothesis is that starting age for learning L3 English will influence both attainment and rate of acquisition in the areas of writing fluency, complexity and accuracy, with older students progressing faster in all three areas.

The study by Navés et al. (2003) shows that students who started learning English when they were 11 years old (late starters) obtained higher test scores than students who started learning English when they were eight years old (early starters) at all three data collection points (after 200, 416 and 726 hours of instruction). Thus, the
early starters did not catch up with the late starters long-term, i.e. after 726 hours of instruction. Regarding the first hypothesis of the study conducted by Torras & Celaya (2001), the results show that the development of the three measures (fluency, complexity and accuracy) did not take place at the same rate and presented different patterns of development in the two age groups. Both the early starters’ and the late starters’ fluency developed faster and achieved higher levels than complexity and accuracy at both data collection points (after 200 and 416 hours of instruction). Thus, the first hypothesis was not confirmed since the development of the three measures did not progress linearly. Regarding the second hypothesis, the study shows that the rate of acquisition was higher for the late starters and that their English attainment at both 200 and 416 hours of instruction was higher than the early starters’ English attainment. After 200 hours of instruction the late starters scored significantly higher than the early starters on all three measures while the late starters scored significantly higher than the early starters on two out of three measures after 416 hours of instruction. Therefore, the second hypothesis of the study was confirmed, since the late starters were faster learners and progressed further. Based on these findings, the authors suggest that the older students’ overall higher linguistic competence in English may be explained by the fact that they have received instruction at an age when their cognitive and conceptual development was higher, as were their L1 skills.

The final study within the theme *Impact of age/early introduction to foreign language instruction in school* is the study by Muñoz (2006), which also publishes data from the Barcelona Age Factor (BAF) Project. In the textbox below a more detailed description of the study by Muñoz (2006) is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’.

This study by Muñoz (2006), which is carried out in the framework of the Barcelona Age Factor (BAF) Project, raises two research questions related to learning rate and acquisition: the first question relates to whether there will be an age-related difference in the rate of English learning as an L3. Previous research results have led to the prediction that older foreign language learners would show a faster rate of acquisition than younger learners in the first stages of foreign language acquisition. If that hypothesis is confirmed, a second research question will be raised: will younger foreign language learners eventually surpass older learners? Previous research has shown that, in non-formal settings, younger learners have been observed to surpass older learners.

The study was conducted in Catalonia and the students spoke both Spanish and Catalan and were therefore considered bilinguals. The study was partly longitudinal and partly cross-
sectional. Three groups of students who were eight, 11 and 14 years old when they started learning English participated in the study. Data was collected the first time after 200 hours of instruction, the second time after 416 hours of instruction, and the third time after 726 hours of instruction. The students were followed longitudinally from the first to the second time when data was collected while the author also conducted cross-sectional comparisons involving students who only appeared at one point of data collection. The groups of students used in the longitudinal analysis consisted of 83 students while the groups of students used in the cross-sectional analysis consisted of 175 students. An extensive test battery was used in the BAF Project. Students were asked to listen to oral data and to speak, write and read in English with the aim of assessing the four skills: speaking, listening, writing and reading.

The study shows that the older learners progressed faster than the younger learners. The group of learners who began learning English at age 14 obtained significantly higher scores than the younger groups, and the group of students who began at age 11 obtained significantly higher scores than the group of students who began at age eight. The difference did not reach significance at Time 1 in most tests, but it was highly significant at Time 2 and Time 3 on most tests. The youngest group showed the slowest rate in the first 416 hours, but a rapid increase from Time 2 to Time 3.

The answer to the second research question whether younger foreign language learners eventually surpass older learners is negative. In the time span covered in this study, younger learners did not obtain higher scores than older learners. The older learners scored higher on the tests at all three data collection points although the differences diminished at Time 3. The differences did not diminish homogeneously for all tests, which leads the author to discuss whether there are different age effects for different language skills or subcomponents. The author finds that language skills which are more cognitively demanding, measured using tests where the students are required to use grammatical, lexical and contextual knowledge, are more affected by age than tests of the students’ listening comprehension or receptive language skills. Based on this, the author concludes that cognitive development plays an important role in explaining why older learners in a formal learning situation are faster and more efficient than younger learners. In school contexts where opportunities for implicit learning and practice are minimal, older learners may be quicker to acquire a third language.

Read more in: The Effects of Age on Foreign Language Learning: The BAF Project. (Muñoz (2006)).
5.4.2 Summary on Impact of age/early introduction to foreign language instruction in school

In summary, the results from the 19 studies in this overall theme Impact of age/early introduction to foreign language instruction in school make up a rather stable group of findings regarding a possible impact of age/early introduction to foreign language instruction in school.

The major part of the studies included in this theme finds that older students/late starters obtain higher scores than younger students/early starters in measures of third language proficiency. However, several of the studies point out that the age factor cannot be isolated from a series of other influential factors that might relate to age, such as the older students’ greater cognitive maturity, teaching methodology, the students’ individual learning strategies, test-taking strategies and the students’ proficiency in L1. Moreover, a few studies point to the fact that because the studies on the age factor only include data corresponding to a specific point in the development of third language proficiency, they do not give a complete picture of the effect of early introduction of foreign language instruction.

Also, as pointed out by Muñoz (2006), it is important to explore whether there are different age effects for different language skills or subcomponents in third language acquisition, as she finds that language skills which are more cognitively demanding, measured using tests where the students are required to use grammatical, lexical and contextual knowledge, are more affected by age than tests of the students’ listening comprehension or receptive language skills. The studies included in this theme that find that older students perform better and/or faster on tests of third language proficiency than do younger students have measured various linguistic aspects and subcomponents of both receptive skills and productive skills.

A few key points across the studies identified as studies that analyse the Impact of age/early introduction to foreign language instruction in school are summarised as follows:

- The findings point towards a tendency of late starters performing better than early starters in certain contexts and on most measures of third language proficiency.
- A number of factors, apart from age, that might also add to explain the difference in performance between early and late starters should be taken into consideration. These are factors such as the students’ cognitive maturity, proficiency in L1, individual learning strategies, test-taking strategies, number of hours of L3 instruction as well as the teaching methodology applied by teachers.
5.5 Theme three: Impact of bilingualism and/or level of bilingual proficiency

The studies in this theme examine the impact of bilingualism and/or level of bilingual proficiency in relation to third language acquisition. More specifically, the studies can be divided into three categories that define the impact of bilingualism. First, nine studies look at the impacts of being monolingual versus being bilingual when learning a third language in school (Bild & Swain, 1989; Cenoz & Valencia, 1994; Haenni Hoti, 2009; Klawitter Beusch, 2011; Klein, 1995; Lasagabaster Herrarte, 1998a; Mady, 2014a; Sanders & Meijers, 1995; van Gelderen et al., 2003). Second, five studies examine the impact of language proficiency in L1 and/or L2 on third language acquisition (Bérubé & Marinova-Todd, 2013; Gallardo del Puerto, 2007; Haenni Hoti et al., 2011; Sagasta Errasti, 2003; Valencia & Cenoz, 1992). Lastly, the impact of bilingualism and/or level of bilingual proficiency can be seen in three studies focusing on biliteracy (Rauch, 2011; Sanz, 2000; Swain et al., 1989).

These 18 studies are categorised schematically in table 5.3 below. For a comprehensive description of each study’s purpose and results, see Appendix 3 ‘Abstracts for the studies available for the synthesis’.
<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Focus/foci</th>
<th>Factor(s)</th>
<th>Reception(s)</th>
<th>Vocabulary/grammar</th>
<th>Production(s)</th>
<th>Design</th>
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</thead>
<tbody>
<tr>
<td>Bérubé &amp; Marinova-Todd (2013)</td>
<td>Canada</td>
<td>Bilingual proficiency</td>
<td>Personal, educational, social/social psych.</td>
<td>Reading</td>
<td>Speaking</td>
<td>Cross-sectional study</td>
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<td>Canada</td>
<td>Monolinguals versus bilinguals</td>
<td>Educational, foreign language specific</td>
<td>Vocabulary/grammar</td>
<td>Speaking, writing</td>
<td>Cross-sectional study</td>
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<td>Cenoz &amp; Valencia (1994)</td>
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<td>Monolinguals versus bilinguals</td>
<td>Personal, educational, social/social psych., cognitive</td>
<td>Reading, listening</td>
<td>Vocabulary/grammar</td>
<td>Speaking, writing</td>
<td>Cross-sectional study</td>
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<tr>
<td>Gallardo del Puerto (2007)</td>
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<td>Bilingual proficiency</td>
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<td>Listening</td>
<td></td>
<td>Case-control study</td>
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<tr>
<td>Haenni Hoti (2009)</td>
<td>Switzerland</td>
<td>Monolinguals versus bilinguals</td>
<td>Personal, social/social psych.</td>
<td>Reading, listening</td>
<td></td>
<td>Longitudinal study: Cohort based study</td>
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<td>Switzerland</td>
<td>Bilingual proficiency</td>
<td>Personal, social/social psych.</td>
<td>Reading, listening</td>
<td></td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
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<tr>
<td>Klawitter Beusch (2011)</td>
<td>Sweden</td>
<td>Monolinguals versus bilinguals</td>
<td>Personal, social/social psych., cognitive</td>
<td>Reading</td>
<td>Vocabulary</td>
<td>Longitudinal study: Cohort based study</td>
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<tr>
<td>Study</td>
<td>Country</td>
<td>Type of Study</td>
<td>Linguistic Description</td>
<td>Language Proficiency</td>
<td>Study Type</td>
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<tr>
<td>Klein (1995)</td>
<td>USA</td>
<td>Monolinguals versus bilinguals</td>
<td>Educational, cognitive, Reading, listening</td>
<td>Grammar, Vocabulary/grammar, Speaking, writing</td>
<td>Cross-sectional study</td>
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<tr>
<td>Lasagabaster Herrarte (1998a)</td>
<td>Spain, Basque Country</td>
<td>Monolinguals versus bilinguals</td>
<td>Educational, social/social psych., linguistic</td>
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<td>Cross-sectional study</td>
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<td>Lukas et al. (2012)</td>
<td>Spain, Basque Country</td>
<td>Level of bilingualism</td>
<td>Educational, social/social psych., cognitive</td>
<td>Reading, Speaking, writing</td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
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<tr>
<td>Mady (2014a)</td>
<td>Canada</td>
<td>Monolinguals versus bilinguals</td>
<td>Personal, educational, social/social psych., cognitive</td>
<td>Reading</td>
<td>Cross-sectional study</td>
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<tr>
<td>Rauch (2011)</td>
<td>Germany</td>
<td>Bilitery</td>
<td>Personal, cognitive, Reading</td>
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<tr>
<td>Sagasta Errasti (2003)</td>
<td>Spain, Basque Country</td>
<td>Bilingual proficiency</td>
<td>Personal, educational, social/social psych.</td>
<td>Writing</td>
<td>Cross-sectional study</td>
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<td>Sanders &amp; Meijers (1995)</td>
<td>The Netherlands</td>
<td>Monolinguals versus bilinguals</td>
<td>Educational</td>
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<td>Longitudinal study: Cohort based study</td>
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<tr>
<td>Sanz (2000)</td>
<td>Spain, Catalonia</td>
<td>Bilitery</td>
<td>Personal, educational, social/social psych.</td>
<td>Vocabulary/grammar</td>
<td>Cross-sectional study</td>
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<tr>
<td>Swain et al. (1989)</td>
<td>Canada</td>
<td>Bilitery</td>
<td>Personal, linguistic, Reading, listening</td>
<td>Writing</td>
<td>Cross-sectional study</td>
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<tr>
<td>Valencia &amp; Cenoz (1992)</td>
<td>Spain, Basque Country</td>
<td>Bilingual proficiency</td>
<td>Personal, educational, social/social psych.</td>
<td>Reading, listening</td>
<td>Vocabulary/grammar</td>
<td>Speaking, writing</td>
<td>Cross-sectional study</td>
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<tr>
<td>van Gelderen et al. (2003)</td>
<td>The Netherlands</td>
<td>Monolinguals versus bilinguals</td>
<td>Linguistic</td>
<td>Reading</td>
<td>Vocabulary/grammar</td>
<td>Writing</td>
<td>Cross-sectional study</td>
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</tbody>
</table>


5.5.1 Monolinguals versus bilinguals

The first category within the theme *Impact of bilingualism and/or the level of bilingual proficiency* concerns studies that investigate monolinguals versus bilinguals and their L3 acquisition in order to study whether bilinguals have advantages or disadvantages over monolinguals when acquiring a third language in school. The results from the nine studies in this category make up a rather stable group of findings, despite the mixed results. In general, the findings point towards a tendency of bilingualism having a positive influence on third language acquisition. Five of the studies described below find positive results for bilingualism related to third language acquisition in school.

One of the studies looking at monolinguals versus bilinguals is the one by Bild & Swain (1989), whose purpose is to compare the French proficiency of minority bilinguals to that of monolinguals in a French immersion programme in Ontario, Canada. The study aims to examine whether the bilinguals benefit from acquiring an L3 at an early stage or if it hinders their language skills development and therefore leads to a lower French proficiency level compared to the monolinguals. The immersion programme offered instruction almost solely in English from the start of the programme until the end of grade 4 and 50-50 English/French instruction from grade 5 and onwards. In order to compare the bilinguals to the monolinguals, grade 8 students were selected on the criteria that they had to have English, Italian or a non-Romance language as their L1.

The results from Bild & Swain’s (1989) study show that bilinguals in general acquired a higher level of French proficiency on almost all the test measures. This suggests, according to the researchers, that bilingual students learn French more effectively than their monolingual peers. The authors therefore conclude that bilingual students are well-suited for French immersion programmes and that the evidence points towards bilinguals having a substantial advantage over monolinguals in regard to learning French. The researchers also conclude that the bilingual participants’ proficiency in French did not seem to suffer as a result of knowing three languages. Rather, the bilinguals seemed to benefit from their additional linguistic knowledge. In conclusion, the authors offer metalinguistic awareness and ability to transfer from both the L1 and the L2 as an explanation for the higher proficiency levels among the bilinguals.

Cenoz & Valencia (1994) also examine the effect of bilingualism, and the purpose of their study is to test the effect of instruction in a minority language on third language acquisition. The study is conducted in the Basque country in Spain where
three linguistic programmes in which parents can enroll their children are offered. It is hypothesised that bilingualism will be associated with higher levels of achievement in English and that bilingualism will have a positive effect on different dimensions of English language proficiency. Bilingual students literate in both Spanish and Basque were compared to Spanish monolinguals. In this study students with Basque or Spanish as their first language who received all their instruction in Basque (model D) were identified as bilinguals. Students whose first language was Spanish and who had been instructed in Spanish (model A) were identified as monolinguals.

Compared to the study by Bild & Swain, the study by Cenoz & Valencia (1994) likewise demonstrates overall advantages of bilinguals over monolinguals in third language acquisition in the Basque Country. The study identifies intelligence, age, motivation, exposure and bilingualism as factors predicting English achievement, and the authors conclude that bilingualism predicts L3 achievement independently of all other factors. The results show that some elements have a greater influence on some English tests than others. For example, bilingualism is more strongly associated with speaking than with other dimensions of language proficiency. According to the authors, the fact that bilingualism does not affect reading comprehension could be due to the extended practice of this skill in secondary schools by both bilingual and monolingual students.

Another study conducted in the Basque Country is the one by Lasagabaster Herrarte (1998a) that examines if there is a correlation between the three different linguistic programmes that the participating students’ are enrolled in and their English proficiency. The students’ English proficiency was measured using speaking, writing, listening and reading tests and a vocabulary and grammar test. An overall English score was constructed based on the five English tests. The author also examines the relationship between the students’ metalinguistic awareness and their English proficiency. Half of the students were enrolled in grade 5 (10-11 year olds) and the other half were enrolled in grade 8 (13-14 year olds). The students started learning L3 English in grade 3.

Lasagabaster Herrarte’s (1998a) results show that students with a higher degree of bilingual proficiency scored higher on tests of metalinguistic awareness and English proficiency. The author argues that bilingual students are better at learning a third lan-

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14 As mentioned before, the Basque immersion programme consists of three models. Model A: The students are instructed in Spanish, and Basque is a school subject (4 to 5 hours per week). Model B: The students are instructed in both Spanish and Basque. Model D: The students are instructed in Basque, and Spanish is a school subject (4 to 5 hours per week).
language and have a higher metalinguistic awareness than monolinguals. These findings are also supported by those of the next study, the study by Haenni Hoti (2009).

Haenni Hoti (2009) aims at uncovering factors that have a positive and a negative influence on grade 3 students’ listening and reading skills in English as L3 in her Swiss study. The study focuses specifically on students with migrant background, which includes 1st, 2nd and 3rd generation immigrants. To examine which factors had positive or negative effects, two research questions were raised: 1) Do English listening and reading comprehension depend on specific individual and contextual factors? 2) Does the migration background or the (bi)national identification of the students have an influence on their listening and reading comprehension in English? The study was conducted in the cantons of Central Switzerland, Obwalden, Zug, Schwyz and Lucerne. Based on background variables the grade 3 students participating in the study were divided into three groups: a) Swiss students b) foreign students and c) students with binational identity. Group b) and c) are in this study regarded as students with a migrant background. After one year of English instruction the students were given tests of English reading and listening comprehension as well as questionnaires.

The results of Haenni Hoti’s (2009) study indicate that migration background does not seem to have an influence on students’ reading and listening skills in English in terms of them being hindered. The study shows that students with binational and bicultural backgrounds (group c) after one year of English instruction show a significantly better listening comprehension than Swiss students (group a) and foreign students (group b) do. The results of this study therefore do not give any empirical grounds to the assumption that students with migration background have to tackle difficulties specifically related to their background, when instructed in English as L3. Furthermore, the results of the study showed that the better results the students achieved in a German (L1 or L2) reading test, the better their results in the English listening and reading comprehension tests were. This was the case for the Swiss students as well as for the binational and the foreign students.

Contradictory to the above findings, there are two studies (Klawitter Beusch, 2011; and van Gelderen et al., 2003) whose results point towards monolinguals gaining better language results in L3 than bilingual students.

In her dissertation Klawitter Beusch (2011) also investigates whether bilingual immigrant high school students in Sweden have any advantages when learning German compared to Swedish monolingual high school students. The dissertation consists of two studies and puts special emphasis on passive vocabulary and reading comprehension. The first study reports on the average test results in relation to linguistic, affective, neurophysiological and socio-economic learner variables, whereas the second
study focuses on the test results concerning lexical inferencing strategies. Monolingual and bilingual students aged 16-19, from three different high schools in Gothenburg participated in the study. The bilingual high school students had diverging backgrounds. Some were second generation immigrants and others had only recently arrived in Sweden. Their native language does equally vary; half of the group originates from Ex-Yugoslavia, and the other half speaks Mandarin, Urdu etc. The study compares and analyses the results of bi- and monolingual students in German as L3, L4 or L5.

Klawitter Beusch’s (2011) study results of the language tests show that the bilingual students had no advantages over the monolingual students on a group level. By comparing the results from the language tests with the results from the questionnaires, the author concludes that for both the bi- and monolingual students a high proficiency in Swedish is an important variable when learning German as L3, L4 or L5. The bilingual students had, in general, a more positive attitude and stronger motivation than the monolingual students; however, the monolingual students had slightly better English grades than the bilingual students. The students with a good English grade did also, in most cases, achieve a good grade in German. Overall, the monolingual students had the best neurophysiological, linguistic and social preconditions for learning German, while the bilingual students had better affective preconditions. Furthermore, the study shows that the bilingual students had lower proficiency in Swedish as well as lower social preconditions compared to the monolingual students. Despite this, the bilingual students’ parents’ educational backgrounds were not much lower than the monolingual students’ parents’ educational backgrounds, and in combination with the bilingual students’ higher motivation and more positive attitudes towards the course and the German language, they could compensate for their lower proficiency in Swedish and their lower social preconditions.

Klawitter Beusch’s findings are supported by those of van Gelderen et al. (2003). This study compares the English proficiency of students who speak Dutch as their second language and English as their third language with the English proficiency of students whose first language is Dutch and whose second language is English. Dutch grade 8 students participated in this study. The average age of the students was 14 years, and on average they had received 3.5 years of instruction in English. The students who reported speaking a language other than, or in addition to, Dutch, with their parents, and who had acquired a language different from Dutch as their first language were considered bilingual Dutch. The greater part of this group had a Turkish, Moroccan or Surinam background.
The findings of the study by van Gelderen et al. (2003) show that the monolingual students scored significantly higher than the bilingual students on two out of five reading proficiency measures; that is, grammatical knowledge and metacognitive knowledge, and three out of six writing proficiency measures; that is, grammatical knowledge, orthographic knowledge and metacognitive knowledge. However, the effect sizes are rather small. According to van Gelderen et al. (2003), one possible explanation for the bilingual groups’ lower scores is that the bilingual students are weaker readers in general, which could be related to sociolinguistic and/or psycholinguistic factors. In addition, the authors do not have information about the students’ socioeconomic status, which might also influence their success in school. However, it is known that most of the bilingual students became literate in their second language, as they were educated in the Dutch school system and learned to read and write in Dutch, and therefore Dutch literacy may have been similar for the monolingual and the bilingual students. Thus, the advantage of being bilingual (in spoken language) may not pay off in terms of reading and writing development in the second and third foreign language.

Another explanation presented by the authors is that the L1 – L3 gap for the bilingual group was bigger than the L1 – L2 gap for the monolingual students. Seeing that English is typologically closer to Dutch than to the mother tongues of most of the bilingual students (e.g. Sranan Tongo, Berber, Arabic or Turkish), it is possible that an advantage in metacognitive strategy for bilingual students was not sufficient to overcome disadvantages at the lower level of reading and writing proficiency.

Other studies have more mixed results, as for instance the American study by Klein (1995), that examines whether bilingual students acquiring English as a third language are better than monolingual students at identifying correct and incorrect verb and preposition placement in English sentences. Specifically, the students’ knowledge of verb placement and their preposition stranding knowledge is measured. A preposition stranding is a sentence in which a preposition is left without a following object. An example of preposition stranding is the sentence construction “Who are the boys waiting for?” instead of the sentence construction “For whom are the boys waiting?” Thus, the study focuses on a very specific aspect of English proficiency. Preposition stranding is only found in some Germanic languages, particularly English, Dutch and the Scandinavian languages. Native English-speaking monolinguals, monolingual immigrants learning English as their second language and bilingual immigrants learning English as their third or fourth language participated in this study. They ranged in age from 12 to 15, and all attended junior high schools and high schools in New York City. Most of the immigrants had come to the USA within the past three years, and most of the bilingual students learned their first foreign language at a young age.
The study by Klein (1995) shows that the monolingual English speakers scored significantly higher than the immigrant students on both measures of lexical learning and syntactic learning. When comparing the two immigrant groups, the author finds that the bilingual immigrants scored higher than the monolingual immigrants on both measures of lexical learning and syntactic learning. Thus, it appears that bilinguals have an advantage over monolinguals in lexical and syntactic learning when learning a new foreign language. According to the author, it remains an open question whether this advantage will result in greater ultimate attainment, but it is likely to increase the chance of greater ultimate proficiency.

Sanders & Meijers (1995) examine in their Dutch study whether bilingual students differ from their monolingual peers in English proficiency. Furthermore, the study seeks to examine whether bilingual students employ learning strategies different from those of their monolingual peers. The study pays particular attention to the role of the bilinguals’ first language in learning a third language in school. This study was conducted over a period of two years in 10 elementary schools in the Netherlands. Moroccan Arabic-Dutch bilinguals and Turkish-Dutch bilinguals were selected for the study. The bilingual students were given tests of their mother tongue (L1) and Dutch (L2), and their language skills in both languages were judged to be near the level of a peer raised in the country of origin, i.e. the students included in the bilingual group were regarded as being early balanced bilinguals. These bilingual students were matched with monolingual Dutch students who spoke no foreign languages. All students were instructed in English from grade 5 onwards, and their English proficiency was tested in grade 5 (after one year of English instruction) and in grade 6 (after two years of English instruction).

In Sanders & Meijers’ (1995) study the overall results indicate no differences in the English proficiency of monolingual and balanced bilingual students, as the authors found no significant difference between the bilinguals and the monolinguals in any of the language tests. The authors indicate that bilingualism itself is not sufficient to produce language achievement advantages and that the bilingual students’ additional language learning is equally affected by the same factors that affect their monolingual peers, i.e. factors such as school, programme, teacher etc.

The last study in this category is by Mady (2014a). In the textbox below a more detailed description of the study by Mady (2014a) is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’. 
The purpose of this study by Mady (2014a) is to compare the proficiency in French of three groups of students: Canadian-born English-speaking students (CBE), Canadian-born multilingual students (CBM), and immigrant multilingual students (IMM). IMM refers to students who immigrated to Canada after the age of five from countries that have official languages other than English or French. The immigrants and the Canadian-born multilinguals have many different L1s. Their L2 is English and their L3 is French. The students’ French proficiency is compared while taking into account other predicting factors such as their citizenship status, English proficiency and gender.

This cross-sectional study was conducted in the English-dominant province Ontario, where French is a compulsory subject from grades 4 to 9. Data for the study was collected when the students had received two years of formal French teaching. 165 students from eight grade 6 classes in two schools participated in the study and completed a French proficiency test and a questionnaire designed to measure factors previously found to impact foreign language learning. The test consisted of speaking, reading and writing components. The questionnaire provided information about the students’ background and their motivation and anxiety towards learning French, their English proficiency and proficiency in their native language, plus their metalinguistic awareness. ANOVA and multiple regression analyses were used to explore the differences in French proficiency among the three groups and to identify predictors of the students’ French proficiency.

The study shows that the IMM group outperformed both the CBE and the CBM groups in reading and writing tests and also outperformed the CBE group in speaking tests. The CBM group outperformed the CBE group in writing tests. These results indicate that immigrant multilingual students have advantages over Canadian-born English speaking students and Canadian-born multilingual students when learning French. The author’s possible explanations for the advantages of the IMM and the CBM groups are that the monolingual Canadians consider proficiency in English sufficient language knowledge and that the IMM’s status as immigrants has positively influenced their French proficiency as a means to achieve the advantages that come with being part of the native-born group. The study highlights the fact that being in the IMM group may indicate a positive advantage that goes beyond L1 and L2 proficiency, motivation, attitude, metalinguistic awareness or strategy use. Is should be noted that speaking French in class, the degree of willingness to communicate in French and how anxious the students are about using the language remain factors associated with proficiency in French as a second official language.

The author also found that lower English proficiency had a negative impact on French proficiency. This negative impact, however, did not outweigh the positive impact of being in the IMM group. Being a male was consistently a negative predictor of French proficiency. Profi-
iciency in native languages and student motivation for learning French did not prove to be an influential factor in French proficiency for either of the multilingual groups.

Furthermore, the study shows that the greater curricular and classroom emphasis on oral skills provided a context where students could excel regardless of their native language literacy skills. The lack of explicit teacher reference to prior language knowledge other than English may also encourage students to rely on using French to the neglect of their other language knowledge and skills. In fact, the students’ focus on French while in class did prove to be a positive predictor of writing results.

Read more in: Learning French as a second official language in Canada: comparing monolingual and bilingual students at Grade 6 (Mady (2014a)).

### 5.5.2 Proficiency in L1 and L2

The second category in this theme *Impact of bilingualism and/or level of bilingual proficiency* concerns the proficiency in L1 and/or L2 on third language acquisition. Five studies examine this aspect of bilingualism, and all of them point towards positive results regarding proficiency in L1 and/or L2 and its impact on third language acquisition, except for one particular study that shows that the level of bilingual proficiency does not influence L3 acquisition.

The first study by Bérubé & Marinova-Todd (2013) investigates how sociolinguistic factors, metalinguistic awareness, language proficiency, and literacy skills in the L2 relate to language proficiency and literacy skills in the L3 for bilinguals enrolled in a French immersion programme in Canada. All students were enrolled in the immersion programme from an early age and had therefore received French instruction since kindergarten and began receiving English instruction in grade 4. All students were exposed to their L1 from birth and spoke it at home on a daily basis. Oral language skills and reading comprehension in both the L1 and the L2 and motivation for learning French (L3) as well as morphological awareness in English were measured.

The results from Bérubé & Marinova-Todd (2013) show that the degree of oral language proficiency as well as reading comprehension in English have a positive impact on oral language proficiency and reading comprehension skills in French, when controlling for the amount of reading in French and morphological awareness in English. The authors also conclude that, although the bilingual students received instruction in French (L3) throughout most of the time spent in school, this does not seem to prevent them from developing age-appropriate skills in both their L2 and L3. Also the
authors consider that oral proficiency and reading skills in the L2 are almost of equal importance in regard to the impact on L3.

Language proficiency is also a theme in the Swiss study by Haenni Hoti et al. (2011), whose purpose is to examine whether German speaking students who have been learning English from grade 3 onwards will show higher French proficiency in listening and reading in grade 5 than students who have had no previous English instruction. Following a school reform in Switzerland, some German speaking cantons have implemented a new model where English is the first foreign language (L2) to be learnt at school (from grade 3 onwards), followed by French (L3) as the second foreign language (from grade 5 onwards) (called the 3/5 model). Since the cantons have implemented this school reform at different rates, the 3/5 model is compared to the old model with French instruction only, starting in grade 5 (called the 0/5 model). The basis of the study is that the same language, French in this case, is learnt more efficiently as an L3 (model 3/5) than as an L2 (model 0/5), because students with previous foreign language experience in English can use their foreign language skills as a resource when learning a third language. Hence, two hypotheses are put forward in the study: 1) Students who have been learning English (L2) from grade 3 onwards will show higher French (L3) skills on average in grade 5 than students who have had no previous English instruction. 2) The higher the students’ English (L2) skills are the higher their French (L3) skills will be. In order to examine if L2 skills (listening and reading) have an impact on third language acquisition on their own, the authors also examine the following individual and contextual factors: age, type of study plan, school class affiliation, motivation, feelings of being overburdened and fear of making mistakes, self-concept as a learner of French, attitudes towards French speakers and countries, metacognitive, cognitive and social learning strategies and language background, German (L1) reading skills and English (L2) listening and reading skills.

The study by Haenni Hoti et al. (2011) revealed that students who received English instruction from grade 3 displayed higher skills in French than students with no English instruction. Consequently, after one school year, students who learned French as an L3 were more successful than students who learned French as an L2. The students learning French as an L2 performed significantly lower in both the French listening and reading tests than the students who were learning English as an L2 and French as an L3. The students’ listening and reading skills in French were also related to other variables, notably their German (L1) reading skills in grade 4 and their self-concept as learners of French (meaning the students’ perception of their French competence, their ease of learning and their expectation for success). The better the students were at reading German and the more positive their perception of their own competence in French
was, the better they performed in the French listening and reading test at the end of grade 5. Moreover, a positive correlation between the number of languages spoken in the family and the students’ French listening skills was also found, indicating that students with a bi- and multilingual family background are at an advantage compared to monolingually raised students when learning French. For the students in the 3/5 model\textsuperscript{15} the authors also examined what role L2 skills in English played in the prediction of their French proficiency skills. The analyses revealed that the better the students performed in the English listening test in grade 3 and grade 4, the better they performed in the French listening test. Equally, the better the students performed in the English reading test and the German reading test the better they performed in the French reading test.

Two Spanish studies look at the impact of L2 proficiency on L3. The first study, by Sagasta Errasti (2003), examines the influence of bilingualism on proficiency in the writing of L3 English according to model of schooling. The study was conducted in the Basque Country, where three linguistic programmes in which parents can enroll their children are offered\textsuperscript{16}. The study also aims to find a possible relationship between Basque, Spanish and English writing skills and to show whether language use patterns influence third language proficiency. Students aged 12-16 participated in this cross-sectional study. They were all enrolled in a Basque model D school. This model can be defined as maintenance when it involves students who speak Basque at home and immersion when applied to students who only speak Spanish. Half the students had Basque as their first language or spoke mainly Basque at home, at school and in social contexts and are therefore referred to as model D-maintenance. The other half had Spanish as their first language or tended to speak more Spanish than Basque. They are referred to as model D-immersion.

Sagasta Errasti (2003) finds that students who speak Basque at home (D-maintenance) develop a higher competence in writing skills in Basque than students who only speak Spanish (D-immersion). Both groups have been instructed through the medium of Basque throughout their schooling, but students in model D-maintenance are high users of Basque outside school in comparison to their peers in model D-immersion who are high users of Spanish outside school. These results suggest that use of a minority language (Basque) contributes to a higher level of competence in that

\textsuperscript{15} The 3/5 model: English is L2 (from grade 3 onwards), French is L3 (from grade 5 onwards).

\textsuperscript{16} As mentioned before, the Basque immersion programme consists of three models. Model A: The students are instructed in Spanish, and Basque is a school subject (4 to 5 hours per week). Model B: The students are instructed in both Spanish and Basque. Model D: The students are instructed in Basque, and Spanish is a school subject (4 to 5 hours per week).
language. The study also finds that all the students are highly competent in Basque and Spanish but that it is the students with the highest degree of bilingual competence in Basque and Spanish who achieve the best scores in written production in English. Additionally, the results show that the students who mainly speak Basque in school and in social contexts outperform the students who use Spanish most. Overall, the study finds that students who tend to use mainly Basque in school and in social contexts show a higher competence in written English, they are more fluent, their vocabulary is more complex and they make fewer errors. Nevertheless, the study finds that choice of language at home has no effect on proficiency in the writing of English in this sample of students. On the basis of these findings, the author concludes that the language model used in schooling is crucial in developing high levels of language competence, but that the language model used in schooling is not enough.

The other Spanish study is also from the Basque Country and was conducted by Valencia & Cenoz (1992). The purpose of this study was to explore the relationship between bilingualism and the acquisition of a third language. It is hypothesized that bilingualism will have a positive effect on third language learning, and that the effect of bilingualism will be mediated by the role of social motivation. Among other dimensions the authors analyse the effect of bilingual competence (competence in the Basque language) on the acquisition of English as a third language. Monolingual and bilingual students from six secondary schools in the Basque Country participated in this cross-sectional study. Almost half of the students used Spanish as their vehicular language and attended a Spanish-medium school (model A); that is, a school where Spanish is the language of instruction and Basque is taught as a school subject (4 to 5 hours per week). The other half used Basque as their vehicular language and attended a Basque-medium school (model D) where Basque is the language of instruction and Spanish is taught as a school subject (4 to 5 hours per week). The students’ proficiency in English was measured through tests of speaking, listening, reading and writing skills, and a vocabulary and grammar test. Additionally, the students completed questionnaires and participated in a personal interview regarding their social motivation for learning English.

Valencia & Cenoz (1992) find that bilingualism has a positive effect on third language achievement, but that some dimensions of bilingualism have a greater influence on some English language tests than others. The study finds that students with a high level of competence in Basque and students whose first language is Basque obtain better English language scores in tests of speaking, listening, vocabulary and grammar. The results also show that students whose mothers are competent in Basque language achieve better scores in English tests of speaking, listening, vocabulary and grammar.
The study by Gallardo del Puerto (2007) is the last study in this category. This study differs from the four other studies in this category as it is the only one in this category that measures phonological performance. In the textbox below a more detailed description of the study is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’.

The aim of this study by Gallardo del Puerto (2007) is to examine whether a higher level of bilingual proficiency contributes to better linguistic competence in a third language. Specifically, the study reports on foreign language phonological acquisition by Basque/Spanish bilingual students learning English as their third language. Additionally, the study seeks to explore the idea that cognitive advantages associated with the level of bilingualism increase as a function of age. Data contains 60 primary and secondary school students, who were selected out of a larger sample according to their use of Basque. All the participants attended a Basque-medium school; that is, a school where Basque is the language of instruction, and where Spanish is taught as a school subject.

The sample consisted of two bilingual groups: the more bilingually balanced group (n=30), containing the students who spoke Basque the most, and the less bilingually balanced group (n=30), consisting of those who spoke Basque the least. The groups were also matched to examine to which degree they were exposed to English (half of each bilingual group were in their sixth year of English instruction, whereas the other half were in the seventh), and age was examined as well. Each bilingual group was divided into thirds: one-third of students who had started learning English at the age of four, one-third of students who had started learning English at the age of eight, and one-third of students who started learning English at the age of 11. All participants were given an auditory discrimination test in order to measure their sound perception of English phonemes. The test consisted of two different perceptual activities, one for vowel phonemes and one for consonant phonemes. In the test the students were presented with two homonymous words from an audio tape. Simultaneously, cards with drawings of the two words were presented to the students, who were then asked to pick the correct one. In the analysis, T-tests were carried out to see if there were any statistical differences between the two kinds of bilingual learners.

The results of the study show that the level of bilingual proficiency does not exert any influence on the participants’ third language phonological performance, as no significant differences were discovered when analysing the phonological performance of the two bilingual groups, which differed in relation to both age and level of bilingual proficiency.

The study found that there was no significant difference between the correct identification of English phonemes by the students who exhibited a higher level of bilingualism and the right
discrimination of English phonemes by the students who displayed a lower level of bilingual proficiency. Besides, the similarity between the two kinds of bilingual learners was not only evident when analysing the whole sample, but also when looking at the different age groups. The study found that, independently of the kind of sample (all students or different age groups), more balanced bilinguals did not obtain significantly better scores than less balanced bilinguals. On the contrary, the results showed that less balanced bilinguals’ means were slightly higher than more balanced bilinguals’ means on most occasions, though the difference never reached statistical significance. However, both kinds of bilingual learners showed very similar phoneme discrimination skills. Consequently, the supposedly better phonological performance on the part of more balanced bilinguals did not turn out to be comparatively better as age increased, since there was neither a clear pattern related to age in this study, and nor was it discovered that more balanced bilinguals’ were superior. On the basis of these findings, the researcher concludes that phonological competence in English as a third language does not depend on the participants’ level of bilingualism or on their age.

According to the researcher, these surprising results can be explained by three different factors: the specific linguistic aspect under study, interlinguistic distance and type of schooling.

The researcher points to the fact that the present study examines phonology as a specific area, which may be a crucial factor and could explain why the results of this study do not coincide with those of third language acquisition research conducted in similar learning situations. Additionally, the researcher refers to the fact that Spanish and Basque are very similar with regard to segmental phonology (the same vowel system and very similar consonantal inventories). According to the researcher, it is therefore not surprising that the present study finds no differences in the phonological performance of the two groups of bilinguals. Lastly, the researcher suggests that some characteristics of the selected sample could also account for the different results shown by the present study and by the remaining research conducted in the Basque Country. While the students in this study attended the same school and had the minority language (Basque) as the instruction language, in some other studies participants differed as far as the school and education programme they were or had been enrolled in, and, therefore, they were more distinct in relation to their use of Basque and their level of bilingual balance. The researcher also indicates that students with a higher level of bilingualism, supposedly better L3 learners, may advance more rapidly in their L3 learning when they do not share English lessons with lower bilingual proficiency students, allegedly worse L3 learners. Therefore, the fact that the two groups of bilinguals in this study did not attend different classrooms depending on their use of Basque outside school, but were mixed in the same classrooms, might also be a factor.

Read more in: Is L3 Phonological Competence Affected by the Learner’s Level of Bilingualism? (Gallardo del Puerto (2007))
5.5.3 Biliteracy

Lastly, in this theme on *Impact of bilingualism and/or level of bilingual proficiency* on third language acquisition, three studies address biliteracy in, respectively, a German, Spanish and a Canadian context.

The first study by Sanz (2000) aims at investigating the relationship between students’ biliteracy in the minority and majority languages (Catalan and Spanish) and the acquisition of English as a third language in this Spanish study from Catalonia. This is done by comparing the English proficiency of high school students attending a monolingual school in a monolingual area of Spain with their peers in a bilingual school (immersion programme) of similar characteristics in a Catalan bilingual area. In the bilingual school Catalan was the language of instruction, and the students were biliterate in Spanish and Catalan. In the monolingual school Spanish was the language of instruction, and the students were all monolingual Spanish speakers. Specifically, the study isolates a number of independent variables, including bilingualism, which could contribute to the acquisition of an L3 in order to answer the following research questions: Does Catalan/Spanish biliterate bilingualism contribute to more efficient acquisition of English as an L3? Is that contribution independent from that of other predicting factors, such as intelligence, motivation, or sociolinguistic status? Monolingual and bilingual students participated in this study conducted in two high schools in northern Spain.

Sanz (2000) found a positive relationship between being biliterate in Spanish and Catalan and English proficiency, as the results of the study show that the biliterate students scored higher in the tests of English proficiency than did the monolingual students after controlling for relevant background variables.

In the German study by Rauch (2011) reading comprehension of students with different language backgrounds is in focus. The dissertation puts a special emphasize on bilingual Turkish-German students and aims to examine whether bilingual students have more success in acquiring reading competences in a third language than monolingual German students. The study compares Turkish-German bilingual students’ reading competences with German monolingual students’ reading competences. By using the results from the tests in reading competences in Turkish, the study divides the 139 Turkish-German bilingual students into fully and partly biliterate students. The overall focus is interdependence between reading competences in Turkish, German and English. The following research questions are investigated: 1) Which reading competences do Turkish-German bilingual students have in Turkish, German and English? 2) Which German and English reading competences do Turkish-German bilingual students achieve compared to German monolingual students? 3) Do the Turkish-German
bilingual students’ reading competences in Turkish have any influence on the reading competences in German and English? Moreover, the study investigates bilingual students’ language awareness in regards to their reading competences in a third language.

The study by Rauch (2011) shows that 74% of the Turkish-German bilingual students participating in the study were placed below a critical level of Turkish reading comprehension skills, which hinders an independent use of the language. The results of a German reading comprehension test showed that German monolingual students had significantly higher German reading competences than Turkish-German bilingual students. The results of an English reading comprehension test furthermore showed that German monolingual students did not show significantly higher scores than bilingual students. Moreover, the results showed that the bilingual students’ Turkish reading skills did not have any significant effect on their reading competences in German; nevertheless, their reading skills in Turkish showed a significant effect on their English reading comprehension. However, the study concludes that fully bilingual students had better language awareness and reading skills in English compared to monolingual and partly bilingual students. The results showed that it is necessary to be a competent reader in order to have a positive effect on the language awareness and the third language reading skills. Furthermore, the study demonstrates that there are no advantages or disadvantages of being Turkish-German bilingual compared to German monolingual when acquiring reading skills in English.

The third and last study in this category is a study by Swain et al. (1989). In the textbox below a more detailed description of the study by Swain et al. (1989) is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’.

This study by Swain et al. (1989) examines the impact of first language literacy knowledge and use on third language (French) proficiency. The main purpose of the study is to address whether students’ learning of French in school enhances through their literacy in a heritage language, not counting English. It also examines whether there is a differential impact on the students’ French proficiency depending on whether their heritage language was a Romance language (in this study Italian, Spanish and Portuguese) or a non-Romance language. The students were grouped into four categories based upon their understanding of their heritage language: 1) The students have no heritage language understanding other than English (monolinguals), 2) the students understand a heritage language but are unable to understand the written form of it, 3) the students understand a heritage language in written form, but do not use the language in written form, and 4) the students understand and use a heritage language in written form.
319 students from grade 8 participated in this cross-sectional study. The students attended a bilingual programme which begins instruction in English (from grade 1 to grade 4) and introduces French as a language of instruction at grade 5. Therefore, from grade 5 onwards the students were instructed in English for half of the day and in French for the other half. The students completed language tests in writing, reading and listening skills in French. The students also completed a questionnaire where they were asked to assess their literacy knowledge in a heritage language other than English and their frequency of using this language. Information on their socioeconomic background was also collected. All students could understand and use written English. ANOVA and contingency tables were used in the analysis of the results.

Overall, the study showed that bilinguals who were illiterate in their first language did not perform better than the monolingual group, and the authors conclude that the key to third language proficiency is therefore biliteracy and not bilingualism.

The authors found little difference in test scores between those who had no heritage language knowledge and those who understood a heritage language, but were unable to read or write it. Similarly, there was little difference in test scores between those who were literate in their heritage language, but did not use it in written form, and those who both understood and used a heritage language in written form. However, the authors found that students who were able to read and write (biliterate) in their heritage language scored significantly higher than students who were not biliterate in their heritage language in seven out of eight test scores. Thus the results showed that literacy knowledge in a heritage language, regardless of whether learners were making use of those literacy skills had a strong, positive impact on the proficiency in French, not only on reading and writing skills but also on listening skills.

The study also showed that the students who reported using their heritage language frequently in their homes achieved better test scores than students who reported using their heritage language infrequently.

Finally, the study showed that students with a Romance heritage language scored significantly higher than students with a non-Romance language on a written vocabulary task, a global understanding index of auditory comprehension, and on a fluency measure of oral L3 French. The authors conclude that, although the results point in the expected direction, they are not strongly supportive of the hypothesis that positive transfer is more likely to occur when the first language is from the same language family as the language being learned.

Read more in: The Role of Mother Tongue Literacy in Third Language Learning. (Swain et al. (1989)).
5.5.4 Summary on Impact of bilingualism and/or level of bilingualism proficiency

On the whole, the findings from the studies that investigate the Impact of bilingualism and/or level of bilingual proficiency indicate that bilingualism, in general, has a positive influence on third language acquisition. The explanation for this might be related to bilingual students having a higher level of language awareness. For instance, according to Cenoz & Valencia (1994), the advantage of the bilinguals can be explained in terms of their higher level of metalinguistic awareness and their ability to use their knowledge of two other linguistic systems when learning a third language. Further, the authors argue that the skills developed by bilinguals in order to use the appropriate language in interpersonal relationships could account for a higher development of communicative competence in a third language. Also Mady’s (2014a) possible explanation for the advantages on the part of immigrant multilingual students (IMM) and the Canadian-born multilingual students (CBM) is that the monolingual Canadians consider proficiency in English to be sufficient language knowledge and that the IMM’s’ status as immigrants has positively influenced their French proficiency as a mean to achieve the advantages that come with being part of the native-born group. This assumption is supported by the conclusions made by Rauch (2011), who suggests that fully biliterate students have better language awareness and reading skills in English compared to monolingual and partly biliterate students. Overall, the results from his study showed that it is necessary to be a competent reader in order to have a positive effect on the language awareness and the third language reading skills, which is also the conclusion drawn in the studies by Swain et al. (1989) and Sanz (2000).

A few key points across the studies identified as studies that analyse the impact of bilingualism and/or level of bilingual proficiency are summarised as follows:

- Bilingualism does not appear to hinder third language acquisition; on the contrary, it might facilitate students’ L3 learning.
- A high level of proficiency in L1 and/or L2 foster L3 acquisition.
- Students who are biliterate in L1 possibly acquire a third language easier and/or faster than monolingual and passive bilingual peers.

5.6 Theme four: Impact of language exposure outside school

This theme regards studies that all concern the Impact of language exposure outside school on third language acquisition. As all studies included in this systematic review concern language instruction in formal school settings, the studies in this section thus extend their focus by also including settings outside school. These settings might be at home or in other learning situations such as private lessons in a third language. The students
included in the relevant studies might be active or passive users of the languages. The languages studied in the respective studies refer to the students’ L1 and/or L2 and their impact on third language acquisition.

More specifically, five studies look at the impact of language exposure outside school (Balke-Aurell & Lindblad, 1983; Lukas et al., 2012; Sagasta Errasti, 2003; Swain et al., 1990; Valencia & Cenoz, 1992). These five studies are categorized schematically in Table 5.4 below. For a comprehensive description of each study’s purpose and results, see Appendix 3 ‘Abstracts for the studies available for the synthesis’.

**Table 5.4: Table illustrating studies within the theme Impact of language exposure outside school**

<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Focus/ foci</th>
<th>Factor(s)</th>
<th>Recepti- on(s)</th>
<th>Vocabulary/ grammar</th>
<th>Production(s)</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balke-Aurell &amp; Lindblad (1983)</td>
<td>Sweden</td>
<td>Language exposure outside school</td>
<td>Personal, foreign language specific</td>
<td>Reading, listening</td>
<td>Vocabula- ry/grammar</td>
<td></td>
<td>Longitudinal study: Other than cohort based</td>
</tr>
<tr>
<td>Lukas et al. (2012)</td>
<td>Spain, Basque Country</td>
<td>Language exposure outside school</td>
<td>Educational, social/social psych., linguistic</td>
<td></td>
<td></td>
<td></td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Sagasta Errasti (2003)</td>
<td>Spain, Basque Country</td>
<td>Language exposure outside school</td>
<td>Personal, educational, social/social psych.</td>
<td>Writing</td>
<td></td>
<td></td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Swain et al. (1990)</td>
<td>Canada</td>
<td>Language exposure outside school</td>
<td>Personal, linguistic</td>
<td>Reading, listening</td>
<td>Writing</td>
<td></td>
<td>Cross-sectional study</td>
</tr>
<tr>
<td>Valencia &amp; Cenoz (1992)</td>
<td>Spain, Basque Country</td>
<td>Language exposure outside school</td>
<td>Personal, educational, social/social psych.</td>
<td>Reading, listening</td>
<td>Vocabu- lary/grammar</td>
<td>Speaking, writing</td>
<td>Cross-sectional study</td>
</tr>
</tbody>
</table>

### 5.6.1 Language exposure at home or in other instructional settings outside school

The studies categorised under this theme investigate the influence of language use in settings outside school. As mentioned above, this might relate to the use of L1 and/or L2 at home or in other social or educational contexts outside school. The student’s use of L1 and/or L2 at home is referred to as the language being a home language (lan-
language spoken in the student’s home), the student’s mother tongue or heritage language (refers to the first language a child learns). The student is either an active or passive user of this language. Moreover, an issue related to language exposure outside school is the question whether the language studied is a minority or majority language. The five relevant studies in this theme vary quite a lot when it comes to study characteristics and purpose. Balke-Aurell & Lindblad (1983) examines the use of third language proficiency in English among immigrant students in Sweden. The students in this study have varied language background and are divided into groups depending on whether they sometimes or always speak their home language at home and thus are active bilinguals, or whether they mainly speak Swedish at home and thus are passive bilinguals. The students are measured on their participation in home language instructions and their assessment of proficiency in Swedish and the home language. The students are enrolled in either a general study course or a high level study and are compared to Swedish monolinguals.

Overall, the results of Balke-Aurell & Lindblad’s (1983) study shows that the active bilingual students (speaking their home language at home) score lower on the English test than the passive bilinguals (speaking Swedish at home). More specifically, the study shows that home language students, with Finnish, Turkish, Greek or Serbo-Croatian as their L1 speak this language at home to a larger extent compared to the group that have German, Danish, Norwegian, Italian or Hungarian as their L1 but always speak Swedish at home. According to the students’ teachers respectively 63 % of the active bilinguals and 45 % of the passive bilinguals participate in home language instruction outside school. In spite of this great variance between the groups, a relatively large percentage of the students who always speak Swedish at home participate in home language instruction. Moreover, the students’ Swedish proficiency is assessed by their teachers. 51 % of the active bilinguals and 65 % of the passive bilinguals are considered by their teachers to have a command of Swedish comparable to that of an average Swedish student. Finally, the students’ proficiency in their home language is measured. There is a great difference between the groups when it comes to the ability to speak and read the home language as compared to Swedish. More than half of the students who always speak Swedish at home consider themselves to speak and read Swedish better than the home language. The difference between the two groups of students varies greatly in this category, i.e. “command of the home language much poorer than that of Swedish”, especially as far as speaking is concerned. Almost 90 % of the students in the passive home language group speak Swedish a lot better than they speak their home language, contra the active bilingual group where only half of the students speak Swedish better than their home language. The authors point out that
the active home language group also contains students who speak both their home language and Swedish at home. Those in the passive home language group always speak Swedish at home. This does not mean that they cannot speak their home language at all, but, according to the results, few students in this group feel that they speak or read their home language as well as or better than Swedish. Of the students in the active home language group, however, half of them say that they can do this; their ability to read the home language is less well developed, however, than their ability to speak it.

The second study in this theme is the one of Lukas et al. (2012), which examines the impact of the IKASYS programme on students’ performance in Basque, Spanish and English at grades 2, 4 and 6. Additionally, the study aims at examining the influence of students’ mother tongue, their use of language at home, their attendance at private classes of English, and how their motivation and participation in the IKASYS programme impacts on the scoring obtained in learning the three languages. The IKASYS programme is a computer-based learning programme for multilingual learning that enables each student to work at his or her own pace independently and have his or her work corrected immediately, thus making possible the improvement of his or her learning skills.

The results from the study of Lukas et al. (2012) show that, independently of whether the students participated in the programme or not, in all the school years studied, the students whose mother tongue/home language is Basque, or mixed (Basque and Spanish), obtain better results in the Basque language. According to the authors, this finding can be explained by the fact that these students have greater opportunities for interacting in Basque compared to those whose mother tongue or home language is Spanish and for whom practically the only possibility of using Basque is in school. On the other hand, with Spanish language, independently of participating in the programme or not, no differences are observed in any of the school years. According to the authors, this may be because the mother tongue or home language does not have such a decisive influence, given that all of them have many opportunities for using Spanish both in and outside school. Further, the results show that students who participated in the programme obtained better scores in English than those not taking part, independently of whether they attended private English lessons or not. Nevertheless, the results show that the improvement occurring in students participating in the programme is superior amongst those who do not attend private lessons compared to those who do. Moreover, the results show that, independently of participating or not in the IKASYS programme, in all the school years studied, students whose mother tongue and/or home language was Basque obtained statistically significant higher scores in
English than those whose mother tongue and/or home language was Spanish. Thus, the study indicates that students whose mother tongue/home language is a minority language (Basque) obtain a higher level of bilingual proficiency than students whose mother tongue/home language is a majority language (Spanish). In other words, the study indicates a positive influence of a higher level of bilingual proficiency on third language acquisition.

The impact of language exposure outside school is also a theme in the Canadian study by Swain et al. (1990), where the role of mother tongue literacy in third language learning is a central subject. The main purpose of this study is to address whether students’ learning of French in school enhances through their literacy in a heritage language, not counting English. It also examines whether there is a differential impact on the students’ French proficiency depending on whether their heritage language was a Romance language (in this study Italian, Spanish and Portuguese) or a non-Romance language; however, these results will be accounted for later in this synthesis (see section 5.8).

Swain et al. (1990) found little difference in test scores between those who had no heritage language knowledge and those who understood a heritage language but were unable to read or write it in connection with their studies. Similarly, there was little difference in test scores between those who were literate in their heritage language, but did not use it in written form and those who both understood and used a heritage language in written form. However, the authors found that students who were able biliterate in their heritage language scored significantly higher than students who were not biliterate in their heritage language. Thus, the results showed that literacy knowledge in a heritage language, regardless of whether learners were making use of those literacy skills, had a strong, positive impact on the proficiency in French, not only in terms of reading and writing but also in terms of listening. The study also showed that the students who reported using their heritage language frequently in their homes had better test scores than students who reported to using their heritage language infrequently.

Another study that investigates the impact of language exposure outside school is the one by Valencia & Cenoz (1992). The purpose of this study is to explore the relationship between bilingualism and the acquisition of a third language. It is hypothesised that bilingualism will have a positive effect on third language learning, and that the effect of bilingualism will be mediated by the role of social motivation. Another hypothesis raised in this study is that the level of bilingual competence shown by a student’s community is related to foreign language achievement. Students living in bilingual areas are expected to achieve better results in the foreign language.
The overall findings of Valencia & Cenoz’s (1992) study show that bilingualism has a positive effect on third language achievement, but that some dimensions of bilingualism have a greater influence on some English language tests than others. For instance, the study shows that motivational intensity (effort), residence in English speaking countries, English-language instruction outside school and attitude towards learning English have high loading on social motivation. The results also show that students whose mothers are competent in the Basque language achieve better scores in English tests in speaking, listening and vocabulary and grammar. When one of the languages that the bilingual learner knows (Basque in this case) is a minority language, bilinguals obtain better results in L3 (English) when their minority language is valued and used in the family and in education.

Finally, the Spanish study by Sagasta Errasti (2003), that took place in the Basque Country, also studied the impact of language exposure outside school in regards to third language acquisition. In the textbox below a more detailed description of the study by Sagasta Errasti (2003) is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’.

The purpose of this study by Sagasta Errasti (2003) was to examine the influence of bilingualism on proficiency in the writing of L3 English according to model of schooling. The study was conducted in the Basque Country, where three linguistic programmes in which parents can enroll their children are offered: model A: The students are instructed in Spanish, and Basque is a school subject (4 to 5 hours per week). Model B: The students are instructed in both Spanish and Basque. Model D: The students are instructed in Basque, and Spanish is a school subject (4 to 5 hours per week). The study also aims to find a possible relationship between Basque, Spanish and English writing skills and to show whether language use patterns influence third language proficiency.

155 students aged 12-16 years participated in this cross-sectional study. All of them were enrolled in a Basque model D school. This model can be defined as maintenance when it involves students who speak Basque at home and immersion when applied to students who only speak Spanish. Half the students in the sample (n=78) had Basque as their first language or spoke mainly Basque at home, at school and in social contexts and are therefore referred to as model D-maintenance. The other half (n=77) had Spanish as their first language or tended to speak more Spanish than Basque. They are referred to as model D-immersion. All students had received their education through the medium of Basque from the age of three. Spanish was introduced in the curriculum in grade 3 at the age of eight, as was English. The students completed two language tests in writing skills in Basque, Spanish and English, so a total of six texts were produced. Additionally, the students completed a questionnaire to obtain information
about their language background. T-tests and ANOVA analyses were performed on the data obtained.

The results showed that students in model D-maintenance developed higher competence in writing skills in Basque than the students in model D-immersion. Both groups had been instructed through the medium of Basque throughout their schooling, but students in model D-maintenance were high users of Basque outside school in comparison to their peers in model D-immersion, who were high users of Spanish outside school. These results suggest that use of a minority language (Basque) contributes to a higher level of competence in that language. According to the author, these findings also show that, in a language contact situation, education through the medium of the minority language contributes to fostering high levels of additive bilingualism in the majority and the minority language. Additive bilingualism can be explained as the situation in which a person’s second language is unlikely to interfere with his/her first language.

The study also found that all the students were highly competent in Basque and Spanish, but that it was the students with the highest degree of bilingual competence in Basque and Spanish who achieved the best scores in written production in English. Additionally, the results showed that the students who spoke mainly Basque at school and in social contexts outperformed the students who used Spanish the most. The study found that, overall, students who tended to use mainly Basque at school and socially displayed higher competence in written English, they were more fluent, their vocabulary was more complex and they produced fewer errors. Nevertheless, the study found that choice of language at home has no effect on proficiency in the writing of English in this sample of students.

On the basis of these findings, the author concludes that the language model used in schooling is crucial in developing high levels of language competence, but that the language model used in schooling is not enough. Language use outside the curriculum also plays an important role as results of this study show. Therefore, the study concludes that social factors are as important as educational factors when it comes to understanding bilingual and trilingual development in contexts with two official languages, a majority language and a minority language.

Read more in: Acquiring writing skills in a third language: The positive effects of bilingualism. (Sagasta Errasti (2003))

5.6.2 Summary on Impact of language exposure outside school

Common for all of the studies within this theme is that the main focus of their examinations are factors related to third language acquisition and instruction in school, not outside; this is probably a consequence of the search strategy used in this specific sys-
tematic review. The criteria for inclusion and exclusion of studies can be found in Appendix 1. Hence, the studies within this theme are studies that investigate both language acquisition in and outside school.

The findings related to the impact of language exposure outside school are neither many nor profound; hence, the evidence base is quite small. However, the studies agree on the following:

- Language exposure outside school may play an important role in a student’s third language acquisition.
- Bilinguals in a minority language obtain better results in L3 when their minority language is valued and used at home, compared to majority languages.
- Formal language instruction outside school may have a positive effect on language acquisition at school.

When it comes to being an active or passive bilingual, the study results are mixed. On the one hand there are findings that show that passive bilinguals score higher on L3 tests than do active bilinguals (Balke-Aurell & Lindblad, 1983). On the other hand, there are findings that indicate that frequent use of heritage language at home leads to better test scores than infrequent use of heritage language at home (Swain et al., 1989). Finally, a third study finds that choice of language at home has no effect on proficiency in English writing (Sagasta Errasti, 2003).

### 5.7 Theme five: Impact of the degree of formal language instruction in school

This theme consists of four studies (Fullana, 2006; García Mayo, 2003; Muñoz, 2003; Navés et al., 2003), all of which focus on the impact of hours of formal language instruction on the acquisition of a third language.

It is worth mentioning that the studies included in this theme regarding the impact of the degree of formal language instruction in school are also included in theme two regarding the impact of age/early instruction of foreign language instruction in school, which is why some of the results in theme five are equivalent to the results in theme two.

The four studies analyse whether length of exposure to a third language has an influence on students’ proficiency in the target language. The studies are presented in
Table 5.5 below. For a more detailed description of the studies consult Appendix 3 ‘Abstracts for the studies available for the synthesis’.

**Table 5.5: Table illustrating studies within the theme Impact of the degree of formal language instruction in school**

<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Focus/ foci</th>
<th>Factor(s)</th>
<th>Reception(s)</th>
<th>Vocabulary/ grammar</th>
<th>Production(s)</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fullana (2006)</td>
<td>Spain, Catalonia</td>
<td>Degree of exposure</td>
<td>Personal, educational</td>
<td>Listening</td>
<td>Speaking (imitation pronunciation)</td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
<td></td>
</tr>
<tr>
<td>García Mayo (2003)</td>
<td>Spain, Basque Country</td>
<td>Degree of exposure</td>
<td>Personal, educational, cognitive</td>
<td>Grammar</td>
<td>Speaking</td>
<td>Longitudinal study: Cohort based study</td>
<td></td>
</tr>
<tr>
<td>Muñoz (2003)</td>
<td>Spain, Catalonia</td>
<td>Degree of exposure</td>
<td>Personal, educational</td>
<td>Listening</td>
<td>Speaking</td>
<td>Longitudinal study: Other than cohort based</td>
<td></td>
</tr>
<tr>
<td>Navés et al. (2003)</td>
<td>Spain, Catalonia</td>
<td>Degree of exposure</td>
<td>Personal, educational, cognitive</td>
<td>Writing</td>
<td>Cross-sectional study</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.7.1 Degree and/or length of formal language instruction in school

The purpose of the first study in this theme, the study by **Fullana (2006)**, is to test the effect of different starting ages on third language acquisition among Spanish/Catalan bilinguals in the school districts of Barcelona. Additionally, the study aims to assess the factor of varying degrees of exposure to the target language in different age groups, which is why the study is included in this theme. The basis of the study is also to test the Critical Period Hypothesis, which states that native-like phonological language skills can only be acquired if learners start at an early age, against alternative theories that state that this is also possible for late starters.

The results from the study by **Fullana (2006)** indicate that starting age and number of hours of instruction are not strong predictors of the ability to produce English
sounds in a native-like manner in a formal language learning context. There is, however, a small tendency towards late starters having slightly higher proficiency levels on some of the measured tasks. Therefore, the author suggests that the Critical Period Hypothesis can be questioned, since the results suggest that a late starting age of formal language learning in formal instruction learning settings could be favourable.

In the study by García Mayo (2003) it is examined whether the length of exposure to English as a third language has any influence on students’ proficiency in an English grammar test. The study also examines whether an earlier exposure to English leads to a higher level of English proficiency. In this theme the focus will be on the results on whether the length of exposure to English as a third language has any influence on students’ proficiency in an English grammar test.

In García Mayo’s (2003) study the results show that length of exposure to English language instruction has a positive effect on the students’ performance in the English grammar test. This indicates that students’ performance in English as an L3 increases with the length of exposure. The author concludes that early introduction in English as an L3 will not lead to appropriate results if instructional hours are not used effectively and there is no increase in the number of hours of exposure.

Muñoz (2003) poses two research questions in her study. The first research question regards whether early starters learning English as a third language show a similar, poorer or higher performance in English proficiency than late starters. The second research question examines the relation between length of instruction and English proficiency in students with different starting ages. It is the latter research question which is of particular interest in this theme.

The study by Muñoz (2003) found that late starters performed better than early starters in tests in oral skills and the test in listening comprehension. This was the case after 200 hours of instruction and after 416 hours of instruction. The results indicate that the factor that appeared to explain the highest percentage of variance in the English proficiency scores was “proficiency in L1”. No significant differences were found between late and early starters in a word-picture test of the students’ listening comprehension. The study also showed that 416 hours of instruction was not enough for the early starters to catch up. The late starters scored higher in the test of oral productive skills than did the early starters.

The fourth study included in this theme is the study by Navés et al. (2003). In the textbox below a more detailed description of the study by Navés et al. (2003) is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’.
This study by Navés et al. (2003) is part of the Barcelona Age Factor (BAF) Project and investigates the effect of the starting age of third language instruction on written proficiency in English. Short-term, mid-term and long-term effects are measured after 200, 416 and 726 hours of instruction, which enables the authors to examine if early starters are able to catch up with late starters. Previous research has shown that late starters have a higher short-term acquisition rate than early starters, due to their greater cognitive maturity.

A total of 520 Catalan-Spanish bilingual students from different schools in Barcelona participated in this cross-sectional study. Two groups of students were compared: students who started learning English when they were eight years old (early starters) were compared with students who started learning English when they were 11 years old (late starters) after 200, 416 and 726 hours of instruction. The early starters’ proficiency was measured when they were 10.9 years old, 12.9 years old and 16.9 years old on average while the late starters’ proficiency was measured when they were 12.1 years old, 14.9 years old and 17.9 years old on average. Each group completed tests of their written English proficiency measuring their fluency, accuracy, syntactic complexity and lexical complexity. Using the test results, the authors analysed differences in test scores at the three data collection points by means of different statistical tests.

Overall, the study showed that the late starters obtained higher test scores than the early starters at all three data collection times. Thus, the early starters did not catch up on the late starters in the long-term, i.e. after 726 hours of instruction.

Specifically, the results showed that, after 200 hours of instruction, the late starters performed significantly better on 13 out of 16 measures of English proficiency than the earlier starters. After 416 hours of instruction the late starters performed significantly better on 13 out of 15 measures of English proficiency than the earlier starters. After 726 hours of instruction the late starters performed significantly better on 11 out of 40 measures while the early starters performed significantly better on 4 out of 40 measures.

According to the authors, the reduction in significance of certain measures indicates that, while the early starters did not catch up on the late starters after 726 hours of instruction, they might do so if a longer period of comparison was used. The lower scores obtained by the younger group could be due to differences in cognitive maturity, linguistic development and test-taking strategies. The differences observed could also be related to type of input or instructional style with wash-back exam training explaining the higher ultimate attainment in written production of the older learners. According to the authors, the methodological changes that the introduction of a new educational system may have involved are still unclear. The intensity of instruction during the last period of schooling and, therefore, of data collection,
was greater for late starters than for early starters. The amount of instruction received by early starters was far more spread out within the three collection times than that of the late starters.


### 5.7.2 Summary on Impact of the degree of formal language instruction in school

The studies included in the theme *Impact of the degree of formal language instruction in school* share several commonalities in regards to results. The four studies included in this theme all indicate that early starters do not catch up with late starters even when receiving the same amount of instruction time. Also the authors of the studies underline that the effect of the quantity and quality of both formal and informal exposure to an L3 are areas where further research is needed in order to determine whether an early starting age or late starting age is favourable in regard to third language acquisition. These points can be summarised as follows:

- Early starters do not appear to catch up with late starters in the semi long-term, however they may catch up with late starters after a longer period of time.
- An increase in the number of hours of L3 exposure that early starters receive may lessen the gap to older learners.

### 5.8 Theme six: Impact of L1/L2 on L3

This section contains the results from the studies available for the synthesis that focus on whether or not students’ L1 and/or L2 influence their third language acquisition. The studies that examine the impact of L1 and/or L2 on L3 look at the influence of language typology (typological proximity and distance) in relation to third language ac-

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17 As these studies are also included in the theme *Impact ofageearly instruction to foreign language instruction in School,* a number of factors should be taken into consideration (see section 5.4.1). As pointed out in the studies, factors such as the students’ cognitive maturity, their proficiency in L1, their individual learning strategies and test-taking strategies as well as number of hours of L3 instruction might possibly relate to the age factor.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

In school, as they all investigate the typological relationship between students’ L1/L2 and their L3. Also, the studies within this theme investigate the role of cross-linguistic influence of the two first acquired languages on the third, even though the studies are found to focus on fairly different aspects of cross-linguistic influence. However, the studies all look at whether learning a third language in school is facilitated by having an L1/L2 which is typologically similar to the L3.

In all, seven studies analyse the influence of L1/L2 on L3 (Bardel, 2006; Bérubé & Marinova-Todd, 2012; Brohy, 2001; Cenoz, 2001; Cenoz, 2003a; Lindqvist, 2006; Swain et al., 1989). These are presented in Table 5.6 below. For a more detailed description of the studies, see Appendix 3 ‘Abstracts for the studies available for the synthesis’.
<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Focus/foci</th>
<th>Factor(s)</th>
<th>Reception(s)</th>
<th>Vocabulary/grammar</th>
<th>Production(s)</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bardel (2006)</td>
<td>Sweden</td>
<td>Language typology</td>
<td>Linguistic</td>
<td></td>
<td></td>
<td></td>
<td>Case study</td>
</tr>
<tr>
<td>Bérubé &amp; Marinova-Todd (2012)</td>
<td>Canada</td>
<td>Language typology</td>
<td>Linguistic</td>
<td>Reading, listening</td>
<td>Vocabulary</td>
<td>Speaking</td>
<td>Longitudinal study: Cohort based study</td>
</tr>
<tr>
<td>Brohy (2001)</td>
<td>Switzerland</td>
<td>Language typology</td>
<td>Social/social psych., foreign language specific, linguistic</td>
<td>Reading, listening</td>
<td></td>
<td>Speaking, writing</td>
<td>Cross-sectional study + Longitudinal study: Cohort based study</td>
</tr>
<tr>
<td>Cenoz (2001)</td>
<td>Spain, Basque Country</td>
<td>Language typology</td>
<td>Personal, cognitive, foreign language specific, linguistic</td>
<td></td>
<td>Speaking</td>
<td></td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Cenoz (2003a)</td>
<td>Spain, Basque Country</td>
<td>Language typology</td>
<td>Cognitive, foreign language specific, linguistic</td>
<td></td>
<td></td>
<td>Speaking</td>
<td>Longitudinal study: Cohort based study</td>
</tr>
<tr>
<td>Lindqvist (2006)</td>
<td>Sweden</td>
<td>Language typology</td>
<td>Foreign language specific</td>
<td>Speaking</td>
<td></td>
<td></td>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
</tr>
<tr>
<td>Swain et al. (1989)</td>
<td>Canada</td>
<td>Language typology</td>
<td>Personal, linguistic</td>
<td>Reading, listening</td>
<td>Writing</td>
<td></td>
<td>Cross-sectional study</td>
</tr>
</tbody>
</table>

Table 5.6: Table illustrating studies within the theme Impact of L1/L2 on L3
5.8.1 Language typology

As mentioned above, the seven studies categorised under this theme investigate the hypothesis that the relationship between the typology of the students’ L1/L2 and their L3 has a positive impact on the students’ L3 learning and proficiency.

The first study within this theme is a Swiss study carried out by Brohy (2001). This study compares the acquisition of French as a third language by Romansh-German bilingual students who were enrolled in a bilingual programme with the French proficiency of German monolingual students in order to examine whether students who had Romansh as their first language (L1) had better competences in L3 French compared to students who first language was German. Since Romansh is a Romance language, similar to French, students with Romansh as their first language were expected to have better competencies in L3 French, as it was expected that L1 Romansh students would exhibit transfer strategies from Romansh to French.

The study by Brohy (2001) found that students whose first language was Romansh (L1) had better competences in L3 French, which is a Romance language, similar to Romansh, compared to students whose first language was German. The study showed that the overall competences in the four skills measured (reading, listening, speaking and writing taken together) were higher for the students with L1 Romansh. Furthermore, the L1 Romansh students had better pronunciation and speaking skills than the students with L1 German, and the L1 Romansh students processed more information than the minimum required in the assignments. They also took more risks by trying to construct more complex sentences. However, the study showed that both groups of students used transfer strategies.

These results are somewhat in line with the results from the study by Swain et al. (1989). This study compared the level of French proficiency attained by students whose first language was English (L1) and whose second language was French (L2) with bilingual students who had English as L2 and another language as their L1 and who were learning L3 French. Thus, in the same way as the previous study this study also examined whether there was an impact on students’ L3 French proficiency depending on whether their heritage language was a Romance language (in this study Italian, Spanish and Portuguese) or a non-Romance language.

Like the study by Brohy (2001) Swain et al. (1989) also found that bilingual students with a Romance language as their heritage language (in this study Italian, Spanish and Portuguese) scored significantly higher than monolingual students with a non-Romance language on a written vocabulary task, a global understanding index of auditory comprehension, and on a fluency measure of oral L3 French. However, the study
concludes that, although these results point in the expected direction, they are not strongly supportive of the hypothesis that positive transfer is more likely to occur when the first language is from the same language family as the target language.

Another study on the impact of L1 and/or L2 on third language acquisition was carried out by Bérubé & Marinova-Todd (2012). This study investigates the impact of L1 typology on the development of L2 and L3 proficiency in two groups of multilingual students who were exposed to English (L2) and French (L3) in an early French immersion programme. In particular, this study investigates the hypothesis that orthographic similarity between the typology of the L1 and additionally acquired languages has a positive effect on L2 and L3 proficiency.

The results of the study by Bérubé & Marinova-Todd (2012) indicate that vocabulary and listening comprehension skills and (to a lesser degree) reading skills in the acquisition of L2 and L3 are influenced by L1 typology. The study found that the monolingual students and multilingual students with an alphabetic L1 in most cases outperformed the multilingual students with a logographic/syllabary L1 in regards to French and English oral skills and (to some extent) reading proficiency, the latter not including the dimensions of word reading and pseudoword reading. Furthermore, the findings of this study indicate that the acquisition of oral language skills in L2 and L3, particularly vocabulary comprehension, appears to have a positive influence on reading comprehension skills in L2 and L3 to a greater extent when the L1 is typologically similar.

The next study, a Swedish study by Bardel (2006), considers cross-linguistic influence from previously acquired third languages into L4 syntax. The object under study is the acquisition of preverbal placement of sentence negation in Italian L4 among students with the same L1 (Swedish) and L2 (English), but with a different L3 (Spanish, French and German).

The findings obtained in the study by Bardel (2006) point at positive transfer from Spanish L3 into Italian L4: The group that had studied Spanish produced only preverbal negation, while the students who only had experience of Germanic languages (Swedish, English and German) before learning Italian, produced mainly postverbal negation together with nonthematic verbs. Postverbal negation was also found among students who had studied French, although to a lesser extent than among those who only had experience of Germanic languages. As all students had the same L1, the hypothesis that L1 is the only language used in learning a new language is falsified.

The following is another Swedish study, the study by Lindqvist (2006), which investigates to what degree the L1 and L2 are used in and influence third language oral production. In this study the number of cross-linguistic lexemes and the number of
previously acquired languages used were examined, as was the main source of influence (L1 or L2). Thus, this study looked at the roles of the base languages in L3 oral production (specifically, students’ use of L1 Swedish and L2 English in spoken L3 French).

The study by Lindqvist (2006) showed that L1 Swedish was the main source of influence on third language oral production. Thus, the study found that the L2 English was practically non-existent; virtually all of the cross-linguistic lexemes were L1 Swedish. Furthermore, the study showed that the proficiency level in the L3 was decisive for the use of the base languages (L1 and L2) in at least two ways. First, the number of cross-linguistic lexemes in L1 or L2 decreased with proficiency in the L3. Second, the number of base languages used also decreased with proficiency in the L3. Thus, the study found that the number of cross-linguistic lexemes as well as base languages used reflected the proficiency level in the L3.

Another study on the influence of L1 and L2 on third language oral production was carried out by Cenoz (2003a). This study focuses specifically on cross-linguistic influence by comparing a cohort of students at two different points of time in their acquisition process. This was done to see if there was development in the use of the L1 (Basque) or L2 (Spanish) as supplier languages in learning English as a third language. The study considers two types of cross-linguistic influence: interactional strategies and transfer lapses. Interactional strategies refer to direct or indirect appeals to the interlocutor in order to get help to produce a specific term in English. Transfer lapses refer to the use of one or more terms (but not whole sentences) in Basque or Spanish as part of an utterance produced in English.

The study by Cenoz (2003a) finds that factors such as linguistic typology (Spanish is typologically closer to English than Basque), general sociolinguistic context (Spanish is the majority language) or individual differences can be important factors when cross-linguistic influence is analysed. The analysis shows that the total percentage of utterances including elements from other languages increases by the sixth year of primary school. However, the study also shows that it is necessary to distinguish the different types of strategies in oral production as related to the activation of the base languages (L1 and L2). The study suggests that Basque is the default supplier when students use interactional strategies while Spanish is the default supplier in the case of transfer lapses. Results show that the two languages have the same functions in grades 4 and 6, and that the main difference is the number of interactional strategies. According to the researcher, this seems to indicate that students in grade 6 are more confident when it comes to asking for help from their interlocutor. The seventh and last study within this theme of the Impact of L1/L2 on L3, another study by Cenoz (2001), investi-
gates the effect of age and language typology in the language learning process relating to a third language. In the textbox below a more detailed description of the study by Cenoz (2001) is given. This is to give an example of a full abstract as can be found in Appendix 3 ‘Abstracts for the studies available for the synthesis’.

In this study Cenoz (2001) reported the results of a research project on cross-linguistic influence on third language acquisition. Specifically, the study explored the effect of age and language typology in the language learning process relating to a third language. The objective of the study was to examine the amount of lexical transfer of Basque and Spanish to English.

This quasi-experimental study was conducted in a Basque school where English was taught as a third language to native speakers of Basque and Spanish. A total of 90 primary and secondary school students participated. Basque was the first language of 44% of the students, Spanish was the first language for 23%, and the rest (32%) had both Basque and Spanish as their first languages. All the participants attended the same school and had Basque as the language of instruction. To investigate the effect of age on third language acquisition, the students were divided into three groups according to their age; the first group consisted of 30 students in grade 2 (with a mean age of 7.3 years), the second group was composed of 30 students in grade 6 (with a mean age of 11.3 years) and the third group consisted of 30 students in grade 9 (with a mean age of 14.2 years). Data for the study was collected when all of the students had been learning English for four years, although they had begun to learn English at different ages (at the age of four, at the age of eight or at the age of 11). Though all participants had received instruction in English for four years, the students in grades 6 and 9 had received 80 hours more instruction than the students in grade 2. All participants completed an oral production task and a background questionnaire that included questions on their knowledge and use of Basque in social contexts. The oral production task was audio- and videotaped, and also transcribed, and all cases of cross-linguistic influence at the lexical level were identified. However, in this paper only transfer (i.e. borrowings and foreignisings) is analysed.

Overall, the results show that cross-linguistic influence in third language acquisition is related not only to linguistic distance, but also to other factors.

The study finds that typological distance plays an important role in cross-linguistic transfer, as all participants present a stronger influence from Spanish, an Indo-European language, than from Basque; that is, as mentioned before, a non-Indo-European language. The results show that all students prefer to use Spanish as a source language, and that students with Basque as their first language seem to have a stronger preference for Spanish than do students whose first language is Spanish. In other words, Basque L1 students seem to use Spanish as the base language in acquiring English as a third language, and Spanish L1 students transfer more terms from Basque than Basque L1 students, but they still use Spanish as their main source language.
According to the author, the use of Spanish as the base language can be explained in the case of Basque L1 students because Spanish has an L2 status and at the same time is typologically closer to English. In the case of Spanish L1 students, Basque could be the preferred language because of its L2 status, but still Spanish is typologically closer to English than Basque is. According to the author, this could be an explanation of the fact that Spanish L1 students use Basque more often as a source language than do Basque L1 students. Thus, the results of this study indicate that linguistic distance is a stronger predictor of cross-linguistic influence than L2 status.

Moreover, the study suggests that language proficiency and metalinguistic development related to age affect cross-linguistic influence. Regarding the relationship between cross-linguistic transfer and age, the results show that the amount of lexical transfer is higher in grade 9 than in grade 6 and grade 2, and that the older students transfer fewer terms from Basque than do the younger students. Furthermore, the results show that cross-linguistic influence is more common in the case of content words than in the case of function words, and that students borrow very few function words from Basque, which indicates that the type of word transferred is strongly affected by linguistic distance. According to the author, the different structure of Basque as compared to Spanish and English could explain the limited transfer of function words from Basque. However, the influence of linguistic distance could be direct when students are aware of linguistic distance and indirect when students are applying a communicative strategy used when speaking Basque to a third language.

Based on these findings, the author concludes that older students present more cross-linguistic influence than do younger students. According to the author, this could be explained by the higher metalinguistic awareness of the older students, which could make them more aware of the objective linguistic distance between Basque and English. Thus, the author suggests that older students are able to perceive that Basque and English are typologically more distant than Spanish and English, and that they can use Spanish rather than Basque as a base language when acquiring English. The younger students, on the other hand, seem to be less aware of the objective linguistic distance between Basque and English as they find both Spanish and Basque terms transferable to English. Thus, the results of this study seem to be compatible with the idea that the perception of linguistic distance and the perception of ‘transferability’ can be more important than objective linguistic distance.

Lastly, the author underlines that the results of this study were obtained in a specific situation and therefore cannot be generalised without taking the contextual variables into account.

Read more in: The Effect of Linguistic Distance, L2 Status and Age on Cross-linguistic Influence in Third Language Acquisition. (Cenoz (2001)).
5.8.2 Summary on Impact of L1/L2 on L3

In sum, all of the studies described above have investigated directly or indirectly one or more aspects of the influence of L1 and/or L2 on third language acquisition in school. However, the operationalisations of the different aspects are fairly diverse, which also makes the indication of a possible impact of L1/L2 on third language learning and proficiency somewhat hard to determine. The data suggests most firmly that L1 typology may influence the acquisition of certain L3 skills. Moreover, some of the studies identify typological distance, proficiency level in L3 and factors associated with the activation of the base languages or the students’ use of the base languages as factors that can explain the acquisition of third language in school.

A number of key points across the studies identified as studies that analyse the influence of L1/L2 on L3 are summarised in the following. Because the findings of the studies in this theme look at very specific aspects of multiple language learning, references have been added to the summary of findings.

- L1 typology relates to the development of L3 speaking, writing and listening skills as well as reading comprehension skills. Brohy (2001), Swain et al. (1989), Bérubé & Marinova-Todd (2012) and Cenoz (2001) find that when the students’ L1 was typologically related to their L3, they acquired high levels of speaking, listening, vocabulary and to some extent reading skills in the L3. Furthermore, Bérubé & Marinova-Todd (2012) find that the acquisition of oral language skills in L2 and L3, particularly vocabulary comprehension, appears to have a positive influence on reading comprehension skills in L2 and L3 to a greater extent when the L1 is typologically similar.
- Typological distance plays an important role in cross-linguistic influence. Cenoz (2001) finds that linguistic distance is a stronger predictor of cross-linguistic influence than is L2 status.
- The proficiency level in the L3 might well influence the activation of the base languages (L1 and L2) in L3 oral production. Lindqvist (2006) finds that the number of cross-linguistic lexemes as well as used base languages reflects proficiency level in the L3.
- Finally, Cenoz (2003a) finds that different types of cross-linguistic strategies in L3 oral production are related to the students’ use of the base languages in the learning of a third language.
6 Robustness of the synthesis

This section will present an assessment of the robustness of the synthesis. This is an essential part of the narrative synthesis process, as it focuses on the potential methodological strengths and weaknesses of both the applied review method (mapping and synthesis) and methods used in the included studies. These strengths and weaknesses can potentially directly impact the overall robustness of the synthesis and, therefore, also have a bearing on the trustworthiness of the conclusions drawn on the basis of the synthesis. Thus transparency on this subject is of great importance.

The robustness level of the synthesis is essentially determined by how studies are selected for inclusion, what weight they are given in the synthesis and how they are theoretically conceptualised, coded and grouped into themes. Thus how they are identified (search process and key-wording), processed (screening and scope), how they are assessed (quality appraisal) and which level of research quality they display in the systematic research mapping that preceded the synthesis. After completing the systematic research mapping and hereby establishing an evidence base of studies to synthesise the remaining robustness, issues are related to how the studies are grouped by common themes, the conceptual framework used to present the specific research field of the review and how results from the studies are reported.

6.1 Robustness of methods applied in the systematic research mapping

6.1.1 Search process
At the first stage of the systematic research mapping keywords were extracted from state-of-the-art literature identified via preliminary searches and suggested by the review group. A list of key terms was compiled, and the review group was consulted and asked to review this list and to provide additional content if needed. Thereby a robust point of departure for the mapping was created. A full list of search strings and databases are included in (appendix I).

Two factors that could impact the robustness of the synthesis were discovered during this stage. Firstly, the used conceptual terminology appeared to vary across the field. E.g. some researchers would classify early bilinguals as having just an L1, and therefore perceives L2 as the first language learned in school while others would char-
acterise the same bilingual group as having both an L1 and an L2 before beginning formal instruction, making the first language learned in school an L3\textsuperscript{18}. In this case the different use of conceptual terminology affects how studies are indexed and registered in journals and databases. In short: some studies, which should have been labelled as L3 studies, may be hard to identify due to the fact that they have been labelled as L2 studies. To completely counter this, it would be necessary to add a screening of vast parts of the TLA field to the search process. However, we have considered it to be inefficient to spend a large part of the available resources in this way, considering that it would severely limit all the others phases of the review process.

Secondly, it became apparent that not all major journals within the field were sufficiently represented in our selection of databases. Consequently, these journals were hand searched and screened manually, even though this is not an optimally systematic approach.

However, both factors appeared to be of minor magnitude; nevertheless, they might have contributed a small degree of publication bias to the research mapping hence reducing the potential size and quality of the evidence base for the synthesis.

6.1.2 Screening and scoping

The screening phase of the systematic research mapping process was conducted on the basis of the pre-set scope of the systematic review as described in chapter 1. Thus specific criteria for inclusion/exclusion were applied to each of the 6,115 unique references identified in the searches, reducing the number to 58\textsuperscript{19}. Since the inclusion/exclusion process was performed systematically in accordance with a clearly defined ruleset (included in appendix 1), this phase of the mapping process should not impact the evidence base and therefore not reduce the robustness of the synthesis directly. Indirectly, however, it should be noted that any definition and choice of scope entails delimitations in time, space, concept definitions, target group, etc. It limits the part of the research field that is mapped, screened for inclusion/exclusion and assessed.

This also means that a different scope set around the same core subject area or research question could potentially yield a somewhat different evidence base with equivalently different properties in regards to e.g. research quality and study foci. Therefore, when referring to the specific research field of multiple language learning and acquisition, it is implicit that we are referring to the part of the field that falls within the scope of this systematic review. Lastly, setting a scope is necessary in order to

\textsuperscript{18} The latter is in accordance with the terminology adopted in this review.

\textsuperscript{19} 70 references, including secondary references.
reduce the vast number of studies made available from researches around the globe and across time to a number small enough to allow for systematic processing within the time- and resource span of a review process.

6.1.3 The quality and quantity of the studies available for the synthesis
The nature of robustness of the synthesis is closely related to the quality and quantity of the studies available for and included in the synthesis. A synthesis based on studies that have not been quality assessed or were found to be of insufficient research quality will directly affect the robustness of the synthesis, weakening it. The same is true in regards to the number of studies which the synthesis is based on. Fewer studies (even of high quality) increases the probability of synthesising biased results and in many cases provides a more narrow and less rich scope of knowledge.

Although the question of quality and quantity is essential another important point to consider is that the main purpose of the systematic review is to gather and provide the best available knowledge in a specific field of research. This should be underlined as there are vast differences between research fields and some may contain much more research and/or research of higher quality than others. Following this a too rigid standard of quality and robustness may result in it being nearly impossible to conduct reviews in fields with fewer published studies and/or studies of lower quality than average. If researchers were to refrain from gathering the best available evidence in such fields, there would certainly be a risk that the only available knowledge would consist primarily of single studies of relatively low quality, which may lead to a much less robust knowledge base. Therefore, adjusting the quality and quality standards to the properties of a specific field must be considered when conducting a systematic review. Such an adjustment was implemented in this systematic review due to the properties of research in the field.

The pool of 58 studies that remained post-screening were assessed using an adapted version of the EPPI weight of evidence approach, which is in accordance with recommendations for good practice put forth by Popay et al. (2006).

The quality of the final 43 included studies can generally be characterised as medium considering the result of the quality assessment presented in the table below. As mentioned in previous chapters, the combined weight of evidence C builds upon both A and B (cf. section 3.3):
Studies assigned an overall ‘low’ weight of evidence were not included in the synthesis.

The overall weight of evidence assigned to each study was based on an overall assessment of each study on the two evidence weight dimensions of A) research quality and B) research relevance (this procedure is described in detail in section 3.3) hence the methodological robustness of each study and its relevance in regards to providing evidence on the specific topic of this review as defined by the review questions.

It should also be noted that the quality assessment phase revealed a slightly higher rate of disagreement between the external and internal reviewers’ assessments than what is usually the case in this type of review. Final agreements were reached but in some cases after some methodological debate. This could be an early indication that this specific research field might hold some methodological properties and/or challenges which have implications for the robustness of the synthesis. This point is addressed in the next section.

### 6.2 Field specific methodological challenges related to synthesis robustness

#### 6.2.1 Research designs utilised in the included studies

A more in depth look at the research designs applied in the studies available for the synthesis gives rise to a more critical appraisal. Even though Petticrew & Roberts (2003), among others, state that it can be problematic to rely too heavily upon a traditional evidence hierarchy with RCT designs at the top and single case studies at the bottom, it still seems relevant to consider, firstly, that there are no RCT-designs among the included studies, and, secondly, which designs are most commonly applied.

The frequency distribution of utilised research designs indicates that cross-sectional studies are very common in this field of research as approximately 45% of the applied designs are of this type. In regards to robustness, both cohort studies and other

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20 Based on experience from many earlier research mappings and reviews done by DCU
types of longitudinal research designs are usually preferable to, for instance, cross-sectional designs because they analyse a development in the data/the population under investigation by involving repeated observations of the same variables over longer periods of time in contrast to single measurement points in cross sectional designs. This is preferable in the sense that such designs widen the scope of possible types of effects that can be investigated and reduces the risk of e.g. contextual effects all other things being equal.

6.2.2 Sample sizes and sampling procedures
Going beyond the question of research design the sample sizes of the 43 studies included in the synthesis are also relatively small as illustrated below.

The relatively small sample sizes identified in the included studies reduce the robustness of results drawn from the evidence base, as they present less variance and greater potential for bias than large-N studies especially in non-experimental designs. In addition to this, the sample sizes are often comprised of several groups of varying size and composition. For instance a study that has a small-N split among two groups, one consisting of bilinguals and one of monolinguals, and at the same time has different combinations of languages in each group can be very responsive to bias and small changes in the distribution within each group and is thus more likely to reach results that are not statistically reliable. Randomisation can potentially counter some of the reduced robustness stemming from the small sample sizes and group compositions, but such a sampling procedure is not common among the included studies.
6.2.3 Measures, indicators and testing
Having established that sampling and sample sizes may constitute a weakness in regards to the robustness of the synthesis, the operationalisation, testing and choice of indicators within the research field are also worth taking into consideration. The 43 included studies that constitute the evidence base for the synthesis use a fairly large multitude of tests. Some were standardised and some were not (and some were created by the researchers solely for the study in question), but few studies use the same array of tests. It should also be mentioned that quite a few of the studies are not very transparent in regard to details about choice of test or test procedures, and therefore the repeatability is limited.

In addition, the studies often investigate very specific aspects of language acquisition e.g. phonetic identification, lexical reception and use of subject pronouns and not just overall language proficiency. This seems to indicate that there are few instances where the exact same aspects are studied and/or measured in the same way, which can constitute a validity problem in synthesising the results across studies, even when operating with a narrative methodological approach to synthesis, opposed to conducting a meta-analysis. Or at least it could make each synthesised aspect less empirically saturated. The low degree of “coherence” and heterogeneity is expected to have a potential negative impact on the robustness of the synthesis.

6.2.4 Alternative explanations, controlling for confounding and statistical methods
One final research field specific factor that may impact the robustness of the synthesis is the absence of control for alternative explanations in the form of confounding or third variables.

The most commonly observed problem in this regard was related to socio-economic status (SES), although a few studies also did not control for variables such as gender or age. This must be taken into account as observed effects attributed to independent variables such as bilingual status, or a specific L1 or L2 could also find an alternative explanation in the fact that these variables could be highly correlated with SES, which is often considered to have an impact on almost every aspect of formal learning and education. A potential confounding effect (or interaction) could, of course, be either negative or positive. This means that the observed effect of bilingual status or of having a specific L1 or L2 (as in the previous example) could be either greater or smaller. It could also remain unchanged, but experience indicates that this is unlikely. In any case methodological standards call for controlling for such variables,
and the absence of such control might have a negative impact on the robustness of the synthesis of the results from such studies.

There are also a few factors related to the effect of age on multiple language acquisition that could be considered. Firstly, the effect of difference in onset age is difficult to isolate in a research design as other factors such as cognitive ability might influence the acquisition rate, as is also stated in some of the studies. A potentially influential factor rarely considered in these types of studies is the type of the received instruction. Amount of instruction is often measured as hours of instruction, but variance in the instruction type both across and within schools, regions, and over time (e.g. changing curriculums) might also influence the rate of acquisition.

It is also worth stating that far from all studies use advanced statistical procedures such as multivariate analysis (regressions, analysis of variance, multilevel models, structural equation modelling etc.). Some merely rely on simple correlations, t-test and descriptive statistics.

6.2.5 Context effects and external validity of the studies available

The overall assessment of the generalisability of the studies available for the synthesis within the geographical scope of the review is not overwhelming. This is partially due to the previously mentioned methodological challenges of the field, but also due to the unequal distribution of geographical contexts as presented below:

<table>
<thead>
<tr>
<th>Country/countries</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>4</td>
</tr>
<tr>
<td>Canada</td>
<td>5</td>
</tr>
<tr>
<td>USA</td>
<td>1</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>2</td>
</tr>
<tr>
<td>Spain, Catalonia</td>
<td>9</td>
</tr>
<tr>
<td>Switzerland</td>
<td>3</td>
</tr>
<tr>
<td>Spain, Basque Country</td>
<td>14</td>
</tr>
<tr>
<td>Austria</td>
<td>1</td>
</tr>
<tr>
<td>Grand Duchy of Luxembourg</td>
<td>1</td>
</tr>
</tbody>
</table>

N = 43

The table shows that nine countries are represented in the evidence base, but at the same time that more than half of the studies were carried out in Spain - although in different regions. This may constitute a bias as the country and region specific factors may influence the results of the studies as the findings could be different if the geo-
graphical context was changed. Some degree of clustering can be expected, though, as countries with more than one official and/or recognised language might have more incentive and better opportunities for conducting studies in this field. However, it may still have a negative impact on the robustness of the synthesis in regards to external validity and to what degree the results can be generalised across contexts.

6.3 Robustness of the methods applied in the synthesis process

The robustness of the synthesis process itself (beyond the systematic research mapping and the creating of the evidence base) depends on the methods applied in the completion of the synthesis, including an evaluation of the overall methodological approach, the coding into themes and the measures that have been taken to report and synthesize the results in a transparent, fully comprehensive and systematic manner in accordance with the primary data.

In this section, we evaluate the methodological choices made during the synthesis process.

Firstly, we chose not to perform a meta-analysis on the basis of the studies available for the synthesis but instead apply a narrative synthesis approach. This was a consequence of the great heterogeneity found across the studies concerning definitions, operationalisation, measurements and choice of research designs in relation to the multiple language learning phenomena, as well as a consequence of the other methodological challenges stated in the previous section.

Hence a narrative synthesis is the better alternative when aggregating data, e.g. in the form of effect sizes, is not possible. The narrative synthesis has been conducted in accordance with common practice for carrying out a narrative synthesis as described in Popay et al. (2006).

A narrative synthesis approach (Gough et al., 2012; Popay et al., 2006), presents a way of synthesising the results from across the evidence base in a systematic way, thus investigating how the knowledge gained from each individual study can be combined and compared. For this purpose the studies were coded and sorted into themes\(^{21}\) in order to summarise and display the different subject areas, approaches and findings of the studies (Ibid.). See section 3.4 for a complete description of how this synthesis was conducted, which is in accordance with robustness standards put forth by Popay et al. (2006). E.g. systematic abstracts were used in order to provide equal similar textual descriptions of each study in the evidence base in order to provide a strong base for comparison and synthesis.

\(^{21}\) A single study can be coded to more than one theme category.
6.4 Overall assessment of the robustness of the synthesis

As Popay et al. (2006) states “The notion of robustness in relation to evidence synthesis is complex. Most straightforwardly robustness can be used to refer to the methodological quality of the primary studies included in the review and/or the trustworthiness of the product of the synthesis process.” Both of these dimensions have been analytically investigated and evaluated in the previous sections of this chapter and in chapter 3 (section 3.4).

This section presents a summary of the main factors (strengths and weaknesses) that could impact the robustness of the synthesis and provides an assessment of the overall level of robustness. The factors are displayed in the table below:

<table>
<thead>
<tr>
<th>Factors that reduce robustness</th>
<th>Systematic research mapping methods</th>
<th>Methods applied in studies included in the evidence base</th>
<th>Narrative synthesis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• A small degree of publication bias due to varying L2/L3 terminology</td>
<td>• Relatively small samples and even smaller sub-groups</td>
<td>• No quantitative effect aggregation possible</td>
</tr>
<tr>
<td></td>
<td>• Some journals were handsearched</td>
<td>• Vast heterogeneity in regards to choice of indicators (tests) and dependent variables (dimensions/aspects of third language acquisition)</td>
<td>• Less robust evidence base to build on</td>
</tr>
<tr>
<td></td>
<td>• Adjustment of quality assessment to fit the research field</td>
<td>• Non-transparent test procedures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Low degree of control for confounding and third variables</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Biased geographical allocation of studies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Less advanced statistical procedures</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factors that induce robustness</th>
<th>Systematic research mapping methods</th>
<th>Methods applied in studies included in the evidence base</th>
<th>Narrative synthesis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Extensive systematic searching and the robust key-word identification process</td>
<td>• The studies in the evidence base include data from nine different countries</td>
<td>• A robust systematic approach which is in accordance with common methodological standards</td>
</tr>
<tr>
<td></td>
<td>• Large number of identified references and very systematic screening procedures</td>
<td>• Some studies both have a relatively large-N and apply robust statistical testing</td>
<td>• A strong conceptual framework</td>
</tr>
<tr>
<td></td>
<td>• Quality assessment by both internal and external reviewer</td>
<td></td>
<td>• Builds upon extensive systematic abstracts that ensure a solid base for synthesising findings across studies</td>
</tr>
<tr>
<td></td>
<td>• A relatively large number of single studies included</td>
<td></td>
<td>• Systematic coding of studies into themes</td>
</tr>
</tbody>
</table>
The table indicates that most of the factors that influence the robustness of the synthesis in a negative direction primarily appear to stem from the method applied in the included studies in contrast to the methods applied and procedures used in the systematic research mapping or the synthesis. However, some reductions from publication bias should be expected, and a narrative approach to synthesis will always have an Achilles' heel in comparison to meta-analysis in regards to combining findings in a quantitative manner.

Overall, the robustness of the synthesis is reduced considerably by the many methodological challenges of the studies included in the evidence base. This follows from the logical conclusion that a synthesis, no matter how well it is conducted, can only be as robust and valid as the studies in its evidence pool. However, as mentioned in previous sections of this chapter, researchers should not refrain from conducting reviews on the basis of such studies, as a synthesis of studies that (on average) are relatively methodologically challenged is still far more preferable than relying on knowledge gained from single studies alone in the same field, other things being equal. This is assuming that the best available evidence within the field (and within the scope of the review) has been identified during the review process.
7 Conclusion

The 43 studies included in this systematic review have varying aims, foci and use different methodological approaches, and the results that can be extracted from the studies are therefore difficult to generalise and combine. Despite the fact that the studies, as a collective pool of evidence, can be characterised as relatively heterogenic, it has been possible to produce a joint and nuanced picture of what impacts third language acquisition in school.

This section gives a summary of the most important findings extracted from the 43 studies included in the synthesis and also presents suggestions for further research within the field.

The first finding to be highlighted concerns the fact that the studies regarding immersion programmes indicate that these programmes often have a positive impact. It also appears that students in immersion programmes who are learning an L2 and an L3 at an early age develop age appropriate skills in their L1 and L2 at the same time, unhindered by the additional language input. This seems to indicate that immersion programmes do not constitute a source of overload. It is indicated that attending immersion programmes from the onset appear to have a positive impact on L3 acquisition. Other findings from the studies included in this category further indicate that both social factors and educational factors are important when it comes to understanding bilingual and trilingual development in contexts of two languages, a majority language and a minority language, e.g. Spanish and Basque. The findings also show that, when one of the languages that a bilingual learner knows is a minority language, then he or she obtains better results in L3 when his or her minority language is valued and used at home. Moreover, the findings from the theme Impact of language exposure outside school tend to suggest that exposure outside school may play an important role in a student’s third language acquisition.

Moving on to the findings from the category didactic programmes, it is difficult to draw any overall conclusions since only two studies are included in this category. On the other hand, these studies appear to indicate positive effects of well-educated teachers and direct feedback to students. This is in accordance with well-documented results in educational research (e.g. Hattie 2009).

Findings from the studies included in the theme Impact of age/early introduction to foreign language instruction in school seem to indicate that late starters in most cases out-
perform early starters in regards to third language proficiency when the amount of instruction time is held constant. This gap does not appear to close within the short/medium term, although it might disappear in the long term.

Looking further into the age related studies, there seems to be a great deal of uncertainty about how other factors apart from age and amount of instruction impact the results. For instance, older students’ greater cognitive ability might exert influence, but also other factors, such as teaching methodology, the students’ individual learning strategies, test-taking strategies and the students’ proficiency in L1 appear relevant and are debated among the researchers.

Moreover, one study points to the fact that the amount of instruction received by early starters is far more spread out than that of older learners, which might raise the question of whether the groups of early and late starters are completely comparable. This point may also be worth considering in relation to age factor studies in general. In addition, the type of instruction received might vary across countries, regions and even in generations at school (e.g. education acts or changes in curricula), making comparisons between early starters and late starters even more difficult.

A few studies emphasise the fact that, because the studies on the age factor only include data corresponding to a specific point in the development of third language proficiency, they do not give a complete picture of the impact of early introduction of foreign language instruction. The age factor is, in general, difficult to isolate in research designs, and there are many factors that need to be held constant in order to ensure that the differences between the groups are similar in all other aspects but age. Moreover, the studies included generally lack long-term longitudinal data, and it is therefore complicated to determine whether differences between early starters and late starters persist over time.

One of the key findings in the theme Impact of bilingualism and/or level of bilingual proficiency is that the results indicate that high levels of proficiency in L1 and L2 have a positive impact on L3 acquisition. Also, according to the study findings, bilingualism might in general, facilitate students’ learning of an L3. As an explanation for these findings, several studies point to the fact that bilinguals could have an advantage in terms of a higher level of metalinguistic awareness and the ability to use two other linguistic systems when learning a third language.

Additionally, some of the studies suggest that the typological relation between the students’ previously acquired languages and the L3 they are acquiring may facilitate the acquisition of certain L3 skills. Also, some studies identify typological distance and factors associated with the activation of or the students’ use of an L1 and an L2 as important when acquiring a third language in school.
Research on some of the central aspects of third language acquisition is, however, absent or much underrepresented in the research included in this systematic review. For instance, it seems highly relevant to conduct further studies on how specific school structures and systems impact language acquisition, and, following this, to investigate how quality and intensity of instruction impact language learning. Due to new and changing needs brought forth by different school reforms that make educational systems introduce foreign languages at earlier points, as is the case in i.e. Switzerland and Denmark, there also seems to be a growing demand for further research focusing solely on educational and pedagogical practices and what impacts they might have.

Furthermore, as previously briefly touched upon, there is a growing movement in the field of applied linguistics and multiple language learning that stresses the fact that very few students should be considered pure monolinguals, as they are actually exposed to one or more additional languages beyond their L1 before starting formal instruction in school. For instance, most of the western world can be expected to have a relatively high degree of exposure to English outside school. Hence, further research on how this impacts policy and practices regarding multiple language learning appears to be needed. Also, the impact of language exposure stemming from a growing immigrant population seems to be another interesting avenue for further research.

Lastly, it also seems prudent to direct the attention of further research more towards the importance of students’ use of their target language(s) outside school, which is only briefly covered in this review.

Apart from the suggested subject areas for further research, it seems important to stress that the research into bilingualism and third language acquisition in school included in this review is not without methodological challenges (as pointed out in the robustness analysis), and it is therefore difficult to generalise and combine findings across studies and contexts. This can be said to constitute a challenge in terms of providing a more complete evidence base for use in the education of third language teachers.

Furthermore, large-N samples and a more widespread use of longitudinal research designs would strengthen the evidence base by providing robustness and opportunities to study multiple language acquisition over time.

Interestingly, the findings from this systematic review point in the same direction as those of Cenoz (2003, 2013), who concludes that research within the field of second and third language acquisition has identified some trends, but has very different aims, uses a multitude of methodological approaches and measurements of proficiency and lacks control for other variables, and is therefore difficult to generalise.
As a final remark, the conclusions drawn from the synthesis findings should be viewed in the light of the robustness analysis as presented in the previous chapter. The reason for this is that the trustworthiness of the conclusions rests upon the robustness assessment. In addition, it should be stressed that most of the studies included in the synthesis have a very narrow linguistic specific focus, which makes it more difficult to draw general conclusions across studies - even when the studies are in the same synthesis theme. This can even apply to studies that examine the same phenomenon or relations among linguistic variables.

We hope that the findings and conclusions of this systematic review will inspire politicians, practitioners and researchers working within the field of education and multilingualism in various ways and that the systematic review will contribute to the further development of the research field.
8 References to textual commentary


9 Complete overview of references included in the systematic review

The following contains the total list of the 70 references which refer to the 58 studies included in the present systematic research mapping, i.e. in some cases more than one reference reports on the same study. In such cases one of the references is referred to as the primary reference and the other(s) as the secondary reference(s). Secondary references have been marked with a star (*).


*Cenoz, J. (1996). Learning a Third Language: Basque, Spanish and English. In A. Roca, 
& J. B. Jensen (Eds.), *Spanish in Contact: Issues in Bilingualism* (pp. 13-27). Somerville: 
Cascadilla.

Cenoz, J. (2001). The Effect of Linguistic Distance, L2 Status and Age on Cross-
linguistic Influence in Third Language Acquisition. In J. Cenoz, B. Hufeisen, & U. Jess-
ner (Eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Per-
spectives* (pp. 8-20). Clevedon, Buffalo, Toronto, & Sydney: Multilingual Matters LTD.

for the organization of the multilingual mental lexicon. *Bulletin suisse de linguistique 
appliquée*, 78, 1-11.

Cenoz, J. (2003b). The Influence of Age on the Acquisition of English: General Profi-
ciency, Attitudes and Code-mixing. In M. P. García Mayo, & M. L. García Lecumberri 
(Eds.), *Age and the Acquisition of English as a Foreign Language* (pp. 77-93). Clevedon, 
Buffalo, Toronto, & Sydney: Multilingual Matters LTD.

Cenoz, J., & Lindsay, D. (1994). Teaching English in primary school: A project to intro-

*Cenoz, J., & Lindsay, D. (1996). English in Primary School: Teaching a Third Language 
to Eight Year Olds in the Basque Country. *Cuadernos de Filología Inglesa, 5*(1), 81-102.


Engel de Abreu, P. M. J., & Gathercole, S. E. (2012). Executive and Phonological Pro-
cesses in Second-Language Acquisition. *Journal of Educational Psychology, 104*(4), 974-
986.

Starting Age and Exposure Effects. In C. Muñoz (Ed.), *Age and the Rate of Foreign Lan-
guage Learning* (pp. 41-64). Clevedon, Buffalo, Toronto, & Sydney: Multilingual Matters 
LTD.


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(Eds.), *The Exploration of Multilingualism: Development of research on L3, Multilingualism and Multiple Language Acquisition* (pp. 79-102). Amsterdam/Philadelphia: John Benjamins Publishing Company.


Appendix 1

Searches

Searches were conducted in the following databases:

**ERIC** (Educational Research Information Center) is a database on educational sponsored by the U.S. Department of Education. It is focused on educational research in USA.

**AEI** (Australian Education Index) is an Australian database on educational research.

**BEI** (British Education Index) is a British database on educational research.

**CBCA Education** is a Canadian database on educational research.

**PsycINFO** is a database published by the American Psychological Associations, which provides a comprehensive indexing of international psychological literature.

**Web of Science** is an international database providing references from different research areas, including educational research.

**Modern Language Association International Bibliography** is a database on modern languages and linguistics.

**ProQuest Dissertations & Theses Global** is a comprehensive collection of dissertations and theses from around the world.

**ProQuest Education Journals** is an international database on educational research.

**Datenbank der SKBF** is a Swiss national database on educational research.

**FIS Bildung** is a German database on educational research.

**Francis** is a French bibliographic database covering the humanities and the social sciences.

**Forskningsdatabasen** is a Danish research database.

**BIBSYS** is a Norwegian database covering Research published in Norway.

**SwePub** is a Swedish database providing access to research published at Swedish research institutions.

**Evidensbasen** is a database produced by Danish Clearinghouse for Educational Research. It covers systematic research mappings and reviews produced by 10 major Clearinghouses in educational research.
The searches were conducted using the following search profiles:

**ERIC**
Multilingual* OR Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR "Crosslinguistic influence" OR "language transfer" OR multiliteracy* OR "three languages" OR "multiple language*" OR "multiple foreign language*" OR (Multicompetence* AND language*) OR (L3* AND language*) OR (L4 AND language*)

Limited by:
Date: After December 31 1979
Record type:
Education level:
Elementary education, Elementary secondary education, Grade 1, Grade 10, Grade 11, Grade 12, Grade 2, Grade 3, Grade 4, Grade 5, Grade 6, Grade 7, Grade 8, Grade 9, High school equivalency programmes, High schools, Intermediate grades, Junior high schools, Middle schools, Primary education, Secondary education, Two year colleges

**AEI**
Multilingual* OR Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR "Crosslinguistic influence" OR "language transfer" OR multiliteracy* OR "three languages" OR "multiple language*" OR "multiple foreign language*" OR (Multicompetence* AND language*) OR (L3* AND language*) OR (L4 AND language*)

Limited by:
Date: After December 31 1979
Document type:
Exclude:
Subject: higher education; university students; early childhood education; adult education; postsecondary education; university teaching; universities
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE
LANGUAGE TEACHING, PRIOR LANGUAGE
EXPERIENCE AND ACQUISITION ORDER ON
STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY
AND SECONDARY SCHOOL

BEI
Multilingual* OR Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR "Crosslinguistic influence" OR "language transfer" OR multiliteracy* OR "three languages" OR "multiple language*" OR "multiple foreign language*" OR (Multicompetence AND language*) OR (L3* AND language*) OR (L4 AND language*)

Limited by:
Date: After December 31 1979
Publication type:
Books, Conference Papers & Proceedings, Dissertations & Theses, Reports, Scholarly Journals
Document type:
Education level:
16-19 education, Middle-school education (9-13), Primary education (5-9/11), Primary/secondary education (5-16), Secondary education (11/13-16/18), Sixth-form education (16-18)
Exclude:
Subject: mathematics education; higher education

CBCA Education
Multilingual* OR Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR "Crosslinguistic influence" OR "language transfer" OR multiliteracy* OR "three languages" OR "multiple language*" OR "multiple foreign language*" OR (Multicompetence AND language*) OR (L3* AND language*) OR (L4 AND language*)

Limited by:
Date: After December 31 1979
Source type:
Other Sources, Scholarly Journals
Document type:

PsycINFO
Multilingual* OR Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR "Crosslinguistic influence" OR "language transfer" OR multiliteracy* OR
“three languages” OR “multiple language*” OR “multiple foreign language*” OR (Multicompetence AND language*) OR (L3* AND language*) OR (L4 AND language*)

Limited by:
Date: After December 31 1979
Document type:
Methodology:
Language:
Danish, English, Norwegian, Swedish
Age group:
Adolescence (13-17 Yrs), School Age (6-12 Yrs)

Web of Science
TOPIC: (((language AND sequence) OR (language AND simultaneous)) AND (school OR primary OR secondary OR college OR grade OR education)) OR ((Trilingual OR Plurilingual* OR "third language" OR "Tertiary language" OR multiliteracy* OR "three languages" OR "multiple language" OR "multiple foreign language" OR (Multicompetence AND language*) OR (L3 AND language) OR (L4 AND language)))
Refined by: RESEARCH AREAS: (EDUCATION EDUCATIONAL RESEARCH ) AND DOCUMENT TYPES: (ARTICLE OR REVIEW OR REPORT OR CLINICAL TRIAL OR THESIS DISSERTATION OR CASE REPORT OR BOOK ) AND RESEARCH AREAS: (EDUCATION EDUCATIONAL RESEARCH OR PSYCHOLOGY ) AND RESEARCH AREAS: (EDUCATION EDUCATIONAL RESEARCH OR PSYCHOLOGY ) AND RESEARCH AREAS: (EDUCATION EDUCATIONAL RESEARCH OR PSYCHOLOGY )
Timespan=All years
Search language=Auto

Modern Language Association International Bibliography
(((language AND sequen*) OR (language AND simultaneous*)) AND (school* OR primary OR secondary OR college* OR grade* OR education)) OR ((Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR multiliteracy* OR "three language*" OR "Tertiary language" OR multiliteracy* OR "three language*" OR "Tertiary language" OR multiliteracy* OR "three language"))
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

guages* OR "multiple language*" OR "multiple foreign language*" OR (Multicompetence AND language*) OR (L3* AND language*) OR (L4 AND language*))

Limited by:
Date: After December 31 1979
Document type:

**Proquest Dissertations & Theses Global**
all((Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR multiliteracy* OR "three languages" OR "multiple language*" OR "multiple foreign language*" OR (Multicompetence AND language*) OR (L3* AND language*) OR (L4 AND language*)) AND (school* OR primary OR secondary OR college* OR grade* OR education))

Limited by:
Date: After December 31 1979
Manuscript type:
Doctoral dissertations
Language:
Danish, English, French, German, Norwegian, Swedish

**ProQuest Education Journals**
all((Trilingual* OR Plurilingual* OR "third language" OR "Tertiary language" OR multiliteracy* OR "three languages" OR "multiple language*" OR "multiple foreign language*" OR (Multicompetence AND language*) OR (L3* AND language*) OR (L4 AND language*)) AND (school* OR primary OR secondary OR college* OR grade* OR education))

Limited by:
Date: After December 31 1979
Source type:
Books, Conference Papers & Proceedings, Dissertations & Theses, Other Sources, Reports, Scholarly Journals
Language:
English, French, German

**Datenbank der SKBF**
Search done separately on following terms, by word components:
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS' LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

dreisprach
drittisprach
L3
tertiärsprach
Sprachentausch
Sprachtransfer
translexikal
multilingual
trilingual

Search done separately on following terms, by whole words:
drei UND Sprachen

FIS-Bildung
Ihre Abfrage: (Freitext: DREISPRACH*) oder (Freitext: "DREI SPRACHEN") oder (Freitext: DRITTE FREMDSPRACHE") oder (Freitext: DRITTSPRACH*) oder (Freitext: L3) oder (Freitext: TERTIAERSPRACH*) oder (Freitext: SPRACHTRANSFER)) oder (Freitext: SPRACHENTRANSFER) oder (Freitext: "TRANSLEXIKALISCHER EINFLUSS") oder ((Freitext: "ZWEITE FREMDSPRACHE") und (Freitext: LERN*))

FRANCIS
trilingu* OR (L3 AND langue) OR 'troisième langue'
Year: after 1979
Languages: engelsk, tysk, francsk

Forskningsdatabasen
Search done separately on following terms:
Tredjesprog?
Tresprog?
Flersprog? Skole?
Flersprog? Undervisning?
Flersprog? Gymnasi?
L3 AND Language?
"Third language"
Multilingual? AND School?
Years: 1980-2014
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

BIBSYS
Search done separately on following terms:
Trespråk?
Tredjespråk?
Flerspråk? AND Skole?
Flerspråk? AND Grunnskole?
Flerspråk? AND Undervisning?
L3
Third AND language AND acquisition
Third AND language AND learning
Multilingual? AND School?
Years: 1980-2014

SwePub
Search done separately on following terms:
Trespråk*
Tredjespråk*
Flerspråk* AND Skola*
Flerspråk* AND gymnasi*
Flerspråk* AND Undervisning*
L3
"Third language AND acquisition
Multilingual? AND School?
Years: 1980-2014

Evidensbasen
Search done separately on following terms:
Multilingualism*
"Third language"
Flersproge*
Tresproge*

In addition to searches in the above databases, the following five journals have been searched manually for relevant studies:
- International Journal of Multilingualism
- Journal of Multilingual and Multicultural Development
- Multilingual Education
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

- International multilingual research journal
- International Journal of Bilingual Education and Bilingualism
Inclusion/exclusion criteria

Inclusion criteria
Studies will be included in the systematic research mapping if they examine the impact of multiple language teaching, prior language experience and acquisition order on students' language proficiency in primary and secondary school.

Exclusion Criteria
Studies will be excluded from the systematic research mapping if they fall under one of the following criteria categories:
Wrong scope: The study does not examine the impact of multiple language teaching, prior language experience and acquisition order on students' foreign language proficiency in primary and secondary school.
Wrong scope: The study does not examine L3, L4 or L5 acquisition.
Wrong publication: Not a publication containing empirical research data e. g.: non-empirical textbooks, editorials, commentaries, book reviews, policy documents, guides, manuals, bibliographies, discussion papers, theoretical papers, research methodology papers. All academic work on or below master thesis level is not included.
Wrong educational context: references on studies which examine multiple language learning outside primary and secondary education.
Wrong time of publication: References published before January 1980.
Wrong context: Research that does not offer data from the EU member states, Switzerland, Norway, the USA, Canada, Australia and New Zealand.
Wrong language: Research not published in English, German, French, Danish, Swedish or Norwegian.
Appendix 2

Data extraction and coding tool

EPPI-Reviewer Version 4.4.2.0

General guideline

- Section A: Administrative details
  - A.1 Name of the reviewer
    - Details
    *Søren Wind Eskildsen and Stinna Vestergaard*
  - A.2 Date of the review
    - Details
    *20th of October 2014*
  - A.3 Please enter the details of each paper which reports on this item/study and which is used to complete this data extraction.
    - Main paper (1)
      - *Book chapter*
    - Document ID:
      *12324089*
    - Authors:
      *Jasone Cenoz*
    - Publication year
      *2003*
    - Title:
      *The Influence of Age on the Acquisition of English: General Proficiency, Attitudes and Code Mixing*
  - A.4 If the study has a broad focus and this data extraction focuses on just one component of the study, please specify this here.
    - Not applicable (whole study is focus of data extraction)
  - A.5 Language
    - *English language*

- Section C: Overall Study Design
  - C.1 Does the study use qualitative or quantitative methods?
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING. PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

- Quantitative
  - C.2 What is the overall design used in the study?
    - Experiment with non-random allocation to groups (quasi-experiment)

- Section B: Study Characteristics and Descriptives
  - B.1 What size is the sample used in the study?
    - Enter sample size
      - 135 primary and secondary school children participated.
  - B.2 In which country or countries was the study carried out?
    - Spain, Basque Country

- Section D: Quality of study - Transparency
  - D.1 Are the context of the study adequately described?
    - Yes
  - D.2 Are the aims of the study clearly reported?
    - Yes
      
      The study aims at examining the effect of the introduction of English as a foreign language at different ages on the rate of achievement, the development of attitudes and motivation and code-mixing. The research questions are: (1) is the general rate of acquisition higher for older or younger children when the time for learning is held constant? (2) are attitudes and motivation more or less positive when a foreign language is taught from an early age? (3) do younger children mix codes more often than older children? (p. 81-82)
  - D.3 Are there an adequate description of the sample used in the study and how the sample was identified and recruited?
    - Yes
      
      However, it is not stated how many students are included in the three different age groups. See page 82 for information on sample. On page 81 it is stated that “all the children in this research study come from the same geographical area and similar social backgrounds. The subjects included in this research study were selected on the condition that they did not receive instruction or were not exposed to English outside school (private classes, academies, summer courses, etc.).”
  - D.4 Are there an adequate description of the methods used in the study to collect data?
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

- Yes
  Yes and no. Tests and questionnaires are described, but not in detail.

- D.5 Are there an adequate description of the methods of data analysis?
  - No
    Yes and no. The mode of evaluation of the oral data is not explained. The written data is graded using the holistic approach proposed by Jacobs et al. (1981) - it would be very good to have this exemplified. The following statistical analyses are fully explained and unproblematic.

- D.6 Are the study reported with sufficient transparency?
  - Yes
    Both yes and no. The author does not explain the oral assessment criteria.

- Section E: Quality of the study - Weight of evidence
  - E.1 Was the choice of research design appropriate for addressing the research question(s) posed?
    - Yes, to some extent
      It seems appropriate, but it would have been desirable to have been presented with the results from the complete longitudinal study. Also, the lacking descriptors for the oral assessment constitute a substantial weakness.

  - E.2 Have sufficient attempts been made to establish the repeatability or reliability of data collection methods?
    - Yes, some attempt
      It seems ok - but the lacking descriptors for the oral assessment constitute a weakness.

  - E.3 Have sufficient attempts been made to establish the repeatability or reliability of data analysis?
    - Yes, some attempt
      Again, the lacking descriptors for the oral assessment constitute a weakness and make the study difficult to ascertain on the basis of these parameters.

  - E.4 Have sufficient attempts been made to establish the validity or trustworthiness of data collection and methods?
    - Yes, some attempt
      Same as above. Also, I wonder why the youngest students in Grade 5 only completed the oral tests and the attitude and motivation questionnaires. (see p. 85). This is not further elaborated or explained by the author.
E.5 Have sufficient attempts been made to establish the validity or trustworthiness of data analysis?
   - Yes, some attempt
     Again, the lacking descriptors for the oral assessment constitute a weakness and make the study difficult to assess on the basis of these parameters.

E.6 Does the author address the generalisability of the study?
   - No, the author does not address the generalisability of the study

E.7 To what extent is the research design and methods employed able to rule out any other sources of error/bias which would lead to alternative explanations for the findings of the study?
   - A little
     The lacking descriptors for the oral assessment constitute a weakness.

E.8 In light of the above, do the reviewers differ from the authors over the findings or conclusions of the study?
   - Not applicable (no difference in conclusions)
     This is difficult to ascertain because of lacking transparency in the measures of oral skills.

E.9 Have sufficient attempts been made to justify the conclusions drawn from the findings, so that the conclusions are trustworthy?
   - Medium trustworthiness

E.10 Weight of evidence A: Taking account of all quality assessment issues, can the study findings be trusted in answering the study question(s)?
   - Medium trustworthiness
     Apart from the lacking descriptors for the assessment of the oral data, the study is solid, hence the "medium" here.

E.11 Weight of evidence B: Relevance of particular focus of the study (including conceptual focus, context, sample and measures) for addressing the question, or sub-questions, of this specific systematic review?
   - Medium
     It is not clear how code-mixing plays into rate of acquisition, which is the primary focus of this research.

E.12 Weight of evidence C: Overall weight of evidence
   - Medium
Specific guideline

- A Age of participants
  - Please enter the numeric age of the students
    *The participants were divided into three groups: the children who started learning English at the age of four had a mean age of 10.1 years when they were tested, the children who started learning English at the age of eight had a mean age of 12.9 years when they were tested, and the children who started learning English at the age of eleven had a mean age of 16.3 years when they were tested (see page 82).*

- B In which languages are proficiency measured? (multiple answers allowed)
  - L3 (dependent variable)
    - English

- C In which languages are proficiency measured? (multiple answers allowed)
  - English
  - L3

- D Years of instruction
  - L3 (please specify)
    *All the participants had received 600 hours of instruction in L3 English (p. 82)*

- E Combinations of languages L1/L2/L3
  - Spanish/Basque→English
    *The sample was comprised of both students whose first language is Basque and students whose first language is Spanish. Some participants use only Basque at home, others only Spanish and yet others both Basque and Spanish, but the use of the Basque language is slightly more common than the use of Spanish at home for the subjects in this sample. (p. 82) However, it is not quite clear if L2 and L3 were acquired simultaneously or sequentially.*

- F Acquisition order
  - Not stated/unclear (please specify)
    *It is stated that some students had Basque as their first language, while others had Spanish as their first language. However, it is not quite clear if L2 and L3 were acquired simultaneously or sequentially.*

- G Focus (multiple answers allowed)
  - Examines impact of background variables (for instance gender or age) on third language acquisition (please specify)
    *The study examines the effect of introducing English as a foreign language at different ages.*
• The students are involved in an immersion programme
  All participants attend a Basque-medium school where Basque is the language of instruction. This school serves both as a total immersion programme for students whose first language is Spanish and a first language maintenance programme for students whose first language is Basque.

• H Background of the children (multiple answers allowed)
  o Not stated/unclear (please specify)

• I How is language proficiency measured?
  o Please specify
    The students’ proficiency in English was measured by means of tests of speaking, listening, reading and writing skills. Additionally, the students completed a background questionnaire, an attitude questionnaire in order to measure their attitudes towards English, Basque and Spanish, and a motivation questionnaire in order to measure their effort and attitudes towards learning English. (see page 83-84)

• J Linguistic awareness
  o Other (please specify)
    The study does not examine actual cross-linguistic awareness. It examines cross-linguistic influence from Basque and Spanish in English oral production (code-mixing).

• K When is the impact measured? (multiple answers allowed)
  o Immediate/short term

• L Results (multiple answers allowed)
  o Which factors are found to have a positive impact on students’ language acquisition? (please specify)
    The study finds that older students learn quicker than younger students, but that younger students present attitudes that are more positive towards foreign language learning and that younger students do not mix languages more than older students.
Appendix 3

Characteristics of the studies available for the synthesis

In which country or countries were the studies carried out?

<table>
<thead>
<tr>
<th>Country/countries</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>4</td>
</tr>
<tr>
<td>Canada</td>
<td>5</td>
</tr>
<tr>
<td>USA</td>
<td>1</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>2</td>
</tr>
<tr>
<td>Spain, Catalonia</td>
<td>9</td>
</tr>
<tr>
<td>Switzerland</td>
<td>3</td>
</tr>
<tr>
<td>Spain, Basque Country</td>
<td>14</td>
</tr>
<tr>
<td>Austria</td>
<td>1</td>
</tr>
<tr>
<td>Grand Duchy of Luxembourg</td>
<td>1</td>
</tr>
</tbody>
</table>

N = 43

23 of the 43 studies available for the synthesis were conducted in Spain in the Basque Country or in Catalonia respectively. Furthermore, the table shows that Sweden, Canada, Germany and Switzerland are also well represented.

Publication year

As shown in the figure above, 34 of the 43 studies available for the synthesis were conducted from 2000 and onwards, therefore the results are current.
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As stated in the table below, the studies included in the synthesis analyse third language acquisition at different levels of the education system.

*Levels of education covered by the studies available for the synthesis.*

<table>
<thead>
<tr>
<th>Primary and secondary education</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary education</td>
<td>13</td>
</tr>
<tr>
<td>Secondary education</td>
<td>16</td>
</tr>
<tr>
<td>Primary and secondary education</td>
<td>13</td>
</tr>
<tr>
<td>Not stated</td>
<td>1</td>
</tr>
</tbody>
</table>

N=43

As can be seen in the table below, varying research designs have been used. Consequently, it has not been possible to make a systematic synthesis in the form of a meta-analysis. Instead, the synthesis is conducted following the principles of the narrative synthesis, which are described in more detail by Popay et al. (2006).

*What is the overall design used in the study?*

<table>
<thead>
<tr>
<th>Overall design used in the study</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment with non-random allocation to groups (quasi-experiment)</td>
<td>10</td>
</tr>
<tr>
<td>Longitudinal study: Cohort based study</td>
<td>11</td>
</tr>
<tr>
<td>Longitudinal study: Other than cohort based</td>
<td>2</td>
</tr>
<tr>
<td>Case-control study</td>
<td>1</td>
</tr>
<tr>
<td>Cross-sectional study</td>
<td>20</td>
</tr>
<tr>
<td>Case study</td>
<td>1</td>
</tr>
</tbody>
</table>

N = 45 (multiple answers possible)

As can be seen in the table below, the 43 studies available for the synthesis have varying focus areas.
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Focus/foci of the studies

<table>
<thead>
<tr>
<th>Focus</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>General impact of being natural bilingual on third language learning</td>
<td>13</td>
</tr>
<tr>
<td>General impact of being instructed bilingual on third language learning</td>
<td>7</td>
</tr>
<tr>
<td>General impact of the order in which languages are acquired</td>
<td>1</td>
</tr>
<tr>
<td>Impact of the language proximity of already acquired languages in relation to acquiring a third</td>
<td>4</td>
</tr>
<tr>
<td>Impact of background variables (for instance gender or age) on third language acquisition</td>
<td>16</td>
</tr>
<tr>
<td>Impact of specific methods/interventions/programmes used in foreign language learning</td>
<td>3</td>
</tr>
<tr>
<td>The students are involved in an immersion programme</td>
<td>10</td>
</tr>
<tr>
<td>Other focus</td>
<td>8</td>
</tr>
</tbody>
</table>

N = 62 (multiple answers possible)

The studies placed under the category “Other focus” are studies that e.g. focus on “cross-linguistic influence on third language acquisition” or “general impact of being bilingual on third language learning” where it is unclear whether the students are “natural bilingual” or “bilingual by instruction”.

Order of acquisition

<table>
<thead>
<tr>
<th>Order of acquisition</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students acquired L1 and L2 at home and learned L3 in school</td>
<td>15</td>
</tr>
<tr>
<td>The students acquired L1 at home and learned L2 and L3 in school sequentially (with no overlap)</td>
<td>2</td>
</tr>
<tr>
<td>The students acquired L1 at home and learned L2 and L3 in school simultaneously (with overlap, learning could start at the same time or different times)</td>
<td>7</td>
</tr>
<tr>
<td>Two or more groups with different sequences</td>
<td>10</td>
</tr>
<tr>
<td>Other order of acquisition</td>
<td>2</td>
</tr>
<tr>
<td>Not stated/unclear</td>
<td>9</td>
</tr>
</tbody>
</table>

N = 45 (multiple answers possible)

The category “other order of acquisition” covers studies that examine students who acquired L1 at home and learned L2, L3 and L4 in school.

Nine studies have been placed in the category “Not stated/unclear”. These are studies that e.g. do not specify whether the included students are “natural bilinguals” or “bilinguals by instruction”. Some of these studies also do not specify if the children learned L2 and L3 sequentially or simultaneously.
References for the studies available for the synthesis

Listed below are all references to the 43 studies available for the synthesis. Secondary references have been marked with a star (*).


Haenni Hoti, A. (2009). Forschungsergebnisse zu Einflussfaktoren auf die Englischfer
tigkeiten von PrimarschülerInnen unter besonderer Berücksichtigung des Migration
shintergrunds. In A. Näf, V. F. Lauzon, & E. Pochon-Berger (Eds), Die Sprachen in der
Schule Wechselwirkungen zwischen Spracherwerbsforschung und Unterrichtspraxis. Bulletin
suisse linguistique appliquée, 89, 5-14.

Haenni Hoti, A. U., Heinzmann, S., Müller, M., Oliveira, M., Wicki, W., & Werlen, E.
listening and reading skills on L3 acquisition. International Journal of Multilingualism,
8(2), 98-116.

glisch – Überforderung oder Chance? Eine Längsschnittstudie zur Wirksamkeit des
Fremdsprachenunterrichts auf der Primarstufe (Report No. 20). Luzern: Der Pädagogi
ischen Hochschule Zentralschweiz.

und Lexikonerwerb bi- und monoligualer Deutschlerner der schwedischen Oberstufe (Disser


lish as an L3. Atlantis: Revista de la Asociación Española de Estudios Ingleses y Norteameri

Written Production. In M. P. García Mayo, & M. L. García Lecumberri (Eds.), Age and
the Acquisition of English as a Foreign Language (pp. 136-160). Clevedon, Buffalo, Toronto,
& Sydney: Multilingual Matters LTD.

production orale d’apprenants plurilingues (Dissertation). Université de Stockholm, Dé
partment de français, d’italien et de langues classiques, Sweden.

linguistic lexemes in multilingual learners’ oral production. International Journal of Mul
tilingualism, 6(3), 281-297.


Deutsch- und Englisch-Lesekompetenz bei Deutsch-Türkisch bilingualen Schülern. In C. Allemann-Ghionda, P. Stanat, K. Göbel, & C. Röhner (Eds.), Migration, Identität, Sprache und Bildungserfolg (pp. 78-100). Weinheim u.a.: Beltz.


Abstracts for the studies available for the synthesis

Listed below are abstracts for the 43 studies available for the synthesis.

Author(s): Balke-Aurell, Gudrun, & Lindblad, Torsten
Title: Immigrant Children and Their Languages
Country: Sweden
Publication year: 1983

The main aim of this project is to study third language proficiency in English among immigrant children in Sweden. Immigrant 8th graders’ English test results are compared to the test results of the population of 8th grade pupils. In this longitudinal study, data is collected using standardised tests in English given to most students in Swedish grade 8 classes in 1981. 2,736 students who spoke a language at home other than Swedish and English (bilinguals) completed the test and are compared to all grade 8 students who completed the test. Almost half of the bilingual students speak Finnish as their L1 or L2 language while the other half has different language backgrounds. Hence, the students have Swedish as L2 or L1 and English as L3.

The test consists of four parts which are aimed at testing vocabulary, grammar, reading comprehension and listening comprehension. The students also completed a questionnaire regarding their parents’ educational background, their heritage language and regarding which language they speak at home. In this project, socioeconomic background is reflected through mothers’ and fathers’ education. The results pertaining to the immigrants are compared to the results of the population of 8th graders. Test scores are analysed by means of crosstabs.

Overall, the study shows that the differences in test scores between the bilinguals and 8 graders as a whole are very small, and the author does not consider them to be indications of differences in the skills tested. Students are divided into groups depending on whether they sometimes or always speak their home language at home (active bilinguals) or if they always speak Swedish (passive bilinguals). When the bilinguals are divided into these two groups, the study shows that the active bilinguals obtain scores lower in the English test than the Swedish monolinguals and the passive bilinguals while the passive bilinguals score higher than the Swedish monolinguals. The study also shows that the higher the education level of the parents is, the higher both the bilinguals and the monolinguals score in the test of English proficiency.

Since almost half of the students come from Finnish speaking homes, the results of this group and the group of students with different language background are analysed
separately. The Finnish-speaking students have parents with a lower level of education than the other bilingual students and compared to the 8-graders as a whole. The Finnish students scored lower than the 8-graders as a whole. Meanwhile, the non-Finnish bilingual students scored higher than both the Finnish students and higher than the total group of students.
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Author(s): Bardel, Camilla
Title: La connaissance d’une langue étrangère romane favorise-t-elle l’acquisition d’une autre langue romane? Influences translinguistiques dans la syntaxe d’une L3.
Country: Sweden
Publication year: 2006

The purpose of this study is to determine if syntactical structures from previously acquired languages influence learning of the syntax of an L4. The raised hypotheses are: 1) No previously acquired languages influence learning of new languages because only the universal grammar is used, 2) Only the L1 influences learning of new languages, and 3) All previously acquired languages influence learning of new languages. The specific object of the study is the acquisition of the preverbal position of negation in Italian (L4) among students having the same L1 (Swedish) and L2 (English) but different L3 (Spanish, French and German). The influence of the different L3 is the factor that is examined. The negation syntax differs between the L1-L3 languages, Swedish, German and English being post-verbal, French being discontinued in formal settings (both before and after the verb) and post-verbal in informal settings, and Spanish and Italian being pre-verbal.

The data was collected in a Spanish class in a Swedish high school near Lund. The class comprised 31 students aged 16. All had Swedish as L1, had started L2 (English) at the age of 10, and, at the age of 12, they had started to learn their third language: either Spanish (9 students) German (11 students) or French (11 students). At the age of 16, they started to learn L4 (Italian), in which they had received 50 to 60 hours of instruction when the study was conducted. The students were mainly girls. In the experiment the students were shown a short cartoon which they were asked to summarise in Italian. The students’ use of preverbal and postverbal negations were counted and compared for each group using ANOVA variation, T-tests, the Fischer procedure and descriptive statistics.

The results showed that there were significant differences in the three L3 groups’ use of preverbal and postverbal negations, which showed the different groups’ ability to learn a new syntactical structure: the Spanish students had the highest rate of correct preverbal negations, the French students were in the middle, and the German students fared the worst. This falsifies the hypothesis that only universal grammar is used to learn new languages as the scores in this case should have been the same. As all students had the same L1, the hypothesis that L1 is the only language used in learning a
new language is falsified. As the Spanish students presumably transferred preverbal negation from Spanish into Italian, the hypothesis that syntactical structures can be transferred from an already acquired language to new acquired languages is supported.
The purpose of the study is to explore how the language typology (structural characteristics of the language) of students’ L1 influences their L2 and L3 learning and proficiency in an early French immersion programme located in a large city in Canada. The main hypothesis of the study is that orthographic similarity between the typology of the L1 and additionally learned languages (L2 and L3) has a positive effect on L2 and L3 proficiency. Secondarily, the authors explore how oral language proficiency in L2 and L3 impacts L2 and L3 reading proficiency in children with a typologically similar or dissimilar L1.

The sample of the study consists of 90 grade 4 students divided into three groups: 1) English monolinguals who study French as L2, 2) multilinguals with an alphabetically based L1 who study French as L2 and English as L3, and 3) multilinguals with a logographic/syllabary L1 who study French as L2 and English as L3. Group 2 and 3 were characterised by literate proficiency in the L1. The students had received French instruction since Kindergarten and began English instruction in grade 4. The students were tested in French and English at the beginning and at the end of grade 4. The students’ language proficiency was measured in regards to vocabulary comprehension, auditory comprehension and dimensions of reading.

The main findings of the study indicate that vocabulary comprehension, auditory comprehension and (to a lesser degree) reading skills in the acquisition of L2 and L3 are influenced by L1 typology. The monolinguals and multilinguals with an alphabetic L1 in most cases outperformed the multilingual logographic/syllabary L1 group in regards to French and English oral skills and (to some extent) reading proficiency. The latter did not include the dimensions of word reading and pseudoword reading. Also, acquisition of oral language skills in L2 and L3, particularly vocabulary comprehension, appears to positively influence reading comprehension in L2 and L3 to a greater extent when the L1 is typologically similar.
Author(s): Bérubé, Daniel, & Marinova-Todd, Stefka H.
Title: The effect of sociolinguistic factors and English language proficiency on the development of French as a third language
Country: Canada
Publication year: 2013

The purpose of this cross-sectional study is to investigate how sociolinguistic factors, metalinguistic awareness, language proficiency, and literacy skills in the L2 relate to language proficiency and literacy skills in the L3 for bilinguals enrolled in a French immersion programme. All students were enrolled in the immersion programme from an early age and had therefore received French instruction since kindergarten and began receiving English instruction in grade 4. The sample included 55 students who were 11 years and seven months old on average. Data for the study was collected at the end of grade 6. The sample included Amharic, Cantonese, Croatian, German, Greek, Hungarian, Italian, Korean, Mandarin, Polish, Romanian, Spanish, Serbian and Tagalog bilinguals. All students were exposed to their L1 from birth and spoke it at home on a daily basis. Oral language skills and reading comprehension in both the L1 and the L2 and motivation for learning French (L3) as well as morphological awareness in English were measured, and the results were analysed using regression modelling.

The results showed that oral language proficiency and reading comprehension in English had a positive impact on oral language proficiency and reading comprehension skills in French, when controlling for the amount of reading in French and morphological awareness in English. Motivation to learn French (L3) did not have an impact on neither oral proficiency nor reading comprehension. Moreover, parental SES and the frequency with which the student read independently in French, during or outside school, significantly correlated with both oral proficiency and reading comprehension in French. However, the total number of books in the household was significantly associated with oral proficiency in French, but not with reading comprehension.

The authors also conclude that, although the bilingual students received instruction in French (L3) throughout most of the time spent in school, this did not seem to prevent them from developing age-appropriate skills in both their L2 and L3. Also, the authors consider that oral proficiency and reading skills in the L2 are almost of equal importance in regards to the impact on L3.
Author(s): Bild, Eva-Rebecca, & Swain, Merrill  
Title: Minority language students in a French immersion programme: their French proficiency  
Country: Canada  
Publication year: 1989  

The purpose of this study is to compare the French proficiency of minority bilinguals to that of monolinguals in a French immersion programme in Ontario Canada. The study aims to examine whether the bilinguals benefit from acquiring an L3 at an early stage or if it hinders their language skills development and therefore leads to a lower French proficiency level compared to the monolinguals. The immersion programme offered instruction almost solely in English from the start of the programme until the end of grade 4 and fifty-fifty English/French instruction from grade 5 and onwards. In order to compare the bilinguals to the monolinguals, a sample of 47 grade 8 students was selected on the criteria that they had to have English, Italian or a non-Romance language as their L1. The students’ French proficiency in writing was tested by means of two cloze tests, and their oral proficiency was measured through storytelling tasks. The data was analysed via MANOVA, simple mean comparisons and t-tests.  

Results from the study show that, in general, bilinguals acquired a higher level of French proficiency on almost all the test measures. This suggests, according to the researchers, that bilingual students learn French more effectively than their monolingual peers. The authors therefore conclude that bilingual students are well-suited for French immersion programmes and that the evidence points towards bilinguals having a substantial advantage over monolinguals in regards to learning French. The researchers also conclude that the French proficiency of bilingual participants did not seem to suffer as a result of knowing three languages. Rather, the bilinguals seemed to benefit from their additional linguistic knowledge.  
In conclusion the authors offer metalinguistic awareness and ability to transfer from both the L1 and the L2 as an explanation for the higher proficiency levels among the bilinguals.
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Author(s): Brohy, Claudine
Title: Generic and/or Specific Advantages of Bilingualism in a Dynamic Plurilingual Situation: The Case of French as Official L3 in the School of Samedan (Switzerland)
Country: Switzerland
Publication year: 2001

The hypothesis of the study is that, since Romansh is a Romance language, similar to French, students with L1 Romansh will have better competences in L3 French as well as a more positive attitude towards it compared to students who have L1 German. Also, it is expected that Romansh students exhibit transfer strategies from Romansh to French. The study compares a group of grade 8 students in the Swiss canton of Samedan who have L1 Romansh with a control group that has German as their L1. The Samedan group consists of two samples, respectively from 1998 and 1999. Both groups (the Samedan group and the control group) are from socio-economically and socioculturally comparable villages from the same canton. The students’ attitudes were measured by means of a questionnaire in which the students rated their attitude towards French on a 1-7 scale with 12 different opposites, e.g. modern – old-fashioned. The language test measured the students’ reading, writing, listening and speaking skills in French.

The difference in attitudes proved to be only marginal, but the German L1 control group had the most positive attitude towards French. The overall competences in the four skills measured (reading, listening, speaking and writing taken together) were higher in both Samedan samples. The Samedan sample of 1998 was outperformed in writing skills by the control group. Both Samedan samples had better pronunciation and speaking skills than the control group, and the raters reported that the Samedan students processed more information than the minimum required in the assignments, and they also took more risks by trying to construct more complex sentences. The qualitative analysis showed that both groups used transfer strategies.

The study sows doubt about the presumed strong links between attitudes and competences, as the Samedan students had the more negative attitudes but the better competences.
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Author(s): Cenoz, Jasone
Title: The Effect of Linguistic Distance, L2 Status and Age on Cross-linguistic Influence in Third Language Acquisition
Country: Spain, Basque Country
Publication year: 2001

This book chapter reports on the results of a research project on cross-linguistic influence on third language acquisition. Specifically, the study explores the effect of age and language typology in the language learning process relating to a third language. The objective of the study is to examine the amount of lexical transfer of Basque and Spanish into English.

This quasi-experimental study was conducted in a Basque school where English is taught as a third language to native speakers of Basque and Spanish. A total of 90 primary and secondary school students participated. Basque was the first language of 44% of the students, Spanish was the first language of 23%, and the rest (32%) had both Basque and Spanish as their first languages. All the participants attended the same school and had Basque as the language of instruction. To investigate the effect of age on third language acquisition, the students were divided into three groups according to their age; the first group consisted of 30 students in grade 2 (with a mean age of 7.3 years), the second group was composed of 30 students in grade 6 (with a mean age of 11.3 years) and the third group consisted of 30 students in grade 9 (with a mean age of 14.2 years). Data for the study was collected when all the students had been learning English for four years, although they had begun to learn English at different ages (at the age of four, at the age of eight or at the age of 11). Though all participants had received instruction in English for four years, the students in grades 6 and 9 had received 80 hours more instruction than the students in grade 2. All participants completed an oral production task and a background questionnaire that included questions on their knowledge and use of Basque in social contexts. The oral production task was audio- and videotaped, and also transcribed, and all cases of cross-linguistic influence at the lexical level were identified. However, in this paper only transfer (i.e. borrowings and foreignisings) is analysed.

Overall, the results show that cross-linguistic influence on third language acquisition is related not only to linguistic distance, but also to other factors.
The study finds that typological distance plays an important role in cross-linguistic transfer, as all participants display a stronger influence from Spanish, an Indo-European language, than from Basque, which, as mentioned before, is a non-Indo-European language. The results show that all students prefer to use Spanish as a source language, and that students with Basque as their first language seem to have a stronger preference for Spanish than do students whose first language is Spanish. In other words, Basque L1 students seem to use Spanish as the base language in acquiring English as a third language, and Spanish L1 students transfer more terms from Basque than Basque L1 students, but they still use Spanish as their main source language. According to the author, the use of Spanish as the base language can be explained in the case of Basque L1 students because Spanish has an L2 status and at the same time is typologically closer to English. In the case of Spanish L1 students, Basque could be the preferred language because of its L2 status, but Spanish remains typologically closer to English than Basque. According to the author, this could be an explanation for the fact that Spanish L1 students use Basque more often as a source language than do Basque L1 students. Thus, the results of this study indicate that linguistic distance is a stronger predictor of cross-linguistic influence than L2 status.

Moreover, the study suggests that language proficiency and metalinguistic development related to age affect cross-linguistic influence. Regarding the relationship between cross-linguistic transfer and age, the results show that the amount of lexical transfer is higher in grade 9 than in grade 6 and grade 2, and that the older students transfer fewer terms from Basque than do the younger students. Furthermore, the results show that cross-linguistic influence is more common in the case of content words than in the case of function words, and that students borrow very few function words from Basque, which indicates that the type of word transferred is strongly affected by linguistic distance. According to the author, the different structure of Basque as compared to Spanish and English could explain the limited transfer of function words from Basque. However, the influence of linguistic distance could be direct when students are aware of linguistic distance and indirect when students are applying a communicative strategy used when speaking Basque to a third language.

Based on these findings, the author concludes that older students display more cross-linguistic influence than younger students. According to the author, this could be explained by the higher metalinguistic awareness of the older students, which could make them more aware of the objective linguistic distance between Basque and English. Thus, the author suggests that older students are able to perceive that Basque and
English are typologically more different than Spanish and English, and that they can use Spanish rather than Basque as a base language when acquiring English. The younger students, on the other hand, seem to be less aware of the objective linguistic distance between Basque and English as they find both Spanish and Basque terms transferable to English. Thus, the results of this study seem to be compatible with the idea that the perception of linguistic distance and the perception of ‘transferability’ can be more important than objective linguistic distance.

Lastly, the author stresses that the results of this study were obtained in a specific situation and therefore cannot be generalised without the contextual variables being taken into account.
Author(s): Cenoz, Jasone
Title: Cross-linguistic influence in third language acquisition: Implications for the organisation of the multilingual mental lexicon
Country: Spain, Basque Country
Publication year: 2003a

The main purpose of this study is to examine the influence of two previously acquired languages on third language oral production. Specifically, the study focuses on cross-linguistic influence by comparing a cohort of students at two different points of time in their acquisition process. This is done to see if there is development in the use of the L1 or L2 as supplier languages.

The research is designed as a longitudinal cohort study. 20 students who were studying English as a third language participated in the study. All participants attended a Basque-medium school (model D) from the age of three, where Basque is the language of instruction, and Spanish is taught as a school subject (4 to 5 hours per week). The students were all bilingual in Basque and Spanish and had received English instruction from the age of four. Data was collected in grade 4 and grade 6 of primary school. All participating students completed a language test of speaking skills in English and a background questionnaire which included questions on their knowledge and use of Basque and Spanish. The study considers two types of cross-linguistic influence: interactional strategies and transfer lapses. Interactional strategies refer to direct or indirect appeals to the interlocutor in order to get help to produce a specific term in English. Transfer lapses refer to the use of one or more terms (but not whole sentences) in Basque or Spanish as part of an utterance produced in English. In the analysis t-tests were carried out to compare the mean percentages of utterances containing units from other languages, and to compare the percentages of cross-linguistic influence for the two types of strategies and the supplier language.

Overall, the results obtained in this study indicate that factors such as linguistic typology (Spanish is typologically closer to English than Basque), general sociolinguistic context (Spanish is the majority language) or individual differences can be important factors when cross-linguistic influence is analysed. The analysis shows that the total percentage of utterances, including elements from other languages, increases by the sixth year of primary school. However, the study also shows that it is necessary to distinguish the different types of strategies in oral production as related to the activation of the base languages. The study suggests that Basque is the default supplier when
students use interactional strategies while Spanish is the default supplier when it comes to transfer lapses. Results show that the two languages have the same functions in grades 4 and 6 and that the main difference is the number of interactional strategies. According to the researcher, this seems to indicate that students in grade 6 are more confident in terms of asking for help from their interlocutor.

The study suggests that cross-linguistic influence is more frequent in grade 6 as the initial analysis shows that there is a significant increase in the number of utterances that contain words from other languages. However, a separate analysis of transfer lapses and interactional strategies shows that it is important to distinguish between the two types of strategies because they reflect different levels of awareness that can be relevant for the organisation of the multilingual lexicon.

The analysis of transfer lapses indicates that there are no significant differences between grade 4 and grade 6 with respect to the percentage of terms taken from Basque, Spanish or both languages. Most terms are transferred from Spanish, and the percentage of utterances containing terms from both Basque and Spanish in the target language is very low in both grades. In the case of interactional strategies the results also indicate that the differences between grade 4 and Grade 6 are not significant; i.e. there are no differences in the percentages that reflect the use of Basque, Spanish or both languages as suppliers.

Lastly, the researcher stresses that the findings of this study are based on a specific combination of languages in a specific sociolinguistic context using a specific research methodology and therefore cannot be generalised so as to apply to all cases of third language production.
Author(s): Cenoz, Jasone
Title: The Influence of Age on the Acquisition of English: General Proficiency, Attitudes and Code-mixing
Country: Spain, Basque Country
Publication year: 2003b

The purpose of this study is to measure the effect of age on the general rate of third language acquisition and on the development of attitudes as well as on motivation and code-mixing. The study compares the levels of L3 English proficiency between groups of students who have had the same amount of instruction but started learning English at different ages. Specifically, the research questions in the present study are: (1) Is the general rate of acquisition higher for older or younger children when the time is held constant? (2) Are attitudes and motivation more or less positive when the foreign language is taught from an early age? (3) Do younger children mix codes more often than older children?

This quasi-experimental study includes 135 primary and secondary school children from a Basque-medium school (model D) where Basque is the language of instruction and Spanish is taught as a school subject (4 to 5 hours per week). The school serves both as a total immersion programme for students whose first language is Spanish and a first language maintenance programme for students whose first language is Basque. Some of the participants speak only Basque at home while other speak only Spanish or both Basque and Spanish. However, for this sample speaking Basque is slightly more common than speaking Spanish at home. The study compared three groups of students: the first group consisted of students in grade 5 (with a mean age of 10.1 years), the second group was composed of students in grade 8 (with a mean age of 12.9 years) and the third group consisted of students in grade 11 (with a mean age of 16.3 years). The participants were tested when all of them had received 600 hours of English instruction, although they had started learning English at different ages: at the age of four, at the age of eight, and at the age of eleven. The students' proficiency in English was measured through tests of speaking, listening, reading and writing skills. Additionally, the students completed a background questionnaire, an attitude questionnaire in order to measure their attitudes towards English, Basque and Spanish, and a motivation questionnaire in order to measure their effort and attitudes towards learning English. However, the students in grade 5 only completed the oral test and the attitudes and motivation questionnaires. ANOVA analyses and Scheffé tests were performed to compare the mean scores obtained by the three groups of students.
Overall, the study finds that older students learn quicker than younger students, but that younger students display more positive attitudes towards foreign language learning and that younger students do not mix languages more than older students.

The results show that older students obtain significantly higher results than younger students in most of the measures of English proficiency. Even though only the two older groups (students in grades 8 and 11) completed all the tests, the general trend observed after 600 hours of exposure is that the oldest group (grade 11) displays the highest level of proficiency in English followed by the intermediate group (grade 8), and the lowest scores correspond to the youngest group (grade 5). According to the author, cognitive maturity could explain the higher linguistic development of the oldest students and could also be linked to higher developed test-taking strategies. Another possible explanation proposed by the author is linked to the type of input. The more traditional instructional approaches used with older students could explain the higher lexical and syntactic complexity and their higher scores in the written tests.

Interestingly, the study finds that the scores in social psychological factors (attitudes and motivation) point in the opposite direction of the scores in language proficiency. The results show that the youngest students in grade 5 tend to display significantly more positive attitudes and are more motivated than older students after 600 hours of English instruction. According to the author, psychological factors associated with age could explain a rejection of the school system and have a negative effect on the attitudes and motivation scores obtained by the older students in grades 8 and 11. An alternative explanation is related to educational factors and particularly to input and teaching methods used in secondary school as compared to primary school. According to the author, the results indicate that students enjoy their English classes when an oral-based approach and a very active methodology based on drama and storytelling is used. Contrary, students’ attitudes and motivation are less positive when more attention is devoted to grammar and vocabulary learning in secondary school.

Regarding the third research question the data indicate that students who started learning English at the age of four do not mix codes more often than students who started learning English at the age of eight or at the age of eleven. Furthermore, the data shows no clear pattern that can be related to age when all terms and expressions transferred from Basque and Spanish are divided into interactional strategies, code-switching and transfer. In fact, the use of interactional strategies and transfer by the
youngest and the oldest groups is very similar and differs from the intermediate group.

Lastly, the author points out that the present study does not give a complete picture of the effect of the early introduction of a foreign language as it only includes data corresponding to a specific point in the development of English proficiency.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Author(s): Cenoz, Jasone, & Valencia, Jose F.
Title: Additive trilingualism: Evidence from the Basque Country
Country: Spain, Basque Country
Publication year: 1994

Secondary reference:

The purpose of this study is to examine the effect of bilingualism on the acquisition of a third language and to test the effect of instruction in a minority language on third language acquisition. The study is conducted in the Basque country where three linguistic programmes in which parents can enroll their children are offered: model A: the students are instructed in Spanish, and Basque is a school subject (4 to 5 hours per week). Model B: the students are instructed in both Spanish and Basque. Model D: the students are instructed in Basque, and Spanish is a school subject (4 to 5 hours per week). The study compares the acquisition of English L3 by high school students in majority (model A) and minority (model D) language programmes. A number of independent variables are grouped into four different types of factors: cognitive, sociostructural, social psychological and educational. Overall, English proficiency is the dependent variable. It is hypothesised that bilingualism will be associated with higher levels of achievement in English once the effects of the different types of factors have been accounted for, and that bilingualism will have a positive effect on different dimensions of English language proficiency.

A total of 320 students participated in this cross-sectional study, which compares bilinguals literate in both Spanish and Basque with Spanish monolinguals. In this study, students with Basque or Spanish as their first language who received all their instruction in Basque (model D) were identified as bilinguals. Of these students, 68% had Basque as their first language and 32% had Spanish, but all of them had Basque as the language of instruction for at least 12 years. Students whose first language was Spanish and who had been instructed in Spanish (model A) were identified as monolinguals. Five tests of English language achievement were administered in order to measure different dimensions of language proficiency. All students were tested in relation to the four language skills (speaking, listening, reading and writing), as well as they were tested in relation to vocabulary and grammar. The students’ general intelligence was
measured via the Spanish version of the Otis-Lennon Mental Ability test, whereas their attitude and motivation were measured via a Likert format questionnaire. In addition, the students answered questions about gender and socioeconomic status. Multiple regression analyses were carried out in order to analyse the role of bilingual education.

Overall, the study demonstrates the advantages of bilinguals over monolinguals in third language acquisition in the Basque Country. The study identifies intelligence, age, motivation, exposure and bilingualism as factors predicting English achievement, and the authors conclude that bilingualism predicts L3 achievement independently of all other factors.

The authors find that only one predictor from each group of independent variables contributed significantly to English language achievement. The results show that the social psychological variable motivation is an excellent predictor, and that high scores on the motivation index are associated with higher achievement in English. Intelligence also contributes a significant portion of variance to the English language score: higher scores in the intelligence test are associated with higher scores in the English language. In addition, the authors find that the effect of the educational variable exposure is also significant, with more exposure to English being associated with higher scores in this language. Finally, the study shows that age is more important than the other sociostructural predictors (gender and socioeconomic status) in differentiating among the students’ English language achievement. Thus, the authors find that younger ages are associated with higher scores.

In examining whether bilingualism would predict English language achievement even after the effects of the other variables had been accounted for, the study shows that the inclusion of bilingualism increases the percentage of variance explained. Thus, the inclusion of bilingualism significantly improves the prediction of English language achievement, once the effect of other predictors has been accounted for. In addition, the authors investigated whether bilingualism contributed independently to English language achievement. The authors find that there are no interaction effects between bilingualism and the other predictors, so the effect of bilingualism is obtained regardless of the effects of the cognitive, sociostructural, social psychological and educational variables.

Regarding the second hypothesis the authors find that bilingualism exerts a significant effect on four of the five measures of English language proficiency, i.e. speaking, listen-
ing, writing, and vocabulary and grammar. However, the results show that some elements have a greater influence on some English tests than others. For example, bilingualism is more strongly associated with speaking than with other dimensions of language proficiency. According to the authors, the fact that bilingualism does not affect reading comprehension could be due to the extended practice of this skill in secondary schools by both bilingual and monolingual students.

On the basis of these findings, the authors conclude that the use of a second language (Basque) as the language of instruction can have a positive influence on the acquisition of a third language (English) for students whose first language (Spanish) is a dominant language in the community. Furthermore, the use of Basque as the language of instruction for native Basque speakers has positive linguistic outcomes in third language acquisition. According to the authors, the advantage of the bilinguals can be explained in terms of their higher level of metalinguistic awareness and their ability to use their knowledge of two other linguistic systems when learning a third language. Further, the authors argue that the skills developed by bilinguals for them to use the appropriate language in interpersonal relationships could account for a higher development of communicative competence in a third language.
The purpose of this study is to examine the relationship between executive and phonological processes and L1-, L2-, and L3-proficiency in 8-9-year-old learners who follow the same multilingual curriculum. Specifically, the study explores the cross-sectional links between identified factors and proficiency in vocabulary, grammar and literacy across different language gauges (L1, L2, and L3).

The study was conducted in the Grand Duchy of Luxembourg, where the education system is trilingual: in kindergarten (compulsory for ages 4–6 years) the language of instruction is Luxembourgish; no second languages are taught or used by the teachers. In year 1 (age 6–7) children start to learn their second language, German. Luxembourgish and German are used as the media of instruction; however, children learn to read and write in German - not in Luxembourgish. Oral French is introduced as a school subject in the second term of year 2 (age 7–8) and French literacy starts in year 3. Thus, the study focuses on the interplay of factors in an educational system that introduces two foreign languages at an early point.

98 students from 34 primary classes from 16 state schools across the Grand Duchy of Luxembourg participated in the study. All of them completed multiple L1-measures of complex span, verbal short term storage and phonological awareness in addition to tests of proficiency in a range of linguistic domains (vocabulary, grammar and literacy) in L1 (Luxembourgish), L2 (German) and L3 (French). The students were tested in their second year of primary school (year 2) after having formally studied German (L2) for 19 months and French (L3) for four months. Data was analysed quantitatively through the use of partial correlations in order to explore the relationship between the measures while controlling for L1-vocabulary. Additionally, confirmatory factor analyses and regression analyses were performed in order to explore the specific links between the identified factors and proficiencies in different languages and linguistic domains.

The results of the study indicate that executive processing abilities, phonological short-term memory and phonological awareness operate as distinct, but related constructs differentiated by their associations with different linguistic domains in L1 and second languages (L2 and L3). Working memory is a cognitive system that temporarily holds
and manipulates information over brief periods of time in the ongoing cognitive activities. It is thought to consist of domain-general executive processes that coordinate activity within the entire working memory system and of domain-specific mechanisms of short-term storage. Phonological short-term memory is a component of the working memory, whereas phonological awareness (a concept closely related to phonological short-term memory) is described as the ability to make explicit judgements about sounds of spoken words independent of their meanings. Executive processing has been identified as the crucial factor that links the working memory system to higher order language abilities such as language comprehension.

The study finds that phonological short-term memory was uniquely linked to vocabulary in L1 (Luxembourgish) and the structurally similar L2 (German). The study further shows that executive processes were related to grammar across languages, reading comprehension and spelling, and that phonological awareness made specific contributions to word decoding, spelling, and language proficiency in the structurally dissimilar L3 (French).

According to the authors, the capacity to discern the sound system of a language might be particularity important in the early stages of acquiring an additional language with an unfamiliar phonology. Hence, the study suggests that language familiarity might be an important factor to consider in third language acquisition: whereas long-term lexical knowledge in L1 appears to play a crucial role in the acquisition of a familiar L2, native language contributions to L2-learning might diminish and basic cognitive processes gain in importance as familiarity with L1 increases. Most notably, basic phonological processing abilities in the native language seem to be an important springboard to success in the learning of a third language with an unfamiliar phonology. Finally, the study shows that executive processes of working memory make general rather than specific contributions to language learning, possibly in terms of attentional control mechanisms that actively maintain crucial information and regulate controlling processes during complex and effortful learning activities present in many classroom situations.

However, the authors stress that it is a major limitation of the study that the participating students had received instruction in L2 German substantially longer than in L3-French, and that they were tested after only four months of L3 French instruction and had not been explicitly taught French phonology (which is not part of the Luxembourgish curriculum). Therefore, it is likely that the students in this study had not yet creat-
ed stable representations of the different sound units in the French language, which might have shadowed the contribution of short-term storage to vocabulary learning. The authors thus stress that the observed results might be related to length of instruction rather than to language typology.
Author(s): Fullana, Natalia  
Title: The Development of English (FL) Perception and Production Skills: Starting Age and Exposure Effects  
Country: Spain, Catalonia  
Publication year: 2006

The purpose of this study is to test the effect of different starting ages on third language acquisition among Spanish/Catalan bilinguals in the school districts of Barcelona. Additionally, the study aims to assess the factor of varying degrees of exposure to the target language in the different age groups. The basis of the study is also to test the Critical Period Hypothesis, which states that native-like phonological language skills can only be acquired if learners start at an early age, against alternative theories that state that this is also possible for late learners.

The sample used in the study consisted of 218 students divided into groups that differed in terms of starting age and hours of instruction. All participants are considered bilingual in the sense that they speak both Spanish and Catalan, but the question of which language is the dominant language varies. The research design is quasi-experimental in nature and involves different groups of different starting ages that have received different amounts of instruction. All students were recruited via the Barcelona Age Factor (BAF) Project located at the University of Barcelona. The BAF Project is dedicated to exploring the influence of age on language learning. The participants’ auditory proficiency was measured by the help of auditory discrimination and imitation tasks. The discrimination task consisted of twenty recorded pairs of words produced by a female native speaker of Standard British English in which the second word in each pair could be either the same as or different from the first word presented in the pair. The imitation task consisted of repeating a list of 34 English words presented in isolation by the same recorded female voice as in the discrimination task.

The results from the study indicate that starting age (8, 11 and 14 years) and number of hours of instruction (200, 416 and 726 hours) were not strong predictors of the ability to produce English sounds in a native-like manner in a formal language learning context. There was, however, a small tendency towards late starters having slightly higher proficiency levels in relation to some of the measured tasks. Therefore, the author suggests that the Critical Period Hypothesis can be questioned because the results suggest that a late starting age of foreign language learning in formal instruction learning settings could be favourable.
The aim of this study is to examine whether a higher level of bilingual proficiency contributes to better linguistic competence in a third language. Specifically, the study reports on foreign language phonological acquisition by Basque/Spanish bilingual students learning English as their third language. Additionally, the study seeks to explore the idea that cognitive advantages associated with the level of bilingualism increase as a function of age. Data contains 60 primary and secondary school children, who were selected out of a larger sample according to their use of Basque. All the participants attended a Basque-medium school; that is, a school where Basque is the language of instruction, and where Spanish is taught as a school subject.

The sample consisted of two bilingual groups: the more bilingually balanced group (n=30), containing the students who spoke Basque the most and the less bilingually balanced group (n=30), consisting of those who spoke Basque the least. The groups were also matched to examine to which degree they were exposed to English (half of the members of each bilingual group were in their sixth year of English instruction, whereas the other half were in the seventh), and age was examined as well. Each bilingual group was divided into thirds: one-third of students who had started learning English at the age of four, one-third of students who had started learning English at the age of eight, and one-third of students who had started learning English at the age of eleven. All participants were given an auditory discrimination test in order to measure their sound perception of English phonemes. The test consisted of two different perceptual activities, one for vowel phonemes and one for consonant phonemes. In the test the students were presented with two homonymous words from an audio tape. Simultaneously, cards with drawings of the two words were presented to the students, who were then asked to pick the correct one. In the analysis T-tests were carried out to see if there were any statistical differences between the two kinds of bilingual learners.

The results of the study show that the level of bilingual proficiency does not exert any influence on the participants’ third language phonological performance, as no significant differences were discovered when analysing the phonological performance of the
two bilingual groups, which differed in relation to both their age and their level of bilingual proficiency.

The study finds that there was no significant difference between the correct identification of English phonemes by the students who exhibited a higher level of bilingualism and the correct discrimination of English phonemes by the students who showed a lower level of bilingual proficiency. Besides, the similarity between the two kinds of bilingual learners was not only evident when analysing the whole sample, but also when looking at the different age groups. The study finds that, independently of the kind of sample (all students or different age groups), more balanced bilinguals did not obtain significantly better scores than less balanced bilinguals. Quite the contrary, the results showed that less balanced bilinguals’ means were slightly higher than more balanced bilinguals’ means on most occasions, though the difference never reached statistical significance. However, both kinds of bilingual learners showed very similar phoneme discrimination skills. Consequently, the supposedly better phonological performance on the part of more balanced bilinguals did not turn out to be comparatively better as age increased, since a clear pattern related neither to age nor more balanced bilinguals’ superiority was discovered in this study. On the basis of these findings, the researcher concludes that phonological competence in English as a third language does not depend on the participants’ level of bilingualism or their age.

According to the researcher, these surprising results can be explained by three different factors: the specific linguistic aspect under study, interlinguistic distance and type of schooling.

The researcher points to the fact that the present study examines phonology as a specific area, which may be a crucial factor and could explain why the results of this study do not coincide with those of third language acquisition research conducted in similar learning situations. Additionally, the researcher refers to the fact that Spanish and Basque are very similar with regard to segmental phonology (the same vowel system and very similar consonantal inventories). According to the researcher, it is therefore not surprising that the present study finds no differences in the phonological performance of the two groups of bilinguals. Lastly, the researcher suggests that some characteristics of the selected sample could also account for the different results shown by the present study and by the remaining research conducted in the Basque Country. While the students in this study attended the same school and had the minority language (Basque) as the instruction language, in some other studies participants differed
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as far as the school and education programme they were or had been enrolled in and, therefore, they were more distinct in relation to their use of Basque and their level of bilingual balance. The researcher also indicates that students with a higher level of bilingualism, supposedly better L3 learners, may advance more rapidly in their L3 learning when they do not share English lessons with lower bilingual proficiency children, allegedly worse L3 learners. Therefore, the fact that the two groups of bilinguals in this study did not attend different classrooms depending on their use of Basque outside school, but were mixed up in the same classrooms, might also be a factor.
The aim of this study was to find age-related differences in English proficiency for students starting third language instruction in English at three different ages and school grades. The research was conducted in an attempt to test whether an early starting age is a favorable factor for sound perception in English. Sound perception is measured as the students’ abilities to discriminate vowels and consonants when listening to words and their degree of foreign accent and intelligibility.

This study is part of a larger longitudinal research project on the issue of age and the acquisition of English as an L3 in the Basque Country. 60 students belonging to three different age groups participated in the study. The students had started learning English at school at three different ages: at 4, 8, and 11 years of age. All students were learning English as third language at the same school. The students’ sound perception in English was measured after six and a half years of instruction when they were around 10, 14, and 17 years old. Two different tests were used to measure their sound perception: a consonant and vowel perception test and a test of the students’ intelligibility in English and the degree to which they spoke a foreign language. In the consonant and vowel test, the students were presented with two similar words from an audio tape. Simultaneously, cards with drawings of the two words were presented to the students, who were then asked to pick the correct one. In total the students were presented with 45 different pairs of words. In the other test, the students were asked to retell a story. This was recorded on tape and a native English speaker listened to the tapes and assessed the students’ intelligibility and their degree of foreign accent. Intelligibility and degree of foreign accent were found to be correlated. Comparisons between the groups were carried out using ANOVA, and possible correlations between the results were explored using Pearson’s r.

Overall, the study shows that early starting age is not a favorable factor in relation to sound perception in English. The authors find the opposite; the students in the oldest group scored higher than the students in the two youngest groups in both tests.

In the vowel perception test the 17-year-old students performed significantly better than both the 11-year-old and the 14-year-old students. In the consonant perception test the 17-year-olds performed significantly better than the 11-year-old students, but
not significantly better than the 14-year-old students. There were no significant differences between the 11-year-old students and the 14-year-old students. In the test of intelligibility and degree of foreign accent the 17-year-old students performed significantly better than both the 11-year-old and the 14-year-old students. Again, there were no significant differences between the 11-year-old students and the 14-year-old students.

The authors mention that none of the students are anywhere near acquiring a native-like pronunciation and that there are other influential factors at work. For instance, it is possible that six years has not been sufficient time for the youngest children to catch up with the older learners.

Moreover, an increase in reading pronunciation proportional to age was found. According to the authors, this is probably related to teaching methods, since the youngest learners started instruction without written materials and therefore had less exposure to spelling during their instruction period. However, reading pronunciation may also be a type of native language influence since in both their native languages, orthography and pronunciation bear a strong correspondence, and, clearly, in the older groups this correspondence has a stronger establishment since the creation of orthographic images for pronunciation increases with children’s age. This would be native language influence in the wider sense of the term as well as a cognitive maturation effect. Finally, the authors state that cognitive maturation, individual learning strategies and training methods could be possible explanations for the foreign language pronunciation results.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Author(s): García Mayo, María del Pilar
Title: Age, Length of Exposure and Grammaticality Judgements in the Acquisition of English as a Foreign Language
Country: Spain, Basque Country
Publication year: 2003

The purpose of this study is to examine whether length of exposure to English as a third language has any influence on students’ proficiency in an English grammar test. The author also examines whether an earlier exposure to English leads to a higher level of English proficiency. The following three research questions were posed: (1) Does length of exposure in a foreign language setting have any influence on target-like performance in a grammaticality judgement task? (2) Does an earlier exposure to the language mean more target-like performance in that type of task? (3) Is higher cognitive development related to higher degree of metalinguistic awareness?

This study was part of a larger longitudinal research project on the issue of age and the acquisition of English as an L3 in the Basque Country. The 60 students participating in the study were two groups of Basque/ Spanish bilinguals who were studying English as L3 at the same school. The groups were matched for number of hours of exposure and type of instruction received, but they differed in age of first exposure to English (8-9-year-olds versus 11-12-year olds). Both groups of students were tested after three years and 396 hours of instruction and again after five years and 594 hours of instruction. The students were given a grammar task with 17 sentences in English and were asked to indicate whether the sentences were correct or incorrect. If they thought the sentences were incorrect, they were asked to make the relevant changes.

The study shows that length of exposure to English language instruction has a positive effect on the students’ performance in the English grammar test. This indicates that students’ performance in English as an L3 increases with the length of exposure. Regarding age at the time of first exposure the study shows that the students who started learning English as 11-12-year-olds performed better in the grammar test than the students who were exposed to English as 8-9-year-olds. The older students (16-17 years old at time of testing) obtained significantly higher scores than the younger students (13-14 years old at the time of testing). As regards metalinguistic awareness the study finds that the older students had a greater sensitivity to deviance; that is, the older students had a greater ability to pinpoint the trouble spot in each sentence and provide a correction for the problems they found. According to the author, the older students’
greater cognitive ability is a possible explanation for their better performance. Based on these results, the author concludes that early introduction of English as an L3 will not lead to appropriate results if instructional hours are not used effectively and there is no increase in the number of hours of exposure.
Author(s): Griessler, Marion
Title: The Effects of Third Language Learning on Second Language Proficiency: An Austrian Example
Country: Austria
Publication year: 2001

This study compares the development of two age groups and three different education programmes. The main objective is to investigate the effectiveness of English instruction at three Austrian schools with different approaches to language teaching. Two specific programmes with a linguistic bias and a regular high school are compared: (1) the Linz International School Auhof (LISA), an immersion school employing English as the language of instruction throughout the curriculum, (2) the Lycée Danube, which teaches English according to the traditional high school curriculum, yet introduces French as a third language at an early stage, and (3) a regular Austrian high school, or Bundesrealgymnasium (hereafter referred to by its abbreviation BRG), which is a school with a science rather than a language bias. The study examines whether the ambition to learn a third language (French) will have any effect on the students’ proficiency in the second language (English).

Data for this cross-sectional study was collected in six classes from the three different school programmes. To add a developmental aspect to the study, two age groups were taken into account, which were grades 6 (11-13-year-olds) and 9 (14-16-year-olds). A total of 75 monolingual German-speaking students participated in the study. The students’ English proficiency was measured on the basis of oral picture book narrations. All narratives were analysed with respect to the two linguistic domains of vocabulary on the one hand, and grammatical aspects of the English verb on the other. The students were tested when they had received instruction in L2 English for one year (grade 6 students) and four years (grade 9 students), respectively. Grade 9 students had received approximately two years of L3 French instruction.

Overall, the study indicates a supportive effect of third language learning on second language proficiency, and the results show positive effects on immersion education, lexical development and grammatical accuracy.

The study finds that LISA students display the highest levels of English proficiency in all linguistic domains investigated, lexical and grammatical, which seems to underscore the advantages of immersion education. The LISA students were followed by the
Lycée students, who also consistently and significantly outperformed the BRG group, which achieved the lowest scores throughout the analyses. The author points to the fact that even grade 6 Lycée students, who had not had any more language learning experience than BRG students at the time since their L3 French classes only start in grade 7, nonetheless outperformed their peers from the BRG. According to the author, this finding indicates that further aspects must be taken into consideration. The author suggests that factors other than language learning experience, such as motivation and parental interest, may have an influence on language learning achievement.

Regarding the learning effects over time, the results show that developmental progress with regard to vocabulary learning was highest within the Lycée group, while hardly any add-on effect is observed in the BRG students. According to the author, this suggests that students progress faster in their second language when learning a third. In the case of verbal morphology the results show that developmental progress is most pronounced within the BRG group. According to the author, a possible explanation might be that, unlike immersion education (as represented by LISA), traditional language classes still put greater emphasis on formal correctness than on vocabulary development.

According to the author, the most obvious explanation for the performance of LISA students is, of course, the use of English as the language of instruction. This is undoubtedly a major factor with very positive effects. However, the significance of other factors in effective foreign language learning becomes especially evident from the analysis of the Lycée students’ performance. While the success of LISA has been largely attributed to input and teaching methods, these factors cannot account for the difference between Lycée and BRG scores. According to the author, the mutual influence between L1 and L2 might explain the enormous progress Lycée students make from grade 6 to grade 9. Thus, the author suggests that further factors such as language aptitude, attitude, motivation, teacher commitment and parental interest (home environment) are taken into consideration.
Author(s): Göbel, Kerstin, Vieluf, Svenja, & Hesse, Hermann-Günter

Title: Die Sprachentransferunterstützung im Deutsch- und Englishunterricht bei Schülerinnen und Schülern unterschiedlicher Sprachlernerfahrung

Country: Germany

Publication year: 2010

The aim of this study is to investigate whether or not positive influence from immigrant students’ linguistic background is supported by teachers in language instruction, i.e. if similarities, transfer and/or inference to the students’ native languages can be of productive use in teaching. The main focus is language transfer support as a strategy in teaching. Language transfer support strategy includes both the students’ native language as well as foreign languages. L1 and L2 are seen as resources in relation to learning an L3 in school. The study examines whether language transfer is systematically supported in English and German lessons, and to what extent students can benefit from such language support as a strategy in teaching. More specifically, this study seeks to answer the following questions: 1) Is language transfer systematically supported during English and German lessons by different teachers? 2) Which premises support the language transfer? 3) Is there any connection between the language transfer support and the students’ performance in German and English? 4) Is there any difference in the connection between the students’ native languages and the language transfer support with regards to the tests in German and English?

Constituting a random sample, 11,000 9th grade students and 440 teachers participated in this longitudinal study, which draws on data from the DESI (Deutsch-Englisch-Schülerleistungen International) study. The students were divided into three language groups: a) monolingual German students, b) multilingual students with two first languages, German being one of them c) non-German students, whose first language is not German.

The students’ proficiency in German and English was measured through tests of vocabulary, speaking, listening, reading and writing skills. Additionally, the students completed a background questionnaire. Furthermore, information was collected regarding the teachers’ attitudes towards language transfer support in teaching, as well as their use of the students’ native and foreign languages when teaching. The questionnaires consisted of four items, 1) the teachers’ opinion on using the language support in the teaching, 2) the actual use of different languages in the teaching, 3) implementing lexical language competences, 4) implementing pragmatic language compe-
Linguistic support data was drawn from the teachers’ perspectives and separated from the German and English instruction. To cover background variables, the categories ‘individual’ and ‘class-level’ were established. This aimed at comprehending whether there was a difference between the classes in regards to the students’ language background and their ability to perform academically. Moreover, the study sought to understand whether the language transfer support had different effects on the students’ ability to perform academically independently from their language background.

Overall, the study showed that the non-German and the multilingual students have an advantage over the German monolingual students when learning English. This leads to the assumption of interdependence between L1 and additional languages. Moreover, the study showed that the effects of the language transfer support on the achievements of the students depend on the language that is being taught. The language transfer support during German lessons only had a slight positive effect on the achievements of the students; no conclusion on the significant correlation between language transfer support and the students’ achievements can therefore be made. During English classes there was a significant correlation between linguistic transfer support and the students’ achievements, meaning that the more linguistic language support the students received, the higher they tended to score in the English test. The multilingual students, earlier referred to as group B, scored significantly higher in the English test than the German monolingual students, whereas the German monolingual students and the non-German students showed no significant difference when compared. The overall positive effects of the language transfer support on English give attention to teaching strategies that includes language transfer support. It can be concluded that the implementation of the language transfer support in German lessons were more effective when the number of non-German students was high. According to the study, the use of language transfer support in English lessons depends on the English teachers’ contact with English-speaking countries abroad and therefore relies on the teachers’ own competences and experiences.

The results of the study also showed that the teachers found it meaningful to make use of language transfer strategies. However, it showed a gap between their positive attitudes towards the language transfer support and their implementation of the teaching strategies. Furthermore, the study states that the low outcome of the improved achievements in German should not discourage the use of language transfer support, but should, however, encourage more thorough consideration of the teachers’ ability and motivation to implement the language transfer support in practice.
Author(s): Haenni Hoti, Andrea
Title: Forschungsergebnisse zu Einflussfaktoren auf die Englishfertigkeiten von PrimarschülerInnen unter besonderer Berücksichtigung des Migrationshintergrunds
Country: Switzerland
Publication year: 2009

The aim of this study is to uncover factors that have positive and negative influence on 3rd grade students’ listening and reading skills in English as an L3. The study focuses specifically on students with migrant background, which includes 1st, 2nd and 3rd generation immigrants. To examine which factors had positive or negative effects, the following research questions were raised: 1) Do English listening and reading comprehension depend on specific individual and contextual factors? 2) Does the migration background or the (bi)national identification of the students have an influence on their listening and reading comprehension in English?

The study was conducted in the cantons of Central Switzerland, Obwalden, Zug, Schwyz and Lucerne. 592 3rd grade students (from 30 school classes) with an average age of 9 years and 6 months participated in this longitudinal, cohort-based study. 25% had a migration background, and 12% of these students stated that they were of foreign nationality, whereas 13% stated that they were both Swiss as well as another nationality. Based on these background variables, the students were divided into three groups: a) Swiss students b) foreign students and c) students with binational identity. Group b) and c) are in this study regarded as students with a migrant background.

After one year of English instruction the students were given tests of English reading and listening comprehension as well as questionnaires. The questionnaires contained questions regarding the students’ motivation, learning strategies and attitudes towards the countries and speakers of the target language. The questionnaires also included background variables such as nationality, gender, number of languages spoken at home, SES, etc. A multilevel analysis with multiple regressions was carried out in order to identify relevant factors that might explain the students’ reading and listening comprehension in English.

The results indicate that migration background does not seem to have an influence on the students’ reading and listening skills in English. The study shows that, after one year of English instruction, students with binational and bicultural background (group c) display significantly better listening comprehension than Swiss students (group a).
and foreign students (group b). The results of this study therefore do not give any empirical grounds to the assumption that students with migration background have to tackle difficulties specifically related to their background when instructed in English as an L3.

Furthermore, the results of the study showed that the better results the students achieved in the German reading test, the better their results in the English listening and reading comprehension were. This was the case in relation to the Swiss students as well as the binational and foreign students. The more the students felt overloaded and feared making mistakes, the lower they scored in the English tests. However, there was no connection between the students’ nationality and their feeling of being overloaded. The study concluded that the development of skills in L3 instructed in school was to a substantial degree connected with the students’ linguistic pre-knowledge - their experience of other languages - as well as with certain emotional factors, i.e. not feeling overpowered and being afraid of making mistakes. This was the case for both students with and without a migration background.
Author(s): Haenni Hoti, Andrea U., Heinzmann, Sybille, Müller, Marianne, Oliveira, Marta, Wicki, Werner, & Werlen, Erika
Title: Introducing a second foreign language in Swiss primary schools: The effect of L2 listening and reading skills on L3 acquisition
Country: Switzerland
Publication year: 2011

Secondary reference:

The purpose of this study is to examine whether German-speaking students who have been learning English from grade 3 onwards will display higher French proficiency in listening and reading in grade 5 than students who have had no previous English instruction. Following a school reform in Switzerland, some German-speaking cantons have implemented a new model where English is the first foreign language (L2) to be learnt at school (from grade 3 onwards), followed by French (L3) as the second foreign language (from grade 5 onwards) (called the 3/5 model). Since the cantons have implemented this school reform at different rates, the 3/5 model is compared to the old model with French instruction only, starting in grade 5 (called the 0/5 model).

The basis of the study is that the same language, French in this case, is learnt more efficiently as an L3 (model 3/5) than as an L2 (model 0/5), because students with previous foreign language experience in English can use their foreign language skills as a resource when learning a third language. Hence, two hypotheses are put forward in the study: 1) Students who have been learning English (L2) from grade 3 onwards will display higher French (L3) skills on average in grade 5 than students who have had no previous English instruction. 2) The higher the students’ English (L2) skills are, the higher their French (L3) skills will be. In order to examine if L2 skills (listening and reading) have an impact on third language acquisition in themselves, the authors also examine the following individual and contextual factors: age, type of study plan, school class affiliation, motivation, feelings of being overburdened and fear of making mistakes, self-concept as a learner of French, attitudes towards French-speakers and countries, metacognitive, cognitive and social learning strategies and language background, German (L1) reading skills, and English (L2) listening and reading skills. Fur-
Furthermore, the following demographic and family-related factors are examined: gender, cantonal affiliation, nationality, length of residency in Switzerland, literacy of the household and parental assistance with learning French.

The sample in this quasi-experimental study consists of two groups of students following the two different foreign language learning models. The cantons of Obwalden, Zug and Schwyz introduced the new 3/5 model in the school year 2005/2006 while the canton of Lucerne introduced the model in the school year 2007/2008. In the study 552 students in the new 3/5 model in Obwalden, Zug and Schwyz are compared to 376 students in the old 0/5 model in Lucerne. All students’ French proficiency skills in listening and reading were assessed by the end of grade 5. German reading skills were assessed in grades 3 and 4 for all students while English listening and reading skills for students in the 3/5 model were assessed in grades 3-5. Apart from the achievement tests, the study involved a questionnaire filled in by all students that encompassed demographic variables and questions about learning strategies, motivation and self-concept as a learner of English/French. Multilevel regression analyses were used to compare the French skills of both groups of learners while controlling for a large number of variables which might influence the scores on the achievement tests in French.

The first hypothesis concerning the influence of previous English instruction on the French skills of the students was confirmed as was the second hypothesis concerning what role L2 skills in English play in the prediction of L3 skills. Furthermore, the results show that, apart from previously acquired linguistic skills, specific demographic, social psychological and contextual factors contribute to the explanation of listening and reading skills in the L3 of the students.

The comparison of students with and without English instruction revealed that students with English instruction from grade 3 displayed higher skills in French than students with no English instruction. Consequently, after one school year, students who learned French as an L3 were more successful than children who learned French as an L2. The students learning French as an L2 performed significantly worse in both the French listening and reading tests than the students who were learning English as an L2 and French as an L3. The students’ listening and reading skills in French were also related to other variables, notably their German (L1) reading skills in grade 4 and their self-concept as a learner of French (meaning the students’ perception of their French competence, their ease of learning and their expectations about success). The better the students were at reading German and the more positive their perception of their own
competence in French were, the better they performed in the French listening and reading test at the end of grade 5. The age of the students also plays a role in French listening and reading. Students who were 12 years old or older in grade 5 scored significantly lower in the French listening test than students who were younger than 11 years. In French reading the group of 12-year olds or older students scored significantly lower than the younger students.

Moreover, a positive correlation between the number of languages spoken in the family and the students’ French listening skills was also found, indicating that students with a bi- and multilingual family background are at an advantage compared to monolingually raised students when learning French.

For the students in the 3/5 model the authors also examined what role L2 skills in English played in the prediction of their French proficiency skills. The analyses revealed that the better the students performed in the English listening test in grade 3 and grade 4, the better they performed in the French listening test. Equally, the better the students performed in the English reading test and the German reading test, the better they performed in the French reading test.
Author(s): Klawitter Beusch, Johanna
Title: Durch Zweisprachigkeit schneller ans Ziel? Zu Leseverständnis und Lexikon-
erwerb bi- und monolingualer Deutschlernер der schwedischen Oberstufe
Country: Sweden
Publication year: 2011

The study investigates whether bilingual immigrant high school students in Sweden have any advantages when learning German compared to Swedish monolingual high school students. The dissertation consists of two studies and puts special emphasis on passive vocabulary and reading comprehension. The first study reports on the average test results in relation to linguistic, affective, neurophysiological and socio-economic learner variables, whereas the second study focuses on the individual test results and the used lexical inferencing strategies.

31 monolingual and 16 bilingual students aged 16-19 from three different high schools in Gothenburg participated in the study. The bilingual high school students had diverging backgrounds; some were second generation immigrants and, others had just recently arrived in Sweden. Their native language varied equally; half of the group originated from Ex-Yugoslavia, and the other half spoke Mandarin, Urdu, etc. The study compares and analyses the results of bi- and monolingual students in German L3, L4 and L5. In order to measure the students’ proficiency in German and their inferencing strategies, five tests of vocabulary and reading comprehension were applied. Four questionnaires were conducted to cover the four different learning variables.

Data was collected when the students were in their first year of learning German as a foreign language. The first of the five language tests included 38 items, namely German, French, Spanish and English words. The aim was to understand the students’ capability to recognise words and identify which language they belonged to. The second test consisted of Swedish and German cognates in order to investigate if the students were able to transfer their knowledge of Swedish words into German words. The third test consisted of 12 words in German, each of which was part of a sentence accompanied by a picture. The task was to translate specific, highlighted words into Swedish. The aim was to understand how the students used their intralingual and interlingual, respectively contextual references. The fourth test aimed at investigating

Inferences are what we figure out based on an experience. Helping students understand when information is implied, or not directly stated, will improve their skill in drawing conclusions and making inferences. Inferential thinking is a complex skill that will develop over time and with experience (http://www.readingrocks.org/strategies/inference).
how the students constructed meaning from contextual references. The test was constructed of sentences with missing words. The fifth test aimed at investigating the students’ reading comprehension after one year of German instruction. The four questionnaires consisted of (1) general information, (2) background information, (3) self-evaluation of native language and (4) motivation/attitude/language anxiety. The results of the language tests show that the bilingual students had no advantages over the monolingual students on a group level. By comparing the results from the language tests with the results from the questionnaires, the dissertation concludes that, for both the bi- and monolingual students, high proficiency in Swedish is an important variable when learning German as an L3, L4 and L5. Furthermore, a certain level of competences and a high activity level in students’ native language show a positive effect on the ability to learn German, although this is always in connection with high proficiency in Swedish. Moreover, the results show that affective learning variables have a significant impact on the acquisition of a foreign language. The bilingual students had, in general, a more positive attitude and stronger motivation than the monolingual students; however, the monolingual students had slightly better English grades than the bilingual students. The students with a good English grade did also, in most cases, achieve a good grade in German. Two social variables were measured, respectively the parents’ educational background and the parents’ support. The monolingual students’ parents had, in general, a higher educational level than parents of the bilingual students, although this was not significant. The correlation between this variable and the monolingual’s test results was significant. However, the correlation between the parents’ educational background and the bilingual students’ test results was positive, but was not significant. Neither was the support of the parents significant for the bilingual students. There was no strong correlation between the parents’ support and the test results for any of the groups. Overall, the monolingual students had the best neurophysiological, linguistic and social preconditions for learning German while the bilingual students had better affective preconditions. Furthermore, the study shows that the bilingual students had lower proficiency in Swedish as well as lower social preconditions compared to the monolingual students. Despite this, the bilingual students’ parents’ educational backgrounds were not much lower than the monolingual students’ parents’ educational backgrounds and, in combination with the bilingual students’ higher motivation and more positive attitude towards the course and the German language, they could compensate for their lower proficiency in Swedish and their lower social preconditions.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS' LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Author(s): Klein, Elaine C.
Title: Second versus Third Language Acquisition: Is There a Difference?
Country: USA
Publication year: 1995

The purpose of this study is to examine if bilingual students acquiring English as a second foreign language are better than monolingual students at identifying correct and incorrect verb and preposition placement in English sentences. Specifically, the students’ knowledge of verb placement and their preposition stranding knowledge are measured. A preposition stranding is a sentence in which a preposition is left without a following object. An example of preposition stranding is the sentence construction “Who are the boys waiting for?” instead of the sentence construction “For whom are the boys waiting?” Thus, the study focuses on a very specific aspect of English proficiency. Preposition stranding is only found in some Germanic languages, particularly English, Dutch and the Scandinavian languages. 15 native English-speaking monolinguals, 17 monolingual immigrants learning English as their second language and 15 bilingual immigrants learning English as their third or fourth language participated in this cross-sectional study. They ranged in age from 12 to 15 years, and all of them attended junior high schools and high schools in New York City. Most of the immigrants had come to the USA within the past three years, and most of the bilingual students learned their first foreign language at a young age. The students’ proficiency in English was measured using two measures: one measure was based on the students’ assessments of whether a given sentence was acceptable or unacceptable in English. This second measure was constructed to test their knowledge of preposition stranding. None of the immigrant students’ first languages permitted preposition stranding. Mean percentages of accurate responses in the groups were calculated and Fischer’s test was employed in the statistical analysis.

The study shows that the monolingual English speakers scored significantly higher than the immigrant students on both measures of lexical learning and syntactic learning. When comparing the two immigrant groups, the author finds that the bilingual immigrants scored higher than the monolingual immigrants on both measures of lexical learning and syntactic learning. Thus, it appears that bilinguals have an advantage over monolinguals in lexical and syntactic learning when learning a new foreign language. According to the author, it remains an open question whether this advantage will result in greater ultimate attainment, but it is likely to increase the chance for greater ultimate proficiency.
The purpose of this study is to examine if there is a correlation between three different linguistic programmes that students are enrolled in and their English proficiency. The author also examines the relationship between the students’ metalinguistic awareness and their English proficiency. The study is conducted in the Basque country, where three linguistic programmes in which parents can enroll their children are offered:

Model A: the students are instructed in Spanish, and Basque is a school subject (4 to 5 hours per week). Students have Spanish as their mother tongue, and their level of proficiency in Basque is very low. The author regards them as monolinguals with a small knowledge of Basque.

Model B: the students are instructed in both Spanish and Basque. The vast majority of the students have Spanish as their mother tongue. These students are more proficient in Basque than the model A students while their Spanish proficiency is similar to that of model A students.

Model D: The students are instructed in Basque, and Spanish is a school subject (4 to 5 hours per week). Students may have Spanish, Basque or both languages as their mother tongue. Model D students are as highly proficient in Spanish as model A and B students, whereas their proficiency in Basque is higher.

252 students participated in this cross-sectional study. 126 were enrolled in grade 5 (10-11-year olds), and the other half were enrolled in Grade 8 (13-14-year-olds). The sample consists of 42 students in each programme in each grade. The students started learning English in grade 3, and this language represents the L3 for all of them. The students’ English proficiency was measured using speaking, writing, listening and reading tests and a vocabulary and grammar test. An overall English score was constructed based on the five English tests. Based on their scores, the author constructed three proportional groups of students, with the highest scoring students in group 1, the medium scoring students in group 2 and the lowest scoring students in group 3. Three similar groups were constructed based on the students’ scores in a metalinguistic awareness test. The students completed a questionnaire and answered questions about
their gender, age, socioeconomic status and motivation. Contingency tables were used to examine the relationship between students in the three different programmes and their metalinguistic awareness and English proficiency.

The study shows that the students with a higher degree of bilingualism scored higher in tests of metalinguistic awareness and English proficiency. The students in model D outnumbered the students in model B in group 1 (the highest scoring students) and the students in model B outnumbered the students in model A. This applied to both grades 5 and 8. The opposite picture could be seen in group 3 for both metalinguistic awareness and English since there were more model A students in this group than model B and model D students. Since the students in model D and model B, according to previous research, had a higher proficiency in Basque than the students in model A, the author argues that bilingual students are better at learning a third language and have a higher metalinguistic awareness than monolinguals.

The results of the study also showed that there was a relationship between the students’ results obtained in the metalinguistic awareness tests and the results obtained in the English tests.
The purpose of this study is to examine the influence that the starting age of third language learning has on the written production in three groups of students with a similar period of time of exposure to the third language. The following three hypotheses are put forward: (1) the age factor determines the degree of competence achieved in the students’ written production, (2) the older the students are, the better the results obtained in fluency, complexity and accuracy will be, and (3) the age of the students will influence the kind of errors made by the participants. A total of 62 Spanish-Basque bilinguals participated in this quasi-experimental study. All of them attended a Basque-medium school (model D), where Basque was the language of instruction and Spanish was taught as a school subject (4 to 5 hours per week). The students were divided into three groups according to age: the first group was made up of 31 students from grade 6 (11–12-year-olds) who had started their English lessons when they were 4-5 years old. The second group consisted of 18 students from grade 10 (15–16-year-olds) who had started learning English at the age of 8-9. The third group, consisting of 13 grade 12 students (17–18 year-olds), had received instruction in English from the age of 11-12. All participants had received instruction in L3 English within an eight-year time span. Specifically, the students in grade 6 had had a total of 704 hours of English instruction at the point in time when data for the present study was collected. The grade 10 students had received a total of 792 hours of English instruction while the Grade 12 students had had a total of 693 hours of instruction in English. All participants completed a written task which was analysed according to three types of analysis: a holistic, a quantitative and a descriptive approach. ANOVA analyses were performed to compare the mean scores obtained by the three different age groups.

Overall, the hypotheses put forward in this study are borne out, and the study concludes that the older the students are, the better their written competence in L3 English is. However, the authors point out that the age factor cannot be isolated from a series of factors that interact with it, such as the influence of experience and the level of competence achieved in L1 and L2, as well as affective factors such as attitudes and motivation and the students’ cognitive style, personality etc. Furthermore, the authors stress that the present study is part of a longitudinal study, which is why definitive conclu-
sions can only be drawn once all the participating students have reached the age of 17/18 (the oldest group of the sample).

The holistic analysis finds that the older the students are, the more developed communicative ability is displayed in their texts. Results show that the differences between the three age groups are significant as regards content, organisation, vocabulary, use of language, mechanics and the overall score, and it is always in favour of the older group. These results are confirmed by the quantitative analysis, which shows that the older the students are, the more extended their texts are, the greater lexical, syntactical and discoursal complexity is shown in their texts, and the lower the number of errors is. Thus, the study suggests that the three characteristics of linguistic development (fluency, complexity and accuracy) evolve simultaneously, as the more competent students produce longer, more complex and more accurate texts than those with a lower degree of competence.

In the last type of analysis, the error analysis, three trends stand out which are based on two basic parameters: degree of competence and complexity of the utilised structures. Again, the results show that the age factor has a great impact. In the first trend the younger students (11/12-year-olds) make a higher number of basic errors such as spelling mistakes, misformation of number and gender, and omission of the main or the auxiliary verb. According to the authors, poor linguistic competence and lack of experience in foreign-language writing can explain these errors. However, in the second trend it is the older students (17/18-year-olds) who make the largest number of errors, with the omission of the infinitive particle ‘to’ (which is not present in the 11/12-year-old students’ texts), misordering of the constituents within the sentence and misformation of the word at the semantic level. However, these results have to be interpreted together with the ones obtained in the measures of fluency, complexity and accuracy. Since the older students’ texts are more complex and longer, they are more liable to commit errors of this nature. Finally, in the third trend it is the intermediate group (15/16-year-olds) who make more errors such as the omission of the article or the incorrect use of a particular verb tense. According to the authors, these errors stem from the intermediate students’ poorer linguistic competence when compared to the oldest students and from the inexistence of this kind of errors among the youngest students as a result of their lack of linguistic competence.

Moreover, the error analysis finds that, when participants face a lexical gab, the younger students show a clear preference for Basque, whereas the two older age
groups resort more to Spanish. According to the authors, the explanation for these code-switching results could be that the older students are more aware of the differences / similarities between the three languages in contact. In other words, the authors suggest that the older students are more aware of the existing typological relatedness between English and Spanish and of the typological distance between English and Basque, the latter being a non-Indoeuropean language.
Author(s): Lindqvist, Christina
Title: L’influence translinguistique dans l’interlangue française: Étude de la production orale d’apprenants plurilingues
Country: Sweden
Publication year: 2006

Secondary reference:

This study aims at exploring to what extent the L1 and L2(s) are used in the oral production of French L3. The number of cross-linguistic lexemes and the number of previously acquired languages used were examined as was the main source of influence (L1 or L2). A lexeme is the different morphological forms of the same word; for instance, run, runs, running and ran are all instances of the same lexeme run.

Data was collected through semi-structured interviews that addressed several preselected topics: school, hobbies, interests, family and plans for the future. The numbers of French lexemes used were counted as well as lexemes from other languages. The interviews were carried out in French and lasted about 15 minutes. The interviewers were native French people who spoke Swedish. The participating students were divided into three groups (10 students in each group): beginners, intermediate and advanced learners. However, the students in the beginner and advanced group were all university students and are therefore not included in this systematic review. This means that only results from the intermediate group will be accounted for. The intermediate group consisted of 10 secondary school students who had had 3.5 years of French instruction at the time of data collection. In the transcription of recordings, two types of cross-linguistic influence were identified: code-switches and word construction attempts. Code-switches are defined as utterances that clearly belong to one of the previously acquired languages and that are not adapted to the target language in any way. Word construction attempts correspond to the students’ attempts at producing a word in the target language on the basis of a word from a previously acquired language. One-way ANOVA analyses were performed on the data obtained.

The study shows that the total of lexemes used increased with the proficiency in the target language. Inversely, the insertions of cross-linguistic lexemes, that is lexemes in
L1 or L2, decreased with proficiency in French. The L2 was practically non-existent in the intermediate group; virtually all of the cross-linguistic lexemes were Swedish.

For the intermediate group, the most used cross-linguistic lexeme was code switching to L1 (Swedish), which occurred 121 times; thus the results show that the intermediate groups only used L2 (English) to a rather low extent, as only four instances of code switching to L2 (English) were found. This was true in spite of the fact that the students had good competences in L2. Regarding word construction attempts, the intermediate group used L1 (Swedish) seven times and L2 (English) only once. Code-switching was by far the category that was used most frequently. One possible explanation might be that code-switching is the most efficient and easiest way out when confronted with lexical difficulties during conversation. The fact that the students used L1 (Swedish) is probably related to the fact that the interviewer understood Swedish. Word construction attempts, on the other hand, involve a more risky and demanding process where the student has to modify a word phonologically and/or morphologically. Moreover, the chances to be understood are perhaps smaller.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Author(s): Lukas, José-Francisco, Santiago, Karlos, & Etxeberria, Juan
Title: Computer-Assisted Language Learning (CALL) and trilingualism in the Basque Country
Country: Spain, Basque Country
Publication year: 2012

The purpose of this study is to examine the impact of the IKASYS programme on students’ performance in Basque, Spanish and English at grades 2, 4 and 6. Additionally, the study aims at examining the influence of students’ mother tongue, their use of language at home, their attendance at private classes of English, and examining how their motivation and participation in the IKASYS programme impacts on the scoring obtained in learning the three languages.

The IKASYS programme is a computer-based learning programme for multilingual learning that enables each student to work at his or her own pace independently and have his or her work corrected immediately, thus making possible the improvement of their learning skills. The programme is based on a didactic contract in which the teacher and student agree on what work is to be done (the number of exercises, levels of difficulty to reach, time given over to study etc.). Thus, each student works on the agreed exercises on the basis on his or her level. The teacher supervises the work and offers any help required. As students do the exercises, the computer programme corrects them simultaneously. Once the work is finished, the teacher and the student carry out an assessment of the activities and the difficulties that may have arisen. And, on the basis of their evaluation, they decide what work commitments are to be established on that basis.

Data for this quasi-experimental study was collected in 19 schools in the Basque Country. The schools each had to have at least two classes from each of the school years studied under the programme (grades 2, 4 and 6 of primary education). The IKASYS programme was applied in one of the classrooms (the experimental group), the other being the control group, whose members continued with their usual school curriculum. A total of 2,405 students participated in the study. At the end of the process, data on performance in both groups was collected and compared in order to analyse the possible impact of the programme. All the students completed performance tests to measure their proficiency in Basque, Spanish and English. In addition, they completed a questionnaire which included questions on their mother tongue, use of language at
home, attendance at private English lessons and their satisfaction with the IKASYS programme. T-tests and ANOVA analyses were performed on the data obtained.

The results show that students who participated in the IKASYS programme obtained better results in Basque, Spanish and English than those who followed the usual curriculum. This situation was repeated over the three school years studied, although the differences were more marked in grade 2, becoming less so in grades 4 and 6.

Furthermore, the study finds that students participating in the IKASYS programme show themselves to be highly motivated when using a computer as a complement to learning the three languages. Nevertheless, the level of motivation falls as age increases, and this motivation also reduces the influence on performance, thus making the differences between the experimental group and the control group less as students grow older.

Independently of whether the students participated in the programme or not, in all the school years studied, the study finds that the students whose mother tongue/home language is Basque, or mixed (Basque and Spanish), obtain better results in the Basque language. According to the authors, this finding can be explained by the fact that these students have greater opportunities to interact in Basque compared to those whose mother tongue or home language is Spanish and for whom practically the only possibility of using Basque is at school. On the other hand, in relation to the Spanish language, independently of participating in the programme or not, no differences are observed in any of the school years. According to the authors, this may be because the mother tongue or home language does not have such a decisive influence, given that they all have many opportunities for using Spanish, both within and outside school.

Further, the results show that students who participated in the programme obtained better scores in English than those not taking part, independently of whether they attended private English lessons or not. Nevertheless, the results show that the improvement occurring in students participating in the programme is superior amongst those who do not attend private lessons compared to those who do.

Moreover, the results show that, independently of participating or not in the IKASYS programme, in all the school years studied, students whose mother tongue and/or home language is Basque obtained statistically significant higher scores in English than those whose mother tongue and/or home language is Spanish. Thus, the study indi-
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cates that students whose mother tongue/home language is a minority language (Basque) obtain a higher level of bilingualism than students whose mother tongue/home language is a majority language (Spanish). In other words, the study indicates a positive influence of a higher level of bilingualism on third language acquisition.
Author(s): Mady, Callie
Title: Learning French as a second official language in Canada: comparing monolingual and bilingual students at Grade 6
Country: Canada
Publication year: 2014a

Secondary reference:

The purpose of this study is to compare the proficiency in French of three groups of students: Canadian-born English-speaking students (CBE), Canadian-born multilingual students (CBM) and immigrant multilingual students (IMM). IMM refers to students who immigrated to Canada after having reached the age of five from countries that have official languages other than English or French. The immigrants and the Canadian-born multilinguals have many different L1s. Their L2 is English, and their L3 is French. The students’ French proficiency is compared while taking into account other predicting factors such as their citizenship status, English proficiency and gender.

This cross-sectional study was conducted in the English-dominant province Ontario, where French is a compulsory subject from grades 4 to 9. Data for the study was collected when the students had received two years of formal French teaching. 165 students from eight grade 6 classes in two schools participated in the study and completed a French proficiency test and a questionnaire designed to measure factors previously found to impact foreign language learning. The test consisted of speaking, reading and writing components. The questionnaire provided information about the students’ background and their motivation and anxiety towards learning French, their English proficiency and proficiency in their native language, plus their metalinguistic awareness. ANOVA and multiple regression analyses were used to explore the differences in French proficiency among the three groups and to identify predictors of students’ French proficiency.

The study shows that the IMM group outperformed both the CBE and the CBM groups in reading and writing tests and also outperformed the CBE group in speaking tests. The CBM group outperformed the CBE group in writing tests. These results indicate that immigrant multilingual students have advantages over Canadian-born English-
speaking students and Canadian-born multilingual students when learning French. The author’s possible explanations for the advantages of the IMM and the CBM groups are that the monolingual Canadians consider proficiency in English sufficient language knowledge and that the IMM’s status as immigrants has positively influenced their French proficiency as a means to achieve the advantages that come with being part of the native-born group. The study highlights the fact that being in the IMM group may indicate a positive advantage that goes beyond L1 and L2 proficiency, motivation, attitude, metalinguistic awareness or strategy use. It should be noted that speaking French in class, the degree of willingness to communicate in French and how anxious the students are about using the language remain factors associated with proficiency in French as a second official language.

The author also found that lower English proficiency had a negative impact on French proficiency. This negative impact, however, did not outweigh the positive impact of being in the IMM group. Being a male was consistently a negative predictor of French proficiency. Proficiency in native languages and student motivation for learning French did not prove to be influential factors in French proficiency for either of the multilingual groups.

Furthermore, the study shows that the greater curricular and classroom emphasis on oral skills provided a context where students could excel regardless of native language literacy skills. The lack of explicit teacher reference to prior language knowledge other than English may also encourage students to rely on use of French to the neglect of their other language knowledge and skills. In fact, student’s focus on French while in class did prove to be a positive predictor of writing results.
The purpose of the study was to explore whether students who started learning English as a third language from the age of 8 in a formal school context had gained a better productive vocabulary than students who started later at the age of 11 at the end of their formal secondary education.

The participants were two groups of Catalan/Spanish bilinguals who received the same number of hours of formal English instruction while attending school in Barcelona. The participants were part of the Barcelona Age Factor (BAF) Project. The early starter group (N =57) had an onset age of 8 and were tested when their mean age was 16.3 years. The late starter group (N = 41) had an onset age of 11 and a mean age of 17.9 years when tested. Both groups received a total of 726 hours of L3 instruction. The productive vocabulary of the participants was measured in regards to oral and written performance. Written performance was tested using a cloze test, and the participants were given 15 minutes to write a piece about themselves. Oral performance was tested via a semi-structured interview, a story-telling task and a roleplaying task. The participants also filled in a background questionnaire.

Overall, the study shows that the late starters performed better than the early starters after 726 hours of L3 English instruction. The late starters especially outperformed the early starters in regards to diversity of productive vocabulary, storytelling and in the cloze test. The two groups performed equally well in the roleplaying task.

Specifically, the results show that, as regards free productive vocabulary, after 726 hours of formal exposure, learners who started learning English at the age of 8 (early starters) did not outperform those who started learning English three years later, that is at the age of 11 (late starters). Hence, the differences in favour of the late starters were obvious in controlled productive vocabulary, as they obtained significatively better results in the cloze test. However, the author found that there were many instances in which the differences between the groups were not significant, although the late starters’ productive vocabulary was shown to be marginally more diverse. Nevertheless, the author found that late starters tended to obtain higher results in some of the tasks
(for example, late starters outperformed early starters in the story-telling task). Yet, the two groups performed similarly in the role-playing task.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS' LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Author(s): Mora, Joan C.
Title: Age Effects on Oral Fluency Development
Country: Spain, Catalonia
Publication year: 2006

The purpose of this study was to examine how early language learning starting age, compared to late starting age, affects L3 English fluency when students receive the same amount of L3 instruction.

The study was part of the Barcelona Age Factor (BAF) Project located at the University of Barcelona. The BAF Project studies the effect of age on different aspects of language acquisition among Spanish/Catalan-speaking students. To study the influence of starting age on L3 fluency, a sample of 60 students comprised of two groups of equal size but different starting age were tested in an experimental research design. The early starter group had an onset age of 8 and were tested when their mean age was 16.9. The late starter group had an onset age of 11 and a mean age of 17.9 when tested. Both groups received a total of 726 hours of L3 English instruction. The testing took place in the form of a storytelling task where the students were given a short cartoon and asked to tell a story about it. The response data was then quantified into variables measuring length, number of syllables used and Word Ration Mean Length, pause frequency and other variables relating to fluency.

The results from the study showed that the group of late language learning starters generally outperformed the early starter group on most test measures apart from dysfluency rate and internal clause pausing. These results indicate that late starters have a higher oral L3 competence. The author therefore concludes that in this case there does not seem to be any real advantage in starting language learning early in regards to fluency. The author concludes that this apparently contradictory outcome may be due to the fact that, in highly dysfluent non-native speech, better performance on oral fluency variables associated with the amount of oral production results in an increase in repetitions and restart and pause frequency.
Two research questions are put forward in this study conducted in Catalonia, Spain. The first research question is whether or not early starters learning English as a third language display a similar, poorer or higher performance in English proficiency than late starters. English proficiency is measured through tests of students’ oral productive skills and listening comprehension skills. The second research question examines the relationship between length of instruction and English proficiency in students with different starting ages. Specifically, the author focuses on the length of time required for younger starters to catch up with or overtake late starters. Previous research has shown that older students have been found to have a superior rate of acquisition while younger students have shown a higher level of attainment in the long term and have also been observed to catch up and eventually outperform older students.

The participants in this longitudinal study are bilingual Catalan/ Spanish students. The sample includes students who began formal instruction in English at the age of 8 (early starters) and students who began at the age of 11 (late starters). The data was collected at three different points in time from participants who were bilingual in Catalan and Spanish and who belonged to the Barcelona Age Factor (BAF) Project. The students’ listening comprehension and oral skills in English were tested at two different points in time: after 200 hours of English instruction (time 1) and after 416 hours of English instruction (time 2). The late starters were 12.9 and 14.9 years old on average when they were tested while the early starters were 10.9 and 12.9 years old on average.

The students’ oral productive skills and listening comprehension skills were measured through their performance in an interview about their family, daily life and hobbies. Each student was given a score from 1 to 7 based on his or her performance on two scales, one for oral production and one for listening comprehension. In addition, the students’ listening comprehension was also measured in a word-picture test consisting of 25 items. In this test, the students were presented with a word and asked to identify one picture (out of three) that corresponded with the word they heard. 80 (time 1) to 83 (time 2) students were interviewed while 233 (time 2) to 267 (time 1) students participated in the word-picture test. In the analysis, both groups’ mean results were calculated and a t-test performed to examine if the results were significantly different. A
step-by-step regression analysis was conducted and the students’ different types of responses in the interview were also analysed in order to identify different patterns in the responses from the two age groups.

The study showed that late starters performed better than early starters in both the test of oral skills and listening comprehension in the interview. This was the case after 200 hours of instruction and after 416 hours of instruction. The results indicate that the factor that appeared to explain the highest percentage of variance in the English proficiency scores was “proficiency in L1”. No significant differences were found between late and early starters in the word-picture test of the students’ listening comprehension. The study also shows that 416 hours of instruction had not been enough for the early starters to catch up. The late starters scored higher in the test of oral productive skills than the early starters. When analysing the students’ different responses in the interview, the author found that the 12-year-old students exerted a more active role than the 10-year-old students. According to the author, active involvement can be harder for younger students to live up to, and this indicates that age difference itself and not only English proficiency may help explain the older children’s higher scores in the interview test.
A SYSTEMATIC REVIEW OF THE IMPACT OF MULTIPLE LANGUAGE TEACHING, PRIOR LANGUAGE EXPERIENCE AND ACQUISITION ORDER ON STUDENTS’ LANGUAGE PROFICIENCY IN PRIMARY AND SECONDARY SCHOOL

Author(s): Muñoz, Carmen
Title: The Effects of Age on Foreign Language Learning: The BAF Project
Country: Spain, Catalonia
Publication year: 2006

This article publishes data from the Barcelona Age Factor (BAF) Project. Two research questions related to learning rate and acquisition are raised: the first question relates to whether there will be an age-related difference in the rate of English learning as an L3. Previous research results have led to the prediction that older foreign language learners would show a faster rate of acquisition than younger learners in the first stages of foreign language acquisition. If that hypothesis is confirmed, a second research question will be raised: will younger foreign language learners eventually surpass older learners? Previous research has shown that, in non-formal settings, younger learners have been observed to surpass older learners.

The study was conducted in Catalonia, and the students spoke both Spanish and Catalan and were therefore considered bilinguals. The study is partly longitudinal and partly cross-sectional. Three groups of students who were 8, 11 and 14 years old when they started learning English participated in the study. Data was collected for the first time after 200 hours of instruction, for the second time after 416 hours of instruction, and for the third time after 726 hours of instruction. The students were followed longitudinally from the first to the second time when data was collected while the author also conducted cross-sectional comparisons involving students who only appeared at one point of data collection. The groups of students used in the longitudinal analysis consisted of 83 students while the groups of students used in the cross-sectional analysis consisted of 175 students. An extensive test battery was used in the BAF Project. Students were asked to listen to oral data and to speak, write and read in English with the aim of assessing the four skills: speaking, listening, writing and reading.

The study showed that the older learners progressed faster than the younger learners. The group of learners who began learning English at age 14 obtained significantly higher scores than the younger groups, and the group of students who began at age 11 obtained significantly higher scores than the group of students who began at age 8. The difference did not reach significance at Time 1 in most tests, but it was highly significant at Time 2 and Time 3 on most tests. The youngest group displayed the slowest rate in the first 416 hours, but a rapid increase from Time 2 to Time 3.
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The answer to the second research question, whether younger foreign language learners eventually surpass older learners, is negative. In the time span covered in this study, younger learners did not obtain higher scores than older learners. The older learners scored higher on the tests at all three data collection times although the differences diminished at Time 3.

The differences did not diminish homogeneously for all tests, which leads the author to discuss whether there are different age effects for different language skills or subcomponents. The author finds that language skills which are more cognitively demanding, measured using tests where the students are required to use grammatical, lexical and contextual knowledge, are more affected by age than tests of the students’ listening comprehension or receptive language skills. Based on this, the author concludes that cognitive development plays an important role in explaining why older learners in a formal learning situation are faster and more efficient than younger learners. In school contexts where opportunities for implicit learning and practice are minimal, older learners may be quicker to acquire a third language.
This study raises two research questions. The first one concerns the long-term effects of starting age when learning English in Catalonia, Spain. Specifically, it is asked whether early starters will eventually reach higher levels of proficiency than late starters. Based on the Barcelona Age Factor (BAF) Project, the hypothesis is that, in the long term and after similar amounts of instruction or exposure, starting age will not be a predictor of English proficiency: late starters will no longer have a cognitive advantage over early starters and the latter will not have benefited from their younger age because of the lack of massive exposure needed for their implicit learning mechanisms to operate in the early stages.

The second research question regards the effects of input such as instruction hours and length of exposure to English. The hypothesis is proposed that, in settings of formal language instruction, the amount of exposure never ceases to be a determinant factor.

162 undergraduate students studying English at a Spanish university participated in this cross-sectional study. To be included in the sample, it was required that participants had more than 10 years of instruction in English and that they were 30 years old or younger. The mean age of the participants was 21.3 years, the mean starting age of learning English was 7.8, and the mean length of exposure to English since the beginning of instruction was 13.9 years. 141 of the students were female, and 21 were male. All students started learning English in school, and all students spoke Catalan, Spanish and English. All participants completed three tests of English proficiency: a standardised general proficiency test, a lexical reception test and a phonetic identification test. All of the tests were computer-administered, as was a questionnaire that elicited detailed information about the students’ English learning biography (e.g. amount of hours of curricular and extracurricular instruction). Pearson correlational analyses were conducted in order to explore relationships between starting age, length of exposure and the three proficiency measures.

Regarding the first research question a significant relationship was not found between students’ starting age of English language learning and the three proficiency measures. This was also the case after controlling for age at testing and amount of instruction in English. Thus the results seem to confirm the hypothesis proposed in Muñoz (2006),
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According to which no differences will be found due to starting age of learning English as an L3 in the long term. The findings seem to confirm that in a typical limited-input foreign language setting, age does not yield the same type of long-term advantage as in a natural language learning setting.

To answer the second research question, the author examines various input variables to explore their relationship with the three proficiency measures. The author finds that both instruction hours in primary school and instruction hours in secondary school do not show significant correlations with proficiency measures. Length of exposure in years has a significant relationship with one of the proficiency measures, the lexical reception test, after controlling for starting age. Length of exposure in years includes both curricular and extracurricular instruction.
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Author(s): Navés, Teresa, Torras, M. Rosa, & Celaya, M. Luz
Title: Long-term effects of an earlier start. An analysis of EFL written production
Country: Spain, Catalonia
Publication year: 2003

Secondary reference:

This study is part of the Barcelona Age Factor (BAF) Project and investigates the effect of the starting age of third language instruction on written proficiency in English. Short-term, mid-term and long-term effects are measured after 200, 416 and 726 hours of instruction, which enables the authors to examine if early starters are able to catch up with late starters. Previous research has shown that late starters have a higher acquisition rate than early starters, short-term, due to greater cognitive maturity.

A total of 520 Catalan-Spanish bilingual students from different schools in Barcelona participated in this cross-sectional study. Two groups of students were compared: students who started learning English when they were eight years old (early starters) are compared with students who started learning English when they were 11 years old (late starters) after 200, 416 and 726 hours of instruction. The early starters’ proficiency was measured when they were 10.9 years old, 12.9 years old and 16.9 years old on average while the late starters’ proficiency was measured when they were 12.1 years old, 14.9 years old and 17.9 years old on average. Each group completed tests of their written English proficiency measuring their fluency, accuracy, syntactic complexity and lexical complexity. Using the test results, the authors analysed differences in test scores at the three data collection points by means of different statistical tests.

Overall, the study shows that the late starters obtained higher test scores than the early starters at all three data collection times. Thus the early starters did not catch up with the late starters long-term, i.e. after 726 hours of instruction.

Specifically, the results show that, after 200 hours of instruction, the late starters performed significantly better on 13 out of 16 measures of English proficiency than the early starters. After 416 hours of instruction the late starters performed significantly better on 13 out of 15 measures of English proficiency than the early starters. After 726
hours of instruction the late starters performed significantly better on 11 out of 40 measures while the early starters performed significantly better on 4 out of 40 measures. According to the authors, the reduction in significance of certain measures indicate that, while the early starters did not catch up on the late starters after 726 hours of instruction, they might do so if a longer period of comparison was used. The lower scores obtained by the younger group could be due to differences in cognitive maturity, linguistic development and test-taking strategies. The differences observed could also be related to type of input or instructional style with wash-back exam training explaining the higher ultimate attainment in written production of the older learners. According to the authors, the methodological changes that the introduction of a new educational system may have involved are still unclear. The intensity of instruction during the last period of schooling and, therefore, of data collection, was greater for late starters than for early starters. The amount of instruction received by early starters is far more spread out within the three collection times than that of the late starters.
Author(s): Rauch, Dominique P.
Title: Beiträge zur Lesekompetenz von Personen mit unterschiedlicher Sprachbiografie
Country: Germany
Publication year: 2011

Secondary references:


This study focuses on the reading comprehension of students with different language backgrounds. The dissertation puts a special emphasis on bilingual German-Turkish students and aims to examine whether bilingual students have more success in acquiring reading competences in a third language than monolingual German students. The study is a threefold article-based PhD. The first article examines the dimensionality of a reading comprehension assessment with non-stem equivalent multiple-choice items and open-ended items where the second article investigates whether there is a correlation between reading competences in multiple languages and focus on reading competences in the students’ native language, and additionally their acquired foreign language. The contribution compares Turkish-German bilingual students’ reading competences with German monolingual students’ reading competences. The overall focus is interdependence between reading competences in Turkish, German and English. The following research questions are investigated: 1) Which reading competences do Turkish-German bilingual students have in Turkish, German and English? 2) Which German and English reading competences do Turkish-German bilingual students achieve compared to German monolingual students? 3) Do the Turkish-German bilingual stu-
The first article draws data from the DESI-study (Deutsch-Englisch-Schülerleistungen International), which tested the German reading competences of 8523 students from 427 different classes, including primary and secondary school. The second and third article draw data from 299 9th grade students from primary and secondary schools in Hamburg. All students were given questionnaires that addressed language biography and language use. In the second article 139 students were identified as Turkish-German bilingual students, i.e. students, who had learned Turkish and German simultaneously or sequentially and who used both languages in everyday life. 121 German monolingual students were identified. 39 students were excluded due to unclear answers. In the second article the Turkish-German bilingual students’ proficiency in Turkish was measured by means of a reading comprehension test. All students were tested in their reading competences in English and German. Their German reading competences were tested by means of DESI German reading competence tests, and the English reading competence tests also originate from the DESI study. In the third article the Turkish-German bilingual students’ reading competences in two languages were investigated. By using the results from the tests in reading competences in Turkish, the study divides the 139 Turkish-German bilingual students into fully and partly biliterates. In the third article the random sample, unlike the sample in the second article, consists of all 299 students, of which 152 are German monolingual students, 101 are partly Turkish-German biliterate students and 32 are fully Turkish-German biliterate students. The students were in their 4 ½ year of English teaching as an L2 or L3. The students’ language awareness was also tested.

The results of the first article show that a two-dimensional IRT (Item Response Theory) model with within-item multidimensionality, where multiple-choice and open-ended items load on a general latent dimension and open-ended items additionally load on a nested latent dimension, had a superior fit compared to a unidimensional model. However, in regards to reading fluency no notable difference between the multiple-choice test and the open-ended test materialised. The multiple-choice test therefore gives a better understanding of the general cognitive competences, vocabulary and orthography than the open-ended test.

The second article shows that 74% of the Turkish-German bilingual students were placed below a critical level of Turkish reading comprehension skills, which hinders an independent use of the language. The results of the German reading comprehension
The test showed that German monolingual students had significantly higher German reading competences than Turkish-German bilingual students. The results of the English reading comprehension test furthermore showed that German monolingual students did not achieve significantly higher scores than bilingual students. Finally, the results showed that the bilingual students’ Turkish reading skills did not have any significant effect on their reading competences in German. However, their reading skills in Turkish had a significant effect on their English reading comprehension.

The third article concludes that fully biliterate students had better language awareness and reading skills in English compared to monolingual and partly biliterate students. Overall, the results showed that it is necessary to be a competent reader in order to have a positive effect on the language awareness and the third language reading skills.

The study concludes that the Turkish-German bilingual students’ success in reading comprehension in a third language depends on the definition of the group. The second article shows that there are no advantages or disadvantages of being a Turkish-German bilingual person compared to a German monolingual person when acquiring reading skills in English. However, the third article shows that Turkish-German bilingual students who have sufficient reading skills in both German and Turkish can profit from their bilingualism when learning English as a third language. Furthermore, the third article emphasises that, when splitting the bilingual students into partly biliterate and fully biliterate ones, the fully biliterate students have an advantage when acquiring reading skills in English as a third language compared to partly biliterate and monolingual students. However, monolingual students stand stronger when acquiring reading competences in a third language than partly biliterate students.
Author(s): Ruiz de Zarobe, Yolanda
Title: Instruction and Age in the Acquisition of Negation in English as a Third Language
Country: Spain, Basque Country
Publication year: 2002

This study compares the progress of Basque/English bilingual students who began to learn English as a third language at different ages, but within the same school curriculum, to see the effect of age on third language learning. The study has two main objectives: to examine third language learners’ development of negation in English as an L3 and to examine the rate of third language acquisition by learners who have begun at different ages, but have received the same amount of instruction. Negations are negative words, phrases or clauses that are used to say that something is not true or is not the case. Negation can happen in a number of ways, but the most common negative words are no and not.

81 Basque/English bilingual students participated in this quasi-experimental study. All of them attended a Basque medium school where Basque was the language of instruction, and Spanish was taught as a school subject (4 to 5 hours per week). The students were split into three groups according to their age; the first group consisted of 34 students in grade 4 (with a mean age of 9.2 years), the second group was composed of 29 students in grade 8 (with a mean age of 13.2 years) and the third group consisted of 18 students in grade 10 (with a mean age of 16.3 years). Data for the study was collected when all the students were in their sixth year of English instruction, but they had all begun to learn English at different ages: at the age of four, at the age of eight and at the age of eleven. All participants completed an oral production task and a written task. ANOVA analyses and Scheffé tests were performed to compare the mean scores obtained by the three age groups.

The study indicates that age is positively related to the acquisition of the different developmental sequences in English as a third language and suggests that older learners outperform younger learners when the number of hours of instruction is held constant. The study found that, in both production tasks, younger students produced a high percentage of externally negated constructions and unanalysed negative particles while older students made better use of the full auxiliary system. Thus, the study indicated that the youngest students were still in the early stages of development, displaying a predominant use of preverbal negation, while the oldest students were more ad-
vanced in the acquisition of negation. These students appeared to have acquired some of the basic properties of negation, showing a more systematic use of the auxiliary and modal system, which implies that they were at a later developmental stage. According to the author, the explanation for these results may lie in cognitive maturity.

On the basis of these findings, the study indicates that an earlier start does not have a positive effect on the acquisition of negation in English as a third language in a situation of formal instruction. Thus, the author concludes that age will be a predictor of proficiency in formal contexts of language acquisition - at least with regards to speaking and writing skills. However, the author also stresses that the results of this study may have been affected by the fact that the students’ length of exposure to the language was short. Therefore, it may be that older students display superior results because younger learners are still in the early stages of acquisition and require more time to be able to catch up with and/or overtake older learners.

Furthermore, the results do not seem to indicate that the teaching methodology followed has an impact on the students’ development of negation in L3 English. According to the author, an oral-based teaching approach, which emphasises communicative skills in the classroom, has mainly been implemented in the case of younger students while older students have received more training in reading and writing skills and in the learning of grammar. Still the older students display a more advanced knowledge of negation in oral proficiency, whereas the younger students still exhibit a very basic knowledge of negation. In other words, the younger students do not seem to have benefited from the type of input they have received. The results show similar patterns of behaviour when it comes to the written test, regardless of the type of input used in the classroom.
The aim of this study is to examine the rate of acquisition in English as a third language of students who have received the same amount of instruction but have started learning English at different ages. English proficiency is measured through a test of the students’ use of subject pronouns. A subject pronoun is a personal pronoun that is used as the subject of a verb. In English the subject pronouns are I, you, he, she, it, we, they, what, and who. Subject pronouns are used when the person or thing is the subject of the sentence or clause (I like to eat chips, but she does not). Spanish and Basque allow subject pronoun omissions and, therefore, the students were tested to see whether they omitted these subject pronouns when learning L3 English, and if they did, whether there were any differences related to age.

90 bilingual students from the Basque Country, Spain, participated in this study. The students were split into three groups with 30 students in each group, according to the age at which they had started to learn English: in kindergarten (age 4/5), in grade 3 (age 8/9) and in grade 6 (age 11/12). 23 % of the students had Spanish as L1, 44 % had Basque as L1, and the rest had both Basque and Spanish as their first language. The students were asked to complete two complementary tests: an oral production task and a written task. In the case of oral production participants were tested three times: after 4, 6 and 8 years of English instruction, whereas in the case of written composition they were only tested twice (after 6 and 8 years of instruction). After 6 years of instruction the sample had been reduced to 81 students, and after 8 years of instruction 53 students took part in the study. The mean for the number of missing subject pronouns was calculated and an analysis of variance was carried out to compare the three age groups.

The study shows that there is a linear decline in subject pronoun omissions as age increases. The study also shows that age seems to be positively related to subject pronoun usage, meaning that the older the students were when they started learning English, the faster they improved on the tests scores.

The results obtained in oral production indicate that there is an improvement of the use of subject pronouns between the first two periods (between 4 and 6 years of in-
struction), mainly in relation to the youngest group and the intermediate group. The results further show that there are significant differences in terms of how referential subjects are used in relation to both the youngest and the intermediate group; in the second period there is a significant decrease in the number of subject pronoun omissions. Nevertheless, this improvement diminishes to a large extent in the third period after students have completed 8 years of instruction. In the case of the intermediate group and the oldest group, there is a maintenance or a slight increase in the number of errors, but the biggest difference in the number of subject omissions is found in the youngest group where students make a much higher percentage of errors in the third period. According to the author, the difference relating to subject omissions between the intermediate group and the oldest group could be caused by the fact that, by the time of the third data collection, the oldest students had already finished school. Therefore, the students who completed the tests were from a previous year and had thus studied English for less time (650 hours compared to the intermediate group’ 740 hours).

The results of the written task indicate that the number of subject pronoun omissions decreases with age in both periods. This suggests that the youngest students are more inclined to use subjectless sentences and that there is an improvement of the ability to use subject pronouns as age increases, implying that there is an advantage for older students in the use of pronominal subjects. Again, the differences between the intermediate group and the oldest group during the second period may be explained by the difference in the hours of instruction in English.

According to the author, the age-related differences found in this study might be explained by cognitive maturity, as older students are cognitively more prepared to perform demanding tasks such as a writing assignment. Furthermore, instructional considerations may also account for the age differences found in this study. Older pupils have had more training in reading and writing skills, which are predominantly used with advanced language learning groups, while younger students have had a more communicative approach to language, which falls back on listening and speaking activities. According to the author, this fact may also account for the differences encountered in oral and written production. When the two tasks are compared, it is evident how the errors in the written task outnumber significantly those in the oral test, which may be due to the oral-based methodology used in the classroom with younger students. As the years of instruction increase, a more traditional approach is followed; consequently, more limited differences between the two productive tasks are found.
Author(s): Sagasta Errasti, Maria Pilar
Title: Acquiring writing skills in a third language: The positive effects of bilingualism
Country: Spain, Basque Country
Publication year: 2003

The purpose of this study is to examine the influence of bilingualism on proficiency in the writing of L3 English according to model of schooling. The study is conducted in the Basque Country where three linguistic programmes in which parents can enroll their children are offered: model A: The students are instructed in Spanish, and Basque is a school subject (4 to 5 hours per week). Model B: The students are instructed in both Spanish and Basque. Model D: The students are instructed in Basque, and Spanish is a school subject (4 to 5 hours per week). The study also aims to find a possible relationship between Basque, Spanish and English writing skills and to show whether language use patterns influence third language proficiency.

155 students aged 12-16 participated in this cross-sectional study. All of them were enrolled in a Basque model D school. This model can be defined as maintenance when it involves children who speak Basque at home and immersion when applied to children who only speak Spanish. Half the students in the sample (n=78) had Basque as their first language or spoke mainly Basque at home, at school and in social contexts and are therefore referred to as model D-maintenance. The other half (n=77) had Spanish as their first language or tended to speak more Spanish than Basque. They are referred to as model D-immersion. All students had received their education through the medium of Basque from the age of three. Spanish was introduced in the curriculum in grade 3 at the age of eight, as was English. The students completed two language tests of writing skills in Basque, Spanish and English, so a total of six texts were produced. Additionally, the students completed a questionnaire to obtain information about their language background. T-tests and ANOVA analyses were performed on the data obtained.

The results show that students in model D-maintenance develop a higher competence in writing skills in Basque than students in model D-immersion. Both groups have been instructed through the medium of Basque throughout their schooling, but students in model D-maintenance are high users of Basque outside school in comparison with their peers in model D-immersion, who are high users of Spanish outside school. These results suggest that use of a minority language (Basque) contributes to a higher
level of competence in that language. According to the author, these findings also show that, in a language contact situation, education through the medium of the minority language contributes to fostering high levels of additive bilingualism in the majority and the minority language. Additive bilingualism can be explained as the situation in which a person’s second language is unlikely to interfere with his/hers first language.

The study also finds that all the students are highly competent in Basque and Spanish, but that it is the students with the highest degree of bilingual competence in Basque and Spanish who achieve the best scores in written production in English. Additionally, the results show that the students who speak mainly Basque at school and in social contexts outperform the students who use Spanish the most. The study finds that students who tend to speak mainly Basque at school and socially display an overall higher competence in written English, they are more fluent, their vocabulary is more complex and they produce fewer errors. Nevertheless, the study finds that choice of language at home has no effect on proficiency in the writing of English in this sample of students.

On the basis of these findings, the author concludes that the language model used in schooling is crucial in developing high levels of language competence, but that the language model used in schooling is not enough. Language use outside the curriculum also plays an important role as the results of this study indicate. Therefore, the study concludes that social factors are as important as educational factors when it comes to understanding bilingual and trilingual development in contexts with two official languages, a majority language and a minority language.
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LANGUAGE TEACHING. PRIOR LANGUAGE
EXPERIENCE AND ACQUISITION ORDER ON
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AND SECONDARY SCHOOL

Author(s): Sanders, Marianne, & Meijers, Guust
Title: English as L3 in the Elementary School
Country: The Netherlands
Publication year: 1995

The main objective of this study is to examine whether bilingual students differ from their monolingual peers in English proficiency. Furthermore, the study seeks to examine whether bilingual students employ learning strategies different from those of their monolingual peers. The study pays particular attention to the role of the bilinguals’ first language in learning a third language in school.

This longitudinal study was conducted in a period of two years in 10 elementary schools in the Netherlands. 15 Moroccan Arabic and Dutch speakers and 31 Turkish and Dutch speakers were selected for the study. These 46 bilingual students were matched with monolingual Dutch students who spoke no foreign languages. The matching was based on the students’ IQ (measured using Raven’s Progressive Matrices) and their socio-economic status, and, when it was possible, the students were matched with children in their own classroom. Further, the bilingual students were given tests of their mother tongue (L1) and Dutch (L2), and their language skills in both languages were judged to be near the level of a peer raised in the country of origin, i.e. the students included in the bilingual group were regarded as being early balanced bilinguals. All students were instructed in English from grade 5 onwards, and their English proficiency was tested in grade 5 (after one year of English instruction) and in grade 6 (after two years of English instruction) using five different tests: a grammar test, a test of spontaneous language use, a word comprehension test, a word production test and a word recognition test. Mean scores in the tests were calculated, and it was assessed if the differences were statistically significant.

Overall, the results of the study indicate no differences in the English proficiency of monolingual and balanced bilingual students, as the authors find no significant differences between the bilinguals and the monolinguals in any of the five tests. Moreover, the findings suggest that third language learning in the early stages is not significantly different from second language learning. However, the critical factor is that the first language learned plays a role in learning a third language - particularly in the area of grammar.
Further, the study shows that the range of learning strategies employed by the students, such as avoidance, abandonment, paraphrase and circumlocution, was extremely wide and did not reflect differences between the bilingual group and the monolingual group as much as within these groups. According to the authors, this could be explained by the low number of hours of English instruction, which did not bring the participating students beyond the beginner stage. Therefore, the authors suggest that differences in learning strategies may only become clear in the later stages of learning. In addition, the authors note that school membership more than group membership accounted for differences in the students’ English proficiency, suggesting that the teacher or the programme could be an influential factor. Thus, the authors indicate that bilingualism itself is not sufficient to produce language achievement advantages and that the bilingual students’ additional language learning is equally affected by the same factors that affect their monolingual peers, i.e. factors such as school, programme, teacher, etc.
Author(s): Sanz, Cristina
Title: Bilingual education enhances third language acquisition: Evidence from Catalonia
Country: Spain, Catalonia
Publication year: 2000

Previous research has shown that being biliterate is more effective than being bilingual when it comes to third language learning. Therefore, the purpose of this study is to investigate the relationship between students’ biliteracy in the minority and majority languages (Catalan and Spanish) and the acquisition of English as a third language. This is done by comparing the English proficiency of high school students attending a monolingual school in a monolingual area of Spain with their peers in a bilingual school of similar characteristics in a Catalan bilingual area. Specifically, the study isolates a number of independent variables, including bilingualism, which could contribute to the acquisition of an L3 in order to answer the following research questions: Does Catalan/Spanish biliterate bilingualism contribute to more efficient acquisition of English as an L3? Is that contribution independent from that of other predicting factors, such as intelligence, motivation, or sociolinguistic status?

201 students (77 monolinguals and 124 biliterals) participated in this cross-sectional study conducted in two high schools in northern Spain. One school was a bilingual school (immersion programme) where Catalan was the language of instruction and the students were biliterate in Spanish and Catalan. In the other school, Spanish was the language of instruction and the students were all monolingual Spanish-speakers. All students completed questionnaires regarding personal information such as gender and socioeconomic background, attitudes and motivation for learning English, as well as formal and informal exposure to English. The students’ intelligence was measured via the Raven’s Progressive Matrices Test, and their English proficiency was tested using the Comprehensive English Language Test (CELT) by means of a vocabulary subtest and a structure subtest (the listening subtest was not applied). The structure subtest measures the students’ grammatical knowledge in terms of lexical, morphosyntactic, and cohesive form and meaning, whereas the vocabulary subtest measures the students’ general vocabulary knowledge. Multiple regression analysis was applied to assess the relationship between biliterate bilingualism and English proficiency. The dependent variable was English proficiency, calculated as the sum of the scores from the vocabulary and structure tests.
The author found a positive relationship between being biliterate in Spanish and Catalan, and English proficiency, as the results of the study show that the biliterate students scored higher in the tests of English proficiency than the monolingual students after controlling for relevant background variables. The author also found a positive relationship between motivation for learning English and formal exposure to English (such as number of English courses and the hours per course at school) and English proficiency, whereas factors such as age and intelligence did not prove to be significant predictors of English achievement. However, according to the author this might be due to limitations in the testing procedure.

Furthermore, the author concludes that schooling in a minority language (immersion programmes), in this case Catalan, produces more efficient language learners. However, the author also notes that this does not mean that one can assume that the results would be the same for all bilingual programmes around the world. According to the author, Catalans expect their children to be better language learners if they attend a bilingual school whose goal is to promote additive bilingualism. Therefore, the author suggests that positive attitudes toward other linguistic communities and expectations about language learning have an effect of motivating students, whether they are learning a second or a third language.
This study examined the impact of first language literacy knowledge and use on third language (French) proficiency. The main purpose of the study was to address whether students’ learning of French in school would be enhanced through their literacy in a heritage language, not counting English. It also examined whether there was a differential impact on the students’ French proficiency depending on whether their heritage language was a Romance language (in this study Italian, Spanish and Portuguese) or a non-Romance language. The students were grouped into four categories based upon their understanding of their heritage language: 1) The students had no heritage language understanding other than English (monolinguals), 2) the students understood a heritage language, but were unable to understand the written form of it, 3) the students understood a heritage language in written form but did not use the language in written form, and 4) the students understood and used a heritage language in written form.

319 students from grade 8 participated in this cross-sectional study. The students attended a bilingual programme which begins instruction using English (from grade 1 to grade 4) and introduces French as a language of instruction in grade 5. Therefore, from grade 5 onwards the students were instructed in English for half of the day and in French for the other half. The students completed language tests of writing, reading and listening skills in French. The students also completed a questionnaire where they were asked to assess their literacy knowledge in a heritage language other than English and the frequency with which they used that other language. Information on their socioeconomic background was also collected. All students could understand and use written English. ANOVA and contingency tables were used in the analysis of the results.

Overall, the study showed that bilinguals illiterate in their first language did not perform better than the monolingual group, and the authors conclude that the key to third language proficiency therefore is biliteracy and not bilingualism.

The authors found little difference in test scores between those who had no heritage language knowledge and those who understood a heritage language, but were unable to read or write it. Similarly, there was little difference in the test scores between those
who were literate in their heritage language but did not use it in written form and those who both understood and used a heritage language in written form. However, the authors found that students who were able to read and write (biliterate) in their heritage language scored significantly higher than students who were not biliterate in their heritage language in seven out of eight test scores. Thus the results showed that literacy knowledge in a heritage language, regardless of whether learners were making use of those literacy skills, had a strong positive impact on the proficiency in French - not only in reading and writing, but also in listening.

The study also showed that the students who reported using their heritage language frequently in their homes had better test scores than students who reported using their heritage language infrequently. Finally, the study showed that students with a Romance language as a heritage language scored significantly higher than students with a non-Romance language in a written vocabulary task, a global understanding index of auditory comprehension, and on a fluency measure of oral L3 French. The authors conclude that, although the results point in the expected direction, they are not strongly supportive of the hypothesis that positive transfer is more likely to occur when the first language is from the same language family as the language being learned.
Author(s): Thees, Margot
Title: Vorgezogene zweite und dritte Fremdsprache am Gymnasium. Abschlussbericht
Country: Germany
Publication year: 1999

The purpose of the study is to examine the effects of introducing a third (L3) and fourth language (L4) in secondary schools one year earlier than normal. The study was carried out in secondary schools in Germany and investigates:
1) Whether early introduction enabled a deeper appropriation of the languages and an expansion of the contents of the teaching?
2) If the earlier start and more concentrated foreign language learning lead to positive or negative changes in the student’s workload?
3) What new possibilities of adding content to the teaching emerge from the early introduction?
4) Which overall effect does the early introduction of the foreign languages have on learning?

The study was conducted as a longitudinal study with data extracted every year from grade 5 (approximately 10 years of age) to grade 10 (approximately 15 years of age). The experiment was conducted in two types of secondary schools: classical and non-classical. The two types of secondary schools introduce the same foreign languages, respectively Latin, French and English, but in different orders. In the classical schools the students were instructed in Latin as an L2, English as an L3 and French as an L4, whereas in the non-classical schools the students were instructed in English as an L2, French as an L3 and Latin as an L4. 648 students from 10 secondary schools (5 classical and 5 non-classical) participated in the study. Half of the students became part of a test group, and the other half were categorised as control group. Students in the control group followed the traditional procedure of introducing a third language (L3) in the 7th grade (starting age 12) and a fourth language (L4) in the 9th grade (starting age 14). The researchers controlled for background variables such as gender, the parents’ educational background, the children’s grammatical intuition and the children’s pre-knowledge of foreign languages.

The students were tested yearly in respectively Latin, English and French, and the tests were based on grammatical and lexical tasks, as well as writing and reading comprehension tasks. To find out whether early introduction of a third language (L3) had any
side effects on other school subjects, the students were also tested in mathematics from the 5th to the 7th grade. They were tested in arithmetic, geometry and set theory. All tests were specially made for this study. To understand the non-cognitive development, all students from the 6th to the 9th grade were given two questionnaires yearly, focusing on their motivation and attitude towards learning a foreign language, their learning behavior and self-assessment of workload. The programme SPSS was used to analyse the data.

The results of the study showed that the students introduced to a third (L3) and fourth language (L4) one year earlier managed to achieve the same results as the students following the traditional curriculum. Finishing one year earlier allows the students to gain better language competences and to develop a deeper appropriation of the languages by the end of secondary school. The students being exposed to an early introduction of foreign language instruction (L3+L4) were highly motivated and showed no signs of excessive workload. These results apply to the overall performance of the class. Moreover, the learning goals in the curriculum were achieved one year earlier than normally; therefore, it is possible to expand the learning goals of the teaching. Finally, the early introduction opens up for new and expanded teaching processes without causing additional stress or influencing the students' performance in other subjects.
Author(s): Torras, M. Rosa, & Celaya, M. Luz
Title: Age-related Differences in the Development of Written Production. An Empirical Study of EFL School Learners
Country: Spain, Catalonia
Publication year: 2001

The purpose of this study was to examine L3 English development as reflected in writing in two groups of students who started learning L3 English at different ages. Two hypotheses guided this study, which was conducted with bilingual students in Catalonia, Spain. The first hypothesis was that students with different starting ages would progress linearly in their acquisition of L3 English writing competence, measured in terms of fluency, complexity (both lexical and grammatical) and accuracy. The other hypothesis was that starting age for learning L3 English would influence both attainment and rate of acquisition in the areas of writing fluency, complexity and accuracy, with older students progressing faster in all three areas. Thus, the study examined the way in which the advantage of older learners was reflected in the development of the three areas of writing.

63 students participated in this longitudinal study. These participants form part of a larger sample of the Barcelona Age Factor (BAF) Project located at the University of Barcelona. The sample was made up of two groups: one group consisted of 42 students who started L3 English instruction at the age of 8 (early starters), and another group consisted of 21 students who started L3 English instruction at the age of 11 (late starters). Both groups of students were tested after 200 hours of instruction (Time 1) and after 416 hours of instruction (Time 2). The English instruction took place exclusively at school, and students who had attended or were attending private English classes at the time of data collection were excluded from the sample. All participants were assigned a task measuring their written English, consisting of measures of fluency, complexity and accuracy. The students were all given 10 minutes to write on the topic “Introduce yourself”. The hypotheses of the study were tested using t-tests.

Regarding the first hypothesis the study shows that the development of the three areas (fluency, complexity and accuracy) did not take place at the same rate and presented different patterns of development in the two age groups. Both the early starters’ and the late starters’ fluency developed faster and achieved higher levels of complexity and accuracy at both data collection times. Thus, the first hypothesis was not confirmed since the development of the three measures did not progress linearly.
Regarding the second hypothesis the results show that the rate of acquisition was higher for the late starters, and that their English attainment at both Time 1 and Time 2 was higher than the early starters’ English attainment. At Time 1 the late starters scored significantly higher than the early starters on all three measures while the late starters scored significantly higher than the early starters on two out of three measures at Time 2. Therefore, the second hypothesis of the study was confirmed, since the late starters were faster learners and progressed further.

According to the authors, a key factor in explaining differences between the two age groups was to assign two separate values to the subareas of complexity (lexical and grammatical complexity). In both groups fluency was the area that developed furthest, and both groups presented lower development in complexity and accuracy than in fluency, but there were differences in their rate and attainment - possibly because of the effect of age. The higher means in the subarea of lexical complexity as compared to grammatical complexity in both groups may favor greater development in the area of fluency in both groups.

Furthermore, the authors find that, from the age of 12 onwards, there seems to be a rapid increase in the students’ grammatical development. However, in connection with this finding the authors emphasise the fact that the early starters received English instruction during the age period 8 to 12, whereas the late starters were instructed from when they were 11 to 14 years old, with more extensive exposure up to 12 years than the early starters. Thus, the early starters received the first 200 hours of instruction over a period of three school years (2 hours per week) from the age of 8 to 10, whereas the late starters received the same amount over a period of two school years (3 hours per week) from the age of 11 to 12. According to the authors, this suggests that the age of 12 might be a turning point in the third language acquisition process. This is especially reflected in the students’ development of grammatical complexity, for which the late starters presented the same mean at Time 1 as the early starters at Time 2.

Based on these findings, the authors suggest that the older students’ overall higher linguistic competence in English may be explained by the fact that they had received instruction at an age when their cognitive and conceptual development was higher, as were their L1 skills. Furthermore, the authors note that the results of this study should also be considered in the light of the teaching approach of the language teachers, as explicit teaching of the linguistic system was only introduced from age 11/12 onwards. According to the authors, this means that the superiority of the older students might
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not only be due to age, but can perhaps also be ascribed to methodological changes in the teaching approach with the inclusion of more form-focused and metalinguistic activities, which consequently favor linguistic awareness.

Finally, the authors stress that the results of this study cannot be generalised because influence from factors such as, for instance different socio-economic and cultural contexts might provide different results.
The purpose of this study is to explore the relationship between bilingualism and the acquisition of a third language. It is hypothesised that bilingualism has a positive effect on third language learning and that the effect of bilingualism will be mediated by the role of social motivation. The study analyses the effect of five dimensions of Basque/Spanish bilingualism on the acquisition of English as a third language. These are: early bilingualism (L1 is Basque), bilingual competence (competence in Basque language), family bilingualism (mother’s bilingualism), educational bilingualism (linguistic school programme) and sociocultural bilingualism (geographical context). In examining the second hypothesis, the study includes four measures of social motivation: attitude towards learning English, effort in the study of English, residence in English-speaking countries and English-language instruction outside school.

A total of 321 monolingual and bilingual students from six secondary schools in the Basque Country participated in this cross-sectional study. Almost half of the students used Spanish as their vehicular language and attended a Spanish-medium school (model A); that is, a school where Spanish is the language of instruction and Basque is taught as a school subject (4 to 5 hours per week). The other half used Basque as their vehicular language and attended a Basque-medium school (model D), where Basque is the language of instruction, and Spanish is taught as a school subject (4 to 5 hours per week). The students’ proficiency in English was measured through tests of speaking, listening, reading and writing skills and a vocabulary and grammar test. Additionally, the students completed questionnaires and participated in a personal interview regarding their social motivation for learning English.

Overall, the authors find that bilingualism has a positive effect on third language achievement, but that some dimensions of bilingualism have a greater influence on some English language tests than others. The results show that the five English tests (speaking, listening, reading, writing and vocabulary and grammar) contribute significantly to achievement. Similarly, motivational intensity (effort), residence in English-speaking countries, English-language instruction outside school and attitude towards learning English have high loading on social motivation. Finally, the study shows that
four measures of bilingualism (early bilingualism, bilingual competence, family bilingualism and educational bilingualism) present important contributions to the latent variable of bilingualism.

The study finds that students with a high level of competence in Basque and students whose first language is Basque obtain better English language scores in tests of speaking, listening and vocabulary and grammar. The results also show that students whose mothers are competent in the Basque language achieve better scores in English tests of speaking, listening and vocabulary and grammar. In addition, the study finds that students who have Basque as the medium of instruction (model D) achieve significantly higher scores in English tests of speaking, listening and vocabulary and grammar than students instructed in Spanish (model A). When one of the languages that the bilingual learner knows (Basque in this case) is a minority language, bilinguals obtain better results in L3 (English) when their minority language is valued and used in the family and in education. Thus, the study suggests an association between linguistic school programme and third language achievement. Regarding the second hypothesis the study shows that social motivation has a direct effect on achievement and that the relationship between achievement and bilingualism is indirect, social motivation being the mediating variable.
Author(s): van Gelderen, Amos, Schoonen, Rob, de Glopper, Kees, Hulstijn, Jan, Snellings, Patrick, Simis, Annegien, & Stevenson, Marie

Title: Roles of linguistic knowledge, metacognitive knowledge and processing speed in L3, L2 and L1 reading comprehension: A structural equation modeling approach

Country: The Netherlands
Publication year: 2003

Secondary reference:

The aim of this study is to compare the English proficiency of students who speak Dutch as their second language and English as their third language with the English proficiency of students whose first language is Dutch and whose second language is English.

A sample of 397 Dutch grade 8 students participated in this cross-sectional study. The average age of the students was 14 years and they had received 3.5 years of education on average in English as a foreign language. 57 students who reported speaking a language other than, or in addition to, Dutch with their parents, and who had acquired a language different from Dutch as their first language were considered bilingual Dutch. The greater part of this group were of Turkish, Moroccan or Surinam background. 281 students were identified as monolingual Dutch speakers while 59 students who could not unambiguously be identified as monolinguals or bilinguals were excluded from the analyses. The students were given tests of reading and writing skills measured by means of writing proficiency, reading proficiency, vocabulary knowledge, grammatical knowledge, metacognitive knowledge, orthographic knowledge (in writing only), speed of word recognition and speed of sentence verification. Means and significance levels were computed for all tests and the difference in mean score between the two groups is expressed in effect sizes.

The study shows that the monolingual students scored significantly higher than the bilingual students on two out of five reading proficiency measures, that is grammatical
knowledge and metacognitive knowledge, and three out of six writing proficiency measures, that is grammatical knowledge, orthographic knowledge and metacognitive knowledge. However, the effect sizes are rather small.

According to the authors, one possible explanation for the bilingual groups’ lower scores is that the bilingual students are weaker readers in general, which could be related to sociolinguistic and/or psycholinguistic factors. In addition, the authors do not have information about the students’ socioeconomic status, which might also influence their school success. However, it is known that most of the bilingual students became literate in their second language, as they were educated in the Dutch school system and learned to read and write in Dutch, and, therefore, Dutch literacy may have been similar for the monolingual and the bilingual students. Thus, the advantage of being bilingual (in spoken language) may not pay off in terms of reading and writing development in the second and third foreign language.

Another explanation presented by the authors is that the L1 – L3 gap for the bilingual group was bigger than the L1 – L2 gap for the monolingual students. Seeing that English is typologically closer to Dutch than to the mother tongues of most of the bilingual students (e.g. Sranan Tongo, Berber, Arabic or Turkish), it is possible that an advantage in metacognitive strategy for bilingual students was not sufficient to overcome disadvantages at the lower level of reading and writing proficiency.

Finally, it is noted that a possible lack of statistical power to show that substantial differences are statistically significant - because the bilingual sample is relatively small (n=57) - might also contribute to the explanation for the results of the present study.
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