How Do They Do It? Vocabulary Learning Strategies Used by Hungarian EFL Learners with Autism Spectrum Disorder: An Interview Study

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Abstract
Recently, there has been a growing interest in the ways people with autism spectrum disorder learn. Previous studies, however, have not dealt with language learning strategies. This paper, based on my MEd thesis, aims to portray the approaches of a group of adults with autism spectrum disorder towards vocabulary learning, as well as the vocabulary learning strategies they implement. Data were collected at the beginning of 2023 after a very detailed review of available literature on the topic. Participants (N=10) took part in sixty-minute-long deep interviews online. According to the results the most participants are not visual learners contrary to some of the literature reviewed. They have varied individual strengths, needs and preferences in their English as a foreign language studies. On the one hand, some respondents have and use very strong mental associations. On the other hand, they might struggle with the social aspects of language learning. Among learning strategies, mostly guessing and context-based ones were mentioned. Half of the participants felt that they would like to improve the way they learn vocabulary items.

Introduction
As the number of Hungarian students with Autism Spectrum Disorder (hereafter ASD) learning in mainstream settings has grown rapidly in the last twenty years, the need for creating a framework of methodology for their highly integrated and hopefully inclusive education is becoming a more and more pressing issue. English as a foreign language (EFL) is one of those areas of education which can not only develop students’ knowledge but can also have a positive effect on their overall well-being. However, very little
is known about how students with ASD approach language learning and what strategies they use to acquire the target language.

My interest in the area of English vocabulary use among autistic people developed while I was working with them in professional and private settings. The misunderstanding of one single word can lead to a lot of misinterpretation and even disagreement, this is one of the most important “truths” of communicating with people on the autism spectrum I have learnt through the years of private tutoring, self-advocacy and friendship. Yet, there are only a few people I am familiar with who are aware of the different layers of vocabulary. This means they only focus on mastering one meaning for one word or are not aware of the importance of learning phrases or chunks.

Little research has been done on the language learning strategies and their teachability among students with autism. One commonly held theory described by Hashim et al. (2022) states that most autistic people are visual learners. It means they associate everything with pictures or things seen. Yet, during my professional and voluntary work I have met at least as many non-visual or not solely visual learners among autistic people as visual ones. This contradiction has inspired me to explore the vocabulary learning strategies of a group of adult Hungarian EFL learners with ASD. The study seeks answer to the following research questions:

Q1: How do the participating adult EFL learners with ASD approach vocabulary learning and using vocabulary learning strategies?
Q2: What aspects of vocabulary items do they learn?
Q3: How much context do they typically learn?
Q4: From what sources do they develop their vocabulary?
Q5: What other aspects of EFL learning of the participants are worth mentioning?

Theoretical and Empirical Background

Research into the vocabulary learning strategies of autistic people can be linked to at least three different fields, that is, psycholinguistics, applied linguistics as well as special education of students with ASD. Thus, the review of the existing secondary literature will be divided into two main parts in order to provide a well-structured account of the works consulted.

The World of Vocabulary Learning Strategies

According to Thékes (2016) vocabulary is the key element that leads to fluency. We have to know so many things just to fully grasp one item of vocabulary, like its form, grammatical role, connection to other words, etc., (Lukács et al., 2014). What is more, Webb and Nation (2017) established that most vocabulary is learnt outside the classroom. Therefore, students are usually alone when they have to tackle the learning
burden of each word (Nation, 2022, 49). Taking all of these into consideration it seems essential to find ways of making the learning process easier and as effective as possible.

Vocabulary learning strategies (henceforth VLS) are deliberate mental processes and physical activities that can make independent word acquisition more effective, therefore students can achieve more success in less time (Webb & Nation, 2017; Oxford & Griffiths, 2016). In addition to this, they have a really important role in making students’ learning autonomous, independent of a teacher’s assistance (Nation, 2022, 316).

Can some strategies be regarded as more important than others? Webb and Nation (2017) claim so as they created a list of “key strategies” (2017). They urge students to find strategies both for encountering and using L2 vocabulary outside the classroom, as these can help them with deepening their knowledge of words they have not completely acquired yet. A good example is doing extensive reading and viewing in L2. Even though some may regard these as only fun activities, one should not overlook their motivational impact as well as the fact that words can be learnt incidentally during these activities (Webb & Nation 2017). These two strategy groups can be linked to guessing from context methods (Webb & Nation 2017). If someone has great difficulty inferring the meaning of some of the most important vocabulary, they may be unable to enjoy watching a program or reading a book. In connection with this, Webb and Nation (2017) maintain that students will need to use dictionaries strategically as it can give clues both to those students who can become lost even if they only meet with one or two unfamiliar words and to those who are able to guess the meaning of words from the context. It is important to cross-check the guessed meaning with a dictionary and the checking also increases the number of exposures to the word, which can ensure deeper learning (Nation, 2022; Oxford and Griffith, 2016, Mizumoto, 2010).

Webb and Nation (2017) mention the use of flashcards as a really good alternative to vocabulary booklets. Flashcards enable so much more options in learning than vocabulary booklets do. They are interchangeable, can be grouped and prioritised. They also enable spaced repetition which motivates students to go back to difficult items several times (Nation, 2022).

The final key strategy introduced by Webb and Nation (2017) is the internal analysis of words. If a student knows the roles of prefixes and suffixes, they may easily learn a whole word family through linking it to one stem (Nation, 2022).

In addition to the above-described key strategies the following strategy groups based on Mizumoto (2010) are also worth mentioning:

- discovery strategies: beside the above-mentioned guessing and dictionary strategies the use of social strategies are important for clarifying the meanings of new words or phrases;
- consolidation strategies: note taking, making lists based on a variety of possible connections between words, creating mind maps (Nation, 2022; Mizumoto, 2010);
activation strategies for using the new vocabulary items both in speech and in writing (Nation, 2022);


In our modern world one cannot disregard the learning opportunities provided by information technology. Three authors (Mizumoto, 2010; Oxford and Griffith, 2016; Nation 2022) comment on the incredible possibilities in e-dictionaries, even though there is very little research done to determine their efficacy. There are so many online and offline tools for creating and using the flashcards Nation (2022) praised so much. A good example is Anki (Anki, 2016), which is free to use and supports spaced repetition. Even though it has a lot of great features, most students may not start to use it unless urged by a teacher. This leads us to the issue of the teachability of vocabulary learning strategies.

Most authors, no matter which strategy, strategy-system or method they promote for self-regulated vocabulary-development, state how important the role of educators is. They also claim that students do not tend to use or struggle to use different strategies unless supported and motivated by a teacher. (Oxford & Griffith, 2016; Nation, 2022; Web & Nation, 2022).

From the studies reviewed here, it is evident that learning and using VLS effectively may require attention, energy and time. The curious question is if autistic students are generally better using VLS or not. In the next section some important aspects of this multifaceted condition will be discussed.

The World of People on The Autism Spectrum

Before talking about the vocabulary learning strategies of autistic people, we need to understand what this condition is and how it can affect language use and acquisition. As Volkmar and Wiesner (2021) state “there is no simple blood or laboratory test that can establish whether a child does or doesn’t have autism”. As a result, a diagnosis is based on behavioural characteristics, which are grouped into the so-called Autistic-dyad. On the one hand, autistic people may have clinically significant challenges with mutual social interactions and communication. On the other hand, they may show restricted, repetitive behaviours and interests (Volkmar et al., 2014 based on American Psychiatric Association, 2013).

The researcher will try to collect aspects that can be valid for the whole autism spectrum, however, many sources are about the language use of high-functioning people, as described by Győri (2014). This group includes autistic people, whose language development is not significantly delayed. They are able to uphold a level of independent living and show no general mental disability. In addition to this, the claims will be about both men and women on the spectrum, since sources such as Happé and Frith (2020) and Hebron and Bond (2019) clearly show that the number of women with ASD may not be so low. Hebron and Bond (2019) further stress that many issues with communication may overlap between boys and girls.
According to Győri (2014), there are limits to language use in every autistic person, may they be “little professors” (Asperger 1991 as quoted in Győri, 2014), who use very formal, structure-based language or those, who cannot speak and have to use augmentative or alternative forms of communication (Mirenda, 2014). These limits fall into one or both aspects of the autistic dyad.

The communication of autistic people tends to be “too much” or “too little”. Győri (2014) gives two examples. Autistic people often use over-the-top intonation which may sound like singing or may not use intonation at all and sound like a speech generator. Other interesting features include but are not limited to
- using and strongly insisting on linguistic routines and set action reaction schemes, having problems continuing speech if the routine is not followed (Győri, 2014);
- using idiosyncratic language: when words and phrases are not used with their normal meaning but rather, they are linked to something else (Győri, 2014). For example, some autistic people may use animal sound words instead of saying hello;
- creating neologisms (Attwood, 2007; Győri, 2014): not using the -ka -ke ending in Hungarian words like macka or kecske, because they feel this is a suffix making the big cat “macka” into a small cat and the big goat “kecske” into a small one;
- immediate or delayed echolalia (Győri, 2014): when phrases, sentences or even full interactions are repeated back after a period of time;
- preference towards using literal meaning and not abstract or strongly context-based ones (Vermeulen, 2012);
- Vermeulen (2022) suggests that the main issue may not be with the understanding of context but predicting the expectations and reactions of the conversation partner;
- autistic people have difficulties with identifying the emotions, internal states and intentions of other people (Győri, 2014; Happé & Frith, 2020).

Having looked at some behavioural and linguistic characteristics of autistic people let us now turn to discussing their situation in learning EFL.

The first question may be how autism affects students’ EFL studies and what they think about their learning processes. As Digard et al. (2020) point out, there is a great variety in learner profiles. Even though Caldwell-Harris (2022) argues that some autistic people can have high aptitude for language learning and may learn more than one foreign language, there are multiple challenges that may prevent autistic learners from reaching their goals in learning EFL or any L2. They are as follows:
- issues with managing conversation, understanding new words in a noisy environment (Caldwell-Harris, 2022 and 2023);
- difficulty forming sentences quickly enough (Caldwell-Harris, 2022 and 2023);
- deficits in making the communication mutual (Volkmar et al., 2014);
- social shyness (Caldwell-Harris, 2022 and 2023) and anxiety (Hebron & Bond, 2019);
- preference of learning alone (Caldwell-Harris, 2022 and 2023) and as a result, possible resistance to participating in pair work or group work tasks (Hashim et al., 2022);
- issues of so-called executive dysfunctions which are related to restrictive and repetitive behaviours (Caldwell-Harris, 2022);
- autistic students might find multitasking challenging. For instance, selecting which words to search for in a dictionary while reading;
- need or desire for one step at a time approach to activities;
- executive dysfunctions can have memory-related effects as well (Caldwell-Harris, 2023);
- preference for logical explanations behind the spelling of a word (Caldwell-Harris, 2022).

Besides the many challenges ASD might cause to students, we must mention the advantages it can bring as well. “Autism wires people for language and maths” as Caldwell-Harris (2022, 8) quotes a post in her research. Their tendency to systemise may help them with learning word parts, creating groups of words and learning multi-word units, all of which are of key importance according to Nation (2022) and Web and Nation (2017). In addition to this, Hashim et al. (2021) state that autistic children’s learning English is faster than learning L1 in certain cases. They link it to specific characteristics of the English language itself.

When talking about autistic people one must not forget to consider their hyperfocus and special interests as huge assets, especially so when English becomes the object of a person’s hyperfocus for a shorter period of time or special interest in the long run (Caldwell-Harris, 2022; Wire, 2005). Autistic people’s fascination with the system of a language and languages themselves can lead them to trying out studying multiple languages. They may not reach proficiency levels, but even these short trials and the joy of using foreign languages with people and about topics intriguing for autistic people can have a positive effect on their well-being.

Finally, it is important to talk about the attitude of the EFL teacher towards autistic students. Some people on the spectrum can be very diligent, as Caldwell-Harris (2022) notes. However, the outcome of EFL learning experiences depends on the instructor as well. If they have higher expectations, they can motivate their students (Yahya et al., 2013). Realistic praise, motivation to participate in activities and positive relationships are also keys to the successful integration of an autistic student (Rezvani, 2017).

Turning now to the secondary literature on what VLS in English or any L2 autistic people may use, we will find that the different strategies hypothesis of Caldwell-Harris (2022 and 2023) and her colleagues (Garrity et al., 2018) can be a really good starting point for possible ideas. They state “different strategies are available for foreign language learning for all humans, but some learning routes may be more beneficial for autistic persons, due to their unique learning styles and capabilities.” (Caldwell-Harris, 2022, 2)

This claim was confirmed by their study, nevertheless, cannot be generalised due to the size and characteristics of the sample (Caldwell-Harris, 2022). As far as the theory goes, there are no more direct or detailed presumptions about actual strategies.
However, the sample quotes of Caldwell-Harris, 2022) might give us more clues:
- learning “dull” lists of vocabulary,
- learning words from songs, but not knowing what their meaning was otherwise,
- picking up cognates
are things mentioned by people with ASD about vocabulary learning.

We should add to the above that people with ASD tend to strategise, they usually find the patterns in certain things where no pattern is visible for neurotypical people. At the same time, as Volkmar and Wiesner (2021) emphasise incidental learning might be totally ununderstandable and useless for some of them.

In summary, we know little about how autistic students learn English and what strategies they use. We may consider factors influencing strategy use based on the topics included in the literature overview. However, VLS in autism has hardly been studied in its full complexity. The interview study described in the next part aims to hopefully call attention on the one hand to the strategies, strengths as well as weaknesses of autistic students and on the other hand to the possibilities in teaching EFL strategies to them.

**Research Design**

The methodological approach taken in this study was qualitative using semi-structured deep interviews, as the goal was to gain a more profound understanding of informants’ views, methods, and strategies in accordance with Maykut and Morehouse (1994, 40).

A very detailed interview guide was created, which included questions, samples of learning strategies. Hungarian was used to avoid any misunderstandings and to enable a less formal-feeling atmosphere to be formed. There were thirty-five main questions with a lot of helping questions. These focused on
- vocabulary learning strategies,
- sources of new vocabulary,
- self-regulation methods and autism-related issues concerning vocabulary learning and English language studies in general.

The study conducted in 2023 used a convenience sample of ten adults with ASD. They were either directly contacted by the researcher or applied by filling in a Google form. For the selection of the sample the following primary inclusion criteria were made:
- All of the informants had to have an official diagnosis of a condition on the autism spectrum.
- They had to have good enough communication skills to participate in an interview without any support or with moderate aid from a support person who could facilitate the communication.
- All participants had to be over the age of eighteen, had to have the right to give informed consent and participate in the study on their own will.

The most important pieces of background information about the informants in the final sample have been compiled in Table 1.
Table 1: Background information on participants (M – male, F – female)

<table>
<thead>
<tr>
<th>Pseudonym and gender</th>
<th>Age</th>
<th>Place</th>
<th>Occupation</th>
<th>Perceived level of EFL knowledge</th>
<th>Currently learning English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erin (F)</td>
<td>25</td>
<td>Budapest</td>
<td>university student; autism awareness raiser</td>
<td>B2</td>
<td>no, but plans to</td>
</tr>
<tr>
<td>Fyra (F)</td>
<td>49</td>
<td>a North-European capital</td>
<td>university tutor</td>
<td>C1</td>
<td>no</td>
</tr>
<tr>
<td>Bayley (M)</td>
<td>44</td>
<td>town, Western Hungary</td>
<td>translator, security technician</td>
<td>C1</td>
<td>no</td>
</tr>
<tr>
<td>Tamás (M)</td>
<td>39</td>
<td>Budapest</td>
<td>IT specialist</td>
<td>B2</td>
<td>no</td>
</tr>
<tr>
<td>Viki (F)</td>
<td>33</td>
<td>town, Western Hungary</td>
<td>IT specialist</td>
<td>B2</td>
<td>yes, with private tutor</td>
</tr>
<tr>
<td>Ren (F)</td>
<td>19</td>
<td>town near Budapest</td>
<td>shop unemployed</td>
<td>B2</td>
<td>no, plans to continue on her own</td>
</tr>
<tr>
<td>László (F)</td>
<td>22</td>
<td>town, Eastern Hungary</td>
<td>student on a gap year before university</td>
<td>B2</td>
<td>yes</td>
</tr>
<tr>
<td>Anett (F)</td>
<td>38</td>
<td>Budapest</td>
<td>IT, AI adviser</td>
<td>B2-C1</td>
<td>no</td>
</tr>
<tr>
<td>Emma (F)</td>
<td>33</td>
<td>Budapest</td>
<td>Purchasing assistant at an IT company</td>
<td>B2</td>
<td>no, but plans to</td>
</tr>
<tr>
<td>GBW (M)</td>
<td>49</td>
<td>Budapest</td>
<td>Self-employed electrical engineer</td>
<td>B2</td>
<td>no</td>
</tr>
</tbody>
</table>

After the completion of the interviews they were transcribed, coded and analysed using an online computer-assisted qualitative data analysis software (CAQDAS).

Results and Discussion

The goal of this study was to give a snapshot of the what and how of the vocabulary learning strategies implemented by these autistic people.

Due to space limitations the findings will be summarised according to the research questions.
Q1: How do the participating adult EFL learners with ASD approach vocabulary learning and using vocabulary learning strategies?

Participants have quite varied approaches to EFL and VLS. These clearly reflect their individual differences. One common feature may be the very limited deliberate VLS use in its narrower meaning. The methods applied by the interviewees are mostly based on comfort and practicality, for example, checking the meaning of a word whenever it appears in a text and as many times as necessary. Some participants also focus on using the new items of vocabulary several times. For example, two respondents try to put new vocabulary items into real-life conversations, while another two create imaginary conversations or sentences to use new words. They apply their own creativity and do not need outside sources or help such as an online task, a coursebook or a teacher's support.

The research has also shown that respondents tend not to organise their knowledge in written format, such as lists, vocabulary booklets, flashcards or mind maps. These are neglected because these methods seem not effective enough. Some interviewees, however, have really complex mental association and organisation systems where a lot more data is stored. Ren called her version a multi-dimensional mental mind map of experiences, words, contexts.

Q2: What aspects of vocabulary items do they learn?

Respondents consider the meaning of a word as the most important aspect to know. In many cases, this is connected to pictures or concepts. We may quote Laszlo’s description of the chair whose general appearance he recalls but mostly connects it to its function i.e., people sit on it. Hungarian counterparts are also often matched to English words. In addition to these, participants pay less attention to pronunciation and appropriateness. Many claim that they can guess the pronunciation of unfamiliar words and do not feel the need to check it in a dictionary.

Q3: How much context do they typically learn?

The findings clearly indicate that most participants collect a lot of contextual information in connection with any item of vocabulary. They focus on the role of the word in a sentence as well as possible phrases with the word. What is more, this seems to be the most strategic element of their vocabulary learning and use, as many of them concentrate on guessing the meaning from context and understanding why that word or phrase is the best in any given situation. Some interviewees also memorise sentences or other contextual clues. These can be whole sentences, or parts of the text. Others also pay attention to the style (formal or a friendly conversation). In some cases, some participants may remember the situation where they met the text, for example a film it was in or where they were travelling when they heard or read a new phrase.
Q4: From what sources do they develop their vocabulary?

Participants have varied sources of authentic English input depending on their special interests (e.g., lamps and electricity, languages) as well as work and private background. The most typical are online texts and videos, but printed text and video materials in connection with special interests or work are relevant, too. The more confident interviewees also watch films and series in English with English subtitles.

Q5: What other aspects of EFL learning of the participants are worth mentioning?

The following points are loosely connected to vocabulary learning, even so they can be interesting for the overall understanding of autistic adults’ attitudes to EFL learning. Firstly, background noise can disturb them, may it be a conversation or learning situation. Another important topic was the role of echolalia, which helps the interviewees with memorising certain words and phrases or even complete parts of texts. Moreover, they can be intrinsically motivated if they find a meaning, a sense in learning English besides work or study reasons. In this study, three participants are motivated to learn because the common language with their (prospective) partners is English. Almost all participants mentioned the motivating role of special interests.

Pedagogical Implications and Conclusion

Even though the findings are about a very small group of adults, they may be of interest to teachers on many levels. They can be sources of ideas and possible considerations when observing an autistic student’s attitudes and challenges.

Although the sample of the study is varied, a common element in all of their EFL studies has been following some unusual tracks and using peculiar methods. Looking outside of the box of practices that work with non-autistic students and considering unwalked paths can help both the teacher’s work and the student's success. A good example can be the choice of topics and adaptation of tasks. Coursebooks used in elementary and secondary schools may contain activities that are way outside an autistic learner’s interest or comfort zone. Such a topic is introducing favourites or famous people. These tasks tend to be about singers, actors and stars. Some autistic students may be interested in such topics. For others, however, giving them permission to talk about a person at whom they can look up, for instance a famous inventor, can be a viable solution. Furthermore, reading about topics that are interesting for the student might provide them some useful input to increase vocabulary. Using contextual information was proven to be a strength of the majority of the participants of this study. This may not be the case for autistic students in general. This can also be strengthened easier if appropriate reading and listening materials are chosen.
Individual differences could be taken advantage of. For example, if a student has an interesting association system for learning words it could be shown to other students. This way classmates can be motivated to include autistic students into group work activities.

This study, in spite of its limitations in sample and methodology, clearly showed how much we can learn from autistic people, if we ask them the right questions and assure them that their answers are valid whatever they share. I am sure that with proper adaptation and care other types of research methods could also be used to better understand their language learning strategies and learning in general. The results could benefit not only autistic people, but their teachers and classmates as well.

Bibliography


