

4 The integration of assistive technologies in the SEN EAP classroom: raising awareness

Theodora Charalambous¹,
Salomi Papadima-Sophocleous²,
and Christina Nicole Giannikas³

Abstract

Students with Special Educational Needs (SEN) in universities are a challenging issue of much concern. University students often need to attend English for Academic Purposes (EAP) classes to complete their studies, as it is necessary for their academic progress. According to Gathercole, Alloway, Willis, and Adams (2006), SEN students show low levels of working memory performance. Also, they are often diagnosed with poor concentration (Westwood, 2007), spelling difficulties (dysorthographia), and often have trouble understanding and applying phonic decoding principles (Westwood, 2007). When these struggling skills are not catered for properly they are often the cause for SEN EAP students falling behind in their studies as their lessons increase in their level of difficulty. Subsequently, it is important for these students, instead of being part of regular EAP classes where they may not receive the required attention, to be taught in a specialised learning environment with tools that will attend to their needs and facilitate the language learning process. Moreover, with the continuous growth of technology and the systematic training of educators in the use of technology, it has been widely acknowledged that technology can assist and benefit

1. Limassol, Cyprus; theodora.94ch@gmail.com; <https://orcid.org/0000-0002-2599-1416>

2. Cyprus University of Technology, Limassol, Cyprus; salomi.papadima@cut.ac.cy; <https://orcid.org/0000-0003-4444-4482>

3. Cyprus University of Technology, Limassol, Cyprus; christina.giannikas@cut.ac.cy; <https://orcid.org/0000-0002-5653-6803>

How to cite: Charalambous, T., Papadima-Sophocleous, S., & Giannikas, C. N. (2021). The integration of assistive technologies in the SEN EAP classroom: raising awareness. In S. Papadima-Sophocleous, E. Kakoulli Constantinou & C. N. Giannikas (Eds), *Tertiary education language learning: a collection of research* (pp. 65-88). Research-publishing.net. <https://doi.org/10.14705/rpnet.2021.51.1255>

EAP practice in various ways. Based on students' needs analysis conducted by the instructor at the beginning of the course, the present study investigates the different Assistive Technologies (ATs) used by an SEN EAP instructor in order to support students' memorisation, concentration, and spelling. Furthermore, it investigates the SEN EAP students' attitudes towards the specialised EAP process. The aim of the present chapter is to raise awareness in the type of support given to university SEN EAP students with the use of ATs in SEN EAP contexts.

Keywords: SEN, CALL, EAP, language education, higher education, qualitative research, classroom-based research.

1. Introduction

SEN in higher education is a challenging issue that needs utmost attention. As SEN students move on to tertiary education they are often expected to take EAP and English for Specific Academic Purposes (ESAP) classes, where they often struggle with low levels of working memory performance (Gathercole et al., 2006), poor concentration (Westwood, 2007), dysorthographia, and often have severe difficulties with understanding and applying phonic decoding principles (Westwood, 2007). When these issues are not appropriately addressed, they are often the cause for SEN students losing all motivation and progress less in their English language development than they would have if their strengths and weaknesses were properly channelled. The present chapter sheds light on useful and meaningful practices in the area of SEN EAP with the use of ATs in higher education. This is done by sharing the students' and the instructor's experiences in the hope that it would fill some of the gap in the area of raising awareness of stakeholders, such as instructors, and policy makers. Cyprus University of Technology (CUT), where the research was conducted, is an example, among other universities, which has designed a personalised support programme with ATs, which are any devices, equipment, or product systems that increase,

maintain, and/or improve the functional capabilities of SEN students (CUT Language Centre Language Policy, n.d.). The study was guided by two research questions, which derived from the purpose of the study.

- Which ATs are used by SEN EAP teachers in SEN EAP classes and how do the specific ATs improve SEN EAP students' memorisation, concentration, and spelling skills, and raise awareness in the area?
- Which are the students' attitudes towards these SEN EAP technology-supported classes, which raise awareness in the area from the students' perspective?

2. Literature review

2.1. Supporting SEN EAP/ESAP students

The last recommendation of the [European Commission \(2018\)](#) highlights quality education and learning to ensure opportunities to all students. Including SEN students in higher education, and assisting them throughout their academic journey, is something that has been promoted by many European universities. Among these universities is the University of Cyprus ([UCY Legislation, n.d.](#)) which supports students with learning difficulties and hearing or visual impairments. The aforementioned university includes audiovisual content in the lectures and uses supportive technology which assists these students to perform at their full capacity. Another example is the Masaryk University in the Czech Republic ([Claeys-Kulik, Jørgensen, & Stöber, 2019](#)) which has developed inclusive educational methods by implementing technological measures to make education, documents, and communication accessible to students with special needs. According to [Broom \(2017\)](#), the European Parliament Policy Department of Citizens' Rights and Constitutional Affairs mentioned that inclusive education has to recognise, accept, and respond to learners' diversity and prepare them to engage in society. As it was mentioned above, EAP courses are offered by universities in order to initiate students into the expectations of the academic

world. In their study, [Asaoka and Usui \(2003\)](#) mention that this initiation cannot be achieved if practitioners are not aware of their students' learning needs. Language educators need to be aware of their students' previous knowledge, their experiences, and, most importantly, any possible difficulties they may face. For the purpose of the present research, the review was narrowed down to those often related to specific skills. For example, SEN students may struggle with their working memory, which is responsible for enabling the mind to store information in order to comprehend reading or planning a series of thoughts ([Holmes & Gathercole, 2012](#)). SEN students may suffer from Attention Deficit Hyperactivity Disorder (ADHD) or Attention Deficit Disorder (ADD); both are very common and can often lead SEN students to frustration and the inability to concentrate ([Barrett, 2013](#)). Spelling has also proven to be challenging and can interfere with the execution of other composing processes and writing development ([Graham, 1999](#)). In addition to this, English is considered to be an opaque language when it comes to orthography ([Reason, 2004](#)). Thus, the automaticity and fluency in the English language that EAP students should have, remains problematic to SEN students.

2.2. Supporting SEN EAP/ESAP students with the use of ATs

ATs have been evident in the field of education since 1988 when The Individuals with Disabilities Education Act (IDEA) was implemented in the USA. Thanks to IDEA, technological advances increased the potential of the integration of students with learning differences into general and inclusive education ([Fein, 1996](#)). According to [Hasselbring and Glaser \(2000\)](#), computer technology can highly assist and motivate students with both mild and severe difficulties to become active learners. Also as [Perna, Varriale, and Ferrara \(2020\)](#) argue that ATs can support and assist SEN students' full participation during their learning process, as they help students overcome the barriers created by traditional educational methods ([Giannikas, 2020](#)). The rapid growth of the usage of ATs has also offered a lot in teaching ([Edyburn, 2004](#)). Technology is highly utilised in the contemporary English as a Second Language (ESL) teaching processes. It is considered to be the most innovative endeavour, as it is proved that it motivates students, and improves the teaching methods and students' results

(Azmat, 2016). Young adult SEN ESL learners are immensely benefitted by the introduction of technology in their learning path as well, as they are considered to be ‘digital natives’ (Kosunen, 2016, p. 1). Different software and applications, aiming at enhancing SEN students’ learning process, exist as researchers attempt to involve different aspects of technology to support SEN students' education (Loizides, Kartapanis, Sella, & Papadima-Sophocleous, 2015).

2.3. Previous research in higher education SEN EAP

The review in this area revealed that there is little research on higher education SEN EAP students’ difficulties. In their paper, for example, Young, Schaefer, and Lesley (2019) argue that Japanese SEN students enrolled in higher education EAP classes were taught by instructors specifically trained for this framework, making their education more effective. However, ATs were not mentioned in the specific study. Another recent research related to the specific topic, carried out by Blázquez Arribas, Barros del Rio, Peñalver, and Sigona (2020), sheds light on the learning difficulties among adults who are learning English in higher education. The specific research suggests and highlights the use of technology in the classroom as it can contribute to the inclusion of students with difficulties and improve their learning process. More specifically, the study discusses the outcomes of the European project EN-ABILITIES (Enabling Inclusive Education through Technology). A large amount of research exists on SEN students in higher education. However, the difficulties that SEN students face in EAP classes that are offered in universities, and how ATs can be used to support these students, is a topic that needs to be further explored in order to raise awareness and improve SEN/EAP learning and teaching practices.

2.4. Awareness

Awareness is the “knowledge that something exists, or understanding of a situation or subject at the present time based on information or experience”⁴.

4. <https://dictionary.cambridge.org/dictionary/english/awareness>

According to [Sayers \(2006\)](#), awareness-raising, however, is a tool which stimulates discussions and innovations in the design of the process. To raise awareness is to inform and educate the wider public about a topic or issue with the intention of influencing attitudes, behaviours, and beliefs towards the achievement of a defined purpose or goal ([Sayers, 2006](#)). The present study concentrates on a SEN/EAP tertiary education programme. The aim is to raise awareness, in other words knowledge and understanding, of the integration of ATs in the SEN EAP classroom of stakeholders, such as ESL instructors and policy makers, by sharing data and the experiences of the participants' use of ATs in the SEN EAP programme.

3. Methodology

3.1. Participants

The research was carried out at the CUT Language Centre during the 2017, autumn semester. The participants were two classes of first year SEN EAP students, taught by the same specialised SEN EAP educator. Class A had three students and Class B four students. Students' average age was 19. For anonymity purposes, students were referred to as A1, A2, A3, B1, B2, B3, and B4. The students' profile was provided by the SEN EAP educator, who is an experienced English instructor specialised in SEN education. The two observed classes consisted of mixed abilities students who faced ADD, ADHD, mild and severe dyslexia, and dysorthographia. More specifically, students A1, A2, and A3 were facing severe dyslexia and generally, as the SEN EAP educator mentioned, they were weak students, who were also struggling with technology. Students B1, B3, and B4 were facing mild dyslexia combined with ADHD. Lastly, student B2 had dysorthographia combined with ADD. The participants were Cypriots and Greek native speakers.

The instructor was also considered a participant of the study and was observed and interviewed as well, thus enriching the research data. The specific course observed, aiming to provide meaningful EAP lessons to these students, as EAP

is a mandatory module at CUT. According to the specific university, the EAP course prepares and equips students with the language skills that are needed to successfully carry out their studies and research. Additionally, it prepares them for their future academic and professional careers ([CUT Language Centre Language Policy, n.d.](#)).

3.2. Research approach

The research studied the nature of SEN EAP classrooms and the use of ATs. Classroom observations were conducted to facilitate the process of the naturalistic inquiry known as the research method that best serves the social and the behavioural sciences ([Guba & Lincoln, 1982](#)). According to [Lincoln \(2007\)](#), the naturalistic inquiry is an interpretive and non-experimental research which creates a meaningful reality when dealing with human research. This was used as the basis of this research. Qualitative research builds a complex out of words, and reports detailed views in a natural setting ([Sogunro, 2002](#)). Thus, the qualitative research methodologies were used to collect the necessary in-class data.

3.3. Data collection tools

Three different tools were used for data collection: observation, reflective journal, and interviews. A detailed description of the function of these tools follows in the next sections.

3.3.1. Observation

An observation protocol was completed by Researcher 1 during the observations. Nine scheduled observations were carried out in total: five with the first group and four with the second. The observation protocol was used in order to record the ATs that were being used during the lessons. Moreover, the protocol was used to record the skills that were being benefitted by each of the ATs used. Finally, the students' attitudes and difficulties, the teacher's challenges, and the objectives of the lesson were also recorded.

3.3.2. *Reflective journal*

A reflective journal, which recognises the multiple realities existing around the topic, was completed by Researcher 1 at the end of each observation. It is a record of the researcher's experiences, thoughts, and feelings after observing each lesson. Keeping a journal led Researcher 1 to a better understanding (Rogers et al., 2018) of the SEN EAP teaching and learning of the specific case and the use of ATs.

3.3.3. *Interviews*

Finally, in order to strengthen the qualitative nature of the research and to ensure the validity and the reliability of the journal, the data were triangulated with the use of a third data collection tool, the interviews. This included a semi-structured interview for the instructor, and structured interviews for the students. The interviews were carried out when the nine observations were completed. All of the interviews were held after the final observation. They were conducted with each participant individually. They were recorded and later transcribed verbatim. All participants were interviewed individually in order to ensure the quality and the confidentiality of the interviews. The students' structured interview included six open-ended and leading types of questions. The students were asked about their level in English. They were also asked to identify and share their weaknesses considering English language learning. They were also asked if they find the SEN EAP course a useful course for their academic studies. The final question was whether they find technologically assisted English lessons better than the mainstream English languages lessons where traditional methods are used.

3.4. **Data analysis**

Due to the qualitative nature of the research and the small number of participants, it was decided not to use any qualitative data analysis software for the data analysis. Also, it was possible that a qualitative data analysis software would dehumanise the data, distance the researcher, and, therefore, the complexity and the richness of it could be lost (John & Johnson, 2000). In order to maintain

a close relationship between the researchers and the data, the data analysis was carried out manually. According to Webb (1999), the manual approach is recommended for small-scale studies in order to gain insight into the intuitive aspects of the analysis.

The next step was to choose the methods with which the data for each question would be analysed.

The method chosen for the analysis of Question 1 was the *narrative analysis*. More specifically, the data were analysed by combining two different approaches to conduct a narrative analysis:

- the *thematic analysis*, which focuses on ‘what’ is said according to the content of the text (Riessman & Quinney, 2005); and
- the *structural analysis*, which focuses on ‘how’ things happened by creating a brief, topically-centred narrative based on an abstract summary of the story, that focuses on the place, the characters, and the situation (Riessman & Quinney, 2005).

According to Patton and Cochran (2002), thematic analysis is the method that identifies the common issues that recur across the data. Another data analysis method is structural analysis, which has an intention to extrapolate and understand better specific personal experiences (Bamberg, 2012). In the present research, both of the methods were used. The first one was used in order to identify the different ATs used and the skills that each one of them benefitted. The latter was used to present the way that the specific ATs benefitted the identified skill, according to the observations and the reflective journal. The combination of these two methods of data analysis and the accumulation of the data aimed to raise the awareness of SEN, SEN ESL, and SEN EAP educators who need to use more ATs in their teaching methods.

Narrative analysis was also chosen for Question 2. The students’ attitudes expressed during their interviews were summarised in order to reach the point

of their story (Riessman & Quinney, 2005). For Question 2, narrative analysis was conducted through structural analysis which, as already mentioned, creates an abstract of the story.

4. Discussion of the findings

4.1. Discussion of the data for Question 1

In order to raise awareness of the integration of ATs in an SEN EAP classroom, the following data were recorded: the ATs used by the SEN EAP teacher in the SEN EAP class; the way they were used to improve SEN EAP students' memorisation, concentration, and spelling skills. Thematic Analysis was chosen to identify the different ATs used and the skill that each one of them benefitted. By accumulating the information derived from the data and focusing on 'what' was said according to the content, an abstract was first created where a lot of ATs were noted down as frequently used in the SEN EAP classes observed. The ATs that were used to benefit the students were the ones presented below, starting from the most frequently used:

- projector;
- Google Drive (cloud storage) <https://www.google.com/drive/>;
- mobile phones;
- computers/laptops;
- PowerPoint/Google Slides <https://office.live.com/start/powerpoint.aspx>,
<https://www.google.com/slides/about/>;
- Kahoot (online game-based learning platform) <https://kahoot.com/>;
- Quizlet (online study application) <https://quizlet.com/>;
- Youtube videos <https://www.youtube.com/>;
- headphones;
- Google search <https://www.google.com/>;
- e-library (CUT) <https://library.cut.ac.cy/>;
- Glogster (online interactive learning tool) <http://edu.glogster.com/>;
- Smartdraw (online diagramming tool) <https://www.smartdraw.com/>;

- QR codes & QR Code Reader application.

Through the observations and semi-structured interview with the SEN EAP instructor, the three struggling skills (spelling, memorisation, and concentration) that improved due to ATs were observed and discussed. The findings are presented in [Table 1](#).

Table 1. Skills benefitted by the devices and ATs used

	Spelling	Memorisation	Concentration
Projector		✓	✓
Google Drive		✓	
Mobile Phones			✓
Computers/Laptops			✓
PowerPoint/Google Slides	✓	✓	
Kahoot		✓	✓
Quizlet	✓	✓	✓
Youtube Videos		✓	✓
Headphones			
Google search		✓	✓
E-library (CUT)		✓	✓
Glogster		✓	✓
Smartdraw		✓	✓
QR Codes & QR Code Reader Application		✓	

The way the specific ATs benefitted the identified skill was analysed through the structural analysis process, as described earlier. The observations and the reflective journal were used to document what was happening during the lesson and how the students were assisted by the ATs used. More specifically, the lessons were observed and later the interpretation of whether the ATs used benefitted and kept the students concentrated was transferred to the reflective journal. Moreover, the researcher observed whether the students were productive and whether their memorisation and spelling skills were benefitted in any way by the presence of the ATs. Finally, the researcher observed whether there were any positive or negative comments by the students about the ATs used. The intention

was to better understand the participants' experiences of the integration of ATs in the SEN EAP class.

What the instructor said about the benefits of the projector in SEN EAP classes was:

“I believe that using technology and audiovisual technology can be beneficial to any kind of students but mainly with these students who face difficulties with memory and concentration”.

It was noted that the **projector** was the most frequently used tool during the lessons, as it was used during all of the observations. More specifically, according to the data collected, students' concentration was reinforced by the use of the projector as it helped them to follow the flow of the class. In this way, memorisation, which is closely linked to concentration, was benefitted at the same time.

All the students of SEN EAP classes had full access, in **Google Drive**, to the shared material, presentations, and notes prepared by the teacher during the whole semester. In this way, students could easily access all material from any device anytime, and were able to study and revise autonomously in order to memorise and refresh the material they were taught. As the instructor also mentioned, Google Drive is highly used in order to help students remember concepts and ideas.

According to the checklist and the observations, **mobile phones** and **laptops** were technologies used in class that were benefiting SEN EAP students' concentration. According to the instructor:

“They actually use their own devices, their mobile phones, which they are familiar with, and they believe that they own the activity, that they feel this ownership, independence and autonomy”.

The permission to use their own devices as a tool for learning and revising made the process more personal for them, making them feel more comfortable and

motivated. Thus, one could argue that their concentration was empowered, as their interest about the task and the material increased.

PowerPoint/Google Slides allowed students to create hands-on presentations; the skills which were observed to be practised when students were asked to carry out a presentation were spelling and memorisation. In the observation protocols and the journal, it was noted that some presentations carried out by the students did not have any spelling mistakes and the students memorised the content of their project before introducing it. Spelling was benefitted as the composition of a presentation required practising writing by students, and they had to recall from memory how to write down the words and terms that they had learnt. Also, autocorrection, which is provided by PowerPoint/Google Slides, reminded them how some of the words are written correctly. Furthermore, students' skill of memorisation was assisted as the hands-on tasks they were requested to carry out with the use of PowerPoint/Google Slides required from them to recall all the memorised input they gained during SEN EAP classes.

Kahoot was highly popular among the students observed. According to the instructor, it is an extremely successful application which has the nature of a game and it also includes competition among them, which is another motivation. It was also mentioned that the music and the visuals it includes and the fact that they need to use their own device are factors that lead to concentration. Another thing that was mentioned and observed about Kahoot was that it helped them practise at their own pace, and be self-corrected, and practise again and again as many times they want in order to achieve their goal, which is learning their vocabulary; memorisation was also empowered.

Quizlet was observed to be highly used for revising and practising purposes during the lessons. As the instructor supported Quizlet, apart from helping them to memorise and remember new vocabulary in the target language, it actually helped them to stay concentrated for a long time on the new language. It was also mentioned that the application corrects misspelled words which they can listen to letter by letter and see the correct form of the word. In this way, they can be self-corrected and self-taught.

By using **YouTube videos** during the lessons, the skill of memorisation and concentration was assisted as this tool was often used to introduce new vocabulary. According to the instructor, videos are combining audiovisual material that helps students save material because they have linked it with audio and visual information. Also, it was mentioned by the instructor, that videos enable them to actually remember what they have learnt before, allowing students can recall specific information. So, by combining audiovisual material this helped students remember it easier. Moreover, YouTube was also used as a revising tool, as videos often provided students with information and they had to connect that with what they had learnt before.

Headphones enhanced students' concentration as they kept students focused on their listening tasks without being distracted by the rest of the group. The personal headphones that students used were linked to their personal computers giving them the opportunity to pause and replay the audio as many times as it was needed. The autonomy that headphones provided to students increased their levels of *concentration*. All students were trying their best. This was recorded in the observation notes.

It was also observed in one of the lessons that students were encouraged to use and explore **Google search** for various tasks, such as research and translation. This activity required students' concentration, and the permission to use Google search autonomously from their smartphones or the computers in order to carry out searches and find information for different kinds of activities, motivated them to stay focused. Memorisation was benefitted as well when they had to use Google search autonomously to find and access different electronic sources, as they had to recall from memory different kinds of terms they had learnt in L2 in order to use them and recognise them.

As higher education students, the students had to familiarise themselves with the use of the **CUT e-library**. It was observed that this technology triggered their skills of concentration and memorisation as the gap filling with the keywords needed to be done carefully, and students had to scan through the content thoroughly to find what would be useful for them.

Glogster was another software with interactive features that was included in the teaching and learning process. It was used by the instructor to enhance students in their concentration and memorisation. The instructor mentioned that it is a tool that combines words with visuals, and it can gather all the information on a subject in one interactive picture, increasing students' concentration, and subsequently triggering their memorisation skill.

Smartdraw, which was recorded in the observation notes, was used by the teacher in class in order to empower students' concentration and memorisation. This online diagramming tool combines words with visuals, like Glogster, and the material becomes more informative and eye-catching to students. In this way, as it was observed when the specific tool was used in class, students were able to concentrate and memorise better what they were taught as their interest was triggered.

Finally, **QR codes & the QR Code Reader application** triggered the SEN EAP students' skill of memorisation. This tool was observed to be used by the SEN EAP teacher in order to introduce or revise new vocabulary. The instructor supported that students found this AT quite interesting and different. This playful way, as both the students and the instructor referred to, of interacting with the new language was contributing to their better memorisation of the new input.

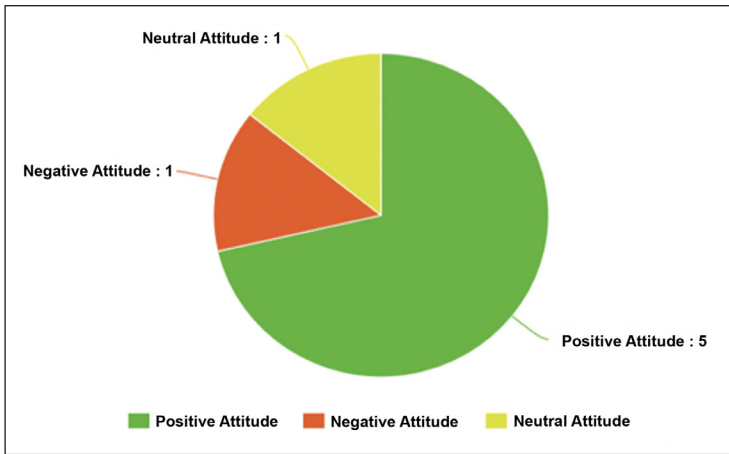
The data analysis revealed that there were a lot of ATs integrated in the SEN EAP programme that helped in improving spelling, memorisation, and concentration. It also revealed the way the specific ATs improved the identified skills. The sharing of this practice and the results of this research may prove useful in raising awareness of the potential of technology integration in SEN EAP programmes.

4.2. Discussion of the data for Question 2

Another aspect that was researched in order to raise awareness of the usefulness of the integration of ATs in SEN EAP programmes was the study of the students' attitudes of these SEN EAP technology-supported classes. The pie chart in **Figure 1** presents the general attitudes of the seven students towards the SEN EAP ATs supported classes. The answers derived from the data collected from

the semi-structured interview, the observations, and the reflective journal. They were analysed with the use of narrative and structural analysis. Their attitudes were divided into negative, positive, and neutral. According to the data, the SEAN EAP students who participated in the research were separated into two SEN EAP classes: one with three students and one with four, the three-student group was referred to as Group A and the four-student group as Group B.

Figure 1. Students' attitude towards SEN EAP classes (N=4)



As presented in [Figure 1](#), the majority of the students (five students out of seven) had a positive attitude towards the SEN EAP technology enhanced classes.

- Positive attitude

As mentioned before, students were asked some questions and their answers were summarised in order to interpret their attitudes. Some of the questions and the summaries of their answers are presented below.

“Do you consider the English Lesson offered by your university to students with learning difficulties, a useful lesson? If yes, why? If not, why?”

For the question above, five out of seven students (A1, A2, A3, B3, and B4), who had a positive attitude towards SEN EAP classes, characterised the lessons as **useful** and **alternative**, especially designed for the kind of students who were used to inclusive classes, where their difficulties were neglected or not **sufficiently** supported. It was also mentioned by student B3 that the SEN EAP instructor was able to focus more on each student as the size of the class was small. Student A2 stated that the extra support given by the instructor and the small size of the class gave students the **confidence** that the lessons were not going to be as hard as they would be in a regular EAP class.

“Do you find technologically assisted English language learning more helpful than the traditional methods of learning that your teachers have been using in the past? If yes, how did the current method help you?”

For this question, five out of seven SEN EAP students (A1, A2, A3, B3, and B4), who had a positive attitude, stated that technologically assisted English language learning is an **alternative** and more **helpful** method to the traditional use of coursebooks. According to the participants, this method helped them **overcome** the difficulties they face with learning. Students supported that the **new approaches** used, like the internet and games, assisted them in ways that traditional methods could not. As they mentioned, the specific SEN EAP classes have helped them **overcome** some struggling skills and contributed to effective English language learning.

In order to investigate why the majority of the students had a positive attitude, data from the Reflective Journal was summarised as well. According to the Reflective Journal data, the majority of the students were **more engaged** when they were asked to use their own mobile phones and compete with each other on the online assessing game, ‘Kahoot’. Using their own mobile phones gave them **confidence** because it was a familiar device to them. The data showed that students felt that the classroom was a **safe environment**, which allowed them to feel more **comfortable** and **motivated**. As a result, they **concentrated more** and at the end of the lessons they were documented feeling satisfied. Also, the

use of interesting YouTube videos with nice pictures and music kept them more **concentrated** and they were **encouraged** to work.

- Negative attitude

There was only one participant who had a negative attitude towards AT, according to the following responses.

“Do you consider the English Lesson offered by your university to students with learning difficulties a useful lesson? If yes, why? If not, why?”

In contrast to the majority of students who had a positive attitude towards the SEN EAP classes, the student who had a negative attitude characterised these classes as **discomforting** and **unhelpful**.

“Do you find the technologically assisted English language learning more helpful than the traditional methods of learning that your teachers have been using in the past? If yes, how did the current method help you?”

Student B2 stated that the lessons were not useful and that they **did not help** in any way. The methodology, the technology, and the games used in this class were characterised as **discomforting**.

Some negative feelings during the observations were also noted in the Reflective Journal. For example, when the students were asked to present a PowerPoint that they had created, there was a feeling that some of them felt **out of their comfort zone** and anxious, as they were making comments continuously about the **difficulties** they were facing both with the ATs and the language. Also, regarding Kahoot, there were two negative comments by student B2 who stated that the activities were **childish** and **unnecessary**.

- Neutral attitude

“Do you consider the English Lesson offered by your university to students with learning difficulties a useful lesson? If yes, why? If not, why?”

Student B1 stated that they **benefitted** SEN students. However, Student B1 believed that the SEN EAP classes should be **optional**, as this kind of **exemption** may be **uncomfortable** and some students may have the fear of being **stigmatised** by the rest of the students who follow an EAP and not a SEN EAP class.

“Do you find the technologically assisted English language learning more helpful than the traditional methods of learning that your teachers have been using in the past? If yes, how did the current method help you?”

According to the data, both methods can be **useful**. However, Student B1 stated:

“I would say that, even though we are using a lot of technologies, the lesson remains a lesson. It is much more interactive and intense, but sometimes I find it foolish and there are a lot of technical problems”.

According to the information gathered through the second question, the majority of students had a positive attitude towards SEN EAP classes and the methods used. This information can be used to raise awareness about how these differentiated courses and methods are perceived by SEN EAP students.

4.3. Limitations

The present research is not without limitations. It is important to mention that this is a small-scale study and the sample size of the students and the instructor observed was very small. The observation of more SEN EAP technology-supported classes can provide more, or even different, results. Furthermore, the integration of more ATs that can boost SEN EAP students' memorisation, concentration, and spelling skills even more is worth exploring. A larger sample size of students would reveal more attitudes that students may have towards

SEN EAP classes supported by ATs. A larger sample of students and SEN EAP educators could provide more information which will help raise awareness on the specific issue.

5. Conclusion

In conclusion, the present study has several positive outcomes. Firstly, a satisfying amount of devices and ATs proved to benefit the most common struggling skills of SEN EAP students in various ways. The data showed that almost all devices and ATs used assisted students with more than one of their struggling skills. The audiovisual nature of the ATs triggered the struggling skills of these students in order to support their performance to their full capacity. The devices and ATs mentioned in this study can be productively used by SEN EAP educators and generally all educators of SEN students in order to assist their students who are facing difficulties with spelling, memorisation, and concentration, as well as through research. Awareness is also raised on how important it is to include technology in language education that takes place in the tertiary sector.

Moreover, the present study gives a voice to SEN EAP students. This occurred through the interviews, where they expressed their opinion about the differentiated SEN EAP courses that were designed for them, including various devices and ATs to support them. The majority of SEN EAP students felt they benefitted from the specific classes as they found them useful, more sufficient to their needs, and they felt that they could succeed in overcoming their difficulties. However, there were a few arguments against SEN EAP, describing them as unnecessary or as classes that carry out the same outcomes with inclusive SEN EAP courses. These arguments focused on the classes themselves, though, and not the technology included.

Technological devices and ATs can be vital when teaching SEN students and integrating them in lessons. The teaching process can be channelled to students much more productively and effectively. For this reason, devices and ATs should

be an integral component of SEN EAP courses, as EAP is highly important to be taught effectively to all higher education students since they need EAP to cope with their academic obligations.

Finally, SEN EAP classes may not be a first choice for students, however the data showed that with the right tools, SEN EAP classes enhanced students' learning and they should be included in the curriculum of higher education institutions. Through this study, it is expected that awareness will be raised about the importance of such classes, in order to motivate even the most reluctant SEN EAP students to participate and be benefitted by these specially designed courses and the ATs used. The present chapter sheds light on an under-researched area and current practices in SEN EAP with the use of ATs in higher education. This was done by sharing the students' and the instructor's experiences in the hope that it would fill some of the gap in the area of raising awareness of stakeholders, such as instructors and policy makers.

6. Acknowledgements

We would like to thank the CUT Language Centre SEN EAP students and their instructor for making this study possible.

References

- Asaoka, C., & Usui, Y. (2003). Students' perceived problems in an EAP writing course. *JALT Journal*, 25(2), 143-172. <https://doi.org/10.37546/jaltjj25.2-2>
- Azmat, Z. (2016). Using multimedia technology in ESL classroom: a case study of undergraduate students of English language at Aligarh Muslim University, Aligarh. *RJELAL Journal*, 4(2), 816-822.
- Bamberg, M. (2012). Narrative analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds), *APA handbook of research methods in psychology (vol 2). Research designs: quantitative, qualitative, neuropsychological, and biological* (pp. 85-102). American Psychological Association. <https://doi.org/10.1037/13620-006>

- Barrett, B. (2013). Enabling students with disabilities with computing interaction and empowerment through enhanced strategic instructional course design. *Electronic Journal of Information Systems Evaluation*, 16(3), 164-173.
- Blázquez Arribas, L., Barros del Río, M. A., Alcalde Peñalver, E., & Sigona, C. M. (2020). Teaching English to adults with disabilities: a digital solution through EN-ABILITIES. *Teaching English with Technology*, 20(1), 80-103.
- Broom, D. M. (2017). *Policy department C citizens' rights and constitutional affairs*. Directorate General for Internal Policies, European Parliament.
- Claeys-Kulik, A. L., Jørgensen, T. E., & Stöber, H. (2019). *Diversity, equity and inclusion in European higher education institutions: results from the INVITED project*. European University Association.
- CUT Language Centre Language Policy (n.d.). <https://www.cut.ac.cy/faculties/languagecentre/the-department/language-policy/?languageId=1>
- Edyburn, D. L. (2004). Rethinking assistive technology. *Special Education Technology Practice*, 5(4), 16-23.
- European Commission. (2018). *Proposal for a council recommendation on promoting common values, inclusive education, and the European dimension of teaching*. <https://ec.europa.eu/transparency/regdoc/rep/1/2018/EN/COM-2018-23-F1-EN-MAIN-PART-1.PDF>
- Fein, J. (1996). A history of legislative support for assistive technology. *Journal of Special Education Technology*, 13(1), 1-3.
- Gathercole, S. E., Alloway, T. P., Willis, C., & Adams, A. M. (2006). Working memory in children with reading disabilities. *Journal of experimental child psychology*, 93(3), 265-281. <https://doi.org/10.1016/j.jecp.2005.08.003>
- Giannikas, C. N. (2020). Technology and dyslexia: the path to effective language learning. *The Teacher Trainer Journal*, 34(3).
- Graham, S. (1999). The role of text production skills in writing development: a special issue-I. *Learning Disability Quarterly*, 22(2), 75-77. <https://doi.org/10.2307/1511267>
- Guba, E. G., & Lincoln, Y. S. (1982). Epistemological and methodological bases of naturalistic inquiry. *ECTJ*, 30(4), 233-252.
- Hasselbring, T. S., & Glaser, C. H. W. (2000). Use of computer technology to help students with special needs. *The Future of Children*, 10(2), 102-122. <https://doi.org/10.2307/1602691>
- Holmes, J., & Gathercole, S. E. (2012). Taking working memory training from the laboratory into schools. *Educational Psychology*, 34(4), 440-450. <https://doi.org/10.1080/01443410.2013.797338>

- John, W. S., & Johnson, P. (2000). The pros and cons of data analysis software for qualitative research. *Journal of nursing scholarship*, 32(4), 393-397. <https://doi.org/10.1111/j.1547-5069.2000.00393.x>
- Kosunen, K. (2016). *Adult language learning: using mini games to teach vocabulary in the ESL classroom*. <http://urn.kb.se/resolve?urn=urn:nbn:se:his:diva-13103>
- Lincoln, Y. S. (2007). *Naturalistic inquiry*. The Blackwell encyclopedia of sociology.
- Loizides, F., Kartapanis, I., Sella, F., & Papadima-Sophocleous, S. (2015). Mi. LA: multilingual and multifaceted mobile interactive applications for children with autism. In F. Helm, L. Bradley, M. Guarda & S. Thouësny (Eds), *Critical CALL – Proceedings of the 2015 EUROCALL Conference, Padova, Italy* (pp. 368-374). Research-publishing.net. <https://doi.org/10.14705/rpnet.2015.000360>
- Patton, M. Q., & Cochran, M. (2002). *A guide to using qualitative research methodology*. Médecins Sans Frontières. https://evaluation.msf.org/sites/evaluation/files/a_guide_to_using_qualitative_research_methodology.pdf
- Perna, G., Varriale, L., & Ferrara, M. (2020). Assistive technology for the social inclusion at school: a portrait of Italy. In Y. Baghdadi, A. Harfouche & M. Musso (Eds), *ICT for an inclusive world* (pp. 161-176). Springer. https://doi.org/10.1007/978-3-030-34269-2_13
- Reason, R. (2004). Dyslexia in different languages: cross-linguistic comparisons. *British Journal of Educational Psychology*, 74, 486-487.
- Riessman, C. K., & Quinney, L. (2005). Narrative in social work: a critical review. *Qualitative Social Work*, 4(4), 391-412. <https://doi.org/10.1177/1473325005058643>
- Rogers, G. D., Mey, A., Chan, P. C., Lombard, M., & Miller, F. (2018). Development and validation of the Griffith University affective learning scale (GUALS): a tool for assessing affective learning in health professional students' reflective journals. *MedEdPublish*, 7(1). <https://doi.org/10.15694/mep.2018.000002.1>
- Sayers, R. (2006). *Awareness-raising awareness-raising principles for information literacy, a case study*. Communication and Information (CI) UNESCO Asia and Pacific Regional Bureau for Education.
- Sogunro, O. A. (2002). Selecting a quantitative or qualitative research methodology: an experience. *Educational Research Quarterly*, 26(1), 3-10.
- UCY Legislation. (n.d.). University of Cyprus policy for quality assurance in teaching. https://www.ucy.ac.cy/graduateschool/documents/Phd/ENGLISH_QualityofTeachingPolicyDocument.pdf
- Webb, C. (1999). Analysing qualitative data: computerized and other approaches. *Journal of advanced nursing*, 29(2), 323-330. <https://doi.org/10.1046/j.1365-2648.1999.00892.x>

Chapter 4

Westwood, P. (2007). *Commonsense methods for children with special educational needs*. Routledge.

Young, D., Schaefer, M. Y., & Lesley, J. (2019). Accommodating students with disabilities studying English as a foreign language (practice brief). *Journal of Postsecondary Education and Disability*, 32(3), 311-319.



Published by Research-publishing.net, a not-for-profit association
Contact: info@research-publishing.net

© 2021 by Editors (collective work)
© 2021 by Authors (individual work)

Tertiary education language learning: a collection of research
Edited by Salomi Papadima-Sophocleous, Elis Kakoulli Constantinou, and Christina Nicole Giannikas

Publication date: 2021/05/03

Rights: the whole volume is published under the Attribution-NonCommercial-NoDerivatives International (CC BY-NC-ND) licence; **individual articles may have a different licence.** Under the CC BY-NC-ND licence, the volume is freely available online (<https://doi.org/10.14705/rpnet.2021.51.9782490057894>) for anybody to read, download, copy, and redistribute provided that the author(s), editorial team, and publisher are properly cited. Commercial use and derivative works are, however, not permitted.

Disclaimer: Research-publishing.net does not take any responsibility for the content of the pages written by the authors of this book. The authors have recognised that the work described was not published before, or that it was not under consideration for publication elsewhere. While the information in this book is believed to be true and accurate on the date of its going to press, neither the editorial team nor the publisher can accept any legal responsibility for any errors or omissions. The publisher makes no warranty, expressed or implied, with respect to the material contained herein. While Research-publishing.net is committed to publishing works of integrity, the words are the authors' alone.

Trademark notice: product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Copyrighted material: every effort has been made by the editorial team to trace copyright holders and to obtain their permission for the use of copyrighted material in this book. In the event of errors or omissions, please notify the publisher of any corrections that will need to be incorporated in future editions of this book.

Typeset by Research-publishing.net
Cover layout by © 2021 Raphaël Savina (raphael@savina.net)

Reference on back cover:

Meyer, H. J. (1997). Language centres and the international dimension of university life. In D. Little & B. Voss (Eds), *Language centres: planning for the new millennium* (pp. 3-12). CercleS.

ISBN13: 978-2-490057-89-4 (Ebook, PDF, colour)

ISBN13: 978-2-490057-90-0 (Ebook, EPUB, colour)

ISBN13: 978-2-490057-88-7 (Paperback - Print on demand, black and white)

Print on demand technology is a high-quality, innovative and ecological printing method; with which the book is never 'out of stock' or 'out of print'.

British Library Cataloguing-in-Publication Data.
A cataloguing record for this book is available from the British Library.

Legal deposit, France: Bibliothèque Nationale de France - Dépôt légal: mai 2021.
