


Evaluation of Diploma Thesis Writing Process from the Perspective of University Students with(out) ADHD

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Abstract: Writing a diploma thesis is a significant academic undertaking, demanding meticulous planning, sustained focus, and effective time management for all groups of students: with(out) neurodevelopmental disorders. These challenges can be particularly daunting among students with Attention Deficit Hyperactivity Disorder (ADHD) because of executive dysfunctions resulting in differences in information processing, learning patterns, emotional responses, and other neurobiological aspects. Therefore, the research question is to find out how students with and without ADHD evaluate the thesis writing process, which emotions accompany both groups while working on the dissertation, which stage (e.g., planning, researching, drafting, revising, etc.) is particularly challenging for them and, finally, the research group with the diagnosis of ADHD was asked to indicate strategies they use to compensate for difficulties arising from the presence of a neurodevelopmental disorder.

Keywords: Attention Deficit Hyperactivity Disorder (ADHD), Special Educational Needs, diploma thesis writing, executive dysfunctions, effective strategies

Introduction

Writing a diploma thesis is a significant milestone in the academic life. It represents the culmination of years of study and the opportunity to delve deep into a chosen field of expertise. However, for students suffering from Attention Deficit Hyperactivity Disorder (ADHD), this academic endeavor can present unique challenges that demand the use of additional strategies for success.

ADHD as a neurodevelopmental disorder affects an individual's ability to maintain attention, regulate impulses, and manage time effectively. In the context of university education, where the demands for sustained focus and organizational skills are heightened, students with ADHD encounter obstacles that impact their diploma thesis writing process. Despite these challenges, it is essential to recognize that with the right strategies and support, individuals with ADHD can not only navigate the complexities of diploma thesis writing but also excel in their academic pursuits.

1. On Understanding ADHD

An increasing number of nations worldwide are diagnosing and treating Attention Deficit Hyperactivity Disorder (ADHD). With prevalence estimates of between 5% and 7.2% worldwide, recent research indicates that ADHD is currently the most frequent neurodevelopmental disease among school-age children and adolescents (Polanczyk et al. 2014;

Thomas et al. 2015). Many nations are beginning to acknowledge ADHD as a lifetime disorder (see: Fayyad et al. 2007; Nakamura et al. 2013); nonetheless, much less research has been done on adult ADHD so far.

1.1 ADHD in Definitions

ADHD (Attention-Deficit Hyperactivity Disorder) is a neurodevelopmental disorder, which is considered a chronic disorder common among children, adolescents, and adults (Bober-Płonka et al. 2019). According to F. O'Regan, it is perceived as a medical condition characterized by brain dysfunction that makes it difficult for a person to control behavior and maintain concentration. This leads to various problems related to knowledge acquisition, behavior, and interpersonal contacts (O'Regan 2005: 11). In turn, the definition formulated by the Polish ADHD Association states that Attention Deficit Hyperactivity Disorder is a mental disorder of childhood, leading to significant impairment of functioning and increasing the risk of other mental disorders, such as behavioral disorders and substance abuse (after Paszkiewicz 2021: 13).

The first mention of ADHD appeared at the end of the 18th century in the scientific works of the German doctor Weikard (Gaidamowicz et al. 2018), who researched attention deficit and comorbid disorders in anxious and disobedient children as well as adults. However, it was the British pediatrician, Sir George F. Still (1868–1941), who described ADHD as a disease entity, pointing to the co-occurrence of impaired concentration and dysfunctional behaviors while maintaining a normal level of intelligence (Galas-Zgorzalewicz et al. 2019). For this reason, Attention Deficit Hyperactivity Disorder was initially called minimal brain dysfunction or hyperkinetic reaction in childhood (Ibidem). Despite such early mentions of ADHD also in adults, for many years it was claimed that it was a disorder occurring mainly in childhood and mainly affecting boys, and what's more, the disorder that one grew out of with age. For this reason, there were simplified patterns of perceiving children with ADHD as naughty, and poorly brought up by their parents, and over the years this "unbearable character" turned into personality or mood disorders, whereas sometimes disappeared completely in adulthood.

The understanding of what is now recognized as Attention Deficit Hyperactivity Disorder has undergone a major change over the last twenty years. This shift represents an essential understanding of the nature and characteristics of this condition rather than the bare creation of another new hypothesis regarding a behaviour pattern. It may even be claimed that Thomas Brown (Brown 2013) has created a new paradigm for ADHD. According to Brown's new framework, an individual with ADHD is defined as a child, adolescent, or adult, being a man or a woman who struggles daily to focus, to complete tasks, to maintain effort, to use working memory, and to regulate emotions. These challenges render it difficult for them to deal with the obligations of daily life. The obstacles listed are some of the problems that we occasionally run into at a given age due to various family, work, or health-related situations. It should be highlighted, nonetheless, that the characteristic of an ADHD diagnosis is the chronic and persistent nature of the difficulties, which substantially limit functioning in comparison to the experiences of other individuals of the same age.

The new definition of ADHD based on the Brown paradigm was formulated as follows (Brown 2013: 20–38):

ADHD =

- a complex syndrome of
- developmental impairments of executive functions,
- the self-management system of the brain,
- a system of mostly unconscious operations.
- These impairments are situationally variable,
- chronic, and significantly interfere with functioning in many aspects of the person's daily life.

Fig. 1. A New Working Definition of ADHD (according to Brown 2013: 20–38).

The exact cause of ADHD is not fully understood, but a combination of genetic, environmental, and neurological factors is believed to contribute to its development. Effective management typically involves a multimodal approach, combining behavioral interventions, psychoeducation, and, in some cases, medication to address specific symptoms and enhance overall functioning.

1.2 Executive Dysfunctions and their Characteristics

The term executive function (EF) describes an individual's ability to employ reasoning abilities to accomplish objectives, create strategies for overcoming problems, along with keeping an eye on and modifying their behaviours. It is an instance of superior brain processing. Furthermore, according to Beck et al. (2011), it is the process by which people exert conscious control over their ideas and behaviours. To lay the foundations for improved living and learning in the future, EF development is especially crucial during childhood. Several studies have demonstrated that it can influence children's cognitive and behavioural issues instantaneously (Diamond et al. 2011; Kim et al. 2013) as well as predict adult outcomes concerning income, health, and crime (Moffitt et al. 2011).

1.2.1 What are Executive Functions?

Various disciplines, including neuropsychology and educational, developmental, and cognitive psychology, have produced several credible definitions of executive functions. However, we must first recognise that executive functions are part of a larger cognitive framework to comprehend what they are and how they work. According to the Stuss and Benson (1986) model, executive functions regulate a person's ability to compensate for deficits brought about by more fundamental impairments, such as those that are emotional, cognitive, linguistic, motor, or cognitive. To accomplish this, they function halfway, bridging the gap between fundamental functions and the feeling of self or self-awareness.

The terms used to describe abilities that comprise executive functions vary, but they encompass skills like goal-setting, planning, monitoring, and anticipating. Executive functions decide what needs to be done, how to handle delicate situations, which objectives are more important than others, when to apply strategies, how to compare outcomes to objectives, and other things. To read a text, for instance, a typical student must be able to focus their attention while simultaneously using their executive processes to focus on the text and make decisions about which details are most crucial. On the other hand, individual's abilities to set objectives and make strategic decisions would be adversely affected if s/he suffers from a severe memory impairment that prevents him/her from remembering new information. It is because making decisions of this nature sometimes requires having a precise memory of recent events. This implies that students may also show signs of struggling at the

intermediate level of executive functions and basic systems. These individuals suffer from two types of disabilities: impairments to their core cognitive processes and impairments to their executive functioning, which enable them to compensate for or work around their disabilities (Kennedy 2017).

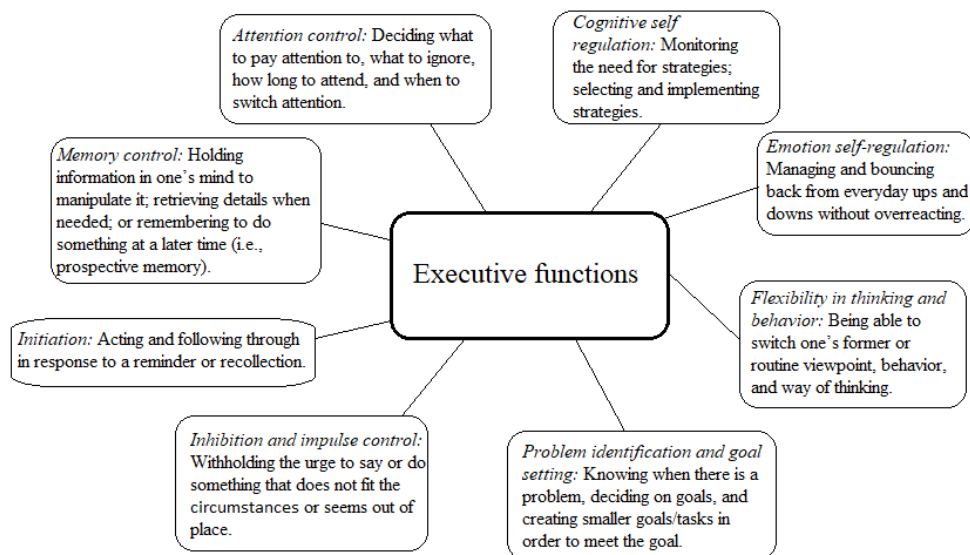


Fig. 2. Scale of Executive Functions (according to Kennedy 2017:13).

Neurobiological disorders or variations have an impact on executive processes. Different types of executive function difficulties emerge among individuals with neurodevelopmental disorders, such as ADHD.

1.2.2 ADHD and Executive Function Disorder

Executive function issues are widely acknowledged as one of the main ways that ADHD impacts a person. The following are some areas where executive function deficit and ADHD overlap:

- get side tracked when trying to finish chores;
- having trouble keeping a schedule;
- ignoring crucial dates, or appointments;
- arriving late for appointments and meetings;
- losing necessary things required for everyday tasks or employment;
- not being motivated to complete certain tasks¹.

A person with ADHD will likely exhibit one or more of the aforementioned symptoms. Despite many similarities, executive function disorder and ADHD are not the same. One official diagnosis that a specialist can make is the one of ADHD. Executive function disorder, on the other hand, is not a diagnosis that can be made on its own because it can have multiple causes. Other differences between the two include how they are detected and managed. For

¹ Executive Function Disorder & ADHD: Their Differences & How They Tie Together (URL <https://add.org/executive-function-disorder/>). [Accessed on 20.12.2023].

instance, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V), a widely recognized manual used in the diagnosis of mental health professionals, lists, among other disorders, ADHD. It includes ADHD as a recognized medical condition with specific diagnostic requirements that a person must fulfill. On the other hand, the DSM-V does not include executive function disorder.

2. Towards Written Expression

ADHD as a heterogeneous neurodevelopmental disorder is typified by disruptive symptoms such as impulsivity, hyperactivity, and/or inattention. Individuals diagnosed with ADHD regularly show deficits in executive functioning (Willcutt et al. 2005) and writing skills in a variety of domains (Kent et al. 2014). To what extent these findings indicate independent deficiencies in ADHD, rather than overlapping pathways, is unknown, though. Nevertheless, there is a direct correlation between them bearing in mind the prevalence of written expression impairments in ADHD (up to 65% of children with ADHD may meet criteria for a specific learning disability in writing; Mayes et al. 2000; Re et al. 2010) and executive function deficits (e.g., up to 89% of children with ADHD may have deficits in at least one executive function; Kofler et al. 2019).

2.1 Requirements for Diploma Thesis Writing

Compiling a thesis is a key stage in the educational process, requiring full commitment, regularity, and the ability to carry out independent research. It is not only the result of accumulated knowledge presented in the form of a coherent text with a defined structure but also a demonstration of the student's analytical skills, critical thinking, and capacity for independent scientific work. Meeting certain writing standards and delivering the thesis by a set deadline determines the student's readiness to the Bachelor's/Master's examination. The thesis is an individual endeavor, written under the supervision of a thesis advisor, reviewed, and then discussed during the diploma examination.

The thesis may take a theoretical-analytical or a theoretical-practical form. In the case of the Applied Linguistics major at the University of Warsaw, the theoretical-practical thesis may include a syllabus, the development of a computer program, the creation of a textbook or a fragment thereof, the preparation of other teaching materials, one's translation work or a dictionary. The optimum volume for a Bachelor's thesis is approximately 30 pages of own text and 60 pages of own text for a Master's thesis. A page of text is understood to be 1800 characters including spaces, Times New Roman 12 pt font, and spacing of 1.5 lines. The bibliography should contain at least 15 scientific items in the Bachelor's thesis and at least 30 scientific items in the Master's thesis (monographs, chapters in monographs and/or articles in scientific journals). An index of source materials, including empirical/analytical material, should be included in the bibliography as reference literature.

The student is informed by the head of the language section concerned about the seminars planned for the following academic year. Before enrolling in a seminar, the student is acquainted with the profiles and research interests of the supervisors and has the opportunity to consult the thesis idea with the potential thesis supervisor before enrolling in his/her seminar to make sure that the supervisor will conduct a specific thesis in line with the student's interests. The thesis topic is chosen through consultation between the thesis supervisor and the student and must be closely related to the student's field of study, the scientific discipline assigned to the field of study, and the specialization chosen by the student. The student

should correctly formulate the research problem, the aim of the thesis, and the research questions/hypotheses as well as select and skilfully apply appropriate research methods and tools in the field of applied linguistics that allow the student to achieve the set aim and create in-depth interpretations. The methodology used is intended to enable the use of existing knowledge in the field of the topic undertaken and may contribute to the production of new subject knowledge.

The thesis should be written in a scientific style, and have a clear and logical structure (with a division into an introduction, chapters, and subchapters, conclusions, etc.). The student should use logical argumentation in formulating conclusions. In the theoretical aspect, the thesis should include a review of the literature on the subject, relevant to the problem taken up, and define the basic concepts. The paper should also indicate practical implications.

The description of the above requirements has been taken from the documents of Resolution No. 16 of the Didactic Council for the Applied Linguistics degree program of 21 December 2021 showing the rules of graduation in the Applied Linguistics degree program. The content of the resolution indicates the complexity of the thesis creation process. It should be borne in mind that, simultaneously with the creation of the thesis, students are required to complete the program of study and usually start their first jobs, which further limits their time options.

3. Methodology

To complete both the Bachelor's and Master's degree programs, students are required to complete a diploma thesis under the supervision of a designated supervisor, following the requirements for a given course of study. The writing process itself depends on the individual predisposition of the student, i.e. some who are “good with words” write longer and shorter forms with relative ease. In contrast, for others, it is a difficult and laborious undertaking. An additional difficulty affecting the process of writing the thesis may be a neurodevelopmental disorder, such as ADHD, which poses additional challenges for a particular group of students. To evaluate the process of diploma thesis writing and to identify the difficulties encountered, a survey was conducted among two seminar groups – BA and MA students of Applied Linguistics. Students were allowed to anonymously indicate how they perceive the thesis writing process, how they cope emotionally, and which strategies they use.

3.1 Research Questions Formulated in the Questionnaire

The questionnaire was made available for students to complete online with no specific time indicated for completing the survey. It included six sections of closed-ended as well as open-ended free-answer questions.

1. Demographic Information – To show basic demographic information, the questionnaire included questions providing information on age, year of study, gender, having a diagnosis of a neurodevelopmental disorder, and being on a student mobility program.
2. Academic Experience – This section was designed to provide information on students' perceptions of the thesis writing process, i.e. indicating on a five-point scale how challenging they thought editing a BA/MA thesis is. In the open-ended question section, students were asked to indicate specific challenges that they faced during the diploma thesis writing process.
3. Use of Strategies – In section three students were asked to think about the process of organising their thesis writing tasks and to identify whether they use any specific

planning tools or techniques or apps to organise their time and help them with concentration while working on their thesis. If they identified the presence of the above, then they were asked to identify specific ones.

4. Emotions & thesis writing – In section four the main aim was to find out the emotions that accompany students during thesis writing. The questionnaire included a list of both positive and negative emotions (including the option *Other (please specify)*). Students were then asked to identify emotions for each stage of thesis writing (e.g., planning, researching, drafting, revising, etc.) along with a reflection on whether their emotional state affects the quality of their thesis writing both negatively and positively.

5. Time Management – Dissertation writing is a multi-faceted process that also includes effective time management, therefore students were asked in section five to indicate how they manage their time effectively when working on the diploma thesis, whether they set short-term/long-term goals, and how they go about setting and achieving these goals.

6. ADHD and Diploma Thesis Writing Strategies – The final section of the questionnaire focused only on students with a diagnosed neurodevelopmental disorder (ADHD) to determine the individual strategies they find most effective in managing ADHD while working on the diploma thesis.

3.2 Participants

The participants in the survey were third-year BA students (14 people) and second-year MA students (8 people) who are completing their first and second-degree programs respectively in the academic year 2023/2024 and writing their thesis under my supervision. Nearly half of them are studying abroad this year as part of the Erasmus+ student mobility program. Both students in the Erasmus program and those continuing their studies in the country meet with the supervisor with the same frequency (either stationary or remotely using the Google Meet platform) and are obliged to meet deadlines for step-by-step accountability of their progress in writing their thesis. The vast majority of respondents are female (2 students chose not to indicate their gender when completing the survey). The final criterion for assessing demographic data was having a diagnosis of a neurodevelopmental disorder with an indication of its type. As a result, it turned out that nearly one-third of the respondents were neuroatypical (4 students with ADHD and 2 with co-occurrence of ADHD and dyslexia).

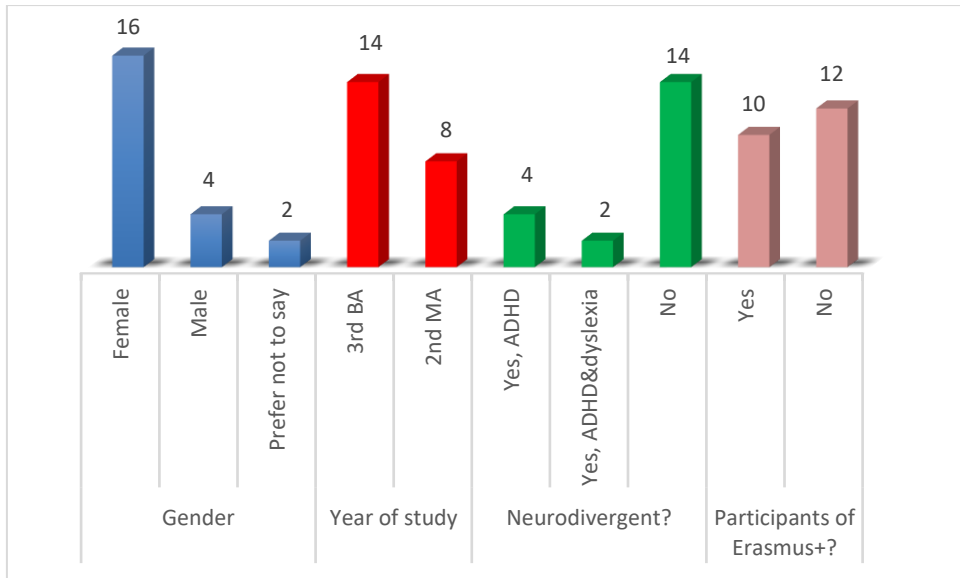


Chart 1. Demographics of study participants.

3.3 Data Analysis Results

3.3.1 Academic Experience

Students indicated that writing a thesis was a challenging process regardless of the presence of a neurodevelopmental disorder. Both groups – with/without ADHD - chose similar upper-scale values.

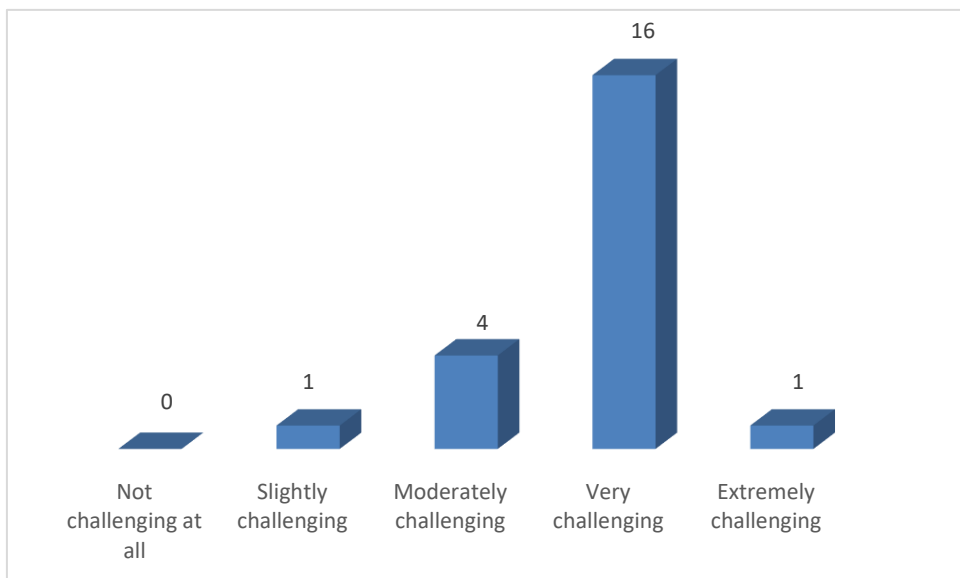


Chart 2. How challenging do you find the process of diploma thesis writing?

After determining the level of difficulty on a closed scale, respondents were asked to indicate the specific problems they face when writing their thesis.

Students with diagnosed ADHD indicated difficulties with academic writing competence, adjusting style, and vocabulary. In addition, there appeared the problem of procrastination, which is characteristic of ADHD, i.e. postponement of assigned tasks, sometimes to the last minute, which also affects the quality of the text:

- *I find it very challenging, as I tend to use colloquial language. When it comes to all these very official - academic - words, then I just don't know some and the others just don't cross my mind. It may be because I have problems with remembering words. Maybe it needs to take time and practice, but as far as I remember, writing in an official style has never been easy for me.*
- *Good time management, keeping the focus on writing.*
- *My biggest issue is to start writing. Once I begin my thesis, it is a bit more encouraging to continue, but I still postpone it as much as possible. I struggle with organizing my time and regularity.*

In the case of students without a diagnosis, most of the problems boiled down to the difficulty of combining studies with professional work, and excessive academic workload (too many homework assignments and projects). Some students also indicated difficulties in searching for and understanding academic sources:

- *Problem with finding time due to work*
- *My main challenge while writing the diploma thesis is the fact that I have too many lessons and countless home assignments. I am also working in a corporation full time, hence I have no time to write my thesis. The 5th year should be dedicated to writing it, in exchange, it is very demanding and time-consuming.*
- *Other difficulties would be understanding the scientific publications or concentrating on certain topics without getting into different subjects and fields (making the research more precise).*

In both groups, there were statements indicating the difficulty of finding the motivation to write a paper, as well as the high demands they make of themselves when working on the text:

- *It's hard to find the motivation to work on the thesis, and it's often hard to get your work properly organized and work step by step.*
- *The most challenging aspect of thesis writing process in my case are high expectations imposed on me by myself. I try to convince myself that it doesn't need to be perfect and I need to start working on it soon but I'm afraid that I won't be satisfied by the results of my writing. So I postpone this as much as I can, which is not good. I also think that my ideas are not good enough or not professional enough, or not interesting enough. I'm scared of disappointment. I feel like I should be more ambitious.*

3.3.2 Use of Strategies

This section aimed to research students' awareness of the use of effective strategies, tools, and apps to improve the thesis writing process itself. Regardless of the prevalence of ADHD, students indicated that they do not use any particular strategy, but students with ADHD readily turn to apps or tools to help them organise their work by segmenting it into smaller parts

and measuring the time dedicated to a given activity. Apps such as 'Forest', 'Pomodoro', and others are designed to count down the time to complete a given task and turn off any notifications on the phone that could distract them while working.

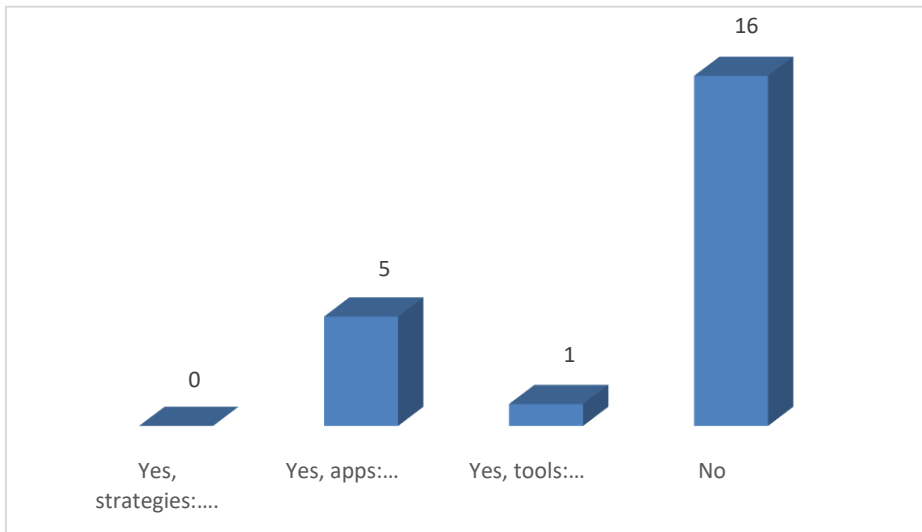


Chart 3. Do you use any specific strategies or techniques or apps to organize your time and help you with concentration while working on your thesis?

3.3.3 Emotions & thesis writing

Students were asked to indicate general emotions that accompany them while working on the dissertation on the basis of the following list: enthusiastic, overwhelmed, confident, insecure, motivated, discouraged, other (please specify):[...]. Positive and negative emotions were shuffled, without positioning them according to a gradational scale. In this section, again both research groups indicated similar emotions, so the presence of a neurodevelopmental disorder does not translate into their emotions. Emotions such as overwhelmed, insecure were typified most frequently, while terms such as ecstatic, joyful and hopeful additionally appeared.

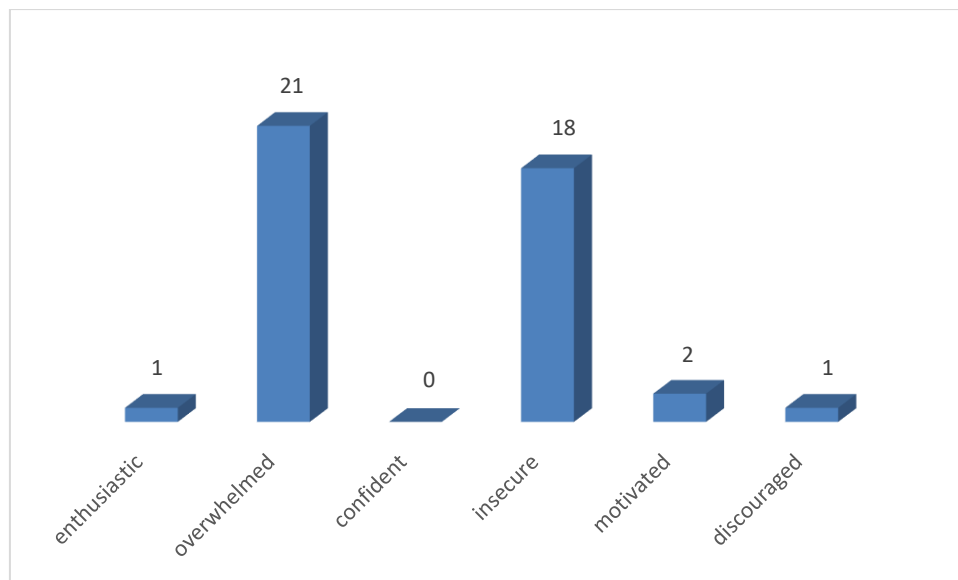


Chart 4. How do you generally feel when you think about your thesis writing process?

The chart above shows that the process of writing the thesis evokes in both groups rather negative emotions. The feeling of being overwhelmed is probably due to the need of combining a number of duties at the same time and it translates into difficulties in finding time for the thesis itself. In the open-ended questions section, students were asked to specify the emotions they feel/felt during the various stages of writing their thesis:

1. Planning

In the case of students with ADHD, this was the most difficult phase, as they experienced difficulties with work organisation and time management, as well as the problem with procrastination and sometimes perfectionism. Among students without neurodevelopmental disorders, the planning phase tended to be associated with positive emotions and enthusiasm for finding inspiration in their interests.

2. Researching

Students with ADHD indicated that if the topic suited them, working on the dissertation was something enjoyable. People with ADHD then fall into what is known as *hyperfocus*, i.e. they concentrate fully on the task that absorbs them because it falls within their area of interest. It is worse if the topic is not particularly close to the person or has fallen out of their area of interest at some stage, in which case the research phase is difficult for them. Students without ADHD did not define this phase explicitly either in positive or negative emotions. They focused more on the difficulty of combining different responsibilities and approached the research phase in a task-based manner.

3. Drafting

Both research groups indicated similarly, i.e. after collecting materials and developing a thesis outline under the guidance of the thesis supervisor, the writing process itself seemed much more enjoyable to them, they felt motivated and sometimes described their emotions as joy.

4. Revising

The group with ADHD expressed apprehension towards being evaluated, which is probably due to Rejection Sensitivity Dysphoria (RSD), often accompanying ADHD. RSD at this point is not yet included in a formal medical diagnosis, as research is ongoing to identify an official list of symptoms. People with RSD experience difficulties with being judged and criticized or even rejected, so negative comments about their work may be experienced as physical pain that makes it difficult for them to continue working on their thesis text. This is why it is important to communicate comments to students affected by this disorder in a careful, motivating way that also shows the good points of what they have already created.

The group without a diagnosis of ADHD described this stage as the most enjoyable, as they can make concrete improvements to their work based on comments made on the draft of their work. Few expressed concern about being assessed, arguing that they did not want to let the supervisor down, so their concern was less about being assessed and more about wanting to impress the supervisor.

3.3.4 Time Management

In this section, students with ADHD indicated that time management is a particular challenge for them, hence they reach for apps or write down a to-do list on a piece of paper to be able to meet the deadlines for particular tasks:

- *I don't think I manage my time effectively... I feel like I waste it a lot trying to force myself to write and do something.*
- *No, I can't focus on it. I am wasting a lot of time on the publications. I run through too many of them and can't concentrate on specific ones. Thankfully, my supervisor helps me to narrow the view. Even when I sit down to write something I get distracted and start thinking about other deadlines and more urgent matters.*
- *This is my biggest struggle. I can't manage my time effectively and even when I dedicate a specific period of time for writing, very often I finish off with half a page of text written in 3 hours or so.*

However, this does not mean that students without ADHD do not experience time management problems, although they indicate this much less frequently:

- *I try to write it regularly - choose a day or two a week when I take care only of my thesis.*
- *I can say that I manage my time effectively.*
- *Sometimes it's hard to find the time, but I try to find some time each week that I dedicate just to work on my thesis.*
- *I work on my thesis every week, usually on weekends. I always have a plan for the whole week, when and on what I am working at particular times of the day.*

3.3.5 Neurodevelopmental disorders and Diploma Thesis Writing Strategies

The last section was designed to be completed exclusively by students with a diagnosis of ADHD, as it aimed to identify the thesis writing strategies used by students to help them manage their ADHD while working on their diploma thesis:

- *My strategy is long sleep, swimming before writing and listening to music while doing it.*

- *I know what time of day is the best for me to work and I try to do this on this specific time and specific day, which I plan earlier.*
- *I always switch off all electronic devices (mobile phone, watch, etc.) so that notifications don't distract me. Besides I ask my parents not to enter my room for the same reason. I somewhat switch off from all my surroundings and focus on my task list.*
- *I divide my work into smaller parts. My alarm clock rings and then I usually check my phone or go to eat or drink something.*

This part of the survey closed with a question about suggestions or recommendations for other students with ADHD who will face the difficulty of writing a thesis in the future. Only one person with ADHD chose to express his/her opinion on this topic:

- *You're not stupid, your brain just works differently. You can do it, but maybe with a different approach and techniques. Be patient with yourself and don't give up. :)*

Conclusions

The study, based on an anonymous questionnaire, aimed to verify the research hypothesis, which assumed that there are significant differences in the evaluation of thesis writing process between the research group comprising students without neurodevelopmental disorders and the research group comprising students with diagnosed ADHD (and possible co-occurrence of other disorders). The results of the questionnaires, however, showed that both groups of students faced similar emotions and difficulties when creating their thesis. The differences mainly boiled down to the need to meet specific educational needs, which means that working with students with ADHD needs to be modified in terms of adjusting the pace of work, setting smaller, achievable goals, developing a thesis topic that necessarily falls within their area of interest (the role of *hyperfocus*) or adequately communicating possible criticisms (the importance of *RSD*). An issue worth dwelling on is undoubtedly the case of difficulties in students with ADHD arising from the competence of academic writing in terms of matching formal style, vocabulary, and writing form. This argument was raised with several students with ADHD, hence it seems necessary to develop some compensatory strategies to facilitate their formal editing of the thesis.

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