

Second Language Learning and Teaching

Joanna Rokita-Jaśkow
Agata Wolanin *Editors*

Facing Diversity in Child Foreign Language Education

 Springer

Second Language Learning and Teaching

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Editors

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ISSN 2193-7648

ISSN 2193-7656 (electronic)

Second Language Learning and Teaching

ISBN 978-3-030-66021-5

ISBN 978-3-030-66022-2 (eBook)

<https://doi.org/10.1007/978-3-030-66022-2>

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This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

The editors would like to express their gratitude to prof. Ewa Piechurska-Kuciel (University of Opole, Poland) for reviewing this work, insightful comments and suggestions, which helped to improve the final outcome.

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What Makes the Difference in Early Foreign Language Education? Learner-Internal vs Learner-External Factors



Joanna Rokita-Jaśkow 

Abstract In this introductory chapter I have decided to outline the theoretical underpinnings of this volume, which concentrate around the notion of diversity. It is argued that since a foreign language, most typically English, is taught globally to an increasing number of children, the variability in the process and varied learning outcomes are inescapable phenomena. Additionally, the chapter provides the theoretical framework for many of the studies in this volume. First the notion of diversity/heterogeneity is explained, then its causes are laid down. Heterogeneity is ascribed to learner—internal as well as learner—external variables. The former are described by biological (e.g., gender, age), cognitive and affective propensities for learning. They are mainly inborn, and can be influenced by the environment only to a certain extent. The latter refer to a diversity of contexts in which learning takes place. The contexts can be understood on a macroscale, as countries and their supportive language policies or lack thereof, or an ethnolinguistic community of users of a particular language. On the mesoscale the contexts can denote different types of educational institutions, such as private and public ones, the teacher and his/her teaching competencies, etc. On a microscale the contexts are characterized by family environment, availability and access to learning resources. In the latter two cases socioeconomic status of the learners appears to be an important mediating variable.

Keywords Heterogeneity · Diversity · Young learner · Globalization · Individual differences

1 Introduction

Early foreign language learning and teaching, particularly of English, which has gained the status of an international language, is becoming a global phenomenon, thus encompassing children of various starting age, ability, socio-economic and

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© The Author(s), under exclusive license to Springer Nature Switzerland AG 2021
J. Rokita-Jaśkow and A. Wolanin (eds.), *Facing Diversity in Child Foreign Language Education*, Second Language Learning and Teaching,
https://doi.org/10.1007/978-3-030-66022-2_1

cultural backgrounds. The situation is partly the result of active language policy measures taken to promote ‘an early start’ in a foreign language, initiated in the EU ca. the year 2000, which led to the gradual implementation of obligatory FL instruction from the onset of schooling via school reform in a majority of EU member states. Early Language learning has been promoted as a child’s right as it can increase vocational opportunities in the future, as well as, contribute to a child’s growth in terms of emotional and cognitive development. This means that the very process of language learning can enhance a child’s openness and curiosity to other cultures, and consequently ‘build the society of greater social cohesion’, as is stated in the language policy document advocating language learning at the pre-primary level (European Commission, 2011). For this reason, it is argued that early language learning should by no means be elitist. Conversely, it should encompass all children, irrespective of background or ability, and include children of Special Educational Needs, thus fulfilling the criterion of equity. This was the goal of the second action plan of the European Commission for the years 2004—2006 and was titled *Promoting Language Learning and Linguistic Diversity* (Commission of the European Communities, 2003).

Additionally, it must be noted that the European language education policy serves as a model for non-European countries. Referred to as ‘policy borrowing’ (Enever, 2018; Ricento, 2000), we can observe the growing popularity of early language teaching policies implemented outside European contexts, despite lack of linguistic evidence for the necessity of such an early start. The result of these measures is an unprecedented popularity of teaching foreign languages to young learners in public and private sectors globally (cf. Rokita-Jaśkow & Ellis, 2019). In contexts where there are no governmental regulations as to the starting age and form/quality of early FL teaching, the process usually takes place in the private sector. As a result, the most troubling difference leading to heterogeneity at the onset of obligatory school instruction is connected with different starting ages of the learners. Additionally, since early foreign language teaching has become so popular in a variety of contexts, the issue of classroom heterogeneity has gained a new dimension.

The goal of this chapter is to characterize early foreign language education as a dynamic and heterogeneous process, which encompasses both learner characteristics and the varied learning contexts. The chapter also aims to serve as an introduction to the volume, highlighting key directions in TEYL with reference to diversity and outlining state-of-the art research directions, including contributions in the volume.

2 Faces of Classroom Heterogeneity: Learner-Internal vs Learner-External

Research on a learner’s individual differences has had a long tradition in applied linguistics and dates back to the 1970s (Arabski & Wojtaszek, 2011; Mihaljević Djigunović, 2009; Robinson, 2002; Skehan, 1991) when it was instigated by the

need to identify good language learners, as well as, determine variables that distinguish them from the failing students. The research on learner individual differences continued for the next few decades, eventually evolving to include novel features and methods of inquiry. Presently, we can witness a revival in interest partly because of the adoption of a new perspective which posits that language learning outcomes are an interplay of intra-learner variables and the social context in which s/he functions, a tenet of the widely acknowledged theory in applied linguistics of Complex Dynamic Systems (Dörnyei, 2014; Larsen-Freeman & Cameron, 2007; Toffoli, 2020). The theory places importance both “on the objects of SLA research (language, learners and teachers) and the process of language acquisition (...) the emphasis complex dynamic systems theory puts on initial conditions, non-linearity, dynamism, attractors, emergence and coadaptation” (Toffoli, 2020, p. 5).

As regards young language learners, much less research has been conducted on their individual propensities for two major reasons. Firstly, the period of childhood (i.e., from birth till ca. 11/12 years of age) signifies tremendous changes in the biological, cognitive and psycho-social development of a child, which naturally impacts their learning abilities. Older children may learn faster due to well-developed learning strategies, yet some other children may develop more slowly, finally attaining similar levels, yet struggling with difficulties on the way to reaching that goal. Secondly, it is only within the last decade that early language learning has become a global phenomenon, thus embracing more children, which may precipitate further research.

The major variable that has been long researched is the biological one, i.e., the age of starting L2 instruction. Age was believed to impact the development of other variables such as the use of learning strategies (Muñoz, 2006; Tragant & Victori, 2006), or even aptitude (Kiss, 2009; Kiss & Nikolov, 2005). Motivation and attitude to learning were discovered to be mainly intrinsic, yet associated with the enjoyment of the lesson, the environment, the person of the teacher and activities (Nikolov, 1999; Wu, 2003).

A call for closer interest in young learner variables was made by Jelena Mihaljević Djigunović and Marianne Nikolov, who have long been involved in the research of young learners in Croatia and Hungary respectively, and who in their seminal article *All shades of every colour* (2011), argued that it is a popular misconception to treat young learners as a whole and homogenous group. They called for more research on the individual differences of the learners, additionally arguing that it is important to investigate the mutual interaction of these variables. In their studies, the affective variables were observed to fluctuate over time and were dependent on circumstances, such as attitude, motivation, learner anxiety or learner self-concept. The precipitation of research on child individual differences must also be attributed to the wide-scale ELLIE (Early Language Learning in Europe) study (Enever, 2011), which provided data from various country contexts, thus indicating inter-individual differences.

Coincidentally, the growth of interest in early child FL education coincided with the revival of interest in individual differences in SLA and the proposal of seeing the process of language learning as a Complex Dynamic System, where different factors, i.e., cognitive, affective and social, not only come into play, but fluctuate in time. As Mihaljević Djigunović (2015, p. 34) put it, the process of early FLL is

“multilayered, cyclical, and dynamic”. The process is not linear, and follows phases of progression, stagnation and regression, which often are caused by the affective state of the learner, and which are aroused by the socio-educational contexts at micro, meso and macro levels. They are related to the immediate environment of the learner e.g., family, social groups one belongs to and interacts with e.g., peers and school, and political and social contexts of living respectively.

Models of such development (e.g., Mihaljević Djigunović, 2015, p. 216; Rokita-Jaškow, 2013, p. 96) are often based on Bronfenbrenner’s (1979) model and can be presented in the form of concentric circles, placing the young learner in the center, showing the ecology of young learner language development. The learning process takes place first of all in the learner, whose learning propensities depend on inborn cognitive predispositions, such as intelligence or aptitude, as well as affective states, such as attitude, interest, motivation, anxiety. The affective states, and to a certain extent the cognitive predispositions, can be influenced by the child’s immediate environments, i.e., microsystems, such as the child’s family and its cultural capital, which can mediate e.g., access to linguistic resources or quality of education (cf. Rokita-Jaškow, 2015a, 2015b). On the mesoscale it is the school context which may also have a favourable or inhibiting impact, depending on the facilities provided, qualifications and motivation of the teachers employed, and peers. Finally, the family and the school are embedded in a wider socio-educational context (i.e., a macrosystem), which is shaped by the language education policies. These, in turn, are inadvertently marked by the process of globalization.

In line with the above sources, classroom heterogeneity can be traced back both to learner-internal characteristics (biological, cognitive, affective) as well as to the learner-external, i.e., contextual factors (at the three levels stated above). These two aspects are addressed in the book. Varied language learning contexts denote that we can refer not only to foreign language learning, but also to second or additional languages, particularly in multilingual settings.

3 Diversity and Globalization

When considering learning contexts on a macroscale, one has to mention globalization which has had an impact on early language learning in a few domains. First of all, it has led to an unprecedented popularity of teaching young learners a foreign language, which in essence, concerns a global language, i.e., English. Policies to introduce it in early school instruction are gradually introduced in non-European settings, such as East Asia, thus posing challenges for teachers and teacher educators on how to prepare young learners for a language which has a different grammatical system, phonology or orthography (cf. Macrory, 2019, but also Hashio and Yamauchi, this volume). Many parents wish that their children learn the language as it may be useful in the child’s vocational future while local government policies may wish to implement early language learning in order to emphasize the need for equity, i.e., equal opportunities for all. Therefore, if a country implements an early start policy, it

is often an outcome of top-down (i.e., policy) and bottom-up (i.e., parental) influences (Rokita-Jaśkow & Pamuła-Behrens, 2019).

Another consequence of globalization is human mobility and migration, which in consequence leads to linguistically and culturally diverse classes. Children who come from multilingual families, or have immigrated to a host country, may find learning English as a foreign language to be a platform for mutual understanding. Yet, even in this case it should be borne in mind that children originating from different home countries may bring with themselves not only different identities, but also different knowledge of other languages, sometimes characterized by a different grammar or writing system. Naturally this will pose a challenge for a language teacher. Secondly, the same children will be learning languages of the host countries, which should be treated as a second or additional language rather than a foreign one. These languages can be acquired both informally through play and interaction with peers, as well as, formally by attending specially designed classes aiming to improve the learners' Cognitive Academic Proficiency Skills (cf. Cummins, 1979), thus enabling education and academic achievement in the target language.

Yet another impact of globalization might be varied out-of-school exposure to languages, and particularly of English in the public space. It is now well recognized that children do not only learn English in class, but a lot of it is picked up incidentally through play activities such as watching TV, playing computer games, browsing the Internet, reading books, etc. English is also present in the surroundings, in the names of shops, product logos, advertising, etc.

In this context it has to be emphasized that the omnipresence of English as a *lingua franca* in media and in the public space, not only facilitates language acquisition, but also mediates the construction of a certain type of identity which is a mixture of global and local identities. It is promoted through coursebooks published for a global market, as well as, products of pop culture (books, films, computer games, Internet resources, social media sites). Thus, material design should also meet the needs of learners coming from various settings and of various ability. Secondly, learners need to learn to understand these texts along with their extralinguistic features (text organization, images), which stands for multimodal literacy.

Globalization is associated with neoliberalism, individualization, and competitiveness on the global job market. Early language learning in this context can be seen as parental investment towards their children's better future. It is assumed that the earlier the children start learning the language, the longer the overall period of learning will be, which allows time to gain proficiency in an L2 and/or time to learn additional languages. In countries where there are supportive policies of an early start, these measures are often taken to manifest response to the aspirations of the (often growing) middle class. In countries where no such policies exist, or where language learning in the public sector is perceived as insufficient, a growth in the private educational sector can be observed. Parents are willing to pay for their children's education in order to compete with other parents in offering them more, earlier. This dream is realized in, for example, fostering plurilingualism, that is, learning not only one foreign language, usually English, but a few, usually those which have the status or potential of international languages, such as Spanish, Russian or Chinese. Thus,

parents aim for individual plurilingualism which is elitist. Such strive for potential plurilingualism starts already in kindergarten (Rokita-Jaśkow, 2013). Consequently, if such early starters find themselves in the public education system, they can gather fruits from early education and, being more proficient than other children, they can be treated as more talented.

This observation shows what really makes the difference in early foreign language education is the unequal access to high quality classroom instruction, characterized by class frequency, teacher didactic, linguistic and interpersonal competencies, availability of teaching resources, including the ICT tools. As the report of Murphy and Evangelou (2016) shows, despite being widely practiced, English language classes can vary in size, teaching methodology, materials used, especially when we take a global perspective: European classes in an elite fee-paying school are not similar to those in Africa. Thus, the socio-economic status of young learner families can play an important role in providing a continuous access to effective and quality FL education. Too often, young learners attend classes which neither provide rich and meaningful language input, nor build interest and openness to other cultures and languages. Thus, it can be argued that social inequalities are a sign of neoliberal trends pervading into education (Sayer, 2018). As Murphy (2018, p. 92) concludes in her foreword to the special issue of *System* journal on this issue, “SES is no doubt a correlated variable with L2 outcomes but not likely to be a causal one”.

Finally, it should be noted that one possible way to counterbalance the social inequalities is through literacy, as access to texts and other resources on the Internet has become widely democratic. For this reason, teachers need to be prepared and willing to teach various types of literacy skills to their (young) learners, which go beyond mere reading comprehension skills. What’s more, reading activities can serve as a prompt to formative assessment, which allows for tracking learner individual development rather than meeting benchmarks of standardized exams.

A call for a more individualized approach in teaching and assessment of early foreign language learning is what should come out from readings of the papers in the volume. Despite globalization and apparent homogenization of the process, it must not be forgotten that in the center of attention is the learner, with his/her varied abilities, varied learning opportunities and varied backgrounds.

4 The Structure of the Volume

The goal of this volume is to focus on the notion of diversity/heterogeneity in the young learner classroom in today’s globalized world. The two terms will be used interchangeably. It is argued that the sources of heterogeneity can be twofold: firstly, they can originate from the learner’s inner characteristics, and thus reflect the learner’s cognitive ability or lack thereof, as well as, affective propensities, such as attitude and motivation towards learning a language.

Secondly, diversity is brought about by the socio-educational and cultural background of the learners, the environments they come from, both on the micro- and on

the macro-levels. On the micro-level it may denote a different socio-economic level of families, and on the macro level a different ethnolinguistic background. Children, particularly of migration experience, may learn second or additional languages of a considerable linguistic distance from their heritage family languages.

Accordingly, the book consists of four thematic strands: in Part I the learner-internal causes of heterogeneity of young language learners are clarified. The authors of individual chapters present an up-to-date discussion of research that may have an impact on a language learner's foreign language achievement in school contexts. The variables discussed are executive function (discussed by Campfield in chapter "[Cognition and Second Language Experience: Broader Considerations in Bilingualism](#)") and working memory (discussed by Biedroń and Véliz-Campos in chapter "[Trainability of Foreign Language Aptitudes in Children](#)"). The two concepts, though discussed separately, are interrelated. Working memory is often defined to be a part of executive functions (EF) and may account for schooling success, or even be perceived as components of linguistic giftedness as well as difficulties, an issue discussed further by Biedroń and Véliz-Campos in chapter "[Trainability of Foreign Language Aptitudes in Children](#)". Both variables play a prominent role in the explicit learning of language subsystems, particularly of grammar, the teaching of which is discussed at length by Pawlak in chapter "[Teaching Foreign Language Grammar to Children: The Role of Individual Differences](#)". He emphasizes that in learning grammar by young learners both explicit and implicit processes take place depending on the age of the learner. He argues that the instructional approach should also take into account a whole spectrum of individual learner variables ranging from age and learning styles to affective variables such as willingness to communicate or enjoyment and boredom. Yet, he recognizes that the link between learner individual differences (IDs) and effectiveness of grammar instruction is still a gap to be filled in child second language acquisition (SLA) research.

This part may be treated as a theoretical background for the empirical studies presented in Part II, as these are cognitive factors that may account both for attentiveness, and subsequently, for incidental learning. Mirna Erk presents an interesting study of implicit vocabulary learning by young language learners in out-of-school contexts in chapter "[Diversity in EELL: Matters of Context and Contact](#)". She observed that already at the start of formal instruction children varied in the amount of vocabulary which they brought to class, having acquired it beforehand, and so leading to heterogeneity in learning levels. Gender also played a role as boys appeared to pick up a lot of vocabulary from computer games, while girls engaged more in reading tasks.

Cognitive processing, and particularly working memory, also play an important role in developing literacy and account for impairments in learning to read. Monika Łodej (chapter "[Reading Accuracy Measure in Screening for Dyslexia in the EFL Classroom](#)") presents a study on a reading accuracy task which can serve as a potential tool for screening for dyslexia. She observes that highly frequent words, even if they had irregular spelling, were recognized correctly even by dyslexic learners. This shows that the frequency factor plays a role not only in incidental vocabulary acquisition, but also in facilitating reading in EFL.

Dyslexic learners are only one type of learners of specific learning difficulties. Werona Król-Gierat (chapter “[Learning Preferences of SEN Children in an Inclusive English Classroom](#)”) looks at an inclusive classroom and learners of Special Educational Needs (SEN). While in such a class the special needs can be of various difficulty, it is important to develop pedagogical solutions that work with all children. She also The author observes that taxation of working memory may be too strenuous for SEN learners, hence a shown preference for shorter and multisensory tasks rather than, e.g., listening to a picturebook reading, which demands focusing attention for a longer period of time.

Dominika Dzik focuses on the development of child plurilingualism (chapter “[Is Strategy Training Necessary in L3 Learning? The Study of Communication Strategies Used by Upper-Primary School Learners](#)”). She conducted a study in a private primary school, where children have a chance to learn a second foreign language, here Spanish, from the age of 12 (grade 5). Since this is a fee-paying institution, we can observe a parental strive to equip children with the knowledge of not just one language (English), but also another language of potential global reach, thus treating plurilingual development as an investment. Dzik postulates that having the experience of learning and communicating in one foreign language (English), the children are confident enough to avoid communication breakdowns by using certain communication strategies. Yet, the use of the strategies would be much more effective if a more explicit training of communication and learning strategies was used, she posits.

Part II finishes with a chapter by Julie Waddington, who makes an important point that if we treat early language learning as the children’s right which should encompass all children irrespective of their ability, then assessment of their progress should motivate children towards this goal rather than be a benchmark that is unrealistic to achieve for some learners. Thus, assessment for learning rather than assessment of learning is more likely to meet the diverse needs of learners. She claims that children are “capable of reflecting on their own performance in a constructive manner, (...) they need to be supported in this process using age-appropriate strategies” (Waddington, chapter “[Assessment for Learning, Learning for All: A Case Study in the Foreign Language Classroom](#)”). Consequently, she proposes a strategic approach to successful peer-assessment and reflective learning using the ‘Two stars and a wish’ task. The recognition of the varied needs of the learners calls for an individual approach in teaching and assessment, so that early language learning is marked with gradual improvement, a lifetime journey, and not with failure.

Part III looks at the links between literacy and diversity. Reading is a source of linguistic input which nowadays is easily available e.g., through the Internet. Engagement in literacy practices out of school may add to school instruction, thus liquidating the differences between learners from varied socio-economic backgrounds. For this reason, it is important to start reading in a FL early, which is argued later on by Šamo and Đurić in chapter “[EFL Reading with Young Learners: The Teacher’s Perspective](#)”.

Here it should be noted that since a considerable number of English language learning materials, whether coursebooks or picturebooks, have been produced for

the global market, they should also meet the needs of the local learner and their cultural background. Stec in chapter “[A Multimodal Analysis of ELT Materials for Young Learners](#)” argues that “the issue is particularly important for Young Learners, who learn holistically and develop their understanding of diversity within their own and others’ culture, also during English classes” (chapter “[A Multimodal Analysis of ELT Materials for Young Learners](#)”). Thus, material designers have to strike a balance between the needs of the global market and the needs/interests of the children in local settings. Conversely, young learners, while learning English, need to develop multimodal literacy, i.e., understand the relationships between text and picture. Stec discusses how these principles are realized in ELT textbooks published for the global market, while Wolanin in chapter “[“Picture This!”: The Educational Value of Illustrations in the Process of Teaching L2 to Young Learners](#)”, focuses on popular authentic picturebooks, the use of which is currently recommended in TEYL. She particularly focuses on the role of images and how they can potentially be used not as a mere addition to the text, but for language development. They can also act as a trigger to conveying educational values and cultural content. She argues that exposing young learners to picturebooks in the L2 classroom additionally prepares them to understand the intricate and dynamic relationships between text and image. From this perspective it seems developing literacy in a foreign language, and particularly in English, quite paradoxically, can lead to homogenization in language skills, learning opportunity and development of ‘global’ identity.

Not only English coursebooks have the potential of teaching text–image relationships while catering for the diversity of their users. The design of coursebooks for migrant learners of Russian, which also has the status of local lingua franca as it is taught to many immigrants from former Soviet Republics, holds the same potential. Lebedeva et al. in chapter “[Corpus-based Evaluation of Textbook Content: A Case of Russian Language Primary School Textbooks for Migrants](#)” “show how cultural and pragmatic components are revealed in Russian-language textbooks for migrants”. They argue that the purpose of a good coursebook is not only to guarantee the effectiveness of the course, but also to convey cultural elements in such a way that they help learners adjust to the host community. Thus, the coursebook analysis they performed follows the criteria of text diversity (prose vs. poetry), frequency of vocabulary, readability, cultural and pragmatic components, and the visual component.

The juxtaposition of the analysis of the two types of coursebooks (i.e., English and Russian) shows how slightly different values and identity options can be promoted depending on which language and associated cultural identity is targeted.

Part IV looks at the notion of heterogeneity from the pedagogical perspective, analyzing teacher opinions and preferences of teachers, teacher educators and teacher trainees. Today’s classes are probably even more heterogeneous than before, as early language learning embraces a growing number of children. Having acknowledged the pervasiveness of this phenomenon, teachers need to be prepared to face heterogeneity in their classrooms already in teacher preparation programmes. Yet, an investigation of available research studies carried out by Bąk-Średnicka (chapter “[A Literature Review on Preparing Preservice Primary Foreign Language Teachers for Diversity via the Practicum](#)”), and a survey investigation carried out by Çamlıbel-Acar (chapter

“Teachers’ Opinions on Heterogeneous Classes: Insights for EFL Teacher Education”), show there is still low awareness of this emerging issue among teachers or teacher trainees. As Bąk-Średnicka observes, diversity in research studies is mainly associated with learners of different ethnolinguistic backgrounds. Worthwhile to note is that most of the studies were conducted in the USA, a multicultural society. This shows that the varying abilities of children, and the difficulties of SEN children, are definitely under researched. By contrast, Çamlıbel-Acar observes that unlike the practicing teachers, the teacher trainees have little awareness of the rapidly changing socio-political situation, such as the migration crisis, which often results in having foreign children in the regular classes. It should be recognized that if globalization brings about rapid changes and instability, teachers need to be prepared for these changes already in advance of their teaching careers, e.g., via the school practicum (Bąk-Średnicka, chapter “[A Literature Review on Preparing Preservice Primary Foreign Language Teachers for Diversity via the Practicum](#)”).

The chapter of MaryAnn Christison, Anna Krulatz and Yesim Sevinç (chapter “[Supporting Teachers of Multilingual Young Learners: Multilingual Approach to Diversity in Education \(MADE\)](#)”) marks a shift to a different facet of diversity, i.e., marked by the multilingual and multicultural background of the learners. Norway exemplifies a country welcoming a considerable number of migrants, which leads to a growth of multilingual classrooms. The authors observe that while Norwegian and English are in daily use in classroom communication, it is difficult to develop a pedagogy in which children’s diverse heritage languages are appreciated and used considering the fact that they are not known by the teachers. The authors propose an innovative solution called the Multilingual Approach to Diversity in Education (MADE) and put it under scrutiny while conducting classroom observation research. The model is bound to become an inspiration to many other settings.

One more aspect to which teachers need to be prepared when teaching young learners, whether of migrant background or not, is the realization that target languages taught may have different grammar and different writing systems from the mother tongues of the learners. This is an issue in Japan, which has recently introduced an early English learning policy. Hashio and Yamauchi (chapter “[A Note on the Influence of Topic Prominence in Japanese Beginner-level EFL Learners’ Interlanguage: An Empirical Study](#)”) posit that English teacher education in their country must entail contrastive analysis of the structures of two languages, i.e., Japanese and English, as syntax of the two languages is completely different. Not only should future teachers be aware of the differences, but they should also be sensitive to these difficulties in their learners in order to help them avoid errors in the early stages of their interlanguage. This also makes us aware of the fact that despite the global reach of English, local specificity has to be taken into account. Though opportunities for mobility exist, an English teacher educated in one setting may not necessarily adapt to teaching conditions in a new situation.

Finally, Šamo and Durić (chapter “[EFL Reading with Young Learners: The Teacher’s Perspective](#)”) observe a link between EFL teachers’ reading habits and their practices in the classroom aimed at developing the reading habits of their learners. They posit that teachers who read a lot for their ongoing professional development

are more likely to develop both effective reading comprehension skills, as well as, interest and motivation for reading in a foreign language. This is because they do not only teach effective strategies for coping with the text, but also organize various educational initiatives in order to raise interest in reading. Thus, there appears to be one more role of effective teacher education programmes, i.e., raising interest in reading by teacher candidates as the relationship between teacher and learner reading interests and skills seems to be reciprocal.

5 Summary

To summarise, the selection of papers in the volume show the major issues posed for TEYL (Teaching English to Young Learners) methodology, which has to cope with the issue of heterogeneity. While it is mainly English that is the major language taught to young learners, and consequently finds reflection in the market for material publications, there is a potential for teaching other languages to young learners as well, be it second or additional languages. An important asset of the book is a variety of country contexts presented (i.e., Croatia, Japan, Norway, Poland, Russia, Spain, Turkey), which points to the fact that early language learning becomes a widespread phenomenon and that the problems presented are universal.

Heterogeneity/diversity of the young learner classroom is the main organizing theme of the book. The reason for choosing this notion as the leitmotif of the book is the fact that young learner FL classrooms become more and more diverse, thus posing challenges for teachers who teach them. Besides, as more and more children are involved in the process globally, more research is done on learner individual characteristics and we learn more on why some children progress with relative ease, while others struggle and give up. This knowledge should be communicated widely, particularly towards various stakeholders, such as teachers, parents and also policy makers to help them understand children's difficulties and tailor the teaching in accordance with learners' needs. The call for a more individualized approach should be the outcome of these readings. Consequently, we hope the book will be of interest to practitioners, who will become more sensitive to various learners' abilities and needs, and researchers, who would like to scrutinize the topic of young learner individual differences and their impact on the teaching-learning process further.

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The Young Learner and Individual Differences

Cognition and Second Language Experience: How Are Executive Function and Second Language Acquisition Related?



Dorota E. Campfield 

Abstract Bilingual children's better performance on cognitive tasks has been explained by greater proficiency in executive function (EF) compared with monolingual peers. This is postulated to stem from quality and complexity in their linguistic environment. Many international studies of executive function adopt leading indicators such as academic performance, overall well-being and happiness. This chapter takes a broader view on bilingualism, including child experience of instructed second language (L2) acquisition and research attempts to map relationships between this experience and EF. The focus is on investigations of causality and studies of the bidirectional influence between EF and L2, suggesting that individual childhood differences improve them as L2 learners and that early L2 experience, in turn, commands a lasting influence on EF. The controversy of the claimed bilingual cognitive advantage is also discussed, and methodological issues are raised. A recent call to re-examine EF to include a broader range of the skills relied upon by children to achieve specific goals is briefly introduced with implications for future studies of the EF/L2 relationship.

Keywords Executive function · Bilingualism · Instructed L2 acquisition · Child L2 acquisition

1 Introduction

Evidence supports the view that the quality of children's linguistic environment is vital to their cognitive development. Clearly, acquisition of second languages is widely prevalent internationally and takes many forms. Early studies have demonstrated bilingual children's superior performance on metalinguistic tasks, in comparison with their monolingual peers. This has aroused interest in any potential cognitive advantage in the development of bilingual children with specific focus on executive function (EF). EF is conceptualised as a set of cognitive processes comprising

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working memory, inhibitory control and mental flexibility and since these processes have been considered of major importance for such leading indicators in international studies as happiness and well-being, it is understandable that research now aims towards mapping relationships between EF and bilingual experience. Motivation for the illumination of these domains is plain. Can understanding in this area lead to improvement in school performance, both in terms of academic achievement and behaviour? Are there interventions that can be offered by education to narrow the educational disparity between rich and poor? Indeed, can education itself be elevated to a greater level of efficacy and the lives of children improved by school activities that they frequently enjoy? If L2 exposure could be shown to improve EF, then it might itself be viewed as an effective and palatable intervention aimed at attenuating these early disparities at individual level by timetabling sufficient L2 activities. This would then add a novel and important dimension to early introduction of children to foreign languages.

The debate surrounding the relationship between bilingual experience and EF reflects a complex picture with contradictory evidence from studies on bilingual advantage with respect to cognitive measures. Research focus has ranged from identification of the aspects of bilingual experience which contribute to superior performance on EF tasks in relation to monolingual participants and which EF component is most influenced by bilingual advantage. Causality has also been investigated, focussing on its direction—does bilingualism drive cognitive function or is it the other way round?—a debate complicated by often hindered access to variables prior to L2 acquisition. Different types of bilingual experience have been examined, from pre-verbal infants through simultaneous to sequential bilinguals and adults who no longer use their second language. Differences in the quantity and intensity of bilingual experience as well as in language balance have been investigated with reference to research into sequential bilingualism. The present chapter aims to present some key issues in the debate on the interaction between different types of bilingual experience and exposure and executive function. Particular attention is given to studies focussing on learners acquiring a second language in instructional settings.

2 Executive Function

Ability to self-regulate behaviour is a complex skill underlined by basic skills which include executive function (EF) and involve its integration with other skills and knowledge (Jones et al., 2016). In literature on cognitive development, EF is conceptualised as a set of related cognitive processes such as (a) working memory, (b) inhibitory control and (c) cognitive flexibility (Davidson et al., 2006; Miyake et al., 2000; Zelazo & Müller, 2002). It has been generally accepted that although related, these processes are nevertheless distinct. They were originally identified by Miyake et al. (2000) using factor analysis on the five executive functions defined by Smith and Jonides (1999). These are: (1) focusing attention on relevant information while inhibiting irrelevant information, (2) scheduling processes, including switching

attention between tasks, (3) planning, (4) updating and checking working memory contents and (5) coding representation in working memory (but see Karr et al., 2018). In short, these functions enable human beings to gain control over information processing and behaviour, thus comprising the human ability to self-regulate.

On closer inspection of each function, mental flexibility, often referred to as shifting, is defined as the ability to switch attention between tasks, between different aspects of a given task or, between different operations or properties of a stimulus. Thus defined, it enables a child to “(...) revise plans when faced with obstacles, new information, or errors and to adapt to unexpected and changing developments” (Dawson & Guare, 2004, p. 2). Inhibitory control, often simply called inhibition, is conceptualised as the ability to prevent consciously and deliberately—thus inhibit—a prepotent, automatic response. In terms of behaviour, it enables the child to override a dominant or automatic response whilst focusing on completion of a task—to think before acting, as it were, or to resist an impulse and evaluate a given situation. Working memory (WM) is for storage, retrieval and processing of information that it holds. According to Baddeley and Hitch (1974), it comprises (a) a short-term storage component—referred to as the slave system and (b) an attentional control component—the central executive. Conceptually and empirically these two WM components are correlated but distinguishable. In this model, working memory is also referred to as updating, relating to the idea that this function enables the child to keep a given amount of information in their attention and update it whilst simultaneously performing an operation on this information. Although influential, this model of working memory is one of three competing theoretical models. Rather than conceptualising WM as a separate storage mechanism, some researchers see it as long-term memory (LTM) representations that are temporarily boosted through a limited attentional resource (Cowan & Morey, 2007; Engle et al., 1999). Researchers often apply Oberauer’s model (von Bastian & Oberauer, 2013) which locates WM within a broader framework of executive function. There is, therefore, no theoretical agreement on the models of working memory and a taxonomy of tasks aimed to measure working memory is often based not on these theoretical models but on evidence-based task analyses (Gathercole et al., 2019).

However, an important recent voice in the debate on the development of EF provides compelling arguments in favour of moving away from conceptualising EF as a few distinct components, separable by demands for specific tasks, and viewing it instead as the development of many skills honing in on achievement of specific goals (Doebel, 2020). How children apply control to achieve each specific goal will depend on the level of ‘mental content’ such as “(...) relevant knowledge, beliefs, values, norms, interests, and preferences that children acquire with development in a specific sociocultural context (...)” (Doebel, 2020, p. 5).

3 Why Interest in EF?

Researchers generally assert that EF indicators offer clear insights into child intellectual potential and reliably explain variability in academic attainment (Cowan, 2014), therefore, studies investigating factors underlying school achievement adopt EF indicators as more reliable measures of cognitive function than intelligence (Ardila, 1999; Nisbett, 2010). This is due to the fact that the latter relies on tasks demanding abilities usually acquired by children through schooling. Since EF is repeatedly shown as a reliable and important predictor of school success which, in turn is a major predictor of general wellbeing (Best et al., 2011; Duncan et al., 2010) it prevails as a research emphasis.

Individual differences in the development of EF that manifest in early childhood have been shown to correlate with higher level of pro-social behaviour, lower levels of disruptive behaviour and higher academic achievement (Bierman et al., 2009; Blair, 2002; Blair et al., 2005; Hughes, 1998; Hughes et al., 1998; Riggs et al., 2004; Smith-Donald et al., 2007; Thorell & Wahlstedt, 2006; Welsh et al., 2010), with EF being more strongly correlated with academic achievement than with behaviour.

The sensitive period for development of executive function is attributed to years 2–5 (Zelazo & Müller, 2011), which, in many countries, falls well before the school entry age. Components of executive function follow different developmental trajectories (Anderson, 2002) maturing by the age of 12 with a critical period between age 7 and 9 for development of cognitive flexibility, goal setting and information processing. The relationship between EF and school achievement weakens, therefore, over successive stages of education (Cowan & Alloway, 2009). Strong dependency between EF and academic performance is observed with younger, primary school children (a) for mathematical ability (Reuhkala, 2001), (b) for reading ability (Christofer et al., 2012; Jacob & Parkinson, 2015; Kaczan & Sobolewski, 2015; Kibby et al., 2014) and (c) for mathematical, reading and writing ability (Sędek et al., 2016). Lower EF performance is associated with learning difficulties, lower verbal and problem solving abilities, concentration difficulties or increased susceptibility to distraction (Alloway et al., 2010).

Disparities in EF, already manifest at the pre-school stage, relate to socioeconomic factors, with children from disadvantaged backgrounds performing persistently below the more advantaged participants on EF measures (Farah et al., 2006). Of particular concern to educators are voices that claim that subsequent school experience does not appear to improve the level of EF. Rather worryingly, Hackman et al. (2014) demonstrated that differences in working memory that appear by the age of 10 are associated with parental education and are not attenuated by schooling since these differences persist into teenage years and beyond.

As children from disadvantaged backgrounds perform below their peers on EF measures, home environment and parenting practices are key to cognitive development, subsequent happiness and well-being. Since these environments differ, it is not difficult to see that any improvement in EF will impact child development. Therefore, any initiatives aimed at improving executive functions for pre-school children have

the potential to influence early learning experiences and future academic achievement, reducing the achievement gap between learners, thus equalising chances for children from disparate socioeconomic backgrounds. Improving executive functions such as working memory, mental flexibility and inhibition is considered likely to have enduring and positive effects, not only for cognitive but also for social and emotional development. Therefore, monitoring EF development from the early years in a child's life is considered vital to the well-conceived provision of early education and care, with the OECD having just completed a study focusing on 5-year old children in a number of countries in this domain (OECD, 2020).

4 EF and Bilingual Experience

There is a growing body of research attempting to map out the relationship between EF and bilingual experience. This interest is justified since, as discussed above, EF is relevant to cognitive development, child outcomes such as thinking and social behaviour, school readiness, success at school and subsequent happiness and general well-being. The nature of the interaction between different types of bilingual experience and executive function, as well as the direction of this interaction has been under some scrutiny with interest ranging from infancy experience to later acquisition of L2.

Interest in the relationship between bilingualism and cognitive development originated with a study by Galambos and Hakuta (1988) in which bilingual children demonstrated better performance than their monolingual peers on tasks assessing abstract language structure. This apparent bilingual advantage could be repeatedly observed in cognitive rather than linguistic tasks. Research reported bilingual advantage for children (Bialystok, 1999; Bialystok & Martin, 2004; Carlson & Meltzoff, 2008; Yoshida et al., 2011) and for adults (Bialystok et al., 2004, 2007, 2008; Costa et al., 2008, 2009; Prior & MacWhinney, 2010). It was noted that such advantage was observed especially in tasks that demanded participants to manage conflict (Adesope et al., 2010; Barac et al., 2014; Bialystok, 1986). It suggests that having more than one language active in the brain, together with the need to constantly engage in the process of selection from this activated material, offers unique training for the executive function system. In other words, bilinguals' constant need to control two or more languages is thought to drive practice of important domain-general EF processes. These linguistic operations are often, therefore, used to explain comparatively better bilingual performance.

Joint activation of two languages in a bilingual brain is supported by behavioural (Beauvillain & Grainger, 1987; Marian & Spivey, 2009; Poulisse, 2000; Schwartz & Kroll, 2006), eye-tracking (Marian et al., 2003) and neuroimaging data (Abutalebi et al., 2007; Christoffels et al., 2007; Hoshino & Thierry, 2011; Martin et al., 2009; Misra et al., 2012; Rodriguez-Fornells et al., 2002) with the domain-general inhibitory control postulated to suppress access to non-target lexis (Meuter, 2005; Kroll et al., 2008). Additionally, it is hypothesised that depending on interlocutors'

language, (a) attentional monitoring is needed to determine which language is to be used (Costa et al., 2009; Soveri et al., 2011) and (b) attentional shifting makes any switching between languages possible—as in the case of code or interlocutor switching (Abutalebi & Green, 2007; Costa & Santesteban, 2004; Prior & Gollan, 2011). This ability to track the environment by (a) detecting changes in demands dictated by tasks or stimuli and (b) altering responses according to such demands—although equally necessary for efficient monolingual language use (Paap & Greenberg, 2013)—is particularly well served by bilingual load, arguably offering more practice for bilingual speakers, thus resulting in their advantage on non-linguistic tasks (Green, 1998).

Although results from neuroimaging studies indicate differences in brain activation and behavioural studies show better bilingual performance, there are also studies that do not confirm differences between mono and bilingual participants (Paap & Greenberg, 2013). Some researchers are more cautious or even sceptical about attributing cognitive advantages to bilingual speakers. Arguments are made pointing to the fact that differences in the level of EF exist not only between bilingual and monolingual speakers but also within (a) bilingual and (b) monolingual speakers and (c) L2 learners. When controlling their two languages, bilingual speakers with better EF abilities demonstrate less difficulty and are better able to avoid interference from their non-target language during a bilingual picture naming task (Festman et al., 2010). In a neuroimaging picture-naming study, Meschyan and Hernandez (2006) demonstrated that during production in their weaker language, bilingual speakers were likely to engage in similar EF processes. fMRI evidence pointed to significant increase in activation in brain regions shown to be activated during task-switching and inhibition tasks. Individual differences in EF are also seen between monolingual speakers, as those with better cognitive control are more successful at processing ambiguous sentences (Novick et al., 2005). Following a training programme aimed at improving task performance in conflict resolution, monolingual speakers were better able to avoid misinterpretation of garden-path sentences (Novick et al., 2014), suggesting that better non-linguistic cognitive control results in more efficient linguistic processing.

Similar individual differences in EF abilities are observed and appear to be important for L2 learning. Linck et al. (2009) looked at adult learners' access to their L1 after 3 months of an L2 immersion experience and found that those with better EF ability demonstrated reduced access to their L1. Specifically, for learners with better EF abilities, a significantly smaller interference from L1 translation was observed in a judgement task that required participants to decide whether a pair of L1 and L2 words were translation equivalents. Also, the L2 immersion experience resulted in reduced performance on an L1 fluency task. These results enabled Linck et al. (2009) to conclude that L2 learners with better EF skills were able to inhibit access to their L1—leading to a reduced access to L1 during a judgement and fluency task—in order to acquire the L2 more efficiently and successfully. The need to inhibit L1 during L2 learner production was also emphasised by Wang et al. (2007), who observed increased activation in the regions associated with EF processing (bilateral frontal cortices and left anterior cingulate cortex) in a study with adult Chinese learners