ANGLICA

An International Journal of English Studies

30/2 2021

UNIVERSITY OF WARSAW

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Anglica 30/2 2021
ISSN: 0860-5734
DOI: 10.7311/0860-5734.30.2.07

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Development of Metalinguistic Awareness in EFL Vocabulary and Spelling: A Longitudinal Case Study of a Child and Adult with Dyslexia

Abstract: This longitudinal case study aimed at investigating the development of metalinguistic awareness in EFL spelling and vocabulary in two Croatian learners with dyslexia who differed in age and language proficiency – a child and an adult. They attended weekly sessions that aimed at improving their English spelling and vocabulary. The data were collected for 45 weeks using the teacher's notes and audio-recorded lesson observations. The results showed that the participants developed their metalinguistic skills; however, the age and language proficiency factor was salient. Also, the metacognitive component of the instruction had a different effect on the development of metalinguistic skills in spelling and vocabulary acquisition. Pedagogical implications are discussed.

Keywords: metalinguistic awareness, dyslexia, age factor, English as a foreign language, spelling, vocabulary

1. Introduction

Metacognition "refers to one's knowledge concerning one's own cognitive processes and products or anything related to them" (Flavell 1976, 232). It is critical for successful second language development (Anderson 2008; Haukås 2018) because self-reflective learning behaviour allows controlling cognitive processes (Goswami 2014). It is also a core element of second language learning strategies (Oxford 2017). For example, metacognition helps the learner extend their mental lexicon by identifying morphological patterns (Michońska-Stadnik 2013) and comprehend the text more efficiently (Chodkiewicz 2013). Metacognition is also crucial for spelling skills development (Cordewener et al. 2018). Metacognitive skills allow the learner to judge how difficult the word is likely to be spelt and

how this difficulty can be overcome to result in the correct spelling of the word (Block and Peskowitz 1990).

However, the use of metacognitive strategies may be age- and language proficiency dependent. Since children cannot fully control cognitive processes (Berk 2018), it can be assumed that older learners are more likely to monitor their language learning more efficiently (Griffiths 2008). On the other hand, higher language proficiency results in more extensive use of metacognitive strategies (Anderson 2008).

Metacognitive awareness may also be correlated with intelligence (Sternberg 1985), and dependent on the learner's non-academic characteristics such as socioeconomic status, cultural and family background (Hartman 2001), the learner's motivation (Mayer 2001), anxiety (Wolters and Pintrich 2001), and transformation of the learning experience (Kolb 1984 cited in Coffield et al. 2004, 61).

More specifically, metalinguistic awareness (MA) is a subfield of metacognition (Gombert 1992). It is conscious thinking about the patterns and rules of the language (Schneider and Crombie 2003). It involves multiple skills related to various language components (Gombert 1992; Bialystok et al. 2014), and it allows an individual to reflect and manipulate different language structures (Tunmer and Herriman 1984).

Baker and Brown (1984 in Schneider and Ganschow 2000, 74) distinguish two forms of MA: "knowledge about cognition", which is knowledge about the linguistic rule system underlying the language activities (e.g. recognition of the English spelling rule), and "regulation of cognition", which refers to knowledge about the strategies to apply this metacognitive knowledge (e.g. the ability to use this rule in writing).

According to Schneider (1999), metalinguistic awareness involves information processing and metalinguistic awareness application. The former includes self-correction after encouragement or stimulus, independent self-correction, remaining in thinking pause, asking questions indicating metalinguistic processing, and identifying vocabulary items correctly in the review using mnemonic devices, which is a partly automatised process. In contrast, the latter includes correct application of the learned rules in different contexts, summarising the rule of a rule pattern either correctly or incorrectly, making rules independently, discovering a rule without help, making correct constructive reference to native language structures, and identifying vocabulary items correctly in a review without using mnemonic devices, which is an automatised process.

The development of MA may start at the beginning of language acquisition, formal schooling, or at later stages (Tunmer and Herriman 1984). Research studies, though scarce, provide inconclusive evidence of various starting points of MA development. For example, Chaney (1992) found that children as young as three years old can make metalinguistic judgments, which is salient later for their reading skills development (Chaney 1998). Duncan et al. (2009), on the other hand,

observed that children aged 5-6 developed MA relying on their earlier linguistic knowledge.

MA development may depend on language characteristics, curricula of the educational system (Duncan et al. 2009), and the learner's vocabulary size (Altman et al. 2018). It was also found to be greater in multilingual speakers as second language acquisition is advantageous for developing MA in various language aspects (Adesope et al. 2010; Reder et al. 2013). However, MA development in the second language setting may significantly depend on language characteristics (Altman et al. 2018) and the learner's cognitive profile (Brooks and Kempe 2013).

Since the ability to monitor and control the thinking process is critical for successful learning (Goswami 2014), it should be promoted by language teachers (Siegel 2005). Students should be encouraged to find about the structures and uniqueness of the new language, why certain expressions are used the way they are, and how students can self-correct and monitor their own learning process (Schneider and Crombie 2003). However, the importance of metalinguistic instruction in second language learning has been questioned because it does not promote communicative competence (Serrano 2011).

Nevertheless, many studies have reported an overall positive effect of metalinguistic instruction on language skills development. Yet, its efficiency depended on participants' individual differences, the length and intensity of the instruction, as well as the content of the training programme. For example, the learner's age and language proficiency may be salient (White 2008; Vold 2018), a shorter period of instruction may yield moderate results (Serrano 2011), and improvements in metalinguistic skills may be due to the student's familiarity with the instructor and the metacognitive awareness training method (Schneider 1999).

In the context of the first language, especially in children with specific learning difficulties or speech and language disorders, research findings showed that metalinguistic instruction improved spelling and reading skills in Hebrew- (Schiff et al. 2016) and English- (Hirschman 2000) speaking children with specific language impairment, or impaired phonological skills in Arabic (Layes et al. 2015) and Chinese (Wang et al. 2020) children with dyslexia. In contrast, second language studies have investigated the effect of metalinguistic instruction on various second language skills, including English oral tasks in Spanish/Catalan bilinguals (Serrano 2011) and Quebec French-speaking children (White and Ranta 2002), English phonological skills (Siu et al. 2018) and grammar (Hu 2011) in Chinese speakers, and German phonology/orthography, grammar, and vocabulary/morphology in adult English speakers (Schneider 1999).

The specific difficulties in phonological processing, verbal memory, and verbal processing speed experienced by learners with dyslexia may have significantly affected the development of language skills in a second language (Kormos 2017). Therefore, language learners with dyslexia should be taught in a multisensory, explicit and structured way to develop higher metalinguistic skills (Schneider and

Crombie 2003). The positive effect of such instruction has been evidenced by many studies in the context of foreign languages (e.g. Schneider 1999; Nijakowska 2008; Pfenninger 2015). However, the study by Schneider (1999) is a rare example of monitoring MA development in learners with dyslexia in the second language context. From the research perspective, this may be so because monitoring metacognitive processes is challenging and time-consuming (Tracy-Ventura and Paquot 2020). However, from the pedagogical perspective, successful learning may significantly depend on metalinguistic skills (Goswami 2014) and thus metalinguistic strategy instruction is important (Siegel 2005). Therefore, this paper attempts to provide the reader with information on how metalinguistic processes can be researched in the form of case studies, and how teachers can successfully promote metalinguistic skills development in learners of different ages and language proficiency.

2. The study

This longitudinal multiple case study was conducted in a teaching context and according to the recommendations for conducting case studies research in rehabilitation studies (Tate et al. 2014, 316-317); the intervention involved discrete phases, and the effect of the intervention was measured repeatedly and frequently.

Since the time of instruction in the so-far studies that investigated the effect of metalinguistic training varied considerably, lasting between a few weeks (e.g. Serrano 2011; Siu et al. 2018) and a few months (Hirschman 2000), it is difficult to establish its optimal duration. All these studies reported a positive effect of the instruction; however, shorter training tended to be less effective (Serrano 2011). Given that metalinguistic development hinges on many academic and non-academic factors (Hartman 2001), it can be assumed that metacognitive instruction should take a considerable amount of time to have any significant effect on language skills performance, especially in younger learners whose language functional control hinges on language development (Gombert 1992). Therefore, the instruction in the present study lasted for 45 weeks.

Furthermore, as controlling of cognitive processing may be age-dependent (Berk 2018) and language proficiency may be a salient factor in metalinguistic processing (White 2008), this study compares the development of metalinguistic awareness in two learners of different language proficiency and ages, a child and an adult.

The study focused on spelling and vocabulary skills as learners with dyslexia may find these difficult to develop because of their lower working memory capacity (Crombie 2000; Kormos and Smith 2012), especially in English because of its low orthographic transparency (Nijakowska 2010).

Finally, vocabulary learning was not the main focus of the so-far studies that investigated metalinguistic development. Schneider (1999) suggested that

future investigation should focus on MA development in vocabulary learning since her participants struggled with explicit mnemonic metalinguistic vocabulary processing devices. Also, observing MA development in this area is undoubtedly important as vocabulary size is critical for the development of the core foreign and second language skills.

2.1 Aim and research questions

The study aimed at investigating the development of MA in EFL vocabulary and spelling learning in two learners with dyslexia who differed in age and language proficiency. The study sought to answer the following questions:

1. To what extent will the participants differ in their MA development in EFL vocabulary and spelling learning considering the age and language proficiency factor?
2. Will MA development be equally important for learning EFL vocabulary and spelling?

Drawing on the literature review, it could be hypothesised that the older participant will be developing their MA at a faster rate because of their higher language proficiency and more mature cognitive skills. As to the second research question, it could be assumed that metalinguistic development will be important for both spelling and vocabulary learning since MA considers many subfields (Gombert 1992) and facilitates the learning and use of different L2 skills (Hu 2011).

2.2 Participants

Two male EFL learners with dyslexia, whose mother tongue (L1) was Croatian, participated in the study. They differed in age. The first participant (P1) was ten years and eight months old when the study began, and 11 years and 11 months old when the study finished. The second participant (P2) was 21 years and eight months old when the study started, and 22 years and 11 months old when the study finished.

The participants were diagnosed with dyslexia in their L1. Both had an uneven cognitive profile typical of individuals with dyslexia. Their non-verbal intelligence was above-average, but they experienced difficulties in reading and spelling in their L1 and EFL.

P1's EFL knowledge was assessed against the national curriculum for primary school (The Croatian Ministry of Science, Education and Sports 2006). The scope of the assessment included the English language skills that were taught in the first four years of primary school. The results of the test showed that P1's English skills were at the level of year one, which suggested a three-year delay in reference to the curriculum requirements.

The academic version of the International English Language Testing System was used to measure P2's English language proficiency. The test results suggested

that P2's English language skills were upper intermediate (the B2 level according to the Common European Framework of Reference for Languages).

2.3 Procedure

The participants attended one English lesson weekly on a one-to-one basis. The break between the lessons was a minimum of three and a maximum of eight days. The lessons were arranged in three teaching sessions: 10-week-course (session 1), 15-week-course (session 2), and 20-week-course (session 3). Between session 1 and 2, there was a six-week break; between session 2 and 3, there was a four-week break.

The participants learned between two to five words or phrases per lesson – the meaning of the word or phrase and its spelling. The content of the lessons was adjusted to the student's knowledge and learning needs. The items were presented in an understandable context for the learner to make the instruction more effective, following the suggestion by Mihaljević Djigunović (1998). The teaching method was based on the approaches recommended for teaching EFL to learners with dyslexia, that is multisensory, structured, explicit, metacognitive instruction (Schneider 1999; Schneider and Ganschow 2000; Schneider and Crombie 2003; Nijakowska 2010). The author of this paper was the teacher.

2.4 Data collection

The learner's knowledge of the items learned in the previous lesson was assessed weekly (short-term retrieval). In the case of failure of acquisition or a partial acquisition, additional instruction was provided. An item was taught as long as full acquisition occurred; however, no longer than for five consecutive lessons.

Learning of the items was also assessed after each session (long-term retrieval). TEST-VOC was used to assess the participants' semantic knowledge of the vocabulary, whereas TEST-SPEL was used to assess the retrieval of spelling. There were three TEST-VOCs and TEST-SPELs. TEST-VOC 1 and TEST-SPEL 1 were administered after the first session and the break and included the items that were fully acquired; TEST-VOC 2 and TEST-SPEL 2 were carried out after session 2 and included the items learned in the first and second session; TEST-VOC 3 and TEST-SPEL 3 were conducted after session 3 and a break of six weeks and assessed the retrieval of the material learned in all three sessions. The findings regarding spelling and vocabulary development in the two participants were reported in two author's publications (Kałdonek-Crnjaković, 2015; 2019).

The development of metalinguistic awareness was monitored using "the Criteria for Metalinguistic Processing" developed by Schneider (1999, 166; see Table 1 below). The metalinguistic processing instances were observed in every session and during the vocabulary (TEST-VOC) and spelling (TEST-SPEL)

assessments. The instances were recorded by the teacher during each vocabulary and spelling activity. Subsequently, the record was verified with the lessons' audio recordings.

Table 1. Criteria for measuring metalinguistic processing

Codes	Metalinguistic skills in the information processing category
1	Self-correction after encouragement/stimulus
2	Self-correction on his own
3	Remaining in thinking pause
4	Asking questions indicating metalinguistic processing
5	Identifying vocabulary item(s) correctly in the review using mnemonic devices (partly automatised process)
Codes	**Metalinguistic skills in the application of metalinguistic awareness category**
6	Identifying vocabulary item(s) correctly in the review without using mnemonic devices (automatised process)
7	Correct application of the learned rules in different contexts
8	Summarising the rule of a rule pattern
9	Making his own rule or discovering a rule without help
10	Making correct constructive reference to native language structures

2.5 Data analysis

Data analyses are presented separately for each participant, and the discussion of the results is based on the two case studies. The analyses include the aggregate number and percentage of metalinguistic instances in spelling and vocabulary learning in each session and retrieval in each assessment (TEST-VOC, TEST-SPEL) with the indication of the metalinguistic skill type and its category.

The significance of the difference between instances in vocabulary and spelling was calculated using a *t*-test for independent means. Also, the Cohen's *d* was used to report the effect size (Cohen 1988).

The reported frequency of instances occurrence included the aggregate number of instances and the mean for the unit of five lessons and per one session. The difference between the participants in this regard was calculated using *t*-test for independent means and the Cohen's *d* (Cohen 1988).

3. Results

Participant 1

In the first session, there were 106 instances in total with 49 instances in vocabulary (46%) and 57 in spelling (54%). All the instances in vocabulary learning were in the information processing category involving three metalinguistic skills (codes 1, 3, 5). In contrast, when learning to spell in this session, P1 used two skills in the same category (code 1 and 3; 63% and 37%, respectively).

In the second session, the aggregate number of metalinguistic instances was 213, with 89 instances in vocabulary (42%) and 124 in spelling learning (58%). In vocabulary learning, all instances occurred in the information processing category involving four skills (codes 1, 2, 3, and 5); however, most frequent were self-correction after encouragement/stimulus (code 1) and remaining in thinking pause (code 3) (85%). Similarly, 95% instances in spelling learning involved the four skills in the information processing category (code 1, 2, 3, and 5), with a prevailing number of self-correction after encouragement/stimulus (code 1) and remaining in thinking pause (code 3) (87%). Five per cent of the instances were the correct application of the learned rules in different contexts (code 7) in the application of metalinguistic awareness category.

In the third session, 282 instances occurred; 105 instances in vocabulary (37%) and 177 in spelling learning (63%). When learning vocabulary in this session, P1 used four skills in the information processing category (codes 1, 2, 3, and 5), but mainly self-correction after encouragement/stimulus (code 1) and remaining in thinking pause (code 3) (86%). In spelling, 96% of the instances occurred in the information proceeding category (codes 1, 2, 3, and 5), and mainly involved two skills (codes 1 and 3) (87%). P1 also used the correct application of the learned rules in different contexts (code 7; 4%) in the application of metalinguistic awareness category.

In TEST-VOC 1 and TEST-SPEL 1, 28 instances occurred in total with seven in vocabulary (25%) and 21 in spelling retrieval (75%). All instances were in the information processing category, involving two skills (code 1 and 3).

In TEST-VOC 2 and TEST-SPEL 2, there were 24 instances in vocabulary (32.5%) and 50 in spelling retrieval (67.5%). In vocabulary retrieval, all instances were in the information processing category (codes 1, 2, and 3), and mainly involved the skills of remaining in thinking pause (code 3) (62.5%). Similarly, most of the instances in spelling retrieval were in the information processing category (92%; codes 1, 2, 3 and 5), and mainly involved self-correction after encouragement/stimulus (code 1) and remaining in thinking pause (code 3) (74%). The remaining instances involved the correct application of the learned rules in different contexts (code 7) in the application of metalinguistic awareness category (8%).

In TEST-VOC 3 and TEST-SPEL 3, 48 instances occurred in vocabulary

(43%) and 64 in spelling retrieval (57%). In vocabulary retrieval, P1 used four skills in the information processing category (codes 1, 2, 3, and 5), and mainly with self-correction after encouragement/stimulus (code 1) and remaining in thinking pause (code 3) (79%). Similarly, in spelling retrieval, the instances occurred in the information processing category (codes 1, 2, 3, and 5) (92%), and mainly self-correction after encouragement/stimulus (code 1) and remaining in thinking pause (code 3) (67%). The correct application of the learned rules in different contexts (code 7) in the application of metalinguistic awareness category was used in 8% of the instances.

The difference between the instances in vocabulary and spelling learning was statistically non-significant but with a medium effect size ($t(12) = -1.01876$; $p = .166$, $d = 0.59$).

A consistent increase of instances was observed over time. In the first session, there were 42 instances in the first five lessons and 64 in lessons 6–10. The average number of instances per lesson increased from 8.4 in the first five lessons to 12.8 in lessons 6–10; the overall mean was 10.6.

In the second session, there were 66 instances in the first five lessons, 75 in lessons 6–10, and 72 in lessons 11–15. The average number of instances per lesson increased from 13.2 in the first five lessons to 15 in lessons 6–10, and 14.4 in lessons 11–15; the overall mean was 14.2.

Similarly, in the third session, in the first five lessons, there were 65 instances, 72 in lessons 6–10, 69 in lessons 11–15, and 76 in lessons 16–20. The average number of instances per lesson rose from 13 to 15.2 (14.4 was for lessons 6–10 and 13.8 for lessons 11–15); the overall mean was 14.1.

Participant 2

In the first session, the aggregate number of instances was 251, with 27 in vocabulary (11%) and 224 in spelling learning (89%). The instances occurred both in the information processing (codes 1–5) and the application of metalinguistic awareness category (codes 6–8) but in the majority in the former (86%). In spelling learning, P2 used eight out of ten metalinguistic skills (codes 1–8). In contrast, in vocabulary learning, he used the first four skills in the information processing category (codes 1–4) and one in the application of metalinguistic awareness category (code 7).

In the second session, the total number of instances was 362, with 50 in vocabulary (14%) and 312 in spelling learning (86%). The instances occurred in both categories but mainly in the information processing one (87%). When learning to spell, P2 used nine skills (codes 1–9). When learning vocabulary, he used all the skills in the information processing category and one skill in the application of metalinguistic awareness category (code 7).

In the last session, there were 485 instances, with 76 in vocabulary (16%) and 409 in spelling learning (84%). The instances involved mainly the skills in

the information processing category (83%). P2 used all the skills but one (code 9) when learning to spell. In contrast, when learning vocabulary, he used all the skills in the information processing category but only one (code 7) in the application of metalinguistic awareness category.

In TEST-VOC 1 and TEST-SPEL 1, there were 83 instances in total with ten in vocabulary (12%) and 73 in spelling retrieval (88%). In vocabulary retrieval, the instances involved three skills in the information processing category (codes 1–3). In spelling retrieval, the instances involved all ten skills; however, most of the instances occurred in the information processing category (89%) and mainly in the form of self-correction after encouragement/stimulus and remaining in thinking pause (codes 1 and 3) (71%).

In TEST-VOC 2 and TEST-SPEL 2, there were 111 instances in total with 16 in vocabulary (14.5%) and 95 in spelling retrieval (85.5%). In vocabulary retrieval, the instances involved three skills in the information processing category (codes 1–3). In contrast, in spelling retrieval, P2 used all the skills but making his own rule or discovering a rule without help (code 9). However, most instances involved skills in the information processing category (codes 1–5) (88.5%), and mainly self-correction after encouragement/stimulus and remaining in thinking pause (codes 1 and 3) (74%).

In TEST-VOC 3 and TEST-SPEL 3, there were 134 instances in total with 22 in vocabulary (16.5%) and 112 in spelling retrieval (83.5%). In spelling retrieval, P2 used eight skills (codes 1–8); however, with a prevailing number of instances in three skills (codes 1–3) in the information processing category (89%). In vocabulary retrieval, P2 used three skills in the information processing category (codes 1–3).

The difference between instances in vocabulary and spelling learning was significant with a large effect size ($t(12) = -3.03753$; $p = .00$; $d = 1.75$).

The number of instances rose over time in all three sessions. In the first session, from 115 in the first five lessons to 136 instances in lessons 6–10. The average number of instances per lesson increased from 23 to 27.2; the overall mean was 25.1.

In the second session, there were 118 instances in the first five lessons, 123 in lessons 6–10, and 121 in lessons 11–15. The average number of instances per lesson increased from 23.6 in the first five lessons to 24.6 in lessons 6–10, and 24.2 in lessons 11–15; the overall mean was 24.13.

In the third session, in the first five lessons, there were 117 instances, 119 in lessons 6–10, 125 in lessons 11–15, and 124 in lessons 16–20. The average number of instances per lesson rose from 23.4 in the first five lessons to 23.8 in lessons 6–10, 25 in lessons 11–15, and 24.8 in the last five lessons; the overall mean was 24.25.

4. Discussion

The first research question asked whether the age and language proficiency factor would affect metalinguistic awareness development. It was assumed that it would be greater in P2 because of the learner's advanced English language skills and cognitive maturity. Drawing on the data analysis results, it can be stated that age and language proficiency are salient factors in the development of metalinguistic awareness in learners with dyslexia of different ages in the context of EFL.

Following Anderson (2008), Vold (2018), and White 2008, that is proficient learners use more metacognitive strategies than their less proficient peers, this study found that the aggregate number of instances in the case of P2 was higher; it was 1426 compared with 815 in the case of P1. This difference was statistically insignificant ($t(24) = 1.2$, $p = .10$) but with a medium effect size ($d = 0.52$), which suggests that both participants comparably developed their metalinguistic skills during the intervention. Drawing on the findings of Cordewener et al. (2018), that explicit instruction improves metacognitive skills, which allow learners to make more conscious decisions, the participants in this study, as previously reported (Kałdonek-Crnjaković 2015; 2019), significantly developed vocabulary and spelling skills during the intervention that was based on the explicit, structured and metacognitive approach.

However, it needs to be noted that the participants differed in their performance in terms of the instances frequency per a five-lesson unit. The mean in the case of P2 was significantly higher ($t(6) = -9.43$, $p = .00$, $d = 7.7$). Referring to the reported results on vocabulary and spelling learning by the participants (Kałdonek-Crnjaković 2015; 2019), it can be stated that more extensive use of metalinguistic skills positively affects vocabulary and spelling learning in EFL.

Moreover, P2 developed their metalinguistic skills at a higher level in spelling ($t(12) = -2.0326$, $p = .03$, $d = 1.17$). This difference between the participants may have resulted from the difficulty level of the words and phrases P2 learned to spell. They were far more complex, and thus P2 had to employ a wider range of metalinguistic skills. Therefore, it may be said that metalinguistic awareness development may be affected by the instruction content, as also observed by Schneider (1999).

On the other hand, considering the mean per a five-lesson unit in each session, P2's metalinguistic awareness was higher from the beginning of the instruction, and the development was not observed (25.1 in the first session, 24.13 in the second session, and 24.25 in the last session). In contrast, P1 had 10.6 instances on average in the first session but already 14.2 and 14.1 in the two following sessions, respectively. Drawing on Schneider's (1999) observations, on the one hand, this difference may suggest a rapid development of metalinguistic awareness; on the other hand, the lower frequency of instances at the beginning of the instruction could have been affected by the participant's unfamiliarity with the teacher and the method.

Furthermore, P2 used all ten metalinguistic skills. In contrast, P1 used only four out of five skills in the information processing and one in the application of metalinguistic awareness category. It may therefore be suggested, referring to Anderson (2008), that P2 could make more conscious decisions and improve their learning more efficiently. However, both participants mainly used processing information skills. It was 96% in the case of P1 and 87% in P2. The skills used primarily by both participants were self-correction after encouragement/stimulus (code 1), self-correction on his own (code 2), and remaining in thinking pause (code 3). The question that can be posed here is whether the use of specific metalinguistic skills is dependent on the length of the instruction, the learner's cognitive profile, or the features of the learning material. Namely, would longer instruction result in higher use of the application of metalinguistic awareness skills? Is the higher use of the information processing metalinguistic skills typical of learners with dyslexia? Or, are the information processing metalinguistic skills more frequently used in EFL vocabulary and spelling learning when the multisensory, explicit, and structured approach is applied? And, referring to the previously reported findings (Kałdonek-Crnjaković 2015; 2019), would higher use of the application of metalinguistic awareness skills result in a higher recall of the taught items in the short- and long-term?

Compare this finding with Schneider's (1999) results. Her learner participants mainly used self-correction after encouragement or stimulus, the application of the learned rule, or summarising the rule or the rule pattern. The skills used less often were self-correction on their own and remaining in thinking pause with evidence of silent or verbal processing. This said, the participants in Schneider's study (1999) used many application of metalinguistic awareness skills. However, they learned a wider variety of language skills: phonology/orthography, grammar, and vocabulary/morphology, and in German as a foreign language. Thus, it can be suggested that the use of specific metalinguistic skills may depend on the features of the skills and subskills learned in the target language of the instruction.

The second research question enquired about the importance of metalinguistic awareness development in vocabulary and spelling learning. The findings suggest that P1 used metalinguistic skills with a similar frequency in vocabulary and spelling learning and retrieval ($t(12) = -1.01876$; $p = .166$; $d = 0.59$).). By contrast, P2 used far more metalinguistic skills in spelling learning and retrieval (($t(12) = -3.03753$; $p = .00$; $d = 1.75$).

Moreover, the application of metalinguistic awareness was more important for spelling than for vocabulary learning and retrieval. In vocabulary learning, P1 only used skills in the information processing category, whereas in spelling, he also correctly applied learned rules in different contexts (code 7). Similarly, in spelling, P2 used all skills in the application of metalinguistic awareness category, but only one (code 7) in vocabulary learning.

It can therefore be concluded that metalinguistic skills play a more important

role in spelling activities. In order to learn to spell a word or write it correctly, one needs to apply a range of strategies that relate to phonological awareness and rapid automatised naming and linguistic contributors that are determined by the spelling acquisition stages (Russak 2020). Considering the stages proposed by Ehri (1992), in the early spelling acquisition when the child randomly combines print symbols, invents spelling patterns relying on grapheme-phoneme correspondence knowledge only to some extent, or spells the word as it sounds, phonological skills development is still in its infancy. This is why P1 relied mainly on information processing skills rather than apply more advanced metalinguistic skills such as summarising the rule of a rule pattern, making his own rule or discovering a rule without help or making correct constructive reference to native language structures (codes 8–10).

This limited usage of metacognitive skills resulted in less effective spelling instruction in the case of P1, whereas a wider use of metalinguistic skills ensured a more sustainable spelling development in the case of P2 (see Kałdonek-Crnjaković 2015). However, a lesser activation of metalinguistic skills in vocabulary did not significantly affect vocabulary development in the two participants; the retrieval of newly learned vocabulary was higher than in spelling acquisition (see Kałdonek-Crnjaković 2015; 2019). Hence, metalinguistic awareness seems to play a less important role in EFL vocabulary development in the case of learners with dyslexia.

5. Conclusion

This study found that learners with dyslexia, regardless of their age and language proficiency, can effectively develop their metalinguistic awareness skills when the instruction is based on the multisensory, structured, explicit, and metacognitive approach in the context of EFL. However, age and language proficiency are salient factors; the metalinguistic awareness development was higher in the older participant. Furthermore, metacognitive awareness seems to be more crucial for spelling development than for vocabulary learning in EFL.

Therefore, these findings imply that remedial second language instruction for learners with dyslexia should include the development of metalinguistic skills, especially those directly related to literacy, such as spelling. It will result in accelerated phonological skills development, which has been found weaker in individuals with dyslexia. In turn, this may improve higher-level writing skills.

Undoubtedly, the present study has limitations. It involved only two learners, and therefore its results should not be generalised. On the other hand, thanks to its design, the study offered a closer look at the metalinguistic awareness development in two learners of different ages and language proficiency levels but with similar manifestations of dyslexia in EFL. Such a case study can be treated as an "intriguing case" (Rose et al. 2020, 7) that may have practical pedagogical implementations and inform future research. As for the former, observing metalinguistic

skills development using the criteria proposed by Schneider (1999) may allow teachers to monitor specific language skills development more effectively in learners of different ages and language proficiency. As for the latter, this study illustrated how metalinguistic skills development can be observed within the framework proposed by Schneider (1999). However, in order to yield more substantial empirical evidence, future studies should involve a larger and more diverse sample, and investigate metalinguistic skills development in other languages than EFL.

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