

STUDENT TEACHERS' EXPERIENCES WITH DIGITAL TOOLS FOR VOCABULARY LEARNING

Die Digitalisierung stellt Lehrpersonen und Lernende vor neue Anforderungen und Aufgaben im Fremdsprachenunterricht. Dabei spielen digitale Tools eine immer wichtigere Rolle, insbesondere im Wortschatzunterricht. Um mehr über die Verwendung von digitalen Tools zu erfahren, wurden Studierende der PHBern aufgefordert, einen Online Fragebogen zum Thema Wortschatzlernen zu beantworten. Die offenen Fragen fokussierten auf zwei Hauptthemen: 1) wie haben die Studierenden während ihrer eigenen Schulzeit Wortschatzunterricht und -lernen erlebt; und 2) welche Beobachtungen konnten Studierende während einem Praktikum zur Verwendung von digitalen Tools im Fremdsprachenunterricht machen. Sechszwanzig Studierende, alle Digital Natives, haben den Fragebogen beantwortet. Bis zum Alter von 16 haben die meisten mit traditionellen Wortkarten oder mit Wortlisten gearbeitet. Mehr als die Hälfte (16 von 26) hatte nie digitale Tools in der Volksschule gebraucht. An den weiterführenden Schulen haben 24 (92%) der Studierenden mit der Hilfe von digitalen Tools Wortschatz gelernt. Dabei wurde von 20 Studierenden der Einsatz von *Quizlet* erwähnt. Insbesondere das Feature *Flashcard* erfreute sich grosser Beliebtheit, jedoch basiert dieses Feature nur auf Worterkennung und bietet wenig Unterstützung für nachhaltiges Lernen an. Ein stets wiederkehrendes Thema war die Bedeutung des Schreibens von Hand für das Wortschatzlernen. Mehrere Teilnehmende haben darauf hingewiesen, wie wichtig das Schreiben der Wörter von Hand für sie war, dies oft zusätzlich zur Verwendung von einem App. Auf Grund der gewonnenen Erkenntnisse wird ein Kursangebot in der Aus- und Weiterbildung von Lehrpersonen zum Thema digitale Tools im Fremdsprachenunterricht empfohlen. Sei es, um mehr digitale Tools kennenzulernen, aber auch um sich über Vor- und Nachteile des Einsatzes von digitalen Tools zu informieren und sich über *smart vocabulary practice activities* auszutauschen.

Tema

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Susanna Schwab has held a long interest in vocabulary learning and teaching, be it with adults, be it with young learners. Her Master thesis (1999) was on Strategy Training for Vocabulary Learning – A Swiss Case Study with research carried out with learners at lower secondary school. Since 2006 she has been training pre-service primary school teachers to teach English as a (second) foreign language at PHBern.

Vocabulary learning and teaching can no longer be called a neglected aspect (see Meara, 1980) of language teaching. According to an estimate “about 30% of research on vocabulary in the last 100 years has been carried out since 2001” (Webb & Nation, 2017, p. 1). Although vocabulary is an important aspect to successfully communicate in another language, word knowledge is more complex than simply knowing its translation and its form (for details see Nation, 2020). Nation also discussed how vocabulary in another language can be developed with his four-strands-framework:

1. meaning-focused input;
2. meaning-focused output;
3. language focused learning;
4. fluency development.

With a focus on teaching young learners, Brewster et al. (2002) used five stages for vocabulary learning that Schwab (2021) adapted slightly. Whereas Brewster et al. listed vocabulary learning strategies (VLS) as a separate and last stage (stage 5),

Schwab's adaptation illustrates that VLS should be taught and used at any stage in vocabulary learning (see Figure 1).

Observations conducted for a research project in ten classrooms in the 2018-2020 school years revealed that by using the compulsory textbooks, all teachers incorporated the first two stages However, there was a lack of opportunities for learners to work with stages 3 and 4. Nation (2020) underscored the importance of placing less attention and time to meaning and form-focus as he claimed that “[a] teacher's concern should not be with how a word should be introduced to the learners, but with how it can be met multiple times in a variety of contexts” (p. 24). As time is limited in many classrooms with only two or three lessons of English per week, Newton (2020) recommended technology-mediated vocabulary learning to practise and consolidate vocabulary. He argued that more “digital technologies have been developed to cater for vocabulary learning” (p. 263) than for any other aspect of language

	Stages	Details
Vocabulary learning strategies	1. exposure	understanding and learning the meaning of new words (in a familiar context)
	2. focus on form	attending to form (copying, noticing grammatical information)
	3. practice	vocabulary practising, memorising and checking activities (making strong memory connections; classifying; sorting; labelling, etc.) e.g., by using digital word cards and all features offered
	4. practice	consolidating, recycling, extending, personalising (e.g., by offering smart vocabulary practice activities)

Figure 1

Schwab's 4 stages of vocabulary teaching and learning (2021) adapted from Brewster et al. (2002)

learning. While Nation's four stands can all benefit from technology-mediated vocabulary teaching and learning (such as e-readers, videos, translation tools), our focus for this article will be on vocabulary learning apps and Nation's third strand, namely the VLS of word cards.

Digital technologies have raised the challenge for teachers and learners for the selection and the incorporation of appropriate tools for vocabulary teaching and learning inside and outside the classroom. Saumell (2016) outlined seven principles for meaningful technology integration (MTI) that teachers can follow:

1. MTI focuses on the learning task and not the technology;
2. MTI involves the students in actively using the technology;
3. MTI is essential not peripheral to the activity;
4. MTI works well for the context;
5. MTI addresses 21st century skills' issues and digital literacies training;
6. MTI facilitates learning activities that would be more difficult or impossible without the technology;
7. MTI breaks down classroom walls.

Her seven principles are based on the Technological Pedagogical Content Knowledge (TPACK) model developed by Mishra and Koehler (2006) and the Substitution, Augmentation, Modification, Redefinition (SAMR) model by Puentedura (2006). It can be expected that following these seven principles would allow teachers to carefully plan meaningful technology integration into their pedagogical practices.

Despite the huge number of digital tools available for vocabulary learning, there is

Digital tools have changed the way learners approach vocabulary learning.

a lack of knowledge of how these tools are incorporated in language teaching and learning, whether teachers follow a principled approach, and about the sustainability of vocabulary practice with digital tools, to name a few. Ma (2017) and Nakata (2020) conducted research on how technology can enhance vocabulary teaching and learning. Both researchers emphasized the advantages of apps with systematic rehearsal and retrieval practice. However, there is little evidence of long-term retention as the studies all seemed to focus on short-term memory with pre- and post-tests that were carried out within a few days of learning vocabulary with a digital tool. Furthermore, the studies were all conducted with university students who were at intermediate or even advanced levels of language proficiency.

The survey presented in this article was also conducted with university students, namely with student teachers at a university of teacher education. However, the survey focused on student teachers' experiences learning vocabulary during their own time at school. Consequently, the survey addressed two major questions 1) how student teachers experienced vocabulary learning during their own time at school in the 21st century; and 2)

Quizlet was the most popular application participants reported having used for vocabulary learning.

whether they have been able to observe the use of digital tools in language learning and teaching during their practicums.

To find out more about how digital natives used to learn vocabulary during their own time at school one cohort at PHBern in the spring semester 2021 participated in a survey. The online survey consisted of 7 open-ended questions:

1. At lower secondary school: How did you use to learn vocabulary;
2. Did you use digital tools for vocabulary learning;
3. Did you use digital tools for vocabulary learning after the age of 16;
4. Have you ever used "Quizlet";
5. Do you know any other apps to learn vocabulary;
6. Have you observed the use of digital tools in English lessons at primary school; and
7. What is your opinion about using digital tools in the young learners' classroom?

Although 34 students answered the questionnaire, the answers of eight students are not reported as they were born before 1995 and do not qualify as digital natives. The answers by the remaining 26 students to questions 1-4 are discussed in some detail, while the answers to questions 5-7 are summarized.

Answering question 1, a total of 12 students reported having used some kind of word cards to learn vocabulary during their time at lower secondary school, mostly by writing their own cards. Eight students mentioned list learning, such as learning the list by heart or parents who worked with them by asking them words from the list. One student explained in detail how she used to read the words several times, then covered up one column and tried to remember the words and later would write them all down as well "to know the orthography". Two more students reported a similar list learning strategy emphasizing the importance of writing the words themselves. Three students did not mention word cards nor list learning but reported the use of mindmaps or picking up new vocabulary by listening to songs and watching movies.

The 23 students (N=26) who reported the use of word cards and/or list learning confirmed Schmitt's (1997) claim that word card and list learning seem to be the most common VLS. Three students highlighted the importance of writing words themselves. Handwriting will be discussed again as it was a recurring theme in answers to some other questions.

An astonishing high number of students (16; 61%) had never used digital tools until the age of 16. Five students mentioned the use of *Quizlet*, while 2 reported using *Kahoot* (see Figure 2 for question 2). One student maintained that she began using *Quizlet* at the end of lower secondary school but that she changed back to the traditional paper word card because she realized that she had to write the words on paper herself to learn them.

The importance of writing the words by hand was mentioned by several students, thus confirming that it is essential for many learners to write words by hand and not type them into a keyboard. The effect writing the words can have on learners' language proficiency was discussed by Webb and Piasecki (2020). Readers with a special interest in handwriting are referred to Sägger Wyss, Sahli Lozano, & Simovic (2021).

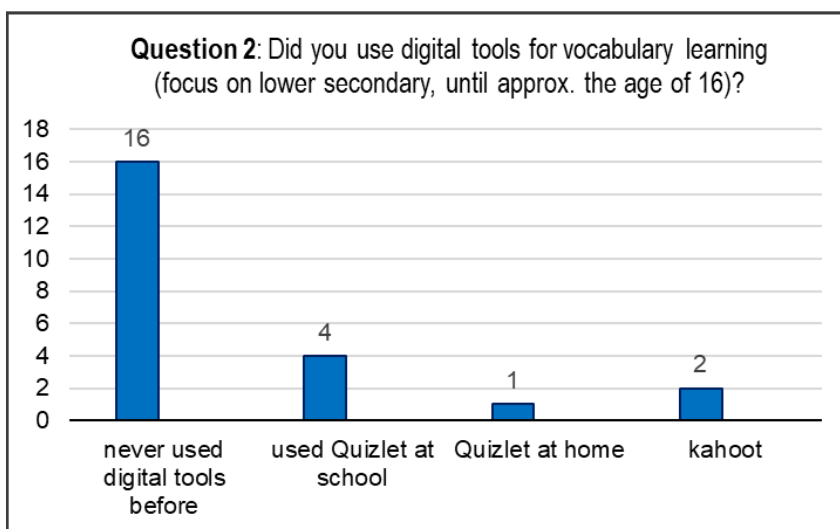


Figure 2
Student teachers' answers to Question 2

After the age of 16, all but two students reported on having used vocabulary tools such as Quizlet, Duolingo, Card2Brain, Anki and Busuu as shown in Figure 3.

In the answers to question 3, the importance of writing the cards by hand was highlighted again. In addition, some students mentioned the disadvantage of working with word cards that contain mistakes:

“I used Quizlet You just have to make sure that the words and phrases are spelled correctly”

“... my classmates used to make one [Quizlet] But I wouldn't recommend that because if the classmates forgot to write a word or wrote a word the wrong way everyone got it wrong”

Those two quotes refer to the same disadvantage of using Quizlet as anybody can upload words. However, it is not only a disadvantage of Quizlet, the same can happen when learners write their own cards as they can misspell a word, too. To write your own cards is time-consuming and it is even more time-consuming for teachers to check that learners have spelt all words correctly. However, the advantages of handwriting (see Sägeser Wyss et al., 2021) seem to outweigh these disadvantages.

Two students mentioned a further negative aspect when using Quizlet:

“I think it can be helpful for some people, for me it's not. On the phone I am not as strict with myself as I am with the physical cards, as it is easier to click than to set the card away”

“It's an easy tool to use.... . But if I am on my mobile I get distracted really easily (push notification) so I would not learn for a long period of time”

Ma (2017) reported the same negative aspect of being easily distracted when studying word cards with a mobile device. Further research is recommended to investigate whether other studies reported similar negative aspects of using mobile devices for vocabulary learning.

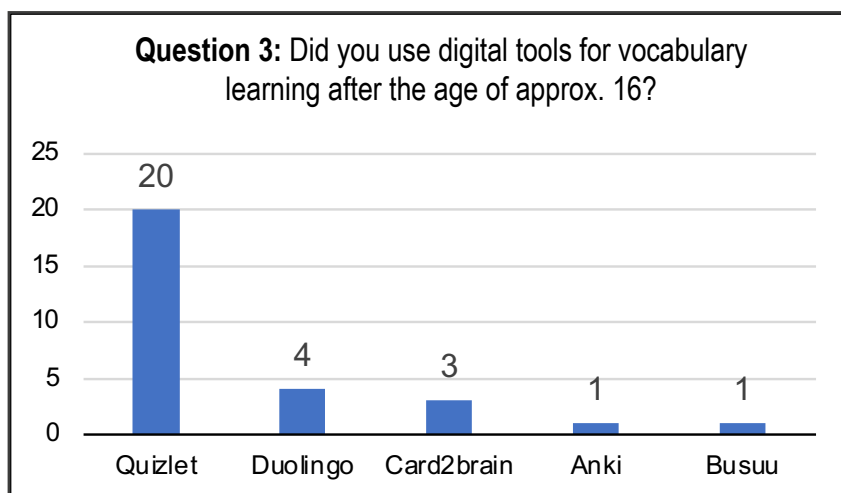


Figure 3
Student teachers' answers to Question 3

The following quote illustrates the use of Quizlet shortly before a test *“I mostly used Quizlet when I started studying too late before the test”*. Nakata (2020) highlighted the importance of spaced learning as massed learning such as starting out late and quickly trying to catch up is not recommended. Massed learning does not necessarily lead to long-term retention and is therefore not sustainable. Readers are referred to Nakata for more details about massed vs spaced learning and the spacing effect.

A research study conducted with 165 first-year business students in Austria (Platzer, 2020) underscored the popularity of Quizlet. Platzer investigated the effectiveness of Quizlet and patterns of its use. An astonishing high number of students only used one of the seven features¹ that Quizlet offers. That feature was *Match*, according to Platzer a “superficially attractive, but ineffective” activity (p. 434) as it is only based on recognition. The cognitively more challenging activities and thus more effective recall-based activities were seldom used.

The answers to questions 5-7 first illustrate that more than half of the students (15 out of 26) do not seem to be aware of other apps to learn vocabulary. Seven students mentioned Duolingo, while three reported having used Card2brain, one student added Busuu and another student mentioned FlipCards.

¹ Quizlet 5 activities available for Mobile App: Learn; Flashcard; Write; Test; Match (2 further activities, Gravity and Spell, require the use of a laptop or PC).

Raise teachers' awareness of some digital tools and their features that might be conducive to help learners recall and retain vocabulary over time.

Digital Tools

Anki

<https://apps.ankiweb.net/>

Busuu

<https://www.busuu.com/de>

Card2brain

<https://card2brain.ch/>

Deepl

<https://www.deepl.com/en/app/>

Duolingo

<https://www.duolingo.com/>

FlipCards

<https://www.flipcards.co.uk/>

Quizlet

<https://quizlet.com>

Regarding the observation of digital tools during a practicum, only half the students reported having observed the use of digital tools. Thirteen students (50%) had never observed learners using a digital tool in class. One student reported having observed a teacher using a special feature of *Quizlet*, the feature *Live*².

To share their opinion on the use of digital tools, students used words such as *great* or a *good* way (8x), *important* and *necessary* (7), *very useful* (3), can be motivating (3). However, three out of four students used a “but” (19 out of 26). The importance of discussing advantages and disadvantages of using digital tools with young learners was also highlighted and how important handwriting is was mentioned again. While three students suggested reconsidering traditional and non-digital VLS such as writing post-its, one student insisted that digital tools should not be used at primary school:

I think in primary school it is not necessary to use digital tools... During their time at primary school children can learn a lot by playing games... later they will only work with their laptops and mobile phones... Young learners are able to learn without digital tools

It would be interesting to find out why that student has such strong beliefs about not using digital tools at primary school. Newton (2020) argued that there is a lack of research on language teacher cognition in relation to vocabulary teaching and learning. Further research with a focus on teachers' beliefs about vocabulary teaching and learning is required.

To sum up the findings of the survey, digital tools have changed the way learners approach vocabulary learning. The results revealed that digital tools have replaced the traditional paper-based word card to

some extent. Whereas only 4 students reported having used digital tools before the age of 16, 24 students (92%) used digital tools once they were more than 16 years old. *Quizlet* was the most popular application participants reported having used for vocabulary learning. Some students discussed disadvantages of apps such as cards that contain mistakes, others reported being easily distracted when they work with an app, and a number of students emphasized how important writing the words by hand was for them, in addition to using an app.

Unfortunately, students rarely experienced or reported having observed the use of digital tools either during a practicum or while teaching their own class. To encourage teachers to embrace technology-mediated vocabulary learning, professional development programs could be offered with the focus on digital tools. The courses could employ Saumell's (2016) seven principles and ensure that tools and features are discussed that go beyond some of the shallow features such as *Quizlet Match* or *Quizlet Flashcard* so that learning with digital cards would become cognitively more challenging. Such courses might raise teachers' awareness of some digital tools and their features that might be conducive to help learners recall and retain vocabulary over time. Teachers also need to keep Nation's four strands in mind and emphasize vocabulary work with stages 3 and 4 with smart vocabulary practice activities that include writing words by hand.

² *Quizlet Live* is a competitive game with two teams playing against each other.

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