

Modifications and Accommodations for Higher Education Students with Special Educational Needs

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Abstract

Students with learning disabilities and attention disorders in higher education are often described as individuals with invisible disorders. This perception may lead to misinterpreting and stereotyping of their educational needs and also to ineffective accommodations. This study aims to review recent research on accommodations and modifications for individuals with learning disabilities and attention disorders in higher education. The authors identified ten studies published between 2017 and 2021 that focused on accommodations for higher education students with learning disabilities (especially dyslexia) and attention disorders (ADHD). The recent research results show that learning difficulties are often manifested during traditional teaching and evaluation. Innovative student-centred approaches might be beneficial not only for students with special educational needs. To be effective the accommodations should be designed concerning personal and environmental factors. Study was supported by grant agency VEGA 1/0119/21.

Keywords: *special educational needs; dyslexia; ADHD; accommodations; higher education; review.*

1. Introduction

According to recent studies (Rouweler, 2021; Ryder & Norwich, 2019), the prevalence of students with special educational needs in colleges and universities is increasing. Universities across the world need to cope with the diversity of students and the variety of their educational needs. This study aims to discuss different types of modifications and accommodations for students with special educational needs in general and then to analyse ten examples of research evaluating or discussing the accommodations or modifications for individuals with learning disabilities and ADHD.

Accommodations in education can be defined as changes to the way of assessment that should help students with special educational needs demonstrate their knowledge or skills, while modifications refer rather to the change of what is being assessed or what learning and teaching methods and materials are being used, e. g., the use of assistive technology. Both accommodations and modifications are based either on the recommendations of psychologists, special educators or other specialists to fit and benefit each particular individual or they could be arranged by university centres for individuals with special educational needs, e. g., for a group of students with similar educational needs.

According to Dunn et al. (2018), the accommodations can be divided into four groups based on the aspect of assessment, which is changed to benefit an individual with special educational needs: A) presentation: The instruction or test items are presented in a modified way, e. g., students with special educational needs may listen to pre-recorded instructions rather than read written instruction. B) response: The form of students' responses to assignments or test items are modified, e. g., the student can use digital technology instead of handwriting. C) setting: The environment where the student completes the assessment is changed, e. g., the student completes the examination individually to limit distractions or in a small group. D) timing and scheduling: The organization of the assessment is modified, e. g., students are provided with extra time or breaks during the examination (Dunn et al., 2018).

Universities and colleges need to decide what accommodations and modifications could and should be implemented with particular students and how to assess their effectiveness and benefits for students. Ideally, the choice of these tools should be evidence-based and at the same time, it should be the result of a discussion between the teacher and the student based on the recommendations of specialists.

2. Students with special educational needs in higher education in Slovakia

The problem of the support for students with special educational needs is not new in Slovakia. Universities have support centres for those students and if they are registered in a centre based on current legislation, they are eligible to apply for suitable accommodations. However, these

services are more commonly offered to students with sensory or physical disabilities rather than those with learning or attention disorders. According to the national statistics (Sokolová & Lemešová, 2022, in press), in primary and secondary education there are about 3% of pupils/students registered as individuals with special educational needs due to learning disabilities. The statistics for higher education are not available. Based on unpublished anecdotal data from authors' institutions we may say that those students do not apply for accommodation in higher education very often. If so, they usually prefer timing and scheduling accommodations, even though these are not always considered valid and effective by some authors (Jansen et al., 2018; Miller et al., 2013).

3. Accommodations and modifications in higher education

For this study, we decided to focus on accommodations and/or modifications for two particular groups of students with special educational needs: students with attention deficit disorders (ADHD) and learning disabilities (especially dyslexia). These are considered invisible disabilities or disorders (Mullins & Preyde, 2013). Students may try to hide their difficulties, particularly when transiting to a higher level of education. On the other hand, when they apply for some accommodations or modifications their special educational needs are often challenged and questioned, e.g., by the university staff, teachers or peers (Mullins & Preyde, 2013; Norris et al., 2020; Stampolzis et al., 2015). The authors searched Science Direct and Web of Science databases to identify studies evaluating different types of accommodations and/or modifications for these particular target groups. We used the following inclusive criteria for the studies: studies published in peer-reviewed journals between 2017 and 2021 (five years), studies written in English, systemic reviews or research studies focused on samples of university or college students with learning disabilities or attention disorders, studies evaluating study interventions (accommodations and/or modifications) for these students. Ten studies that met the required criteria were identified (see Table 1) and discussed in the context of an evidence-based approach to intervention planning.

3.1. Attention deficit disorders (ADHD)

Symptomatology of attention-deficit/hyperactivity disorder is defined as the presence of symptoms of inattention and/or hyperactivity and impulsivity (American Psychiatric Association, 2013). While the symptoms of hyperactivity and impulsivity are highly prevalent in children with diagnosed ADHD, in adolescents and young adults we observe problems with attention, organization, executive functioning, time management, study skills, anxiety and mood (Weis et al., 2019). All these symptoms could be a barrier to successful functioning and performing in higher education. Weis et al. (2019) explored the way how clinicians report about college students with ADHD. Based on the results, they focus mostly

on symptoms rather than barriers and accommodations, in their sample, 32% of clinicians described barriers and only 42% described some history of accommodations. The data about provided accommodations were based mainly on students' self-reports.

Table 1. Overview of accommodation and modification studies

Study	Country	Method	Conclusions
Alabdulkareem & Jamjoom, 2020	Saudi Arabia	review	The gamified intervention has positive effects on improving ADHD individuals.
Knouse et al., 2020	USA	experiment	Students with and without ADHD used retrieval practice to a similar degree.
Weis et al., 2019	USA	document analysis, interview	The evidence about accommodations for ADHD students came from students' self-reports rather than from specialists.
Jansen et al., 2018	Belgium	experiment	The extended examination duration is not objectively effective for ADHD students.
Jansen et al., 2017	Belgium	survey	The effectiveness of accommodations depends on which problems students experience.
Knoop-van Campen et al., 2020	Netherlands	experiment	The only aspect where audio-support facilitated learning for students with dyslexia was factual knowledge learning.
Ryder & Norwich, 2019	UK	questionnaire	The awareness of dyslexia among university teachers is inadequate.
Serry et al., 2017	Australia	survey and interview	Self-advocacy and study resources and skills facilitate successful studies with dyslexia.
Pitt & Soni, 2017	UK	interview	Determination, time management strategies and university staff support are important facilitators.
Griful-Freixenet et al., 2017	Belgium	interview	The Universal Design for Learning (UDL) framework seems to address effectively the needs of students with disabilities.

Source: Sokolová, Lemešová, & Groma (2022).

One of the most common accommodations reported by students is the extended duration of tests and other types of examinations. However, these are not always accepted by experts as effective. Jansen et al. (2018) designed an experimental examination situation with a group of students with ADHD and controls. They were supposed to fill in a paper-and-pencil test in three different time conditions: 1 hr (+0%), 1 hr 20 min (+33%), and 1 hr 30 min (+50%). The participants in both groups used extended time but their performance did not increase. Based on those results, the authors conclude that extended duration of exams does not seem to be objectively effective for ADHD students.

Knouse et al. (2020) used a similar experimental design to compare the effectiveness of retrieval practice. Students with ADHD and controls used a computer interface to practice study material either in a self-regulated mode of learning or with a set criterion of three retrievals. Again, students with and without ADHD used retrieval practice similarly and the recall and recognition of studied material were high in both groups. Based on their results, the authors recommend using retrieval practice as a criterion for both ADHD and non-ADHD higher education students. Assistive technology and innovative interventions seem to be beneficial for students with ADHD at different levels of education including university. Alabdulkareem & Jamjoom (2020) reviewed intervention studies and concluded that serious games and gamified intervention had overall positive effects on individuals with ADHD. The use of gamified learning environments may help students with ADHD to focus on study material and to practice it more effectively.

Even though educators use different types of accommodations, Jansen et al. (2017) concluded that the perceived effectiveness of accommodations depends on actual problems that students face. The authors collected data from individuals with and without ADHD and student counsellors and they found that most of the problems with concentration and focusing among ADHD students are related to the traditional methods of teaching and evaluation. They recommend considering both personal and environmental aspects in accommodation planning.

3.2. Dyslexia and learning disabilities

The symptoms of learning disabilities, among which dyslexia is the most frequently discussed and explored, are persisting from primary school age to higher education in many students. It is manifested especially in the speed and quality of reading; however, it might affect also other areas of study skills and overall functioning in higher education (Rouweler, 2021; Ryder & Norwich, 2019). Similarly to students with ADHD, the students with dyslexia might experience lower self-esteem related to their studies, anxiety, or fear of stigmatization. As far as dyslexia affects especially reading, the accommodations are often designed for this particular area. Knoop-van Campen et al. (2020) used a computer-assisted multimedia learning environment to test the impact of audio support on learning outcomes. Surprisingly, they found that adding audio to multimedia learning material negatively impacts learning and this impact is similar in students with and without dyslexia. The only aspect where audio-support facilitated learning for students with dyslexia was factual knowledge learning (Knoop-van Campen et al., 2020).

Pitt & Soni (2017) and Serry et al. (2017) interviewed students with dyslexia in the United Kingdom and Australia to identify their perception of effective accommodations and academic support. Participants reported several factors facilitating successful studies with dyslexia including family support, self-advocacy skills and learning resources (Pitt & Soni,

2017). The authors recommend developing interventions related to literacy support, self-advocacy, thinking and study skills. Similar results were reported by Serry et al. (2017), study and time management skills were identified as important facilitators by their participants. These also highlighted the role of university teachers and their awareness of dyslexia among university students and their ability to use a more individualised and targeted approach to support students with special educational needs. This result is supported by the survey conducted by Ryder & Norwich (2019) who approached university teachers with an online questionnaire on dyslexia. Their findings showed that teachers' awareness of relevant dyslexia research was inadequate and inaccurate, which might have serious implications for the quality of academic support for those students.

As accessibility seems to be the crucial condition for effective learning, Griful-Freixenet et al. (2017) created the Universal Design for Learning (UDL) framework to support access for all learners. They interviewed higher education students with disabilities to evaluate the concept. They identified different types of accommodation used for those students and found that the system should reflect the individual learning needs of students not only through setting and curricular changes. It should be more direct, reflecting individual needs and asking students "the right questions" (Griful-Freixenet et al., 2017, p. 1627).

4. Discussion and conclusion

Accommodations and modifications for higher education students with learning disabilities and attention disorders are still little explored compared to those designed for younger learners. Higher education students would appreciate especially timing and setting accommodations to avoid distractors during examinations, they also find it useful to have access to assistive technology, to have online study materials available in advance or have an opportunity to communicate their questions and problems with teachers, e.g., via online forums (Pitt & Soni, 2017; Serry et al., 2017; Stampoltzis et al., 2015).

However, the results of the studies included in this review show that some of these accommodations and modifications designed originally for individuals with special educational needs are not beneficial only for this particular group of higher education students. The differences in learning processes and learning outcomes between the students with learning and attention disorders and control groups are not always significant (Jansen et al., 2018) and it is not rare if both groups benefit from the educational change. For students with ADHD, the problems with focusing often arise during classical teaching and evaluation methods (Jansen et al., 2017). It seems that innovative approaches in learning and teaching, including the use of digital media, e.g., serious games or virtual reality (Alabdulkareem & Jamjoom, 2020; Cibrian et al., 2022), computer-assisted retrieval practice (Knouse et al., 2020) or complex environments based on student-centred approach (Griful-Freixenet et al.,

2017; Tops et al., 2021) could be beneficial for students with learning difficulties but also for general higher education students. This is following the concept of inclusive education where learning and teaching are designed to fit the educational needs of all students and at the same time foster understanding of diverse educational needs among teaching staff (Ryder & Norwich, 2019). According to Serry et al. (2017), optimal inclusive practices require greater awareness among staff about the challenges these students face. A combination of teaching staff awareness and understanding with student-centred teaching might help to create adequate academic support for students with learning disabilities and attention disorders.

Despite the reported increase in the number of students with special educational needs in higher education, the research on the topic of accommodations and modifications for this target group is relatively scarce. Our selection of recent studies shows a variety of methods and approaches toward academic support of individuals with disabilities and it also illustrates current trends in the evidence-based evaluation of those approaches.

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