The impact of teaching quality and learning time on primary EFL learners' receptive proficiency

Preliminary findings from the TEPS study

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This contribution presents the preliminary findings from the TEPS study (*Teaching English in Primary Schools*). The study is situated in Germany where primary foreign language (FL) education has been compulsory since 2004, with pupils beginning FL education – mostly English as a FL (EFL) – in either year 1 or 3. Generally, this introduction of primary FL education has not been empirically evaluated, in spite of various open research questions: (1) Does the receptive EFL proficiency of learners at the end of primary education in year 4 differ depending on their learning time (duration & age of onset)? (2) Is there a correlation between teaching quality (learners' perspective) and learners' receptive EFL proficiency as well as their attitudes towards learning EFL? Prior studies (e.g. Demircioglu, 2010) gave first indications that learners with an earlier start achieve better receptive skills. Yet, findings from these samples cannot be generalized and are altogether inconclusive (e.g. Jaekel, van Ackern, Schurig, & Ritter, 2017). Studies investigating correlations between teaching quality and learner achievements in primary school are mainly based in maths and science education (e.g. TIMSS-2015: see Rieser, Stahns, Walzebug, & Wendt, 2016). Thus, the TEPS study situated in both applied linguistics and educational science is addressing some of these research deficits by (a) testing pupils' receptive EFL proficiency at the end of primary education in year 4 ($n=269$) and (b) surveying teaching quality and learner attitudes towards EFL. The study has been conducted in two federal states with different ages of onset (year 1 vs. year 3). Aside from the theoretical background and context of the study this paper will present the complex research design followed by preliminary findings from the pilot study giving insights into the questions raised above (for the main study see Wilden, Porsch, & Schurig, 2020).

Keywords: foreign language education, English as a foreign language, primary school, teaching quality, age of onset

Introduction

The TEPS study (*Teaching English in Primary Schools*) addresses English as a Foreign Language (EFL) education in German primary schools with a particular focus on EFL learners' receptive proficiency at the end of primary education. In the German context, early foreign language (FL) education was introduced as a compulsory primary school subject in all 16 federal states more than 15 years ago. Since then a rather heated media controversy has been making headlines every so often with broadsheet articles scandalizing the educational policy of teaching FL to primary school children. Whereas in the community of foreign language researchers this political innovation (Porsch & Wilden, 2017) has largely been welcomed – with some optimistic voices even considering it a “success story and for sure the only right way” (Böttger, 2009, cit. in Kießler, 2009; transl. by EW) – some media headlined rather critically, as illustrated through the following example from the German broadsheet *Die Zeit*: “No Murks, please. Stoppt den Fremdsprachenunterricht an Grundschulen! [No screw ups, please. Stop foreign language teaching in primary schools!]” (Kerstan, 2008). The recent publication of a study by Jaekel, Schurig, Florian, and Ritter (2017) was met with a similar, even international (Civinini, 2017), response as illustrated with this example from *Spiegel Online*: “Englischunterricht ab der ersten Klasse lohnt sich nicht [English from year 1 isn't worth it]” (*Spiegel Online*, 2017; transl. by EW). As these examples demonstrate there is rather little consensus as to the question whether early FL education in our primary schools actually does ‘work’. Consideration should also be given to the fact that some of the arguments put forward in this debate are devoid of a sound empirical back-up.

One question particularly relevant in the German context is the question whether ‘earlier is better’ – whether early starters (ES), i.e. children starting to learn EFL in year 1, have advantages over late starters (LS), i.e. those children who only start learning EFL in year 3. This question is especially meaningful and controversial in the German context in which so far five out of 16 federal states have opted for starting primary EFL education already in year 1. Quite recently, in autumn 2017, the federal government of Baden Wuerttemberg decided to move primary EFL back to year 3, beginning with the cohort entering school education in the school year 2018/19. In this context, the present study aims at contributing empirical evidence to the question whether an early start in primary EFL education is worthwhile and thus inform future political decision-making regarding early FL teaching. Thus, after outlining the political and theoretical background of the TEPS study, prior research findings relevant to the present study will be summarized. In the subsequent method section the research questions, design and data analysis will be sketched out. This will be followed by reporting and discussing the findings of the present study.

Political and theoretical background

The general context of primary EFL education in Germany

Regarding primary FL education, in most of the 16 German federal states children currently begin learning a FL in year 3 (LS), in five states already in year 1 (ES) (Rixon, 2013, pp. 116–117; Treutlein, Landerl, & Schöler, 2013, pp. 20–22; however, see introduction for recent changes). The present study was conducted in two federal states with a different age of onset: whereas in Lower Saxony (LoS) children begin to learn EFL in year 3 at the age of approximately 8 (NKM, 2006) they already learn EFL from the second half of year 1 onwards in NRW when they are approximately 6 years of age (MSWNRW, 2008).

In the following, the political and curricular situation regarding primary EFL in both LoS and NRW will be outlined in greater detail. In LoS compulsory EFL education in primary school from year 3 was introduced in the school year 2006/2007. In NRW compulsory EFL education in year 3 had already been introduced in the 2003/2004 school year. Just five years later, in 2008, it was moved forward to the second half of year 1. These curricular changes caused significant transformations within a relatively short time span for both teachers and school management.

The overarching goal of the political decision to move foreign language education from secondary school forward to primary school was to – in the long run – have learners achieve a higher foreign language proficiency and thus meet the goals of European language policy. However, on a large scale the introduction of primary FL education has not been empirically evaluated with many studies only being published *after* its introduction (Porsch & Wilden, 2017). As a consequence, there still is no comprehensive empirical basis to be able to say whether (a) primary FL education benefits long-term FL proficiency and (b) a longer learning time in primary school – an early start in year 1 instead of a late start in year 3 – is advantageous.

As a result of the two different curricula in LoS and NRW, the two cohorts tested in this study differ in two respects: on the one hand, they differ in the age of onset – and thus duration – of EFL education at primary level with either two (LoS) or three and a half years (NRW) of approximately eighty 45-minute lessons of EFL per school year. On the other hand, they were taught on the basis of two different curricula ascribing a slightly different importance to the written skills. Whereas the LoS cohort was taught on the basis of a curriculum putting strong emphasis on oral skills (NKM, 2006, p. 9), the NRW cohort was taught in accordance with a curriculum prescribing a more pronounced integration of written language: teachers are required to give written input to support EFL learning right

from the start. Furthermore, in contrast to the LoS curriculum the NRW curriculum explicitly determines EFL competence levels for all skills expected at the end of primary education in year 4 (MSWNRW, 2008). Both curricula highlight oral competences as one of the main objectives of early EFL education along with the acquisition of audio-visual skills (Benigno & Jong, 2016; Nikolov, 2016).

The Affordance-Utilization Model of Teaching and Learning

In the following the Affordance-Utilization-Model of Teaching and Learning (AU model) by A. Helmke (2015, p.71; translation adapted from Kurtz, 2014)¹ will be outlined. In the context of this study, the model (see Figure 1) serves to both classify and summarize prior research in the area of primary EFL education as well as to illustrate the research design of the present study. The model aims at illustrating the complex relationship of *affordances*, i.e. opportunities for learning, and their *utilization*, i.e. the actual using or exploiting of those opportunities by learners, in determining the *outcomes*, i.e. the effects or the impact of school-based learning. Thus, teacher variables influence the instructional setting, which again affect the learning outcomes. As an example, teachers' subject-specific beliefs will influence the teachers' choice of tasks that will then affect their pupils' subject-specific competence.

Figure 1. Affordance-Utilization Model of Teaching and Learning (adapted from: A. Helmke, 2015; Kurtz, 2014)

1. Original title in German: *Angebot-Nutzungs-Modell der Unterrichtswirksamkeit* (A. Helmke (2007, 2015)).

Receptive EFL proficiency, teaching quality and attitudes towards learning EFL

The present study focuses on key constructs representing different elements of the AU model. On the one hand, primary school children were tested on their receptive EFL proficiency, i.e. EFL reading and listening, which belong to the outcome dimension of the AU model. In this context, listening is the ability to extract information from spoken English. This is a complex, dynamic, active and two-sided (bottom-up and top-down) process during which learners deduce and attribute meaning and interpret what they heard (e.g. see Vandergrift & Goh, 2012). The terms reading or reading comprehension describe the ability to extract information from written English texts. This includes various simultaneous processes of understanding in the course of which readers construct meaning with the help of information given in the text (bottom-up), world knowledge gained from experience (top-down) as well as reading strategies (e.g. see Urquhart, 2016).

Aside from the receptive EFL proficiency the study also addresses teaching quality (in German: *Unterrichtsqualität*; A. Helmke, 2009, 2015) which belongs to the instructional dimension of the AU model. Focusing on the quality of school teaching (also referred to as lesson quality, instructional quality, etc.; see Leon, Medina-Garrido, & Núñez, 2017) a number of principles of good teaching – such as learner-orientation (e.g. Brophy, 1999) – have been described, very often subsumed in lists of ten or so criteria (for an overview see e.g. Rossa, 2013, p.30). Klieme, Pauli, and Reusser (2009) then introduced a three-dimensional model to describe qualitative and effective teaching which has become rather influential in educational research. The model outlines the following three dimensions of teaching quality: supportive climate, effective classroom management, and cognitive activation (A. Helmke, 2015; translation adapted from Kurtz, 2014). *Supportive climate* denotes learners experiencing autonomy, e.g. through positive and appreciative teacher feedback or a constructive recognition of mistakes as a resource for learning. *Cognitive activation* relates to challenging tasks, which allow learners to explore and change subject-specific concepts. *Classroom management* refers to preventing interruptions and discipline issues, e.g. through routines and swift transitions in order to ensure as much time on task as possible.

These dimensions of teaching quality have been empirically verified in various studies, yet, mainly in subjects such as Mathematics or Science. In the context of this study, however, the question arises whether these three dimensions are equally applicable and valid to assess teaching quality in EFL education. On a theoretical level, it is debatable whether this subject-unspecific notion of teaching quality can satisfactorily be applied for assessing the very specific situation in a, for example, primary EFL classroom (for a more detailed criticism see

Rossa, 2013). Similarly, Thaler (2014) claims that the notion of cognitive activation is only partly applicable to EFL education and, instead, he suggests the term communicative-cognitive activation, thus highlighting – in contrast to the role of language in many other school subjects – the double function of the target language in FL education (i.e. subject matter *and* medium of communication). So far, no studies have been conducted researching the teaching quality of primary EFL education based on the model by Klieme et al. (2009). However, the German DESI study (*Deutsch Englisch Schülerleistungen International*; T. Helmke et al., 2008) researching secondary EFL education (year 9) found that EFL listening proficiency positively correlates with various indicators of teaching quality such as task orientation and adequate level of task difficulty.

Learning outcomes also depend on the learning potential of students, another dimension of the AU model. The relevance of learner characteristics to learning processes in EFL has been extensively researched. Studies have included such aspects as motivation, emotions, intelligence, age and attitudinal characteristics. Focussing on the latter, Eagly and Chaiken (1993) define attitudes as a multi-dimensional construct which relates to an individual's evaluation of an object or issue involving cognitive, affective or behavioural reactions. Although this view has often been cited, there is no universal agreement even within the socio-psychological research community about the quantity as well as relevance of each component. A positive attitude towards a language has been linked to FL learning since it influences the effort learners invest in their language learning (Gardner, 1985). A considerably large number of studies on learners' attitudes towards learning EFL or EFL as a school subject have been conducted over the years and across the world, however, mainly at secondary level or at universities outside the German speaking countries. An exception is the German BIG study (Barucki et al., 2015) in which approximately 2,000 primary learners (age 10) from 15 different federal states were among others surveyed on their attitudes towards EFL as a school subject. 80.9% of all children agreed to the statement "The school subject EFL is cool" (Barucki et al., 2015, p.14; transl. by EW).

Prior studies on primary EFL learners' receptive proficiency

When reviewing published research in the area of primary EFL education, it is noteworthy that it addresses various dimensions of the AU model. Prior studies have focused on (a) the teacher dimension, for example, researching formal qualifications, teacher attitudes and teaching methods (Kolb, 2011), (b) the instructional dimension, e.g. exploring teaching EFL reading (Frisch, 2011, 2013; Rymarczyk, 2011) or characteristics of successful primary EFL teaching (ELLiE:

Tragant Mestres & Lundberg, 2011) and (c) the outcomes of EFL education. Studies in the outcome dimension of the AU model appear to represent the majority of research efforts in the field and address various aspects such as

1. learners' EFL proficiency at the end of primary schooling. (BIG study: Barucki et al., 2015; Börner et al., 2016; EVENING: Paulick & Groot-Wilken, 2009; KESS4: May, 2006)
2. the long-term development of primary learners' EFL proficiency in primary school (ELLiE: Szpotowicz & Lindgren, 2011) and after the transition to secondary school. (Demircioglu, 2010; Jaekel, Schurig et al., 2017; Kahl & Knebler, 1996; Pfenninger, 2014)
3. the early vs. late start in primary EFL education and its impact on learners' receptive proficiency. (Jaekel, Schurig et al., 2017; Wilden & Porsch, 2015, 2016; Wilden, Porsch, & Ritter, 2013)

Interestingly, none of these studies explore the connection between the different dimensions of the AU model. There are results from large-scale assessment studies on the correlation between teaching quality and learner achievements in primary school (e.g. Rieser et al., 2016) along with teacher qualification (e.g. Blömeke, Olsen, & Suhl, 2016) but they are based in maths and science education. Thus, the present study aims at contributing to closing this research gap with regard to primary EFL education.

Regarding learners' EFL proficiency at the end of primary schooling prior studies report the following findings: In the BIG study (Barucki et al., 2015; Börner et al., 2016) primary learners ($n=2,148$) in 15 out of 16 Germany federal states were tested among others on their receptive EFL proficiency at the end of primary education (approximately ten years old). In reporting their findings, the authors do not distinguish between different federal states even though in contrast to the other ten states five states have implemented an early start with learners starting their EFL education in year 1. The authors solely report percentages of correct answers, which thus needs to be considered in interpreting the findings of the BIG study. Regarding the EFL listening test the authors report that 72.4% of the participants achieved "a good result" (Börner et al., 2016, p. 24; original in German, transl. by EW) and for EFL reading 82.1%.

Similarly to the latter BIG study the EVENING study (Paulick & Groot-Wilken, 2009) tested children in the German federal state of NRW in 2006 ($n=1,748$) and 2007 ($n=1,344$) at the end of primary education in year 4 (approximately ten years) on their receptive EFL proficiency after two years of EFL learning. In both EFL listening and reading the participating children demonstrated unexpectedly good skills. The authors had not anticipated this as very little written language input had been presented in the 88 lessons that were evaluated in

the study (Groot-Wilken, 2009, p.137). Moreover, the teachers interviewed in the study had considered written language use to be a subordinate aspect of primary EFL teaching (p.132).

In the KESS 4 (May, 2006) study all primary school children in the federal state of Hamburg were tested on their EFL listening proficiency after two years of EFL education at the end of year 4 (approximately ten years). The results indicated that most of the children were able to understand individual statements and answer simple questions after two years of EFL learning (p.223). Twenty-five percent of the children belonged to the high-achieving group who were able to understand a coherent text read to them and connect different parts of the text with one another.

Regarding the long-term development of primary learners' EFL proficiency in primary and secondary school, prior studies report these following findings: in the three-year longitudinal ELLiE study (The ELLiE Team, 2011) among others the oral skills (listening and speaking) of roughly 1,400 children in seven European countries were examined from 2007 to 2010. Beginning in the second year of EFL learning, pupils aged 7 to 8 years were tested in listening at the end of each school year. The study found – with only a few exceptions and country-specific variations – a positive longitudinal development of oral foreign language skills over the first 3 years of primary foreign language education (Szpotowicz & Lindgren, 2011, pp.130–133). The authors identified non-school related factors such as the use of the language in society or the media as factors influencing the development of foreign language listening skills.

In the German context Demircioglu (2008, 2010) conducted a longitudinal study determining the impact of systematic primary EFL education on EFL achievements in secondary school (*Gymnasium*). The test group participated in a voluntary primary EFL project with one lesson per week in grades 3 and 4 over two school years (2003–2005). The project followed a systematic teaching approach targeting oral competences, listening comprehension, language awareness, written input and grammar skills. The ensuing evaluative study ($n=97$) compared the test group with two control groups over one year (2005–2006) focusing on the longitudinal development of receptive and productive skills as well as grammatical structures. The study found advantages of children from the test group over the control groups. Also, a consistently higher level of joy for learning and learning motivation was found for children from the test group in comparison to the control groups.

Similarly, in the earlier Hamburg Pilot Project 'EFL education from year 3' (*Englisch ab Klasse 3*) from 1992 to 1995 Kahl and Knebler (1996) compared

learners' oral, written and grammar skills in a control group design² at the end of year 6 in different secondary school types (*Gymnasium*, *Beobachtungsstufe Haupt-/Realschule*, *Orientierungsstufe*, *Gesamtschule*). The test group had learned EFL since year 3 in 13 different pilot classes whereas the control groups had only started to learn EFL in year 5. At the end of year 6 the pupils were tested on their oral and written EFL proficiency. The authors identified higher proficiency levels for the test group in both domains, thus suggesting an advantage of an earlier start.

Studies focusing on the effects of an early vs. a late start in primary EFL education report these findings: in previous studies situated in NRW the authors (Wilden et al., 2013; Wilden & Porsch, 2015, 2016) compared the receptive EFL proficiency of more than 6,500 primary school children with different learning times (age of onset or duration): due to curricular changes in this federal state the LS cohort had started learning EFL in year 3, the ES one was the first cohort to start learning EFL in second half of year 1. In summary, the ES with three and a half years of early EFL education demonstrated higher receptive EFL proficiency than the LS with only two years of early EFL education. In differentiating the achievements of learners with different types of linguistic backgrounds, the study found that *all* learners seemed to benefit from the early start independent of whether they were growing up in mono- or multilingual families.

This is the scarce evidence available on the 'positive' side, however, in light of the present study it is necessary to consider the following limitations of these prior studies: the ELLiE study did not include Germany and the studies by Demircioglu as well as Kahl and Knebler were researching pilot projects – before or during the compulsory introduction of primary FLT – with a rather small cohort (Demircioglu; $n=97$) or rather a long time ago (Kahl & Knebler, 1996). Furthermore, in the studies by Wilden and Porsch the sample was not representative in spite of being large and standardized, for only children in *one* German federal state attending one particular top-tier secondary school type (*Gymnasium*) for high achievers in a multi-partied school system were tested. In addition, the curricula changed from one cohort to the other while at the same time there were considerable changes in EFL teacher education in NRW. A possible effect this may have had in the ES cohort, e.g. regarding the teaching quality of fully qualified primary EFL teachers, cannot be ruled out from the available data (Wilden et al., 2013, pp.194–196; Wilden & Porsch, 2016, p.209).

On the 'negative' side the following studies were identified: Leucht, Priess-Buchheit, Pant, and Köller (2013) evaluated the EFL proficiency of two groups of

2. Control groups were the year groups preceding the test groups (see: Kahl & Knebler, 1996, p.73)

year 9 learners with different ages of onset and amount of exposure at secondary level (without prior foreign language education in primary school). Whereas one group had learned EFL as their first foreign language, the other group had learned EFL as their second foreign language and thus had begun their EFL education a year later. The authors could not identify advantages of those learners with an earlier start at secondary EFL education over those learners with a later start. Also, for the German-speaking Swiss context Pfenninger (2014) could not find any advantages in the EFL writing skills of learners with 5 years of primary EFL schooling over 'late starters', i.e. learners who had only started learning EFL on secondary level.

In the follow-up to Wilden and Porsch's (2015, 2016) studies Jaekel, Schurig et al. (2017) examined the longitudinal development of receptive EFL proficiency among the LS and ES cohorts. Both cohorts were tested again on their EFL listening and reading proficiency two years after leaving primary education. In comparing this data to the same data set as used in the previous studies Jaekel, Schurig et al. (2017) found that – in contrast to two years earlier when the ES had outperformed the LS – after two years of secondary EFL education the LS actually surpassed the ES in their receptive EFL proficiency. This finding ought to be interpreted cautiously as this study is underlying the same limitations as the previous studies by Wilden and Porsch (see above). Furthermore, other factors may have taken effect in the ES losing their lead in the two years of secondary EFL schooling. For example, the transition from primary to secondary schooling and an ensuing change in teaching approaches might have taken effect (Jaekel, Schurig et al., 2017, p.19; Kolb, 2009, 2011). Also, all children participating in the study were attending schools undergoing a substantial reform of the entire school programme (Ritter, Florian, & Lewandowska, 2015; Wendt & Bos, 2015) with both school staff and learners quite possibly being occupied with other aspects of school life than EFL education. Thus, the question posed by this finding is why the ES were not able to exploit their advantage over the LS in secondary EFL education. This is especially noteworthy as, when tested again four years after leaving primary education, there no longer was a significant difference in the receptive EFL proficiency between ES and LS (Jaekel, van Ackern et al., 2017).

In conclusion, one can say that there is insufficient evidence whether an early start in primary EFL education has long-term benefits for learners' EFL proficiency. The studies available provide evidence inconsistent to one another. So far no large-scale study is available in the field of primary EFL education for the German context which is linking indicators of teaching quality and learning outcomes.

Method

Research questions and hypotheses

The present study addresses the following research questions:

1. Does the receptive EFL proficiency of learners at the end of year 4 differ depending on their learning time (duration & age of onset)?
2. Is there a positive correlation between teaching quality (learners' perspective), learners' receptive EFL proficiency and their attitudes towards EFL?

Based on the evidence available from prior studies the authors expect the following results for the present study: a longer learning time (duration & age of onset) leads to learners' higher receptive EFL proficiency at the end of primary education in year 4 (e.g. Wilden & Porsch, 2016) even if controlled by teaching quality (no studies available) (hypothesis 1). A higher degree of teaching quality leads to learners' higher receptive EFL proficiency at the end of primary education in year 4 (T. Helmke et al., 2008) (hypothesis 2). Receptive EFL proficiency at the end of primary education in year 4 is positively related to learners' attitudes towards the subject of EFL (Gardner, 1985) (hypothesis 3).

Research design, instruments and sample

Data for the cross-sectional study was collected in 2016 in two German federal states, in NRW with 3,5 years and in LoS with 2 years of EFL education. 269 children from 20 classes at the end of year 4 were tested on their EFL proficiency by using multiple choice and short answer items (LoS: $n=184$, NRW: $n=83$). Receptive EFL proficiency – listening (73 items) and reading comprehension (125 items) – was assessed via a paper-pencil test. In addition, the children were surveyed on their attitudes towards EFL (instrument constructed by authors; 4 items; 4-point-likert scale; $\alpha=.88$; $M=3.36$; $SD=.54$; example: *English is important.*) as well as the teaching quality in EFL (differentiating between three 4-point-likert scales: cognitive activation [7 items; $\alpha=.88$; $M=2.50$; $SD=.49$], classroom management [5 items; $\alpha=.79$; $M=2.48$; $SD=.61$] and supportive climate [9 items; $\alpha=.89$; $M=3.15$; $SD=.65$] adapted from Fauth, Decristan, Rieser, Klieme, & Büttner, 2014). The composition of both groups was compared with regard to various background variables such as gender, age, first language(s) (German and/or other), and socio-economic background. Regarding these characteristics, the two groups are comparable as no significant differences could be identified.

Data analysis

After coding the items, proficiency scores were obtained by applying a simple one-dimensional logistic item response model (Rasch, 1960/1980) estimating plausible values for each student. Item characteristics were checked for conformity by assessing indicators such as discrimination parameters, mean squared errors (MNSQ), and t-values. Items were scaled separately for each domain. The final scores were standardized to a mean of 500 points with a standard deviation of 100 conventionally used in school achievement studies.

Findings

Research question 1: On a scale with a mean score of 500 and a standard deviation of 100 the ES (NRW) outperform the LS (LoS) in both EFL listening and reading comprehension (see Figure 2). However, only the difference for EFL reading (46 points) is statistically significant (EFL listening: 18 points; $p < .001$). Thus, hypothesis 1 is confirmed, but only for EFL reading comprehension.

Figure 2. Receptive EFL proficiency (listening and reading comprehension) of ES vs. LS

The earlier age of onset or longer duration of EFL education at primary level leads to small differences in reading comprehension with an advantage for the ES over the LS. In order to ensure that the level of teaching quality did not differ between the groups it was controlled in a regression model. Including these predictors in the model did not explain additional variance, the variable ‘age of onset’, however, is still significant.

Research question 2: There is no direct correlation between learners' receptive EFL competences and the three scales assessing teaching quality (i.e. supportive climate, effective classroom management, and cognitive activation) from the pupils' perspective. Thus, hypothesis 2 is rejected. However, there is a small (significant) correlation between learners' attitudes towards EFL and their EFL reading proficiency ($r=.14^*$). Therefore, hypothesis 3 is confirmed. In addition, the findings indicate a moderating effect of teaching quality on the relationship between attitudes towards EFL and receptive EFL proficiency. A moderation or interaction effect is the combined effect of two variables on another. The third variable (here: teaching quality) – the moderator – has an effect on the relationship between two variables (here: reading proficiency and positive attitudes). The influence of teaching quality thus changes the effect of attitudes on proficiency (see Figure 3).

Figure 3. The moderating effect of ‘teaching quality’

Results from regression analysis with interaction terms show that there are statistically significant interactions between the variables ‘cognitive activation’ as well as ‘classroom management’ and ‘positive attitudes towards EFL’ when explaining EFL reading proficiency. This means that attitudes towards EFL are more positive when there is a high level of teaching quality in EFL (high cognitive activation and structured classroom management) – which again leads to higher EFL reading proficiency.

Conclusion and outlook

In conclusion, the preliminary findings from the TEPS pilot study found that ES have a slight margin over the LS in their EFL reading comprehension at the end of primary education in year 4 (research question 1). Teaching quality did not explain any additional variance between ES and LS but the difference between the two groups with a different duration of EFL education (or: age of onset) remains significant. No direct correlation between learners' receptive EFL proficiency and teaching quality were found (research question 2). However, teaching

quality appears to have a moderating effect on learners' positive attitudes towards EFL, which impact on their EFL reading proficiency.

These preliminary findings do not support the conclusion that primary EFL education "could be a waste of time" (Civinini, 2017), even though it remains to be seen whether they will be backed up by findings from the TEPS main study (see Wilden et al., 2020). However, concerns about the quality and effectiveness of teaching FL to young learners need to be taken seriously and deserve the attention of both the FL research community and political stakeholders. Especially the role of teachers in the context of primary EFL education appears to be crucial and ought to be further explored in early FL learning research.

Findings from the TEPS main study will be available in 2020 (see Wilden et al., 2020) and will tackle some of the limitations of the present pilot study. First and foremost, it will also include teacher variables (e.g. teacher qualification). Since only a small number of teachers could be surveyed for the pilot study, it was not yet possible to consider this data for the present study. For the TEPS main study 770 pupils in both NRW and LoS – with a more even distribution over both states – were tested and 844 primary EFL teachers in both states were surveyed. It is thus expected that the TEPS main study will provide further insights into the question how teacher variables impact on EFL classrooms practices and thus on primary EFL learners' proficiencies.

References

- Barucki, H., Bliesener, U., Börner, O., Böttger, H., Hoffmann, I.-B., Kierepka, A., ... Schlüter, N. (2015). *Der Lernstand im Englischunterricht am Ende von Klasse 4: Ergebnisse der BIG-Studie*. München: Domino.
- Benigno, V., & Jong, J. de. (2016). The "Global scale of English learning objectives for young learners": A CEFR-based inventory of descriptors. In M. Nikolov (Ed.), *Assessing young learners of English: Global and local perspectives* (pp. 43–64). New York, NY: Springer. https://doi.org/10.1007/978-3-319-22422-0_3
- Blömeke, S., Olsen, R. V., & Suhl, U. (2016). Relation of student achievement to the quality of their teachers and instructional quality. In T. Nilsen & J.-E. Gustafsson (Eds.), *IEA research for education. Teacher quality, instructional quality and student outcomes: Relationships across countries, cohorts and time* (pp. 21–50). Cham: Springer. https://doi.org/10.1007/978-3-319-41252-8_2
- Börner, O., Böttger, H., Müller, T., Kierepka, A., Kronisch, I., Legutke, M. K., ... Schlüter, N. (2016). Der Lernstand im Englischunterricht am Ende von Klasse 4 – Erste Ergebnisse der BIG-Studie. In H. Böttger & N. Schlüter (Eds.), *Fortschritte im frühen Fremdsprachenlernen: Tagungsband zur 4. FFF-Konferenz* (pp. 8–44). Braunschweig: Westermann.
- Prophy, J. (1999). *Teaching*. Brussels: International Academy of Education.

- Civinini, C. (2017). Not-so-bright and early: Education policy makers have been emphasising the importance of starting foreign language learning early... but could it be a waste of time? *EL Gazette*, 2017(6).
- Demircioglu, J. (2008). *Englisch in der Grundschule: Auswirkungen auf Leistungen und Selbstbewertung in der weiterführenden Schule*. Berlin: Logos.
- Demircioglu, J. (2010). Zur Vorverlegung des Fremdsprachenunterrichts am Beispiel des Englischunterrichts in der Grundschule: Evaluative Argumente. *Bildung und Erziehung*, 63(4), 489–504. <https://doi.org/10.7788/bue.2010.63.4.489>
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes* (2nd ed.). Fort Worth, TX: Harcourt Brace Jovanovich.
- The ELLiE Team. (2011). Introduction. In J. Enever (Ed.), *ELLiE. Early language learning in Europe* (pp. 9–20). London: British Council.
- Fauth, B., Decristan, J., Rieser, S., Klieme, E., & Büttner, G. (2014). Grundschulunterricht aus Schüler-, Lehrer- und Beobachterperspektive: Zusammenhänge und Vorhersage von Lernerfolg. *Zeitschrift für pädagogische Psychologie*, 28(3), 127–137. <https://doi.org/10.1024/1010-0652/a000129>
- Frisch, S. (2011). Explizites und implizites Lernen beim Einsatz der englischen Schrift in der Grundschule. In M. Kötter & J. Rymarczyk (Eds.), *Fremdsprachenunterricht in der Grundschule: Forschungsergebnisse und Vorschläge zu seiner weiteren Entwicklung* (pp. 69–88). Frankfurt: Peter Lang.
- Frisch, S. (2013). *Lesen im Englischunterricht der Grundschule: Eine Vergleichsstudie zur Wirksamkeit zweier Lehrverfahren*. Tübingen: Narr.
- Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation. The social psychology of language*, Vol. 4. London: Arnold.
- Groot-Wilken, B. (2009). Design, Struktur und Durchführung der Evaluationsstudie EVENING in Nordrhein-Westfalen. In G. Engel, B. Groot-Wilken, & E. Thürmann (Eds.), *Englisch in der Primarstufe – Chancen und Herausforderungen: Evaluation und Erfahrungen aus der Praxis* (pp. 124–139). Berlin: Cornelsen.
- Helmke, A. (2007). *Unterrichtsqualität. Erfassen – Bewerten – Verbessern*. Stuttgart: Klett.
- Helmke, A. (2009). *Unterrichtsqualität und Lehrerprofessionalität: Diagnose, Evaluation und Verbesserung des Unterrichts* (3rd ed.). Seelze-Velber: Kallmeyer.
- Helmke, A. (2015). *Unterrichtsqualität und Lehrerprofessionalität: Diagnose, Evaluation und Verbesserung des Unterrichts* (6th ed.). Seelze-Velber: Kallmeyer.
- Helmke, T., Helmke, A., Schrader, F.-W., Wagner, W., Nold, G., & Schröder, K. (2008). Die Videostudie des Englischunterrichts. In DESI-Konsortium (Ed.), *Beltz Pädagogik. Unterricht und Kompetenzerwerb in Deutsch und Englisch: Ergebnisse der DESI-Studie* (pp. 345–363). Weinheim: Beltz.
- Jaekel, N., Schurig, M., Florian, M., & Ritter, M. (2017). From early starters to late finishers? A longitudinal study of early foreign language learning in school. *Language Learning*, 56, 1–29.
- Jaekel, N., van Ackern, I., Schurig, M., & Ritter, M. (2017). *Zeigt der Frühbeginn seinen langen Atem? Der Frühbeginn in Klasse 1 und 3 und sein Einfluss auf die Englischkompetenz in Klasse 9: Presentation at the 27th Congress of the Germany Society for Foreign Language Research (DGFF)*, Sep. 28–30, 2017. Jena, Germany: University of Jena.
- Kahl, P. W., & Knebler, U. (1996). *Englisch in der Grundschule – und dann? Evaluation des Hamburger Schulversuchs Englisch ab Klasse 3*. Berlin: Cornelsen.

- Kerstan, T. (2008). No murks, please. Stoppt den Fremdsprachenunterricht an Grundschulen! *Zeit Online* (17.12.2008). Retrieved from <<http://pdf.zeit.de/2008/52/C-Seitenhieb-52.pdf>> (21 November, 2019).
- Keßler, J.-U. (2009). Englisch ab Klasse 1: Zu früh? Zu wenig erforscht? Wirkungslos? – Zu wichtig! *Schule NRW*, 9(4), 158–162.
- Klieme, E., Pauli, C., & Reusser, K. (2009). The Pythagoras study: Investigating effects of teaching and learning in Swiss and German mathematics classrooms. In T. Janik & T. Seidel (Eds.), *The power of video studies in investigating teaching and learning in the classroom* (pp. 137–160). Münster: Waxmann.
- Kolb, A. (2009). To be continued? Der Übergang von der Primar- zur Sekundarstufe aus der Perspektive von Lehrkräften. In C. Lütge, A. I. Kollenrott, B. Ziegenmeyer, & G. Fellmann (Eds.), *Empirische Fremdsprachenforschung – Konzepte und Perspektiven* (pp. 85–98). Frankfurt: Peter Lang.
- Kolb, A. (2011). Kontinuität und Brüche: Der Übergang von der Primar- zur Sekundarstufe im Englischunterricht aus der Perspektive von Lehrkräften. *Zeitschrift für Fremdsprachenforschung*, 22(2), 145–175.
- Kurtz, J. (2014). Complexity thinking in German Englischdidaktik. Retrieved from: <<https://juergenkurtz.wordpress.com/2014/12/03/complexity-thinking-in-german-englischdidaktik/>> (21 November, 2019).
- Leon, J., Medina-Garrido, E., & Núñez, J. L. (2017). Teaching quality in math class: The development of a scale and the analysis of its relationship with engagement and achievement. *Frontiers in Psychology*, 8, 895. <https://doi.org/10.3389/fpsyg.2017.00895>
- Leucht, M., Priess-Buchheit, J., Pant, H. A., & Köller, O. (2013). Sometimes less is more: Educational effectiveness of English as a foreign language instruction in German classrooms. *School Effectiveness and School Improvement*, 24(4), 435–451. <https://doi.org/10.1080/09243453.2012.758640>
- May, P. (2006). Englisch-Hörverstehen am Ende der Grundschulzeit. In W. Bos & M. Pietsch (Eds.), *KESS 4 – Kompetenzen und Einstellungen von Schülerinnen und Schülern am Ende der Jahrgangsstufe 4 in Hamburger Grundschulen* (pp. 203–224). Münster: Waxmann.
- MSWNRW. (2008). *Richtlinien und Lehrpläne für die Grundschule in Nordrhein-Westfalen*. Düsseldorf: MSWNRW.
- Nikolov, M. (2016). A framework for young EFL learners' diagnostic assessment: 'can do statements' and task types. In M. Nikolov (Ed.), *Assessing young learners of English: Global and local perspectives* (pp. 65–92). New York, NY: Springer. https://doi.org/10.1007/978-3-319-22422-0_4
- NKM. (2006). *Kerncurriculum für die Grundschule. Schuljahrgänge 3–4*. Hannover: Niedersächsisches Kultusministerium.
- Paulick, C., & Groot-Wilken, B. (2009). Rezeptive Fähigkeiten und Fertigkeiten am Ende der 4. Klasse unter besonderer Berücksichtigung der sprachlichen Schülerbiografien. In G. Engel, B. Groot-Wilken, & E. Thürmann (Eds.), *Englisch in der Primarstufe – Chancen und Herausforderungen: Evaluation und Erfahrungen aus der Praxis* (pp. 179–196). Berlin: Cornelsen.
- Pfenninger, S. E. (2014). The literacy factor in the optimal age discussion: A five-year longitudinal study. *International Journal of Bilingual Education and Bilingualism*, 1–18.

- Porsch, R., & Wilden, E. (2017). The introduction of EFL in primary education in Germany: A view from implementation research. In E. Wilden & R. Porsch (Eds.), *The professional development of primary EFL teachers: National and international research* (pp. 59–75). Münster: Waxmann.
- Rasch, G. (1960/1980). *Probabilistic models for some intelligence and attainment tests* (2nd ed.). Chicago, IL: Chicago University Press.
- Rieser, S., Stahns, R., Walzebug, & Wendt, H. (2016). Einblicke in die Gestaltung des Mathematik- und Sachunterrichts. In H. Wendt, W. Bos, C. Selter, O. Köller, K. Schwippert, & D. Kasper (Eds.), *TIMSS 2015 Mathematische und naturwissenschaftliche Kompetenzen von Grundschulkindern in Deutschland im internationalen Vergleich* (1st ed., pp. 205–224). Münster: Waxmann.
- Ritter, M., Florian, M., & Lewandowska, Z. (2015). Materialien für den Englischunterricht: Ganz In. Mit Ganzttag mehr Zukunft. Das neue Ganzttagsgymnasium NRW. *Praxishefte*. Münster: Waxmann.
- Rixon, S. (2013). *British Council Survey of Policy and Practice in Primary English Language Teaching Worldwide*. London: British Council.
- Rossa, H. (2013). Effective language teaching: Wie kann mein Unterricht gelingen? Wie kann ich meine Schüler(innen) dabei unterstützen, die Fremdsprache zu entdecken, zu entschlüsseln und selbst kommunikativ zu nutzen? *Die Grundschulzeitschrift*, 267, 29–31.
- Rymarczyk, J. (2011). “Lautes Lesen = mangelhaft / Leises Lesen = sehr gut?”. Diskrepanzen in den Leseleistungen von Erst- und Drittklässlern im Fremdsprachenunterricht Englisch. In M. Kötter & J. Rymarczyk (Eds.), *Fremdsprachenunterricht in der Grundschule: Forschungsergebnisse und Vorschläge zu seiner weiteren Entwicklung* (pp. 49–67). Frankfurt: Peter Lang. <https://doi.org/10.3726/978-3-653-05466-8/7>
- Spiegel Online (2017). Englischunterricht ab der ersten Klasse lohnt sich nicht: Erstklässler können noch nicht lesen und schreiben, sollen aber schon Englisch sprechen. Zumindest gibt es das Fach vielerorts ab der Einschulung. Nur bringt das nicht viel, zeigt eine Studie. *Spiegel Online*. (May 8, 2017). Retrieved from: <<http://www.spiegel.de/lebenundlernen/schule/englisch-unterricht-ab-der-ersten-klasse-lohnt-sich-nicht-a-1146713.html>> (21 November, 2019).
- Szpotowicz, M., & Lindgren, E. (2011). Language achievements: A longitudinal perspective. In J. Enever (Ed.), *ELLiE. Early Language Learning in Europe* (pp. 125–142). London: British Council.
- Thaler, E. (2014). Kognitive Aktivierung & Hattie & Fremdsprachenunterricht. *Praxis Fremdsprachenunterricht*, 2014(6), 5–6.
- Tragant Mestres, E., & Lundberg, G. (2011). The teacher’s role: What is its significance in early language learning? In J. Enever (Ed.), *ELLiE. Early language learning in Europe* (pp. 81–100). London: British Council.
- Treutlein, A., Landerl, K., & Schöler, H. (2013). (Frühe) Schrifteinführung im Englischunterricht – Überlegungen zu Zeitpunkt und Methode auf Grundlage von psycholinguistischen Studien. *Zeitschrift für Fremdsprachenforschung*, 24(1), 3–27.
- Urquhart, S. (2016). *Reading in a second language: Process, product and practice*. Hoboken, NJ: CRC Press.
- Vandergrift, L., & Goh, C. C. M. (2012). Teaching and learning second language listening: Metacognition in action. *ESL & applied linguistics professional series*. New York, NY: Routledge. <https://doi.org/10.4324/9780203843376>

- Wendt, H., & Bos, W. (Eds.). (2015). *Auf dem Weg zum Ganztagsgymnasium: Erste Ergebnisse der wissenschaftlichen Begleitforschung zum Projekt Ganz In*. Münster: Waxmann.
- Wilden, E., & Porsch, R. (2015). Die Hör- und Leseverstehensleistungen im Fach Englisch von Kindern am Ende der Grundschulzeit unter besonderer Berücksichtigung von lebensweltlicher Ein- und Mehrsprachigkeit. In M. Köttler & J. Rymarczyk (Eds.), *Englischunterricht auf der Primarstufe: neue Forschungen – weitere Entwicklungen* (pp. 59–80). Frankfurt: Peter Lang.
- Wilden, E., & Porsch, R. (2016). Learning EFL from year 1 or year 3? A comparative study on children's EFL listening and reading comprehension at the end of primary education. In M. Nikolov (Ed.), *Assessing young learners of English: Global and local perspectives* (pp. 191–212). New York, NY: Springer. https://doi.org/10.1007/978-3-319-22422-0_8
- Wilden, E., Porsch, R., & Ritter, M. (2013). Je früher desto besser? – Frühbeginnender Englischunterricht ab Klasse 1 oder 3 und seine Auswirkungen auf das Hör- und Leseverstehen. *Zeitschrift für Fremdsprachenforschung*, 24(2), 171–201.
- Wilden, E., Porsch, R., & Schurig, M. (2020). An early start in primary EFL education and the role of teacher qualification and teaching quality. *Language Teaching for Young Learners*, 2(1) 28–51.

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