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PATHWAYS TO INCLUSIVE EXCELLENCE - SERVING STUDENTS WITH SPECIAL
NEEDS AND NEURODIVERSITY IN HIGHER EDUCATION

Investigation based on the Process Model of Inclusion at the University Pécs
(2010-2024) and in light of best practices from international partner institutions.

Theses of the doctoral dissertation (PhD)

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"There is no such thing as neutral education. Education is either a tool of conformism or a tool of freedom." - Paulo Freire

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Abstract

This doctoral research has been conducted on inclusiveness of Hungarian higher education, particularly at the University of Pécs, with a focus on neurodiversity and other special educational needs. The research employs a secondary quantitative analyses of student data from the Neptune Unified Edcuation System (2010-2019) with a focus of entry, study process and degree completion of students who receive preferential treatments (inclusing those with disabilities); analyses surveys conducted with students rating the inclusivity of UP and academic rating their attitudes towards a CHARM-EU Inclusivity Tipplist for Educators. With the help of semi-structured interviews, the researcher investigates the experiences of neurodivergent students, assesses institutional support systems (having visited partner institutions in the Czech Republic, Israel, Spain and in the USA). The value of this doctoral dissertation lies in developing a working modell of assessing HE inclusion and for adapting and validating a survey instrument and translating a check-list for educators into Hungarian langauge. The research identifies factors influencing student success and aims to provide recommendations for developing a more inclusive university environment taking recommendations from students, faculty and staff alike. The work draws upon various theoretical frameworks, such as the Spencer's PVEST and Varga's Process Model of Inclusion. Ultimately, the study seeks to inform institutional policies and practices and points out that all institution need a DEI-strategy with multi-tiered staff training and minimum UDL guarantees in order to continuously improve inclusiveness. UP shall promote academic excellence while improving accessibility of buildings and providing the least restrictive and neuro-affirmative environment for students, faculty and staff alike.

Key Words: neurodiversity, special needs, higher education, inclusive excellence, DEI

I. DISSERTATION TOPIC AND PROBLEM OF PRACTICE

I.1. Introduction to the topic of dissertation

I.1.1. Introduction

As an assistant lecturer at the Institute of Education and Department of Educational Theory at the University of Pécs, and as a doctoral researcher of the Sociology of Education Programme of the Education and Society Doctoral School of Education, I chose my research topic to be the *higher education inclusion of students with special needs and neurodiversity*. My academic interests are determined by my past professional experiences and the emerging need for foreign language education for neurodivergent students. My personal motivation for this research came from 13 years in service in the field of special education, working with at risk, disadvantaged and ESOL students (aged 5-21) with a range of learning difficulties and intellectual abilities. I was also motivated by my background in international human rights law, my years of experience in human rights organisations, the research projects and conferences we attended and organized with the Inclusive University Programme and the Inclusive Excellence Research Group at University of Pecs, and my involvement in the efforts of UP's Equal Opportunities Committee. My Hungarian-English bilingual skills have greatly facilitated my international mobility, academic contacts, collection of good practices and document analysis.

This dissertation builds on the literature of inclusive education for students *with special needs* in higher education, including *neurodivergent* students (e.g. dyslexia, attention deficit hyperactivity disorder, and autism spectrum condition), and takes student diversity as a basic value. The results of academic research support the paradigm shift from a medicalized, pathologizing or 'catch-up' mentality of special education to one where fellow human beings with different abilities, learning styles and ways they access learning materials are part of a natural biodiversity, so there must also be benefits of the variations of different brain wiring, the development of sub-skills and the creation of equal opportunities (AACU, 2021; Rankin, 2021; Bujtendijk, Curry & Maes, 2019). Universal Design for Learning and Teaching (UDL) has

an important role to play in this, with the aim that a solution enables as many students, teachers and staff as possible to participate successfully and effectively (Bracken & Novak, 2019; Burgstahler, 2015).

But how far can this change in scientific approach be followed in practice? What is the experience of students with special needs when they come to UP, and how welcoming do they find our university? Has the inclusive environment been able to evolve from the level of individually addressed problems to an institutional strategy building? What are the further actions and interventions needed according to Support Service staff and students? I sought answers to all these questions through my research on the inclusion of students with special educational needs at the University of Pécs, who are referred to *as disabled students by* Act CCIV of 2011 on National Higher Education (hereinafter: the Higher Education Act). Among others, they are the ones who have *been given preferential treatment* according to Section 24 (b) of Part 24 of the Government Decree 423/2012 (XII.29.) during the admissions procedure to HE institutions, and are therefore entitled to an extra 40 points.

Although my research samples are not representative, they are informative in the sense that the findings can be grouped thematically under the *Process Model of Inclusion* (Varga, 2015a), which helps us indicate quality of existing services and point out missing actions and strategic interventions in the case of UP and our focus group in the study.

I.1.2. Fields of discipline

The research underpinning this dissertation is situated at the interface of **sociology of education a**nd **disability studies**, and hones in on the processes and phenomena that these disciplines study. It focuses on the experiences of university students with special educational needs as a specific minority group, and in particular on neurodivergent students and their perception of inclusion. My research examines the circumstances of their admission to higher education, the inclusiveness of their university environment throughout their studies, and the effectiveness of the support services aimed at improving their academic achievement based on the *Process Model of Inclusion* (Varga, 2015a) and Spencer's *Phenomenological Version of the Ecological Systems Theory* (PVEST) (Spencer & Harpalani, 2004, p. 53-77).

Domestic higher education policy identifies "students with disabilities" as one of the disadvantaged social groups that receive affirmative action. In my dissertation, I will refer to these students - wherever I do not use to the language of legislation – as students *with special needs* (Lányiné Engelmayer, 2013), or its synonyms*, students with special educational needs* (as the PTE Support Service does). My research focuses primarily on University of Pécs and its experiences with special needs (predominantly *neurodivergent*) student groups, however, I also collected best practices from partner institutions visited with Erasmus+ grant.

I.1.3. Relevance and timeliness of the topic

My thesis examines the pathways to inclusive excellence for an underrepresented student group, called students with special needs and neurodiversity. It builds on the core values of Diversity, Equity and Inclusion (hereinafter referred to as DEI), and measures the attitudes of UP faculty members towards an Inclusivity Checklist. In light of recent international events, I recognize as a Hungarian-American citizen, that our current governments are *targeting DEI-efforts* and policies that is making its impact worldwide. From a human rights perspective*,* I believe such measures *threaten democratic values.* DEI-phobia is *a mental prejudice* that propagandises fear and resistance to increasing diversity, which may bring about unprecedented cultural changes, *pogroms, xenophobia and racism* that is familiar to humanity from the time of WWII. Against this Atwoodian dystopia or Orwellian 'newspeak', grassroots civil resistance movements were formed. This phenomenon makes my doctoral dissertation particularly timely.

If we ask the question *"Who is disabled?"* in our country, the laws on public education and higher education use different definitions, so it would be difficult to create harmony between these laws to define who belongs to this preferred target group. It is important, however, to draw parallels with our pedagogy and education students between the *high latencies of* underrepresented minorities in higher education, their

socio-economic indicators, and the structural barriers in their way, which are reinforced in part by the stigma of a de facto segregation in our elitist education system. This is underpinned by *the statistical contradiction* that, while the international literature reports *an* expansion *in the number of* special needs *pupils and university students* worldwide, especially *neurodiverse ones*. The World Health Organisation and the World Bank estimate that 15% of the world's population, around one billion people, live with a disability, up 5% from estimates a generation earlier (WHO&World Bank, 2011). However*,* the PTE *Neptun database* shows *a slow but gradual decrease in the numbers*, while the Ministry of Culture and Innovation's data on KEKVA institutions shows that their share in domestic higher education institutions is stagnating at 1% (KSH & KIM, 2022; Tószegi, 2023). Therefore, research on topics that approach special needs with a neurodiversity perspective will become increasingly relevant, and findings on diverse students and inclusive pedagogical good practices will be collected with a *neurodiversity-affirmative* perspective. By this *neuroaffirmative* approach, I mean "shifting the focus away from 'normalizing and fixing' individuals at all costs, and towards cultivating and educating on their own terms.*"* (Aitken & Fletcher-Watson, 2022, p. 6).

The University of Pécs was the first among the universities in Hungary to include the concept of "inclusion" in its mission statement, emphasising that it not only wishes to be innovative, but also to be a sensitive and socially responsible (e.g. disability-friendly) workplace:

> "We aim to achieve our goals by educating our students to become outstanding professionals, by training and attracting excellent teaching scientists and artists, by combining traditional and innovative elements of education and science, and by building a good *and inclusive university community*." *(PTE, Mission Statement, 2021*

Practice, alongside a principled stance, is supported in many ways and forms by programmes in different faculties. These have been brought together as an umbrella organisation by the Inclusive University Programme (PTE-BE) between 2019 and 2021. In the Inclusive University Forums, all the university's inclusion support and service programmes (e.g. Support Service, Mentoring Network, Legal Clinic, Equal Opportunities Committee, PTE Career Office, Psychological Counselling, Opportunity Bridge, Dancing University) exchanged experiencesPT-BE also provided an academic background through its research, the organisation of national and international conferences and the preparation of the Gender Equality Plan. By June 2021, it had already built an international network of academics and researchers with thematic publications, and established the *Inclusive Excellence Research Group*, which brings together experienced and young researchers to work together to put PTE at the forefront of European higher education and research in terms of its inclusiveness and international equality documents. The present dissertation aims to contribute to work, following the research of Krisztina Kovács (2011) and Ágnes Fazekas Sarolta (2021) on disability studies in higher education, and the basic concepts, theories and research results of Hungarian social scientists and global researchers published on the topic (Bánfalvy, 2008; Csányi, 2001, 2008; Fónai, 2020; Mesterházi et al, 2006; Papp, 2002; Pusztai & Kovács, 2015, Pusztai and Szigeti, 2018; Schiffer, 2008; Varga, 2015a,b; Varga et al, 2019, 2021c,d; Hrabéczy & Pusztai 2020) by summarising the international literature on neurodiversity, developing a model of our own analysis and good practices from international institutions.

I.2. Introduction to the research problem
I.2.1. Aims of the research

My general research objective is to look at the characteristics of inclusion in higher education from the perspective of students with special needs, including neurodivergent students, through the example of a university in Hungary. To this end, I also aim to review the relevant legislation, relevant literature and models of inclusion, which will be the pillars of my research. I also aim to learn and adapt inclusion-focused research tools, which I intend to use in my empirical research. I aim to explore inclusiveness from multiple perspectives: student and educator, as well as individual and institutional.

The aim of my empirical research is also to collect good practices in the field of inclusion in higher education, which can help me to formulate recommendations based on my exploratory research. In doing so, my aim is to model the path that other universities can follow in developing *inclusive excellence* by investigating the University of Pécs and using validated tools used in the research.

I.2.2. Research questions

The research can be understood as a fact-finding study. My research questions outline the investigation from three perspectives. First, the situational inquiry seeks to explore existing inclusive models and assessment instruments; second, it explores the characteristics of neurodivergent students and their perceptions of university inclusion ; and third, it seeks to identify the components of the institutional dimension that can be associated with inclusion. Based on all these, the research questions are:

1. What models and research instruments are available to measure and improve the inclusiveness of higher education, particularly for students with special educational needs, including neurodivergent students?

- Which of the national and international models is suitable for the process-oriented study of the university chosen for the empirical research of the dissertation, and what aspects does the chosen model provide for the conduct of the research?
- What are the validated questionnaires that are suitable as a research tool to conduct the planned research? With the chosen instruments, what needs to be done to adapt them?
- What are the main characteristics, content and research tools of the research model that will lead to a situation analysis of inclusion in higher education, focusing on students with special educational needs, including neurodivergent students?

2. What are the characteristics of students with special needs and neurodiversity in the higher education space, particularly in the university under study?

- What is the ratio and how has it changed over a 10-year period and in Hungary (compared to other universities)? With what aspirations and support did these students enter university?
- How are they making progress in the university environment, and what kind of support do they use and experience to achieve this progress?
- How do they compare to their university peers, is there a difference?

3. What are the characteristics of the universities studied in terms of their inclusiveness?

- What are the attitudes and preparedness of university administrators to successfully support students from different backgrounds, backgrounds and abilities who are underrepresented in higher education? What kind of attitudes, knowledge and competences do educators have in relation to inclusion, especially with regard to neurodivergent students?
- What is the university's commitment to inclusion, what are its organisational dimensions, and are there dedicated departments, programmes and funding resources? What are the leadership visions, achievements and challenges reported by staff working directly on inclusion?
- What inclusive good practices can be found in the international space, what are their uniqueness and common features that can help adaptation?

II. THE SCIENTIFIC AND LEGAL BACKGROUND OF THE TOPIC

On the one hand, this chapter clarifies the framework of the dissertation, the interpretation of the concepts and concepts used, and discusses them in their development and history in the 47 pages of the dissertation. It discusses the student groups that are the focus of the study from a legal, statistical and academic perspective. It interprets the concepts of equality of opportunity and equity, the difference between integration and inclusion, defines the concepts of reasonable accommodation, active measures and preference, and outlines a social and human rights model of disability, discusses ableism as a phenomenon and emphasises the responsibility of institutions to break down structural barriers perpetuated by physical barriers and ableism (Brown & Leigh, 2018; Csillag et al, 2021). In addition to this, it reviews the models that I have been able to use in a way that is relevant to the empirical study of inclusivity in higher education. It also lists a list of measures of inclusiveness that can be adapted domestically to conduct empirical research in a valid way.

II.1. Conceptual framework

II.1.1. Equality and equity

Inclusion as a social strategy seeks to promote *equal opportunity for* disadvantaged groups, which is also a pillar of democracy and the rule of law. However, ensuring *equal* treatment is not always sufficient to create real equality of opportunity (Radó, 2007). *Equity* is the English equivalent of the term "equity" in Hungarian , which has entered the Hungarian sociological and pedagogical discourse of education, and all activities and efforts aimed at ensuring *real access* and *opportunity* can be included in this concept (Varga, 2015b). The real role of **equity** is thus to bridge and correct inequalities, if necessary through *preferential treatment* or *affirmative action* **mechanisms**, and always along the lines of **reasonable** *accommodation*. In terms of an inclusive approach, it is not the special needs student, including neurodivergent students, who "must adapt to an environment with different barriers, but the majority services must be adapted to be used by persons with disabilities (and neurominorities)" (Kovács, 2011, p.80).

In Hungary, following the European jurisprudence, Section 8 a) to t) of Act CXXV of 2003 on Equal Treatment and the Promotion of Equal Opportunities covers real or perceived discrimination against different social groups, Section 8/g) covers persons with disabilities, and Section 8/h) covers persons unlawfully discriminated against on the grounds of health status (e.g. permanent or chronic illness).

II.1.2. The disabilities study approach

My dissertation reflects the approach of disability studies: it goes beyond a deficit-based approach and explores the *social model of disability* (Goodley, 2019). I do this with the conviction that, in this model, disability is not a personal limitation but a social construct, since the limitations of a person with a disability are not necessarily caused by impairment or handicap or dis-ability, since in many cases this could be overcome in their environment through *architectural design* or *assistive technology*. To understand the issues at hand, it would therefore be more appropriate to focus not on the limitations of people disabilities, but *on the quality of the relationship of* these limitations *with society and the environment,* as this is where their limitations are manifested and why they are created (Lisznyai, 2010; Ntombela & Mahlangu, 2019). In many cases, people with disabilities argue that it social attitudes rather than impairments that make them disabled.

Genuine social equality can only be effectively ensured and protected if the law and legislation take into account the historically and culturally disadvantaged groups in a given society and the unequal opportunities that exist in a given space and time. At the same time, there is a parallel phenomenon of *ableism*, which negates the equal opportunities of people with disabilities and *favours the characteristics of able-bodied people*. **Ableism** results in social structures in which people with disabilities and chronic illnesses do not have equal opportunities for self-determination and social fulfilment, and in which their human rights are violated (Brown & Leigh, 2018). Ableism is exclusionary and further marginalises people with disabilities in university culture and does not sufficiently involve them in thinking through the structural changes needed at the systemic level, so that decisions about *access*, *inclusion* and *accommodations* are often not even made with the involvement of the people concerned and competent professionals (Ntombela & Mahlangu, 2019).

The approach of my research therefore tries to move away from the medical-medical approach to disability categories, and looks at *disability as a socially constructed* fact, a natural part of *biodiversity*, whose perception is constantly changing. Like all diversity, special needs and neurodiversity *are understood within a particular social and economic structure.*

II.2 Systems theories and models used as a theoretical framework
II.2.1 Phenomenological Variant of the Ecological Systems Theory (PVEST)

In my dissertation, I interpreted Bronfenbrener's theory adapted to the special needs following the network ecosystem model (Neal&Neal, 2013), and then I presented Spencer's *Phenomenological Variant of the Ecological Systems Theory* (PVEST), based on this theory but focusing explicitly on the individual's experience, which now focuses on the vulnerability and risk factors of the individual and emphasizes identity formation, while simultaneously taking into account social structural forces and cultural influences Spencer & Harpalani, 2004, p. 53-77). The Spencerian model (which is also available in English in the

appendix of my dissertation) can be applied to the situation of students with special needs, including neurodivergent students. The logical threads of the model are as follows: if any student with **a disability** or **neurodiversity** faces the expectations and challenges of higher education programmes without *targeted and differentiated support* (*support programme* or *tiered interventions*) and *accommodations* to overcome difficulties, the following are likely to occur

1. *net vulnerability* will be high (this includes the student's socio-economic background, the social support he/she receives, the type of family, the education level of the parent(s), the local school he/she attends, etc.). If vulnerability is high, then...
2. the **economic and psychological stress on** the student (poverty, change in family income sources, stable/unstable employment, physical and mental health of parents, living with a disability) **is** also greater. As a consequence, **active participation** and **engagement is reduced**, and the student's **self-efficacy is impaired** (*self-efficacy* Bandura, 1997)
3. the student chooses **reactive coping strategy(s)** (decreasing or increasing interaction with family and friends; engaging in high-risk behaviours; belonging to a spiritual or religious community, etc.), which may determine the student's **stable coping strategies** and identity in young adulthood.
4. If they cannot keep up with their studies and **there is no effective support** and services provided by a micro-group, they **are more** likely to fail and **drop out.**
5. **Resilience:** can be developed by making **productive** (non-destructive) decisions appropriate to the life stage. This requires *good coping strategies*, *successful self-advocacy*, *active participation* in support programmes and in programmes that bring the community together. Indicators of all these can be academic progress; the level of acquisition of skills/abilities for learning, information processing and life management; the maintenance of a stable employment relationship; and the existence of a community that supports individual progress and personal development.

The lesson of the model is that, despite vulnerabilities, students can be successful if the environment of an HEI is inclusive and supports the individual in developing identity and resilience (Spencer et al, It is assumed that interviews with students with special needs will also reveal intersectional identities and the risk factors, coping strategies, and supportive individuals and programmes that help them to remain successful. A number of studies on this topic have already tracked successful young career students from special needs groups (Moriña, 2010, 2017).

II.2.2 The process model and theoretical approaches to inclusion

The third model that framed my thinking about this particular group is Varga's "Process Model of Inclusion" (2015a)
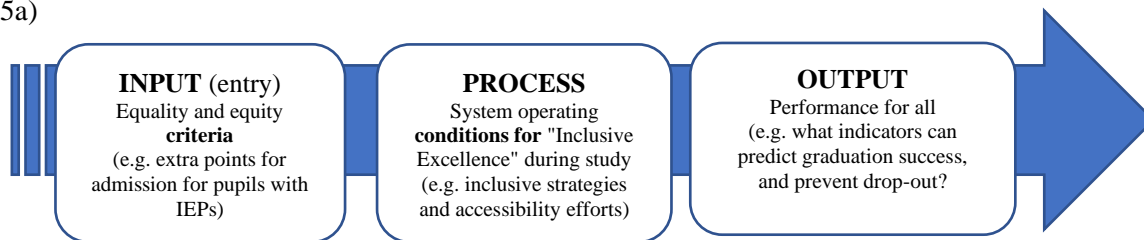
Figure 1: *The Process Model of Inclusion (Varga, 2015, p.66) (own edited figure with the addition of the author's examples of students with special needs).*

I grouped my data according to this model, and formulated my interview questions based on the conditions for *the systemic operation of* an inclusive environment. The principles and conceptual clarifications behind this model are explained in the subsections of my dissertation. It is important to see that a higher education institution has a responsibility to map out how inclusive and accessible its environment is, and what criteria it needs to meet in order to be able to reasonably adapt to the needs of special students. And while inclusive and academic excellence *is a constant goal*, it can only be approached through *continuous development*, by assessing the institution-specific needs that a university sets for itself and by setting strategic goals embedded in the university's operating rules. In today's higher education, Inclusive Excellence and *Diverse Learning Environments* are an internationally recognised and researched *process* (Hurtado et al., 2012; Bensimon, 2004; Peterson et al., 1978, Rankin 2003; Smith at al., 1997; Tarbox, S., 2001; Williams et al., 2005). All the above models *take a process approach to inclusiveness.*

II.3 The conceptual framework of diversity and the relationship of inclusion to academic excellence

Europe's societies and educational institutions are attracting increasingly diverse and diverse groups of learners as a result of accelerating globalisation, technological development and migration, and this process requires universities to become more inclusive, as the meaning of diversity and inclusion is increasingly interpreted in the region's higher education institutions. By *inclusion*, or inclusion in this study, I mean 'that *everyone - in our case, all university citizens - belong, are accepted and supported*' (Swartz et al, And by *diversity*, we mean *individual* differences (e.g. personality, prior knowledge and life experiences) that intersect with *group/social differences* (e.g. race/ethnicity, social status, ability, gender, sexual orientation, country of origin, and cultural, political, religious affiliations) that together influence our lives, identities and relationships (AACU, 2021; Guo & Jamal, 2007).

Diversity, and with it the inevitable *differentiation*, has been one of the most intensively debated issues in higher education policy and research (Bensimon, 2004; Chang et al., 2004). In Europe, these debates have focused mainly on the ability of institutions to expand their training profiles and to meet the different demands and societal needs that are growing with the expansion of higher education (Reichart, 2009; Teichler, 2002; Trow, 1979).

Disability-inclusive education, however, not only has intercultural, psycho-social and cognitive-affective benefits, but also has significant economic benefits for the quality of life and livelihood of participants and their families. International research has shown that years of schooling have a strong positive impact on the probability of employment. A US study showed the difference between employment rate of a student with a disability in an inclusive school and a student with a disability in a segregated setting, which is 73 percent and 53 percent respectively (Abatemarco et al. in Walton, 2012).

II.3.1. Inclusive excellence as an educational policy and institutional strategy framework

The process-based model of inclusion presented in Chapter II.2.2 is seen as a precursor to several models that provide a process-based framework for developing inclusiveness. These included the 'Inclusion Index' developed in public education in England (Booth & Ainscow, 2002) and the model developed in the USA for quality improvement in 'Diverse Learning Environments' (Hurtado et al., 2012).

In the summer 2022 issue of the English-language journal Autonomy and Responsibility in Education, junior researchers and doctoral students of the Inclusive Excellence Research Group of the University of Pécs presented the latest literature on the topic of inclusion in higher education (Csovcsics, 2022; Horváth, 2022; Szabados, 2022; Trendl, 2022; Toszegi, 2022; Vitéz, 2022). Several international researchers have also published in this journal on programmes, good practices and research on the inclusion of underrepresented student groups in higher education in their local specific contexts (Vaccaro, 2022; Varga & Trendl, 2022; Padilla-Carmona et al, 2022; Alluri & Yéré, 2022; Ne'eman et al., 2022).

II.4. Neurodiversity as a key to inclusion in HE

II.4.1. The concept of neurodiversity

For this research, I collected and compared definitions of neurodiversity as a construct used in the dictionary and systematic literature reviews that I have identified.

> "*Neurodiversity:*
> *1:* Individual differences in brain function are considered normal variations within the human population
> *2:* the concept that differences in brain function within the human population are normal and that brain function that is not neurotypical should not be stigmatised.
>> *Neurodiversity is the idea that differences in brain function exist within a population. Differences such as autism, dyslexia and ADHD have existed throughout human history, and not because of faulty neural circuits. Rather, neurodiversity accepts autism as a different way of thinking and behaving.*" - Psychology Today
> 3: the inclusion of people with different types of brain function in a group or organisation." (Merriam-Webster, n.d.).

15 years ago, some international literature referred to the conditions that were called "other psychological development disorders" according to BNO-10 and coded as "developmental learning disorder" (6A03) or "symbolic dysfunction" (MB4B) according to BNO-11 (e.g. dyslexia, dysgraphia and dyscalculia), and the curricular studies reviewed were not all consistent in defining inclusion for 'dys', ADHD and autism

spectrum conditions. Some authors have conceptualised dyslexia as a "phenomenon in which there is a persistent challenge in the acquisition and application of reading and/or spelling at word level" (Diraä et al., 2009, p. 457; Siok et al, Other researchers have regarded it as a form of *neurodiversity*, i.e. "a normal human difference that should be tolerated and respected in the same way as other human differences" (Pollak, 2009, p. 25; Spaeth & Pearson, 2023). Pollack, in his book on the subject, framed *neurodiversity* as a positive attitude towards specific learning *differences* (SpLD), sensing already then that instead of a deficit-based remedial approach, it should be called difference rather than disorder or dysfunction, and that the focus should *be on cognitive processing in different ways* (Pollack, 2009). With regard to the term **neuro-affirmative** as it is used today, it is important to underline the general lack of international consensus on the conceptual framework of constructs (Norwich, 2023).

Figure 2: *Prof. Kirby's neurodiversity diagram, edited and translated by Prof. Kirby (Do-IT Solutions, 2021)*
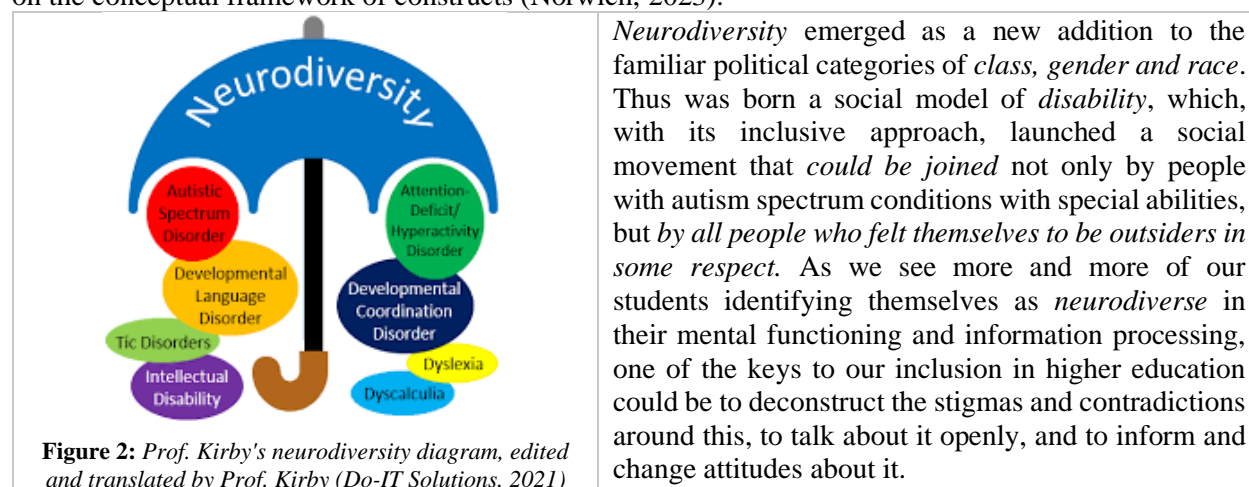
Neurodiversity emerged as a new addition to the familiar political categories of *class, gender and race*. Thus was born a social model of *disability*, which, with its inclusive approach, launched a social movement that *could be joined* not only by people with autism spectrum conditions with special abilities, but *by all people who felt themselves to be outsiders in some respect.* As we see more and more of our students identifying themselves as *neurodiverse* in their mental functioning and information processing, one of the keys to our inclusion in higher education could be to deconstruct the stigmas and contradictions around this, to talk about it openly, and to inform and change attitudes about it.

The main argument of neuroethics is that the exclusionary mechanisms of our elitist education system are in fact morally questionable, as they exclude many neurodivergent students by making them compete with standardized tests tailored to neurotypical individuals, often without the opportunity for differentiation, diverse ways of expressing oneself, and the development of multiple intelligences (Baker & Leonard, 2017; Gardner, 1993). With these arguments, we can accept that not only neurotypical brains have a place in higher education, but also all learners with critical thinking and communication skills who are selected into the system on the basis of their academic performance. If this is the case, do we have a moral obligation to prevent the drop-out of those students who are admitted with a preference (plus points)? Does the university have a moral obligation to support students with learning disabilities or to provide a barrier-free environment for disabled university citizens and access to education for all? Does it have a duty to devote financial resources to learning support services, sub-skills development and academic literacy? It is also worth considering the expansion of domestic higher education from a neurodiversity perspective, and the strategies and dead-ends of possible developments to prevent drop-outs (Kozma, 1984). Baker and Leonard in their book *The Neuroethics of Higher Education* argue that impersonal standardised selection procedures and summative grading are least ideal for *neurodivergent* students because, if they fail, they have no constructive, formative function and do not give the individual real feedback on his or her performance (Arato, 2014:47-50). A theoretical synthesis paper in the first issue of Autonomy and Responsibility 2014 already addressed concepts of equity, effectiveness and efficiency together, which posited the descriptiveness of alternative forms of learning while respecting individual differences and discussed possible implications for teacher education along the lines of the justification of plural intelligence models (Dezső, 2014. p.32). *Perhaps most important* for the neurodiversity movement *is respect for the right of each individual to decide his or her own destiny and how it is referred to*. In the literature of *the* last 5 years, an intersectional identity of *gender and neurodiversity* has emerged that no longer seeks to identify with the categories used by the majority society to pigeonhole and label, a construct called neuroqueer disidentification (Egner, 2019; Griffin, 2022; Magnus&Lundin, 2016). Some also consider neurodivergent

an offensive term, and would use the term *neurominority* instead, because it does not semantically include the adjective of disability, i.e. *divergent* from the norm (see 2023 Rankin interview - Disability in STEMM Archivum, n.d.). In contrast, there are those academics involved in neurodiversity *who do* experience their condition *as a disability* and argue that it is unfortunate to depoliticise the term 'disability' because it is precisely the interests of the students concerned that are harmed if their diagnosis does not find an institutionalised support system or protocol (Cartledge-Mann, 2024). However, in the interest of protecting biodiversity, we must also consider that if an institution were to select its students on this basis, and filter out students with specific learning differences and autism spectrum conditions through standardised testing or interviews for personal aptitude, we would not know which talented students would not be given the chance to flourish. Organizational psychologist Nancy Doyle's (2020, pp.113-116) **bio-psychosocial model** describes a taxonomy of the most common variants of neurodiversity among our students. The model is of interest to us because it outlines not only the challenges of each condition, but already *the advantages and strengths* of different types of mental functioning.

So the concept of neurodiversity is a paradigm shift in that it is not about diseases, but about mental functioning. In Doyle's model, we see that the same emphasis is placed on strengths. "Rather than viewing the majority of our population as having a 'mental deficit', behavioural dysfunction or pervasive developmental disorder**neurodiversity** *proposes instead to talk about* **differences in cognitive functioning** (Armstrong, 2011). In contrast to the corrective-focused medical model of traditional therapies, it is important to emphasize that, in line with the social model of disability (Shakespeare & Watson, 2002) and **neuroaffirmative** *approach*, individuals with neurological and specific learning differences "are not to be fixed," "normalize" them, but rather seek to recognize them in an accepting, "affirming" and "affirming" way so that their specific, unique strengths can be realized.

III. RESEARCH METHODOLOGY

The research is based on a multifaceted, broad toolkit, with triangulation in mind (Sántha, 2017). In terms of qualitative data, I first conducted a documentary analysis of the Higher Education Act and disability legislation, using systems theory as an interpretative framework (A). Among the quantitative data, I filtered and analysed my research **by secondary analysis of** descriptive **macro-statistical data from** the Neptun database covering a 10-year period for PTE, specifically for the training indicators of my research focus group (B). Then, I found it necessary to conduct a recent systematic literature review on the topic to map international and national constructs and practices (C). Then, **I conducted a questionnaire** survey to **explore** the experiences of students and lecturers at our university and their attitudes and perceptions towards the inclusiveness of higher education. As a research tool I used the **student questionnaire** "*University* Inclusion *Opinion Scale (EBAV-Scale)"* (D1), which was validated on the basis of the Inclusion Index and adapted to the Hungarian higher education context . As well as the questionnaire *"How to strive for inclusiveness? - CHARM-EU's* **tips** *for university lecturers"*, I used a self-assessment **questionnaire** for university **lecturers** translated into Hungarian for the first time in Hungary (E1). The answers to the open-ended questions were followed by qualitative coding and analysis and summarisation of the results (D2; E2)**.In structured** interviews**,** *neurodivergent students* shared their life stories with me about their perceptions of inclusion in higher education (F). The analysis focused specifically on the group of preferred students with special educational needs. **Participant observation** (G) was carried out in four institutions (University of Pécs, Masaryk University in Brno, Oranim Teacher Training and Special Education College in Israel and the University of Seville), and I also conducted **expert** interviews (H1) with the heads and staff of support services and centres. **The management interviews** (H2) and the systematic **international good practices** (I) recorded during the visits to the partner institutions could also contribute to the strategic development proposals for the group of students under study. With the help of these research tools, all the planned data collection was completed, most of which has been processed, but due to the limitations of the dissertation, only part of the results can be included in the current analysis. For each research instrument, I also specify the population and sample, as well as the sampling method.

Building on these preliminary studies, I designed my research *using the* mixed method illustrated belowAmong the mixed method research design principles, this research followed the *Convergent Parallel Design*, where my quantitative and qualitative research was conducted in parallel, as this particular mixed method approach maximises the strengths and minimises the weaknesses of the different paradigms (Lochmiller & Lester, 2017; Onwuegbuzie & Leech, 2006). figure below (Figure 4) illustrates the convergent parallel design approach.
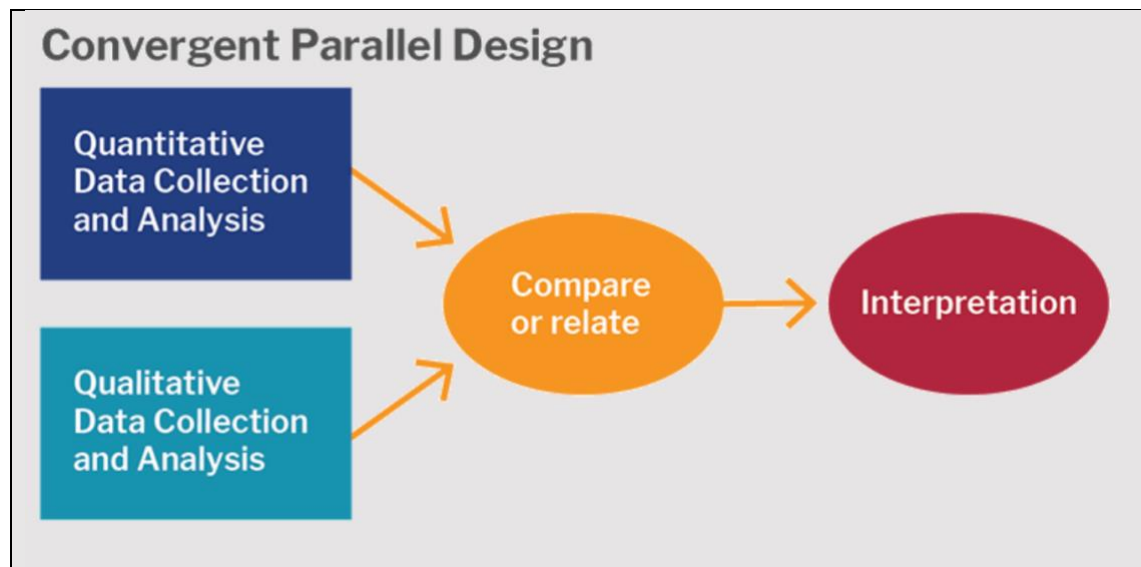
Figure 3: *Research method - convergent parallel design based on Harvard Catalyst (n.d.)*

Finally, the two datasets were displayed together in a *joint display analyses* (Creswell & Clark, 2011) to identify convergence and divergence between the quantitative and qualitative strands of results, i.e. to see which elements of the results converge and diverge.

III.1. The horizontal aspect of the research: an inclusive model
In this part of my dissertation, I present the research points and questions that I have kept in mind when designing all my research tools. Along the structure of the processual model, I have grouped my investigation around the stages of *input*, *process* and *output of* inclusiveness - both from the student and the institutional side.

III.2. Presentation of the research tools
The triangulation of the research is ensured by the fact that I approached inclusion from the perspective of a wide range of participants, with quantitative and qualitative data collected between December 2022 and June 2024 using the tools and methods detailed below.

III.2.1. Systematic literature review and evaluation of relevant literature
We have reviewed several international volumes of studies on diversity and inclusion in higher education, so I first summarised them and carried out a document analysis of the relevant higher education law and disability legislation. As the research progressed, and as the *results of the Neptune data secondary analysis* led me to the conclusion that the present research will require updating this literature framework from a disability studies perspective and writing a systematic literature analysis. In this chapter, I will also conduct a methodological review of the research tools that are relevant to the research I intend to conduct (*Research Question 1*).

The framework of my dissertation gave me the opportunity to discuss the systematic literature review, following the steps known in the literature (Xiao & Watson, 2019; Shaffril et al, I present the results obtained following the systematic review methodology in the form of a summary scoping review, which is detailed in Table 4 of my dissertation, based on the Prism protocol (Peterson et al., 2017) and illustrated here in Figure 4.

Figure 4: *PRISMA 2020 flowchart for new systematic literature reviews that include only searches of databases and records* (Page et al., 2020).

Identifying studies using databases

Identification

The identified records*:
EBSCO/Academic Search Ultimate (57),
ProQuest-Education Database (5)
APA PsychInfo (24), ERIC (11),
SCOPUS (31), Web of Science (4),
Education Source (51) JSTORE (3)
Number of databases (n = 8)
Studies (n = 186)

Data removed prior to screening:
Duplicate removal (n = 47)
Removal of non-English articles (n = 3)

Filtering

Articles reviewed by researcher
based on title and abstract
(n = 136)

Excluded records**
(n = 69) did not the criteria

requested
(n = 67)

Records added by manual search:
(n=11)
Articles not found: (n = 1)

Studies screened and **assessed against the criteria** (n = 77)

Excluded reports:** (n=40)
1. reason: NOT empirical(n=21)
2. reason: Syst.Rev./Nar.Synth. (n=6)
3. reason: NOT higher education

Consultation

Studies included in the review:
(n = 30)

Overall, the literature on the experiences of neurodiverse students in higher education and the support systems that affect them shows that neurodiversity poses *a range of challenges* for both *students* and *educators in institutions*. The main reason for this is, on the one hand, the deficit-based approach, whereby the most common types of neurodiversity are still stigmatised in education systems, resulting in a dilemma for adult students worldwide about whether to embrace their diagnosis or shoulder the time, energy and costs as adults if they have gone through their schools without it (Pino & Mortari, 2014; Anderson et al., 2017; Coudel et al., 2020). Not only is there a lack of transparency from students to the institution, but also *the* latency of *faculty neurodiversity* is even greater, so it is a challenge for faculty-researchers to assert their strengths, which makes them underrepresented in academia everywhere, where a strategy to protect this is not built in, supporting equality, diversity and equity across the university (Mellifont, 2023).

On the other hand, *inconsistent support in* higher education institutions across regions is also a challenge, and there are significant differences in the types of support services provided to adult learners with specific learning differences (SpLD) even across the 11 institutions studied in one country (Dobson, 2019). The international literature supports that a shift from a deficit-oriented approach to a neurodiversity-affirmative action approach is key to the inclusion of people with invisible specific learning differences. Taneja-Johansson (2021) examined factors and barriers to access to higher education in Sweden from a disability perspective, focusing specifically on the lived experiences of young people with ADHD. The results show similarities with other barriers related to special educational needs, for example, she highlighted the challenges of transitioning from the secondary school system to university and becoming self-sufficient, and the inadequate support available at university. She highlighted heterogeneity among people with ADHD and inadequate support structures in higher education. Parents, financial security (scholarships and family support), as well as individual factors and psychological capital, such as discovering their own learning style(s) and facilitating their learning methodically, and belief in their own abilities, were identified as strong support factors. Here again, ADHD and socio-economic disadvantage combine to reinforce the vulnerability visualised by Spencer in the figure in Appendix 4 (Spencer & Harpalani, 2004: 53-77). Several studies emphasise that universities urgently need to change *their entrenched* structures that perceive students with disabilities *as a homogenous group* and disability *as an individual problem*, and that it is time to enable participation for all (Cloudel et al, 2020; Taneja-Johansson, 2021). Studies also emphasise that disclosing a neurodiversity diagnosis and seeking appropriate reasonable accommodations often presents students with a dilemma (Coudel et al., 2020; Anderson et al., 2017). In many cases, they fear stigma, which may lead them not to seek help, and thus often *the support systems available are untapped.*

The need for continuous *monitoring* and support is a very important feature of the host environment. The empirical evidence from the reviews emphasises that support, especially for students with autism spectrum conditions, needs to be ongoing, not only reinforcing support at entry, but also monitoring to adapt the nature of support services to changing needs throughout university life, as it is not just the challenges of academic life and vocational subjects that the *Added Learning* Support model can address for non-homogeneous neurodivergent groups. Research shows that for neurodiverse students, *the development of social and emotional competencies* and *a strengths-based approach are key* to successful career guidance and orientation towards the labour market.Thus, higher education institutions need to pay increased attention to social and emotional needs, as well as academic needs, in order to be inclusive (Sewell, 2022).

The use of *inclusive teaching strategies* is key, as the learning needs of neurodiverse students are often different from those of typical students. The combination of individualised and more flexible support, Universal Design Strategies (UDL) and technological tools could improve the academic and non-academic experiences of these students. Instructional technology and methodological training that shapes the approach to teaching and assessment could alleviate many of these challenges and enable neurodiverse students to be more successfully integrated into higher education with fewer risk and stress factors for all educational stakeholders (Cloudel et al, 2020; Sewell, 2022). *Building* appropriate support systems *into a central DEI strategy* would be the most effective way to do this, as it would not be a matter of remedying individual problems of individual students, but *of deconstructing structural barriers at a systemic level* (Dwyer, 2023). Finally, in the area of *instruction and assessment, mindset-shaping instructional technology*

and methodology training is needed mitigate the challenges of neurodivergent students (and staff) to succeed with fewer risk factors and at the cost of mental health stress (Gillespie-Lynch et al., 2022). These empirically based thematic findings reflect the complexity of the issue of neurodiversity in higher education and highlight the need to *improve support structures*.

III.2.2. Document analysis

I conducted a document analysis of the formal diversity and inclusion strategy documents of training programmes and universities (where they existed), and looked for inclusion-related sections in these policies. Elements of the Higher Education Act and relevant legislation, elements regulating and facilitating admission (institutional admission process, aptitude test, and preference based on institutional scores), process, institution's support that can be filtered out of the Neptun system, and elements of the outcome expectations that are sensitive to their target groups.

Besides the University of Pécs, I visited the following international partner institutions during my doctoral studies in the last 4 years (n=6): Among the EDUC partner universities in the Czech Republic, I visited Masaryk University Brno; for teacher and special needs teacher training, I visited a significant partner university in Israel, the Oranim College of Education, from which visiting lecturers often come to us; two Erasmus partner universities in Spain, the University of Seville and the University of Barcelona, with whom we have submitted Erasmus+ applications, and, for its understanding of universal design, the University of Maryland, College Park, USA. The document analysis included the universities' operating rules, equality plans and inclusion strategies, available on their websites and obtained from their managers.

Since my questionnaire for students and teachers at Hungarian universities in Hungary and abroad resulted in a low number of respondents, it only made sense to focus on the institutional documents and programmes of the University of Pécs, as well as the services and data of the institutional unit (Support Service) that specifically supports students with disabilities, including neurodivergent students.

In particular, the document analysis focused on the diversity criteria identified in international studies, including diversity benchmarks for students with disabilities, including neurodivergent students, and need to address critical minimums in university curricula for a more compassionate higher education pedagogy (Hamilton & Petty, 2023). In the document analysis, I examined the structural criteria that could constitute a framework for the development of diversity in university life and specifically in training programmes for university students with special educational needs (*Research question 3*)

III.2.3. Multivariate statistical analyses, correlation studies

Varga and colleagues (2021a,b) have already shed light on the processes and events behind student dropout in a previous study, especially for the disadvantaged preferred student population, by conducting a large sample survey. These were also carried out for special needs and especially neurodivergent groups in the secondary analysis. Statistical multivariate data analysis based on the process model of inclusion for students who were admitted, benefited from equity, participated in mobility, obtained a language proficiency exam and completed their studies (*research question 2*).

In the case of neurodivergent students, I also considered it important to find out what factors influence the students' institutional attachment, how much they feel like PTE citizens and how much they feel accepted/accepted at the university, and what areas of support services they mention as lacking. Time-series analysis of student databases can provide a factual picture of the areas of inclusion in many different aspects, whether there are differences in the training data of special educational needs or neurodivergent student groups compared to the overall student population. On the one hand, the input, inter-process, degree and post-graduate status of the target groups can be examined. My methods of analysis for these are explained in detail in this chapter of my dissertation. The comparison of the criteria obtained from the documentary analysis is important because the statistical data can reveal patterns that can not only enhance student resilience but also highlight the determinants of the academic environment of academic excellence and can be used to develop a strategic plan for a future-responsive, equitable and continuously modernising and internationalising university (*Research Question 3*).

III.2.4. Structured interviews with directors of inclusive programmes

The interviews were conducted along the elements of the Process Model of Inclusion, described in detail above, with a focus on neurodivergent students and specific to the institution. From the international partner institutions visitedI present a practice related to the theme of visiting lecturer and staff mobility and 1-1 week fieldwork at 5 foreign and 1 Hungarian university visited, which I found adaptable and positive practice for increasing university inclusion. I also conducted interviews with the heads of support services and inclusion programmes and ombudsmen at these universities (n=12), from which I quote here only the relevant reflections. Interviews were conducted with disability commissioners (PTE, ELTE), *programme managers* (MUNI, Oranim, UMD), *the rector* (Oranim), *deputy deans for internationalisation and equal opportunities* (Universitat de Sevilla), *lecturers in the social pedagogy department* (MUNI) and *programme managers in special education* (Oranim), as well as an *Ombudsman* (PTE) (*research question 3*).

III.2.5. Life course and focus group interviews with students with special needs

With the help of the Support Services Manager, students with mobility, visual and hearing impairments, speech impairments and learning disabilities (n= 12) were invited to a focus group or individual interview in 2022 by sending out questionnaires with a voluntary application (research question 2). It was an interesting finding that all students wanted to have an individual life course interview rather than a focus group interview, which had the advantage of not having to find a suitable time for several people, which fitted in well with everyone's timetable. Discretion was also an advantage, as was the online space, which was chosen by 66% of participants. The disadvantage, however, was that I received much more data in this way, the length of which made it lengthy to transcribe (speech to text transcript), listen back to and clean up the data (deleting unnecessary parts, e.g. personal comments). My semi-structured student questions are presented in section III.2.5 of this dissertation. A copy of the student consent form can be found in Appendix 8 of the dissertation.

III.2.6. Fieldwork in support services of international partner institutions

Due to the limitations of my thesis, in addition to the comparison of structural and program elements, I will quote from the transcripts of interviews that can be linked thematically to them, and I will only present practices that can be transferred to the institutional practice of the PTE, which can be highlighted as examples from all universities, and these are organized in Excel, and a catalogue of comparable programs.

I used the interviews with informed consent forms attached in the appendix to inform the participants and adhere to research ethics. I obtained permission for digital audio recording for processing. I processed the interviews using the Otter.AI audio-to-text transcription software and intend to publish their coding and narrative synthesis in further publications, subject to agreement with the cited authorities. In this dissertation, I protect the identity of professionals in institutions where sensitive data is disclosed or where the titles make the identity of the person clear, I cite information quoted from them only with their prior agreement.

I was introduced to the CHARM-EU *Good Practices in Inclusion and Diversity* at the CHARM-EU Inclusion Conference 2022 and registered the practices I have recorded according to this set of criteria, in order to make them compatible with the other European good practices already collected in the catalogue on this topic (CHARM-EU Deliverable 6.2, 2022). You can read more about this CHARM-EU set of criteria in chapter III.2.6. In addition, I also recorded participant observations on the physical accessibility of the university and its services in the buildings of MUNI in Brno, the University of Seville, the Oranim campus, UMD and the University of Barcelona.

III.3. Presentation of research tools created by adaptation

The following two subsections describe the creation, adoption and validation of a selfadapted questionnaire instrument, which is the novelty of my present research. In my study, I designed to adapt measurement tools and research methods that have been previously tested in US studies on the development of Inclusive Excellence models and in comparative education research in European university consortia (EDUC, CHARM-EU, EUCEN-INVITED Project) (Claeys-Kulik et al, 2019), and have been validated in studies

with the Inclusion Index adapted for European higher education (Salceda Mesa & Ibáñez García, 2015) in other countries in Europe (Losada Puente et al., 2022).

The questionnaire survey of the PTE student population was carried out by *access sampling*, via Neptun, online. The questionnaire is a self-developed adapted questionnaire consisting of 56 questions, 36 of which are items from the EBAV scale validated for Index for Inclusion in Higher Education, the rest are items on institutional discrimination and instructor inclusion practices, and sociographic questions. The dimensions, factors, and items of the PTE Index for Inclusion Survey (EBAV scale) and its statistical validation are presented below (Research Question 2).

A fundamental limitation of this part of my research is that the sample is neither representative nor stratified, as only 1.3% of the student population participated in the questionnaires, even at PTE, out of the approximately 20,000 students, the gender, faculty and disability types are not distributed in proportion to the total population. For example, TC students are over-represented compared to the overall student population (80:270 for all special needs indicated - including chronic and persistent illness, which is 30% participation; and 37:99 for TC students with an active BNO code preference, which is 37% participation, most likely due to the relevance of the topic to them and the help of the TC leader, Csaba Magdali.

III.3.1. Scale of Perception of University Inclusion (SPUI Scale) - questionnaire for students
The 36 items of the EBAV scale of the Inclusive Index questionnaire validated for higher education can be grouped under the following 3 main dimensions, which in the original index documents were commonly referred to as the ***culture, policy*** and ***practice dimensions***. In the Hungarian Csányi-Schiffer translation, these are labelled *A. Developing an inclusive approach*, *B. Developing inclusive programmes and strategies*, and *C. Organising the everyday practice of inclusion*. Under these dimensions, there are 2 to 2 further sub-dimensions, i.e. 6 factors in total, and 36 questionnaire items, numbered and grouped in the table below, the lists of which are available in English and Hungarian in Appendix 4. All the steps of adapting, validating and using the Index as a tool are detailed in this chapter of my dissertation.
The PTE Inclusion Index questionnaire is composed of responses on a 5-point Likert scale, with indicators for each factor. The table below shows the 36 inclusion items of the final questionnaire grouped along the 3 main dimensions (A, B, C) and the 6 sub-dimensions (i.e. factors F1-F6).

The dimensions and sub-dimensions of the EBAV scale of the Inclusion Index and the indicators calculated for the corresponding items are shown in the figure below. The Hungarian version has been adapted by the author on 25 July 2022 for the language of domestic higher education institutions.

In a focus group with the Support Service staff, we evaluated and validated the interpretability of the questionnaire questions, rewording several questions that were either not worded in English enough or were not easy to interpret. Then the pilot questionnaire was completed by the team and after corrections I made sub-questions, for example to question 7, response to the Hungarian situation. The English version of the *original questionnaire* and the Hungarian version adapted by the author in the order of the statements can be found in Annex 6 of my thesis.

Statistical tests with the EBAV scale questionnaire: reliability and normal distribution
I developed a tool to measure the inclusion of universities using a Google Form questionnaire entitled #PTEInclusionIndexResearch (Appendix 5). The questionnaire consists of **56** items:

- *36* of which contain *the EBAV scale of the Inclusion Index validated for higher education*, grouped into 6 factors (1-36 items);
- one question (7b) examines *the extent of discrimination against social groups* among students, *broken down into 20 characteristics and affiliations* (including gender, race, ethnicity, language, alien status, sexual orientation, physical or sensory disability and other categories included in legislation, as well as chronic illness, mental health, learning disability);
- one question can rate *statements on the 1o thematic pillar of the Inclusion Tiplist for CHARM-EU trainers* on a Likkert scale;
- followed by *questions on* the 20 university courses and the *sociographic data of* the respondent, where the sensitive data are optional;

- finally, by answering a complex set of open-ended questions, the respondent can write, in any length, even in a single sentence, his/her experiences, opinions and suggestions along the Inclusion Process Model on the input, process and output of his/her university studies.

With the permission of the Vice-Rector for Academic Affairs of PTE, the revised questionnaire was distributed to students at all levels of the university through the Neptun Unified Study System. In addition to PTE, I planned to collect data from other Hungarian universities and teacher training institutes across the border in order to validate the Inclusion Index part of the questionnaire for the region as a tool, but the completion was not successful despite the snowball method and contacts with the university's deputy academic rectors. The range of completers of the full database (n=312) can be seen in the descriptive statistics in Annex 2. Here I would like to highlight a data point that is only important for the logical flow of the analysis, namely that 262 responses were received from the University of Pécs out of the 9 participating universities.

Table 1: *Inclusion Index dimensions, factors and associated items and Totals for PTE.*

Dimensions (3 pieces)		Sub-dimensions Factors (F1-F6)	Questionnaire items (1-36)	M	SD	Kurtosis	Skewness	α
CULTURE	*Creating inclusive cultures*	*Building communities*	2, 3, 4, 5, 6	20.1	3.81	0.419	-0.816	0.822
		Establishing inclusive values	7, 8, 9, 10, 12, 13, 14, 17, 18, (30)	38.5	7.79	0.304	-0.794	0.877
POLICY	Organising diversity support	*Developing a university for ALL*	(1), 15, 16, 20, 25, 26	23.5	4.59	0.476	-0.762	0.729
		Organising diversity	22, 23, 24	10.4	2.96	-0.457	-0.384	0.769
PRACTICE	Developing inclusive practices	Orchestrating learning	11, 19, 21, 27, 28, 29, 31, 32, 33	33.8	7.64	-0.420	-0.470	0.900
		Mobilizing resources	34, 35, 36	10.9	3.02	-0.520	-0.412	0.830

On the Hungarian *version of* the Inclusion Index survey adapted to the **EBAV scale** for higher education in Hungary, *I tested the reliability indicators and the normal distribution by factor using the statistical software Jamovi* on the data of 241 PTEs and 312 *Hungarian university students,* the results of which I report in this chapter of my dissertation.

My research tool for PTE had a sub-population of 20,000 for the 2022/23 academic year, of which 241 completions were received. One of the main limitations of the survey from the other universities included was the fact that only very few completions were received because the questionnaire was not supported for posting on their central Neptun system.

III.3.2. CHARM-EU Inclusivity Tiplist for Educators - survey among teachers

The questionnaire survey of the PTE teaching staff was carried out by access sampling, via Neptun, online. The questionnaire is a self-developed adapted questionnaire, the details of which are described in the following subsection. This survey is based on the CHARM-EU Inclusivity Tiplist for Educators, and Dr. Ágnes Fazekas-Vinkovits gave me permission to translate the CHARM-EU pedagogical guidelines into Hungarian, which, as a qualified special needs teacher, I supplemented with questions specifically designed to explore the teaching and learning environment of students with disabilities and neurodivergent students.

The aim of the questionnaire is to explore respondents' attitudes towards different student populations, their preparedness to educate and support a diverse student base, and their sense of experience and preparedness to organise inclusive education, to deliver knowledge in multiple ways and platforms,

and to flexibly apply multiple assessment methods in the spirit of universal design and reasonable accommodation. This is of particular interest to us in the context of serving special needs including neurodivergent university students, as international literature supports that an institution-wide and universal design-based instructional design (UDL) also contributes greatly to the academic success and dropout reduction of non-disabled university students (Research question 3)

The base population would have been the total number of lecturers at the 12 universities, but 86% of the questionnaire was completed by lecturers at PTE, so the base population of 1400 is the relevant population. One of the main limitations of my research was the fact that far fewer than expected completed the questionnaires, and despite my request to the Vice-Rector of Academic Affairs of the other universities to agree to their central sending, the Vice-Rector of Academic Affairs of PTE and the committee appointed by him did not accept the decision, so only those I met as a colleague at a conference completed the questionnaires. The final *sample* was **126 faculty members completing** the survey from the beginning of April to the end of May 2023. Since this questionnaire is based on a self-assessment by the lecturers and I received useful feedback on how it could be supplemented and where changes should be made, I did not subject it to validation and reliability tests in this doctoral research and therefore did not carry out statistical measurements and tests with it until then. In this research, I will only examine the self-assessment feedback of the trainers on the Likert scale and their qualitative responses to the open-ended question. Here, I also did not consider it important to further narrow down the respondents' dataset to PTE lecturers, as the dataset contains data from national and cross-border respondents in a ratio of approximately 14:86, even if not representative.

IV. Research results

I present my results along the lines and in the order of the research questions. In this way, thanks to the methodological triangulation presented in the previous chapter, the results are now drawn from multiple perspectives, using multiple research tools to obtain a response, and showing connections

IV.1 The research instruments measuring inclusivity and model building
IV.1.1 Empirical trends in the literature on neurodiversity inclusion in higher education

I have examined international research trends on higher education inclusion assessment tools (see Inclusion Index) and empirical research summarising narrative syntheses of empirical research exploring the experiences of neurodivergent students (Clouder et.al, 2020; Sewell, 2022, Pino & Mortari, 2015, etc.), which filtered a total of 38 out of 647 publications from the literature over the last 15-20 years as relevant sources based on the criteria, and a further 30 articles from the most recent studies over the last 5 years for a forthcoming systematic review, the criteria-based assessment of which is presented in Appendix 14. I summarise the key nodes and currents research directions of these and the literature I have recently read in the table and nodes below.

Table 2: *Themes and of the systematic review on neurodiversity in higher education*

The thematic strands of the literature review that have emerged so far:	Additional sub-topics appear below the topics:
A. The experiences of neurodivergent higher education students	- Emotional reactions and well-being - Personal vs. social life - Academic progress at university - Identity and possible self-images
B. Higher education's response to neurodiversity	- Disclosure and diagnosis of neurodiversity - Reasonable accommodation - Academic attitude and scientific expectations - Institutional support and pastoral care

C. Inclusive strategies for teaching, learning and assessment	• Approach to teaching and learning • Technology support • Attitude to assessment • Interventions in education specifically for neurodivergent persons/learners/students
D. relative vs. absolute cognitive strengths	• what does strengths-based (not deficit-based) teaching practice look like in higher education?
E. developing social and emotional competences	• it is not enough to focus on physical and academic needs (see Spencer's P-VEST model and the example of the PTE CsoDisz Club)
F. Integrating a neuroaffirmative approach into the university equal opportunities strategy	• University culture and pedagogical approach can be shaped more effectively through central strategies

Reviewing the narrow topic group, which according to the PTE Support Services is under the growing umbrella of neurodiversity, I concluded from a systematic review of the six most recent narrative syntheses and systematic reviews that while the first 3 do not include literature from the last 3-5 years, they exclusively cover research in English from the Anglo-Saxon and "Global North" (USA, England, Australia, Sweden). My own literature review of 30 literature reviews now provides a thematic synthesis of not only recent studies from the Anglo-Saxon world, but also those from scholars in other regions publishing in English. The following literatures are all supported by empirical research showing that neurodivergent hallagtos also have cognitive strengths and can perform better than their neutropic counterparts in certain domains. As a result of the Golem effect, whereby their teachers pigeonholed them into parking careers with low expectations (Rosenthal & Jacobson, 1968), many of them were treated throughout their school careers as "catch-ups" and not as "rejects" for university. Taft and colleagues (2009) in Iran have shown outstanding results in testing original thinking in neurodivergent students; Alves & Nakano (2014) in Brazil found higher creativity scores for those diagnosed with dyslexia, and Kannangara (2015) in the UK used the term '*thriving* dyslexics' to describe students who had a positive outlook on challenges, excelled at goal-setting and persevered. Reigosa-Crespo (2019), from Cuba, reported on the individual strengths of dyslexic students that should be taken into account when designing iterations for them. These learners all performed better than their typical peers, which shows that new approaches and approaches are indeed needed to reduce the stigma of special learning differences (SpLD). Most of the systematic literature reviews I have read focus on *autism spectrum conditions* and *dyslexia* from the neurodiverse target group, but qualitative data collection with students with ADHD is also part of the sample in places. A stand-alone systematic literature review on ADHD in higher education would be important, and there is also a paucity of research and presentations at conferences on other neurodiverse conditions such as dyspraxia and OCD, which often co-occurs with neurodiversity (Mellifont, 2021).

It is important to consider neurodiversity together in higher education because this is how we can exploit the boundaries of cognitive strengths in context and support international good practice and pedagogical guidelines for Universal Design for Learning (UDL) and inclusive environments. Otherwise, cognitive diversity will become a disability issue isolated by BNO codes, treated as a medicalised problem and deficit, because specific learning differences will either be swept under the carpet, thereby increasing the vulnerability of students in higher education to the net, or they will be structurally hindered without the necessary supports.

IV.1.2. Results of the surveys adapted to measure inclusiveness

IV.1.2.1 Quantitative results from the Jamovi statistical tests

After the reliability test and normal distribution tests presented in the methodology chapter (III.3.1) and the descriptive statistical analysis of the completers, I ran Independent Samples T-Tests to see whether our focus group behaved differently from our control group on the process and outcome inclusion conditions.

My analysis showed that the p-value of Levene's test is significant for each factor (<0.05), except for F2 (Creating inclusive values). This demonstrated that *there is significance in* Likert scale scores for opinions on university inclusion between whether the student completed the questionnaire *as a special* needs *student* or as a member of the control group *for 5* out of 6 *factors.*

An independent samples T-test was conducted on the item of question '*Neurodivergent?'* (44C) for the factors and discrimination sub-items and the instructor inclusion scores. Here again, the difference was significant. And the difference in Likert scale scores between neurodivergent and non-neurodivergent student completers was significant for all factors. The effect size is medium (0.4, which is a value between 0 and 1), so the significance is medium.

However, when conducting *an analysis of variance* test *with ANOVA*, I did not find any significance for the various special need categories - which may be because the relatively small number of items breaks down into even smaller ones, and I should mention as a limitation of the research tool that the categories *are not exclusive* due to latency, intersectionality and diagnostic anomalies (Byrd et al., 2019)

I used **cross-tabulation statistical** tests (contigency tables) as the *independent variables*, then crossed out pass/repeat, language proficiency test, mobility as *dependent variables*, and always tested the correlation between the two (whether they were significant). I then looked at frequency analysis - where I put *the factors in the rows*, which I break down by (the independent variables), i.e. *the categories of special need* (coded 1,2,3) and *whether it is neurodivergent* (0, 1) *and the dependent in the column* (to give a percentage for the column). Here, *significance* emerged *for course repetition and passivation* alone, i.e. *there is a significant correlation between being a candidate for special need and and how much passivation and course repetition* - thus, as a training characteristic indicating dropout risk, significant difference emerged for *passivation* alone.

There is NO significant correlation *for language proficiency* and *housing benefit*, which seems to contradict the second analysis with 10 years of Neptune data for language proficiency, but it is easier to detect a significant correlation in a larger sample than in such a small sample that is further subdivided into subgroups. This is certainly a major limitation of my questionnaire research, in that despite much preparation *it resulted in a small sample* with an over-representation of special needs students, so it was challenging to detect significant correlations.

IV.1.2.2 Descriptive statistics on the respondents to the student questionnaire

Because of the significantly smaller number of items compared to PTE, I decided not to focus on these fillers in this research because the results on the Inclusion Index factors would be biased, so I filtered and analysed the data only for the **262 respondents** for **PTE.** For the non-PTE completers, I analysed only qualitative data from open-ended questions from special needs students, including neurodivergent students, because these experiences can help to understand the experiences of neurodivergent students in higher education regardless of university. The complete data table, with coding work for categories and calculation of totals and averages for factors, and questions and qualitative responses to elements, contains **34,760 data items aggregated into 110 columns and 316 rows.** I have made this Excel spreadsheet, as well as additional spreadsheets with additional filters, available electronically for the reviewers of my research for the purpose of transparency to the subject supervisor and reviewers who read and evaluated the dissertation. The code table and the statistical analyses obtained from the data are presented in the appendices.

IV.1.2.3 Descriptive statistics of PTE students participating in the research

In this section, I have analysed data for PTE, with respondents (**N=262**) representing almost all ten *faculties of* the university, and my descriptive statistical results are illustrated in the tables below, with further data on preference, parental education, special needs, language skills and passivation in the corresponding chapter of the thesis.

Tables 3-19: *Distribution of PES student respondents to the EBAV student questionnaire by faculty, gender, age group, level of education, training, type of training, type of funding, place of birth, housing allowance, time spent in training, language proficiency and mobility, mother tongue, pass/repeat, type of settlement and extra credit*

3.Kar	Students (in total)
BTK	115
TTK	27
MIK	27
ETK	20
ÁJK	18
ÁOK/GYTK	15
KPVK	14
MK	3

6. Gender Female	Gender: male	Do not want to enter
161	94	7

7. Age group	Students (in total)
18-24 years	131
25-29	52
30-39	32
40-49	40
50-59	16

4.Training level	Students (in total)
Bachelor's degree (BA/BSc)	123
Master's degree	98
Univocational teacher training	54
Doctoral (PhD, DLA) training	15
traditional university	13
Further specialised training	10
Higher education vocational training	4

8. Training scheme	Students (in total)
Full-time	189
Correspondence	72

9. Form of financing	Students (in total)
State scholarship holder	198
Self-costed	63

5.Place of birth	Students (in total)
Baranya castle	80
Neighbouring counties	44
From other counties in Hungary	101
Foreign	33

10. Is there a housing allowance?	Students (in total)
College student	48 (VAN)
Lives with her parents	63 (NINCS)
Sublet	90 (NINCS)
Living in own home	61 (NINCS)

11. tongue	Students (in total)
Hungarian	233
other foreign language	29

16. Time spent in training	Students (in total)
freshers	117
sophomore	69
third year	39
quarterly	9
fifth year	10
sixth year	8
No comment	10
Start of training before 2016	4

12. Special need?	Students (in total)
ye	80
not	182

13. Passivation, course repetition	Students (in total)
Passivated	30
Course repeated	44
Neither passed/repeated course	189

14. Earning activity (in addition to studies)	Students (in total)
Not working (scholarship+ parents support, not found a job)	
Course repeated	55
Full time	90
No reply	13

15. Speaks a foreign language well enough for mobility	Students (in total)
Yes (91 B2; 80 C1)	212
No sufficient language skills for mobility	49
No comment	1

17. Type of settlement	Students (in total)
Village or parish	58
City	182
Capital	22

18. Excess points (preferentially scored)	Students (in total)
yes (due to specific need)	25
yes (disadvantaged)	3
yes (carer of the child)	3
not required	213
don't know/didn't know there is such a thing	18

19. Have you been on student mobility?	Students (in total)
Yes	20
None (did not apply or failed)	241
No reply	1

Of the 262 respondents at PTE, 182 did not indicate *a specific training* need, so they form the *control group for* my research questions. In total, 80 respondents indicated **a special need**.

IV.1.2.4 Inclusion Index results for University of Pécs

How did respondents with the above characteristics rate our university in terms of the Inclusion Index indicators? The Inclusion Index is the first 36 items of my questionnaire. The index is divided into 6 factors, and each factor is associated with a different number of statements, the structure and themes of which I have shown in detail in the validation of the questionnaire. The results of the respondents were aggregated by item and by factor. Under each item, I calculated the total actual points received (total actual points) and divided by the highest possible score that would be achieved if everyone had given a 5 on the Likert scale to the statement (total possible points), and then calculated the percentage of that score that item received compared to the highest score. I examined this for all 6 factors and highlighted the outliers, the items with the highest and lowest scores within a factor, as baseline data for a future strategic plan. I also averaged the results for each factor and reviewed them to get an average for that factor, where I put the average into the range and examined the variance to see how much variation in the results gave the average.

I interpreted the Likert scale results as follows:
Table 20: *Calculated ranges of Likert scale scores (range)*

Likert scale value	Interpreting the values of the scale	The range of values
1	He does not agree at all.	1.0-1.8
2	Rather disagree.	1.9-2.6
3	Only partly agree (partly disagree).	2.7-3.4
4	Rather agree.	3.5-4.2
5	Absolutely agree.	4.3-5.0

The descriptive statistical analysis of the factors broken down into categories of special needs summarises the following for the averages:

- Inclusion indices for people with disabilities are generally lower than those of the control group, so it is not enough to give them preferential treatment in the admission process, but the support systems for their learning and university socialisation process must also be rethought in terms of university inclusion policies and the focus groups they are involved in.
- The difference is smallest for F2, which is *the creation of inclusive values*, and varies around 0.2 for the others. This means that it is more typical that not only the control group, but also students with special needs feel that PTE, by putting forward the funding for the Support Service, the Equal Opportunities Commission and the Inclusive University programme, considers an inclusive environment as a value and a prerequisite for quality higher education. However, it is important that the university's senior management also devotes resources to this, not only at the level of support for individuals, but also by providing training for teachers and support groups, credit courses and the conditions for full accessibility.
- The inclusion indices of students with chronic or persistent illnesses are partly close to those of students with disabilities (F2, F3, F4, F5) and partly slightly lower (F1 - Building an inclusive community, F6 - Mobilising resources). So it is important to take into account people with chronic and persistent illnesses as students and as people with disabilities (the latter have been at the forefront of PTE's employment in recent years, although there are also resources from public funding to do so, which makes employers interested).
- The index of ***neurodivergent students*** is not far behind that of students with disabilities, except for F4, the *organisation of support for student diversity*, where it is significantly lower. So it would be important to support lecturers across the university in this regard, with training sessions, information evenings, how to develop their toolkit, what is the minimum everyone should expect from the whole university to guarantee that the teaching staff is diverse, that sharing is flexible and takes place in multiple ways, through multiple channels, and that assessment methods take into account students with specific learning differences.

IV.1.2.5 Qualitative results - Analysis of coded responses to open-ended questions

I examined the students' responses to the open-ended questionnaire based on the process model of inclusion, and interpreted them using narrative analysis after coding.

Inclusion index EBAV scale open-ended question set 38:
1. Input: How easy or difficult was it for you to get into university?
2. Process: What have you experienced in your access to training and university life? Were there any challenges/barriers and, if so, how did you overcome them?
3. Output: How optimistic are you about the future?

After reading through 38 pages and a total of 20,501 words of qualitative data for a population of 312 respondents, I first separated the responses into 4 questions, searching for priority codes from the thematically emerging stories and response categories following Saldana's qualitative data analysis method used in applied social science (Saldana, 2012). I have rearranged the responses in the Excel spreadsheet using a primary coding - then regrouping according to the responses and subcodes (A1, A2, etc) in this chapter of the thesis.

IV.1.3. Own model for assessing the inclusiveness of a higher education institution

I have summarised the steps taken in my research to map the inclusivity of neurodivergent students using the following research model (Figure 5).
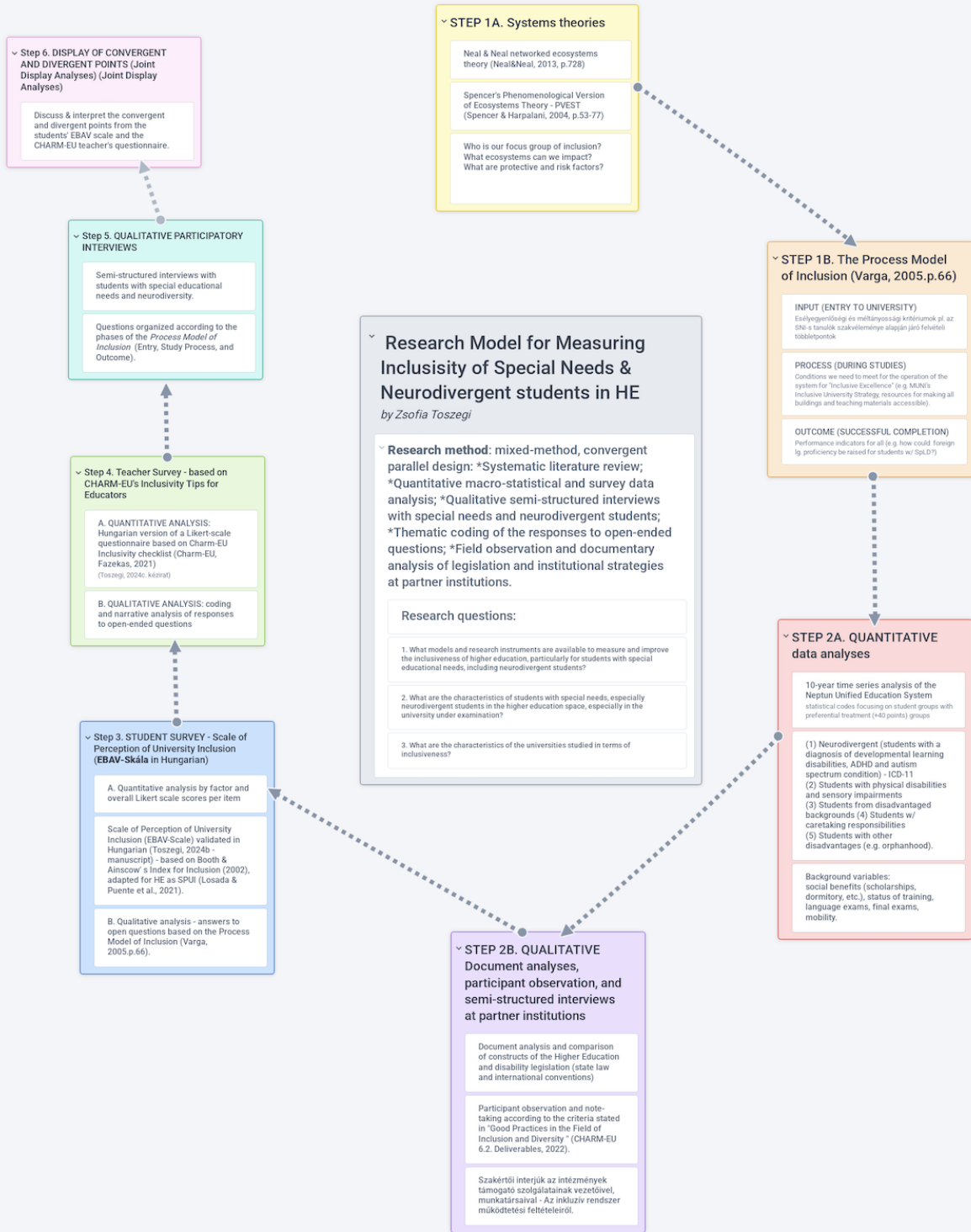

Figure 5: *A possible research model for assessing the inclusiveness of an HE institution (author's own flow diagram using Plectica) See original at he following live link:* <https://www.plectica.com/maps/BX22VUEIK>

IV.2. Student dimensions of inclusiveness based on a quantitative analysis of the UP Neptun Unified Education System

To explore this dimension, I will mainly use the Neptun database and the statistical analysis of the student questionnaire. I complement the quantitative results with typical quotes from interviews and focus group discussions with students with special needs.

59.5% of students in the period under review were female and 40.5% male. The distribution of students by address shows that while a quarter of the non-preferred student population is from Baranya, a third of the special needs (disabled) students are from Baranya (see statistical table 8 in Annex 2 to the doctoral thesis).

IV.2.1 Details of admissions - secondary analysis of the database with a focus on special needs groups

The final sample for our second analysis is the number of students with a training track that has been terminated (n = 47,194), i.e. the number of students who have successfully or unsuccessfully completed their training after 10 years of data cleaning. Students still completing their training were therefore not counted, because then some dropout and outcome indicators (e.g. total semesters passed, language exams or degree receipt) would not have been meaningful.

The aim of our study was to compare the educational progress of students with special educational needs (and therefore preferentially) who had already graduated with that of students from other disadvantaged backgrounds, and with the overall educational progress of other students who were not preferentially (as a control group). Based on the Process Model of Inclusion (Varga, 2015), we were curious to know what proportion of students with special educational needs enter the university under study and *how their numbers evolve* over the decade under study. *What services can be identified* from the Neptun database that are likely to support successful student progression? *To what extent, over time and with what results* do different groups of students progress *to university*? And if the data show that *interventions are needed*, what form could they take?

Our study showed that the *neurodivergent* student population (even without autism spectrum condition), the focus of the research, is the most numerous group of both advantaged and disadvantaged students. In other words, they are the most dominant group of students with special educational needs at the time of university enrolment (*entry*), and I assume that this number would have been 12-15 higher if we had been able to separate the preferred students diagnosed with autism spectrum condition from another group over the 10-year period (Table 21).

Table 21: *Individual conditions aggregated in terms of preference in numbers*

Individual fitness	Number	Percentage
Neurodivergent (without ASC!)	539	1,1
Physical disability (+ASC)	373	0,8
Disadvantaged situation	379	0,8
Other disadvantageous factors	165	0,3
No disadvantage / No preference	45738	96,9
Total	47194	100,0

In the bivariate analyses, we have already been able to examine the time series of the evolution of the different conditions in terms of preference, and we can see that while the number of non-disadvantaged students is increasing, the proportion of students with different disadvantages and disabilities follows a time inverted U-shaped trend. After a peak in 2015-17, the number of neurodivergent students has fallen again,

while the number of students with motor, sensory, and speech disabilities shows a steady downward trend, with the only exception being 2016, when a higher number of students from this population graduated (Figure 6).
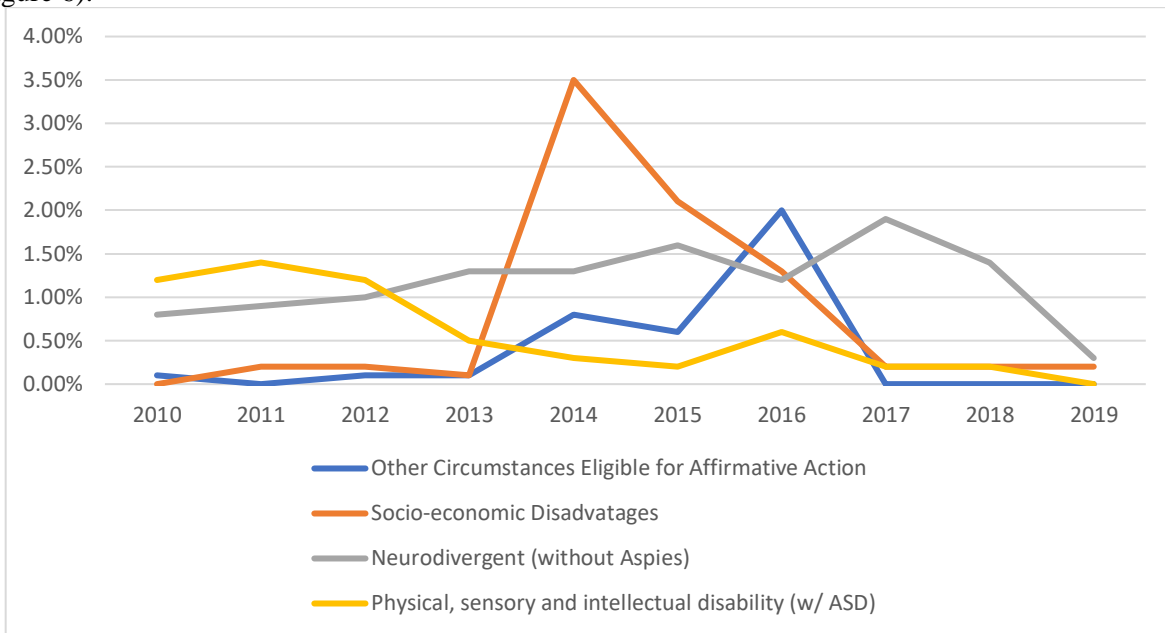

Figure 6: *Graph showing the evolution of percentages of underrepresented student groups at UP (2010- 2019).*

The surge in numbers in 2015-17 is likely to have been caused by a change in legislation, with the introduction of extra equal opportunity incentives (like affirmative action) and the statutory requirement for a university disability commissioner. This may have resulted in a peak in the number of students with special needs, including learning differences (mainly former SNIs with disability), graduating in 2015-17. However, it can also be seen from the figure that without improving the service profile and capacity, as well as developing an institution-wide inclusion protocol, the numbers will not remain stable, because our education system itself is full of structural barriers and ablelist protocolls that accumulate over the period of university entry and training, as student life interviews so accurately mirror.

IV.2.2. Characteristics of study progress in UP - focusing on special needs & neurodiversity
The inclusiveness of the institution is also shown by the amount of support that students with a disadvantage receive during the study period (*process*). Among such support, scholarships and *halls* of *residence* play a prominent role in reducing students' expenditure and time spent working. The results show that *nearly half of* the neurodivergent student population *is in receipt of scholarships*, a similar proportion to the other disabled student population, with only disadvantaged and severely disadvantaged students receiving two-thirds of the scholarships.
It can be said that there is little difference in the support for neurodivergent *students* and other students *with* disabilities compared to students without disabilities, i.e. financial support is more related to the socio-economic situation of the student's family (Figure 15).

The proportion of people with neurodivergent persons in college is slightly higher than the overall student population (26.3%), with a higher proportion of people with physical and sensory disabilities and disadvantaged people *in* college, which may be justified by their mobility and orientation conditions and their social situation (Figure 16). The figures certainly indicate that more dormitory places are needed at PTE to improve the livelihoods, academic situation and well-being of underrepresented students in higher education, as a student is likely to have to devote less time to working to earn rent and living costs, to supplement parental support and thus to devote more time to his/her studies.

A comparison of the training data with the overall student data indicates a discrepancy in *foreign language competences* and the resulting *student mobility* that can be exploited, which may indicate the need for intervention (Figure 7).
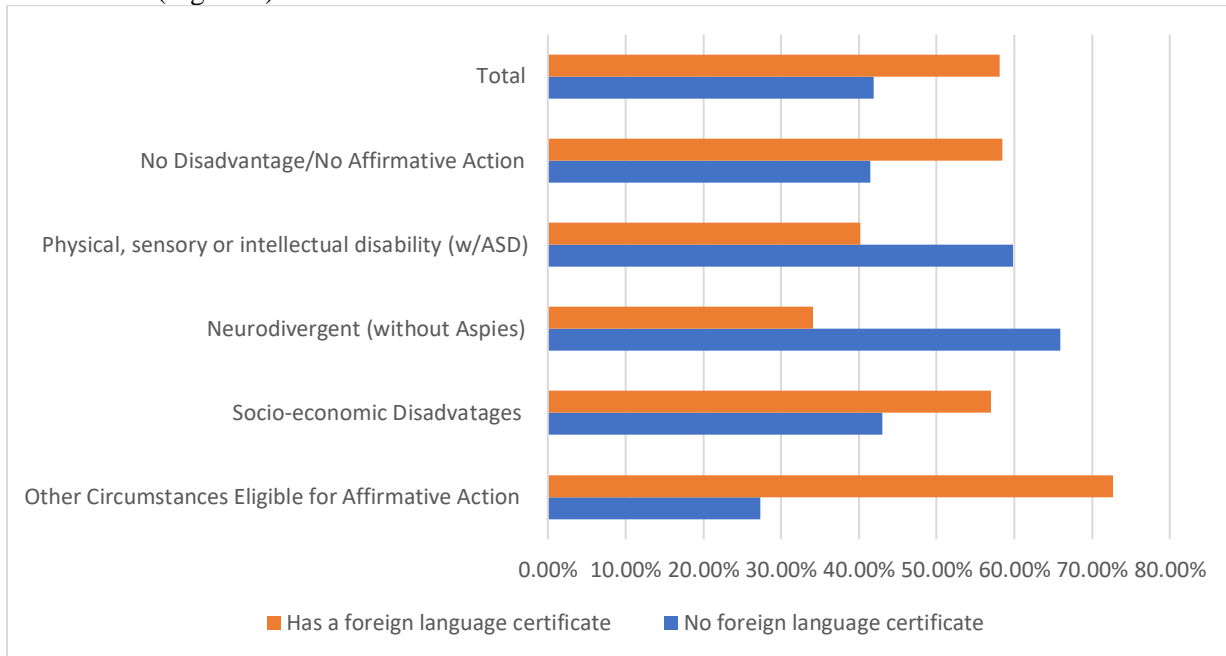

Figure 7: *Percentages of students with and without foreign language exam certificate*

Among neurodivergent people at our university, a higher than average proportion have no language certificate (66%) and just over a third have a language certificate (34%), which can be a serious disadvantage in higher education in the areas of student mobility and participation in international academic discourse. When comparing the data with the total student population (*Total*) and the other preferred student groups, it can be seen that in all but the disabled and neurodivergent groups the ratio is reversed, i.e. all other groups have a higher proportion of students with language qualifications (for example, for those in the *Other disadvantages* group, the ratio is 73:27 in favour of language qualifications) (Figure 7).

IV.2.3. Output - performance indicators of students with special needs & neurodiversity
In terms of *output,* the student sample shows that more than half of the 47,194 students (58.6%) (27,653) successfully completed their studies, but almost a quarter (11,511) did not graduate (24.1%). In addition, 12% (5,671) did not even register in the Neptun database as active students, and 5.3% (2,519) were transferred to another course (Table 22).

Table 22: *Output student categories*

Output from	Number	Percentage
Transfer to another course	2519	5,3
Missed login	5671	12,0
Success	27653	58,6
Unsuccessful	11351	24,1
Total	47194	100,0

The outcome indicators for neurodivergent and already advantaged groups are highly indicative of whether an institutional strategy is in place, whether the university has a programme and course to support

neurodivergent students, and the stress or extra time and time off that is required to complete a course (Figure 8).
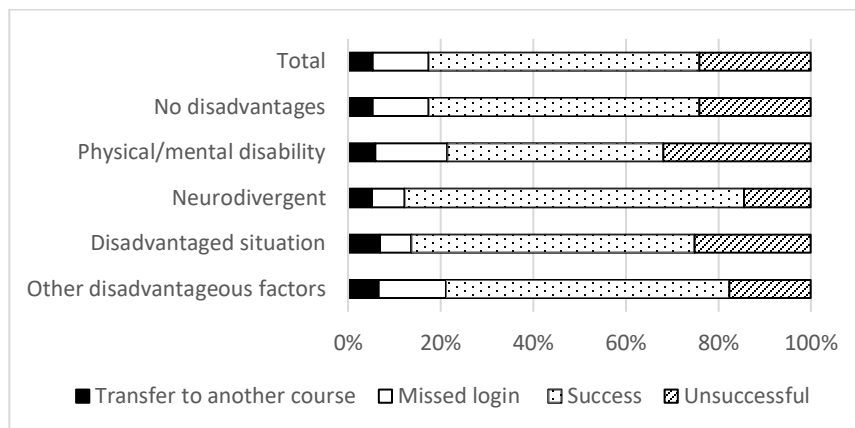

Figure 8: *Percentage of student groups by study outcome (missed login = failed to activate study track)*

Neurodivergent individuals have the highest rate of successful completion of training compared to all groups. This statistical result of the PTE is not only surprising, but certainly goes against the stereotypes conveyed by common sense. Thus, in terms of output, a neurodivergent student (e.g. a student with dyslexia or ADHD) graduated successfully from PTE in the last 10 years at a higher rate (73.28%) than other students with disabilities (46.65%), and even higher than the average non-preferred student (58.59%).

Another surprising finding of our research is that, despite the misconception, the average number of passive semesters is also lower for neurodivergent individuals than the overall PTE average. This suggests that the belief that it would take longer and therefore be less economical to educate preferred neurodivergent students cannot be supported, as our 10 years of data show that more neurodivergents graduate in time than the average university student without a disadvantage. This confirms the finding of previous research (Hrabéczy & Pusztay, 2020) that longitudinal data show that the training time of students with disabilities does not exceed the training time of an average university student.

In addition, I compared the output performance between groups of students using an independent T-test using the statistical software Jamov. There was a significant difference between the group of students with a learning disability and a physical-sensory disability (together with the group of students with special needs, including neurodivergent) and the group of non-preferred students in the outcome measures of output performance, i.e. they scored at least 1 mark lower on the thesis, final exams and exams ($p < 0.001$), indicating need for assessment differentiation and the introduction of multiple forms of assessment as a neuroethical principle to be considered in the future.

The results of the macro-analyses presented in this study provide even more justification for looking behind the data to get a deeper picture of the reasons for the apparent successful progress of this group, based on interviews with the students concerned. On this basis, we would like to see whether the culture and environment of our university is able to be so inclusive of specific learning differences, or whether it is the Support Service at the university that provides the students with the necessary advocacy and mental health support (institutional support dimensions), or whether this support comes from families and peers, or from the students' resilience and positive psychological capital (Masten, 2001). It is also possible that an interplay of all these protective factors helps the neurodivergent university students with special educational needs under study to succeed.

IV.3. Institutional dimensions of inclusiveness

In this section, I examine the impact of higher education policy and preferences on institutions and my student focus group, as well as the work of university education managers and equal opportunities committee members, disability coordinators and student representatives at PTE (see. Annex 7: Interview questions with professionals representing the institutional side based on the Process Model of Inclusion).

The sample (n=12) was taken through interviews and participant observations , of which, due to the space limitations of the paper, only the Support Service of PTE and a good practice specifically for neurodivergent students are presented here with student case studies. I have also summarised the stories and personal experiences of students with different disability categories from the student interviews for each service component in this chapter of the thesis.

The overall percentage of students with disabilities at KEKVA was 1% of the total number of students with disabilities admitted for the autumn semester 2022/23. This is low in relation to international figures, although the Hungarian literature also supports that part of the reason why the proportion of students with disabilities officially represented in higher education is so low is that our public education system is also able-bodied and stigmatises students with special educational needs, and students still face serious barriers in their studies (Petri & Markos, 2021; Hrabéczi & Pusztai, 2020).

Table 23: *Number of students active in the support service in the 10 years of the Neptun study (Source: unpublished data from PTE TSZ)*

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
57	57	51	58	75	88	98	99	97	97	99	99

These figures show that the number of *active* students registered with the TS has almost doubled in 10 years. In fact, according to a presentation by the MIK officer, *social cohesion* is a priority sectoral objective for the KEKVA institutions, whose additional funding can act as an incentive, so all universities are interested in attracting and retaining students who are under-represented in higher education and therefore "*affirmative action*" students with different support and inclusion programmes.

Below are the figures quoted from the PTE Support Service's 2022 report, published by the Host University: Here and Now (Elmer et al., 2021), which shows that in 2022, out of a student population of almost 20,000, 260 students were registered with the PTE as disabled, and almost 75% (194 out of 260) of the registered active students were neurodivergent (A, B, C and D), including 179, or 69%, who were dyslexic (D).

Table 24: *Data from the PTE Support Service for the academic year 2022/23 on the number of registered students*

Factulty/ Special Ed. Needs	Autism spectrum condition (A)	Speech disability (B)	ADHD (C)	Dyslexia Dysgraphia Dyscalculia (D)	Hearing impaired	Visually impaired	Disabled	Multiple diabilities	Other	Total SPED popu-lation
AJK			1	19		4	5		2	31
AOK	1	1		8	2					12
BTK	3		1	32	2	8	9			55
ETK				45		1	8		1	55
GYTK				3						3
KPVK				4	1					6
KTK		1		8	2	1	4			16
MIK	1	1	1	30	4	1		2		40
MK				11		2				13
TTK	1	1	2	19	3				2	31
All	**6**	**4**	**5**	**179**	**14**	**17**	**8**	**2**	**5**	**260**

Reports published in the Autumn 2021 volume "Inclusive University Here and Now" also confirm that more than 1.3% of the total student population is likely to be neurodivergent students with any disability

who may need partial skills development, effective learning strategies, therapeutic treatment, mental health services, or just a destiny community (Vitéz, 2021). According to Csabá Magdali, this could be inferred from the fact that before the language exam amnesty, requests for exemption were still coming in droves to the study committees. If a student's language learning difficulties are supported by a professional opinion before graduation and after final exams, we can assume that these learning challenges are probably not new:

> *"We assume a high latency in this area, because disability, especially invisible learning and behavioural difficulties, autism, is a sensitive topic, and it is a serious challenge and dilemma for the person concerned to accept it. In addition, many students are unaware of their own involvement, or the diagnostic process has not been used to determine an accurate diagnosis for some reason" (Elmer et al., 2021:144).*

These experiences are important for us because we can monitor the trend of increasing numbers of neurodivergent students among the student groups with preferencial treatments, according to the interviews with the Support Service staff and the annual data analysed. *It would be important to further investigate whether this can be linked to diagnostic trends or to the more inclusive nature of our universities.* Do our students have more confidence in their tutors and the Support Service? Considering the high latency, it would be particularly important to build a strategy of a systematic *service needs assessment*, outreach to students with similar ability profiles, and tailoring the service profile to student needs in order to provide more effective support to a wider student population. In addition, among academic staff and lecturers, the TC could, with the support of the university management, carry out sensitisation and training, as it has repeatedly offered to faculties on the specificities of the student population, with information and exercises to sensitise them to the various specific needs. Such training would be useful for the faculties, as it would make the PTE teaching team better informed, better prepared and more effective in its work.

IV.3.1 UP best practice: recreational parasports for students with special needs

For the blind and visually impaired, there are also sporting opportunities for themselves, such as the Paralympic sports game specially developed for them, the *rattle ball*, for which PTE, with the support of the Baranya County Sports Association for the Visually Impaired, PTE and the Lions Club, has provided all the conditions and support. The rattle ball is an example of ensuring equal opportunities in sport in cases where it is not possible to be included in the sport played by others (either because the person cannot see the ball or because, for example, he is a wheelchair user with spinal cord injury and cannot run with it), so an accessible and perceptible sport of skill with balls that make a sound was developed for target groups with special needs (blind, partially sighted and visually impaired people, and wheelchair athletes). The latter illustrates that universal design cannot always replace individualised treatment or the various assistive *devices* and assistive *technologies* developed for target groups.

IV.3.2 Innovative UP practice in the service of neurodiversity: the „Cso-disz" Club

Figure 9: Cso-disz club logo

In the spring of 2020, I learned that colleagues in the Support Service had launched a support group on Microsoft Teams in February, in response to the Covid pandemic. This has been named the *Cso-disz Club*, to develop and support the community of the *wonderful world* of dyslexic, dysgraphic and dyscalulic university students with neurodiversity. The use of peer and peer support can prove to be an uplifting force for all neurodivergent students.

IV.3.3 Student testaments about institutional support and challenges at UP

The aim of my individual and focus group pilot interviews was to map the composition of the students active in the Support Service and to explore their experiences. I was able to visit the students who were preferred due to any disability, after an interview with the Head of the Support Service, with his/her assistance, but subject to the students volunteering to be interviewed, for an appointment at the PTE for an input on their vulnerability due to their special educational needs, students who were preferred in the

admission scoring process (n=7), as well as PTE students who were still active (n=3) and PTE alumni who had already graduated (An=5) during a focus group discussion at the Accessible Tourism Day in Orfű.

IV.3.4 Institutional vision, achievements, difficulties

In this sub-chapter, I examined the institutional arrangements of the PTE and its partner institutions, as well as the challenges of the implementation processes in promoting equal opportunities and supporting university citizens with disabilities.

The impact of the various programmes in the different areas of university inclusion policy should be supported and evaluated by the following documents and reports, which will also support quality control and research in higher education inclusion. the future, one research objective could be to compare and analyse these in order to draw lessons from experience and feed them back into programme development.

IV.3.5 Inclusive best practices in Hungary and from international partner institutions

To explore this dimension, I will mainly use the analysis of interviews and participant observations in the partner institutions of PTE. The six selected university inclusion good practices from international universities are discussed in this section in a case study under the names and logos of the universities visited, focusing on the inclusion programmes and services targeted at my target group.

V. Discussion

In this chapter, I discuss the scientific findings of my mixed-methods doctoral research studies along my research questions and embedded in the national and international literature.

V.1. Results of the convergent parallel design

First, I will illustrate in a table, using symbols, which questions I have approached by which methods, and whether the multiple and triangulated studies have produced coherent or divergent results.

V.2. Discussion of the convergent and divergent points (Joint Display Analyses)

By examining the Charm-EU Teacher Inclusion Scorecard inclusion indices and the student data from the University Attendance Opinions (EBAV) scale, I found the following 3 convergent, i.e. cohesive and coherent, and 7 divergent, i.e. divergent and discordant, areas, which are described in the two tables below.

Table 25: *Inclusion indices showing convergence when looking at student data from the Charm-EU Teacher Inclusion Tiplist and the Opinions on University Admission (EBAV) scale*

CHARM-EU Inclusion from the Instructor Tiplist incorporated into the EBAV scale questionnaire 10 item comparison table (*joint display analyses*)	PTE - Teachers (N=108) values	PTE – SPED NEEDS(including NDs and Cronic Illnesses) (N=80)
1.Our faculty members make it clear at the beginning of the course that *diversity is recognised, accepted and respected*	**4.08** **87.5%**	4.33 86.5%
The importance of an inclusive environment for university courses and the recognition and respect of student diversity as a value is, in principle, mostly agreed (4) by both PTE faculty and students. I did not ask the lecturers how likely they were to state this as a value at the beginning of the course, as there is no provision for this in the PTE Regulations, but measured attitudes by how likely they were to state this as a value at the beginning of the course, with an average answer of "almost certainly". Looking at the variance, 10% of instructors marked unlikely and another 1/5 marked less likely on a scale of 2, so the attitude of nearly a third of instructors suggests that they are not enthusiastically supportive of higher education becoming more inclusive of differentiation towards students with special needs and diverse or neurodivergent learning abilities. A further 20% of teachers are likely to say they would, and 53% are almost certainly or certainly would. The majority of special needs respondents must also have been taught by instructors with this approach, as only 14% of them marked never or rarely, while 86.5% partially, mostly or completely agreed with this statement, increasing the index for institutional culture.		
2.The use of different learning methods and activities shows that trainers *take into account the different learners' preferences, abilities and specific training needs* when preparing their courses.	**4.0** **93%** **DE** 9% disagree or strongly disagree, and almost ¼ only partially agree	4.30 86%
While only 14% of students indicated that they agreed or disagreed with this, 9% of teachers agreed or disagreed that they should take this into account when preparing for the course, and a further quarter only partly agreed that they should. Despite this, the majority view still reflects, on average, that reasonable adjustments are made in the delivery of course material to reflect diverse learners' abilities and specific training needs, and that this is still a mostly accepted phenomenon, and even if a slightly smaller average of trainers think that this is their responsibility and not just that of the TS, a higher percentage indicated that they almost certainly take into account the diversity of their audience when preparing for the course than those who do not.		
3.Trainers *want your feedback* so they can continuously improve their competences.	**4.7** **94%**	4.31 86,3%
For this item, the data showed that both parties consider feedback important, with students showing a slightly lower value for wanting feedback. And although the instructors reflected this in their values, there were a number of entries in the qualitative student data that they had indicated in vain in the central evaluation that the program had not listened to them, and that they had again received an instructor who they felt had not treated them with respect. I am also not sure that it was clear to everyone that by student feedback I did not mean the central course evaluation sent out by Neptune, but the formative student reflections and learning from them that we incorporated in the process of our course and with self-improvement intentions.		

Table 26: *Inclusion indices showing divergence the Charm-EU Teacher Inclusion Tiplist and the EBAV student data*

CHARM-EU Inclusion from the tutor tip list to the questionnaire built-in 10 item comparison table (*joint display analyses*)	PTE Teacher values (N=108)	PTE - student with special needs (N=80)
4. Faculty members *provide a range of assessment opportunities* during and at the end of their courses.	**3.5** **70%** **DE** 22% agree or disagree slightly or not at all	4.30 86%
In this factor, there seems to be a divergence, with the instructors who completed the questionnaire rating themselves more harshly than the students rated them. Based on the data, it was surprising to me, coming from a special education background, that 22% of PTE university lecturers, i.e. more than one fifth, did not think it was their responsibility to provide an alternative and/or multi-element assessment.		
5. Faculty members *take into account your different special training needs* in teaching and learning.	**4.1** **82%** **DE** 5% disagree at all, 15% only partly	3.74 74.8%

For the item on taking into account student diversity, trainers rated their attitude towards taking into account the specific training needs and requirements of their students as stronger. While *students with special needs* report that this is entirely instructor-dependent, and that there is no university-wide, inter-departmental, or even inter-instructional agreement on what constitutes "reasonable accommodation" for different disability categories, what "accommodations" might be made by a student with a specific learning difference (e.g., diagnosed with dyslexia), an ADHD student, or a student with an autism spectrum condition. The situation is complicated by the fact that 5% of teachers do not agree at all that this should be an accommodation on their part, and 15% only partially agree that it should be taken into account. The picture is further nuanced by the fact that in question 12B of the faculty questionnaire, 56 PTE faculty (53%) honestly ticked *"Little knowledge or experience of support and preferences for students with special educational needs."* This cognitive dissonance was also revealed by other research based on semi-structured interview data, in which there was a gap between the knowledge and behaviour of the trainers, particularly with regard to neurodivergent students, and their self-reported knowledge of autism and their actual practice in higher education pedagogy

6. *Learning materials are accessible and user-friendly* to support different learning abilities and preferred learning strategies.	**4.07** **81%** BUT 5% disagree or only slightly agree, 21 persons, i.e. 1/5 only partially	3.66 73,3%

Lecturers rated themselves better in this area, despite the fact that 5% of them do not consider the courses they are asked to teach by their department to be user-friendly or accessible at all, and one fifth, or 21 people, consider them to be only partially user-friendly. Lecturers who have been teaching at our university for a long time feel a greater sense of personal responsibility in this respect than lecturers and teaching assistants who have little responsibility for course material and bibliographies. The question has also been raised as to whose responsibility is it to order foreign literature that is not available online as Open Access studies? Also, should we provide textbooks and workbooks to our fee-paying students for purchase, as there have been several reports (e.g. from law students) that many course materials are only available in limited numbers and that even fee-paying, correspondence students do not receive printed or electronic "textbooks" (or cannot find them in Neptun/MS Teams). Students with special needs may also have problems with readability of printed and online pdf. Materials, for example, the screen reader interprets pdf studies as images and figures shared as image files. This is where collaboration with the Support Service can play an important role. I have collected the attitudes and competences of the lecturers in this respect in section IV.3.5 of my thesis, citing their shared experiences from almost all faculties of our university.

7. In the courses, *what is expected to be completed* is always made clear to the students.	4.6 **93%**	**3.28** **65.5%**

This is the area where there is the greatest discrepancy between the opinions of teachers and students with special educational needs. Whilst instructors were rated as having clearly communicated their expectations in all their courses, these were either not clear enough for students, or not all students were present when they were stated and there was no written record of them in the course description on Neptune and MSTeams, or it is possible that they all changed during the course as the instructor mapped out what was realistic to complete and expect from the student group in that semester. There were also comments from students that different instructors teaching courses of the same title sometimes expected very different amounts and qualities of assessed assignments, papers, ZHs or exams from their students, and these were not always considered to be fair in terms of equal opportunities. This also correlates with one of the weakest items in the EBAV scale, which assessed the likelihood of coordination between programme tutors.

8. You have a choice about how you prepare for a course.	**4.04** **81%**	**3.35** **67%**

In this area, too, teachers are more positive about the situation of students with special educational needs, and the literature confirms that it is not simply a question of the learning method a student uses in his or her free time. Our higher education system is traditional and institutionalised worldwide and creates structural barriers for neurodivergent students – who have problems not only with the amount of material to learn but also with the form of 'memorisation and near-verbatim' accountability, when they could be using a variety of other creative ways to account for their knowledge. There is also the question of whether, in the case of a student studying two subjects, each lecturer in his or her own discipline considers what is relevant and useful knowledge, since   we know that traditional transmission-based and centralised and overloaded curricula are the hallmarks of our education, whereas a 'transformative' approach to education could be the goal, to develop usable knowledge and critical, innovative thinking in all disciplines, going beyond Latin scientific vocabulary, legislation in legal libraries, the stages of educational history or historical names and dates and small letters. We also learn from the student's notes that there is the 'authoritarian and lecturing' attitude of the teacher, where the teacher indicates that the information is irrelevant and will never be needed, but will nevertheless ask for the small print.

9. The content of the courses and the approach of the authors of the literature used represent diversity, the experiences of groups of different nationalities, religions and social backgrounds.	**3.57** **70%**	**2.70** **54%**

Here, it was evident from the responses on both sides that university curricula in most disciplines do not represent other cultures and diverse identities in their literature or archives, which is one of the pillars of the international scientific approach to UN sustainable development. Number of policy recommendations promoting diversity, equity and inclusion in pre-service

education call for teachers to seek to include a diverse perspective, not only in Anglo-Saxon publications, but also in the contributions of researchers and professional materials from other continents and cultures (LERU, 2019, CHARM-EU, 2021, etc.). *"In science education, the identity of the authors of the literature used should not be a criterion, nor should the diversity of these authors"* – a researcher-educator in the Faculty of Science and Technology. *"Much of the knowledge I impart in my courses is objective (provable by mathematical derivations), so diversity of views is not a valuable aspect here."* – MIK researcher.		
10. The University will ensure a diversity of perspectives through the involvement of international guest speakers and diverse external partners.	**3.99** **79.8%**	**2.78** **55.5%**
There is also a dissonance in the perception of the university's inclusive approach to this issue. While academics, reflecting on their own experience and the reality of the internationalisation of higher education in Hungary, feel that PTE strives for diversity of perspectives, students underestimate the effectiveness of our university in this regard, e.g. Students somewhat or very slightly agreed, while for lecturers there was a wide variation, with 35% very slightly or somewhat agreeing and 65% mostly or completely agreeing.		

Judging from the comments of the lecturers, most lecturers, when reading the terms "disabled student", "special educational needs" and "special needs", mainly associate them with people with visible physical and sensory disabilities, or a degree of "learning disability" that makes it *"difficult to imagine a student with special needs getting into medical school at all."* Such remarks represent the **academic ableism** against which several famous disability and neurodivergent scientists have spoken out, including deaf biomedical engineers, disabled anthropologists, dyslexic mathematical physicists, autistic geneticists and even Jacob Bolotin himself, the first blind doctor in the world at the turn of the century.

Most of the teachers judged by the entries are those *who accept the importance of an inclusive approach*, but **feel ill-equipped** to adapt SNI guidelines to higher education pedagogy. More than half (53%) of PTE lecturers ticked "*I have little knowledge or experience of supporting and prioritising students with special educational needs.*" This is definitely an area for improvement in the field of higher education pedagogy, accepting that lectures of more than 100 students are certainly not ideal settings for more personal support and mentoring of students with special educational needs. For such cases, some solutions of universal design are ideal, and the knowledge material shared in several ways, which can be accessed asynchronously and processed with the necessary assistive technologies (screen readers, text readers, etc.). In this case, sharing the audio recordings and slides of lectures, playing them at a slower pace, reviewing the notes of classmates and developing the students' learning methodology techniques with the help of the TC, mentor students and mentor teachers can be helpful. Special education also recognises realistically that not everyone can graduate from university, nor is everyone suited to a particular career. Inclusive excellence is not about that. However, every student's abilities can be developed and everyone deserves respect and patience. With outstanding diligence, perseverance and sacrifice, and with the support of a motivated and supportive mentoring network and peer community, more students would certainly be able to graduate than drop out, thus improving their future job prospects. As the literature reviews have shown, the supportive attitude of teachers, the development of their pedagogy, the institutional provision of necessary *accommodations for* students and the removal of *bureaucratic hurdles* (Lightfoot et al, Where feasible, smaller seminar groups increase personal attention, student confidence, self-efficacy and active engagement in learning (Lipka et al., 2019).

At the other end of the scale were those teachers who, in addition to agreeing with the approach, indicated that they **would be willing to contribute to professional development courses** to promote a more inclusive higher education, with their personal competences, adapted guidelines for higher education in special needs education and developed models of learning methodologies. Although 90% of respondents to the CHARM-EU Inclusion Tip Sheet questionnaire who teach in higher education stated that they fully agree or mostly agree *that "Continuously develop their competences to be able to support the learning of their diverse students (item 11)."* Only half of the lecturers consider it important to develop pedagogical competences to support the success of students with special educational needs, and *a quarter of the* lecturers *do not* see the need to do so in their discipline. For those who are open to this, it would be worthwhile to organise training courses for university teachers and conferences in the field of

higher education pedagogy, and to set up an interdisciplinary group of experts to provide training for teachers in mentoring networks and in areas at higher risk of drop-out in all universities.

V.3. Inclusive best practices at international & partner institutions

As the last element of the third set of questions, I examined what *inclusive best practices* could be found in the international space, what are their uniqueness or common features that could help adaptation? In the table below, I have compared the support programmes of 6 partner universities other than PTE in terms of access, eligible special needs target groups and services provided to them. I have already mapped the comparison to the 3 dimensions and 6 factors of the Inclusion Index in the discourse, and for each of them I have chosen the university that best embodies these values among the institutions visited (the service brochures of these universities are included on the attached CD together with the databases).

Table 27 *Good practices from partner institutions on the dimensions and factors of the EBAV scale*

1. INSTITUTIONAL CULTURE	2. INSTITUTIONAL POLICY	3. GYAKORLAT
Community development (F1) **UNIVERSITY OF MARYLAND, USA** Building an inclusive university culture **with structural guarantees** - DEI strategy! *Universal Design (UD) and automated support* (e.g. barrier-free campus bus, photocell doors, adjustable work space in the library and study areas, barrier-free toilets and showers in the building) Access & Disability Services *(ADS):* - definition *disability* linked to life functions - *psychosocial disorders long-term illnesses* - Letter Confirming Registered Discounts - Assistive technology lab	**Everyone's University** (F3) **ORANIM Academic College of Education** - Hebrew and Arabic-language teacher training for the two types of school system - multicultural teaching team - Teachers spend many hours in school providing practical training **Zweigelt Centre:** remedial education students tutor 80 with SNI **Keshet Centre**: one of the 6 diagnostic centres in the country - provides developmental, language and learning support services for university students. Their inclusive yoga practice in the therapeutic ***art therapy***	**Learning organisation** (F5) **ELTE-SHUT** **Examples of individual sessions:** - Recruitment, training and supervision of personal assistants - Tool hire - Facilitating Erasmus mobility - **Teaching relaxation techniques** - Methodological advice **Examples of group sessions:** - Specialised **career management course** - English chat club - Game Club - **Asperger's group** - Film club **Parasport activities:** - **Unheard** Salsa - Inclusive Sports Day - Para-swimming course - Rattle ball course

1. INSTITUTIONAL CULTURE	2. INSTITUTIONAL POLICY	4. GYAKORLAT
Creating inclusive value (F2) **University of Seville** At the Vice-Rector level, the University has a *Gender Equality* Strategy (*Gender Equality Plan*) managed by women leaders. • Support for mobility programmes • Disabled Students' Services Office • Wider eligibility (HH & migrant background) and financial support in the form of scholarships not only for Spaniards • Assistance with accommodation Less resources for office or bureau-like administrative structural guarantees, more focus on university culture and values, attitude formation and brochures.	**Supporting learner diversity** (F4) **Universitat de Barcelona** University-wide strategy and protection against discrimination: (e.g. rights of disabled university citizens+ with **chronic illness**, mental health conditions DE including **gender identity,** combating gender-based violence, freedom of sexual orientation). **Gender Equality Plan** (GEP), and **Women in Science** (leadership training and scholarships) **UB welfare services** for young people with a temporary learning or *migrant background*. **Integration Programmes Office** • FEM VIA • Special host programmes • Advice and support • Students take notes for community service credit • Access technical support • Job bank/professional integration.	**Mobilisation of resources** (F6) **Masaryk University, Brno** Since 2000, the Teiresias Centre has been housed in the Rector's Office of Masaryk University, with its own office. Their supported groups: • sensory impairment: loss of vision or hearing, • people with reduced mobility, • with specific learning difficulties, • psychological difficulties, • with chronic diseases; The aim: to maximise access to all accredited courses at the university. The centre has 80 seats for lecture and study rooms, open 24/7! The centre provides tactile literature (Braille) and tactile graphics, maps, video studio and Czech sign language.

V.4. Answering the research questions

In this section, the answers to the 9 questions are discussed in detail. Here is a summary of the main findings in bullet points organized under each main questions.

I. Models & Assessment Tools for Measuring and Improving Inclusiveness in HE

1. **Suitable Models:** Several national and international models are suitable for studying university inclusion. Varga's "*Processual Model of Inclusion*" is used as the main organizing principle to examine equal opportunities and equity criteria for admission, systemic conditions for 'Inclusive Excellence,' and outcome indicators. This model is complemented by criteria describing the conditions for an inclusive system to operate, showing the interconnectedness of environmental factors. In this dissertation I also developed my own model of measuring inclusive excellence of special needs students groups. (See Figure 5.)

2. **Systems Theories:** *Neal & Neal's* networked model, based on Bronfenbrenner's nest model, is useful for examining the inclusivity of the various macro-, mezo- and microsystems of the institutional ecosystems. It allows examination of individuals and activities within an inclusive mesosystem, such as interactions between students with dyslexia, ADHD, or AS with classmates and tutors, and support sessions organized by Support Services staff.

   *Spencer'*s Ecological Systems Theory (P-VEST) helps interpret the experiences of neurodivergent students by identifying risk factors that increase their vulnerability and protective factors that equip them with coping strategies.

3. **Measurement Tools:** Two measurement tools were adapted and tested. The validation process was carried out for the first instrument as well.

   3a. Scale of Perception of University Inclusion (SPUI / EBAV-scale in Hungarian): The "Inclusion Index" was adapted from public education to European higher education and translated into Hungarian as the "Egyetemi Befogadásról Alkotott Vélemények" (EBAV-skála)". This questionnaire includes 36 statements measured on a 5-point Likert scale4. The translation process involved multiple checks, including back-translation and AI-assisted translation, to ensure the original meaning and purpose remained.

   - **HE Inclusion Index (SPUI) Dimensions:** The student questionnaire (EBAV scale) examines inclusion in higher education across three main dimensions: institutional culture, institutional policy, and practice.
   - **Survey Additions:** Seventeen questions were added to the Likert scale instrument, addressing sociographic, special needs, and educational aspects of respondents. Additional questions related to indirect discrimination were also included. Narrative qualitative data was collected from students with special needs regarding their university enrolment, study experiences, and future outlook.
   - **Survey Limitations:** Limitations were encountered during the development of the questionnaire, including challenges related to non-exclusive categories and non-neuroaffirmative language in legislation. UP's Research Ethics Committee restricted the use of certain gender identity categories (i.e. nonbinary or non gender conforming), leading to an undesirable limitation in data collection on intersectionality between the overlapping categories of neurodivergent and gender diverse students.
   - **Psychometric Values:** Reliability tests indicated that the reliability indicators (Cronbach's α >0.6) and Peak-to-peak ratios <(2) are appropriate for the questionnaire as a research tool.

   3b.CHARM-EU Teacher Inclusion Tiplist: A questionnaire based on the CHARM-EU Teacher Inclusion Tiplist was used to assess faculty attitudes and experiences towards inclusion. This tool has not yet been validated.

   - **CHARM-EU Tiplist Pillars:** The CHARM-EU Teachers' Inclusion Tiplist includes eight pillars with specific questions and suggestions for teachers to develop an inclusive approach and accessible learning materials.
   - **Overall Approach:** Both the Inclusion Index and the CHARM-EU Teacher Tip List questionnaire aim to equip university professionals with leadership skills and attitudes to foster a mutually inclusive environment and encourage continuous strategic development.

II. Characteristics of Students with Special Needs in Higher Education

Proportion of Students with Disabilities: The proportion of students with disabilities in higher education varies internationally. In Hungary, disabled students admitted to universities run by a foundation is about 1%.

Admission of Neurodivergent Students: Extra points compensate for disadvantages in grades due to neurodiversity, but the admission process can still be stressful. Neurodivergent students may struggle with traditional knowledge transfer methods and executive functions.

Masking: Some students were diagnosed with ADHD, autism, or dyslexia only later in life because they were forced to 'mask' in a neurotypical world.

Support and Intervention: Some students find the demands of higher education insurmountable without help and methodological support. They may face dismissive attitudes and lack supportive interventions.

Scholarships and Accommodation: Scholarships and halls of residence help reduce students' expenditure, allowing them more time to study. Financial support is primarily related to the socio-economic situation of their families.

Language Exams: A higher than average proportion of neurodivergent students have no language exams. The lack of foreign language skills is a serious disadvantage for student mobility and participation in international academic discourse.

Protective Factors: Successfully graduated students have protective factors and coping strategies.

Course Materials: Students want access to elective courses, but many are advertised only in Hungarian. They also resent that course materials and course descriptions are not always available.

Challenges in Teaching and Learning: Neurodivergent students are often overloaded in teacher education programs.

III. Academic Environment and Support for Neurodivergent Students

1. Protective factors at UP
Need for Neuroaffirmative Environment: Neurodivergent students require intermittent intervention and support within a neuroaffirmative, inclusive environment.

Structural Barriers: Inflexible assessment systems create structural barriers for dyslexic and dysgraphic students. Students with ADHD struggle with time management and completing tasks. Sensory sensitivities and challenges in social interaction and communication impact students with autism.

Medication and Substance Abuse: Some students experience improvements with medication, but there are cases of substance abuse due to pressure to perform.

Mental Wellbeing: Students face stress, anxiety, and the need to conform. Support services often do not focus on invisible neurodivergences.

Family Support: The social situation of students' families significantly impacts their higher education experiences and success.

Making Friends: More than 50% of students have difficulty making friends due to poor interpersonal communication skills.

Benefits of University Years: 83% feel that their university years have benefited them by enhancing their personal psychological and social capital, 87% have not been able to derive any financial benefit from their university education

Inclusive Communities: Factors such as smaller support communities, time in nature, quiet spaces, mindfulness-based meditation sessions, and counseling are benificial.

2. Measuring Inclusiveness at UP by Factors (strength and weaknesses):

Building Inclusive Communities (F1): Weakest item is the coordination of their program by trainers. This highlights a serious equality and equity issue for students with dyslexia, autism spectrum disorder, and ADHD.

Cultivating Inclusive Values (F2): Lowest agreement is that "Assessment motivates all students' performance," especially among special needs students.

Making the University Open to All (F3): Confirms the need for a mentoring network. Students feel they do not receive enough support to integrate.

Organizing Support for Diversity (F4): Index of neurodivergent students is significantly lower than that of students with disabilities. "Institutional policy for applicants and students with disabilities" indicates work is still needed at PTE.

- **Barriers to Learning:** There are courses where teachers are unable to reduce barriers to learning and student participation, especially for students with learning difficulties.

- **Mental and Emotional Support:** There is lack of mental and emotional support linked to curriculum development and pedagogical support.

Organization of Learning (F5): Proportion of respondents with special needs who find that their university provides an adequate learning environment20. Instructors often fail to be as supportive as they should.

Mobilizing Resources (F6): There is work to be done to build a university that embraces student diversity.

2. Limitations and Factors Contributing to Success

Limitations of Research: The main limitation of the research is the non-representative sample of 312 respondents, with the majority being PTE students.

Inclusive Approach: The majority of items on the EBAV scale indicate that faculty and staff strive to develop an inclusive approach.

Factors Contributing to Success: The success of special needs and neurodivergent graduate students is due to Support Service staff, faculty members, peers, and mentor students. The love, financial, and emotional support of their families, and their own positive psychological capital are contributing factors.

3. Areas for Improvement and Strategic Planning

Gender Inequality: There is gender inequality in management positions with higher responsibilities and benefits.

Senior Management Commitment: The main challenge is the lack of senior management commitment to actively influence and change the university's inclusive environment and DEI measures for staff and students.

Lack of Resources: Committees and related posts are symbolic and lack the budget and authority to take necessary action.

Comprehensive Protocol: There is a lack of a comprehensive protocol for implementing neuroaffirmative action programs at the university, creating inclusive spaces, employing more professionals with expertise in learning differences and neurodiversity, and test adaptations. Resources would require the commitment of university leadership and ideally the creation of a DEI affairs office of a Neurodiversity Resource Center to oversee these services.

One-pont service registration: It wold be desirable if students did not need to show and upload proof of their conditions over and over again. It should only be done once with Support Services at the time of registration and they should be matched with on-demand academic and mental health services, tutoring and partial waivers through.

VI. Summary of research results, professional recommendations and outlook

"The purpose of university education is to build a more just and equitable society." - Emeritus Prof. Steven Schwartz

University of Pécs on the Path to Inclusive Excellence: the Challenges of Equity and Diversity
By equity, I mean the creation of opportunities at the University of Pécs that are available to historically underrepresented social groups (in our case, people with special educational needs and neurodivergent, people with different mental conditions, people with different working capacities and people with chronic disabilities). and people living with chronic and persistent illnesses) have equal access to and participation in higher education programmes that can minimise the achievement gaps in student success and completion (Varga, 2015b; Lannert, 2015). *An inclusive approach* to higher education, on the other hand, *refers to a perspective or mindset* of professionals *that draws attention to patterns of inequality in student outcomes, prompting them to engage in a process of self-reflection* and *personal* and *institutional accountability, whereby they critically reassess their own practices in the interests of the success of their diverse student population* (Bourdieu, 1990; Bujtendijk et al, 2019; Clancy & Goastellec, 2007). However, this assumes that all of us practitioners are *socially conscious* and aware of the social and historical contexts of exclusionary and constructivist practices in higher education, both domestically and internationally.

From the results of the mixed-methods and triangulated studies of this doctoral research focusing on students *with special educational needs and neurodivergent* students, we can conclude that ***their proportion at entry is underrepresented*** compared to the total number of students officially registered at PTE compared to international higher education data *(Clouder et al. 2020; Nieminen & Pesonen 2022)*, therefore it remains crucial to maintain legislation and support for their preference and to expand the portfolio of institutional services specifically targeting neurodivergent students.

I agree with researchers on this topic that the first step in creating more inclusive universities would be for higher education policy and university administrators to recognise that ***neurodiversity is an important part of the Diversity, Equity and Inclusion*** (DEI) strategy, which is unfortunately also facing increasing resistance worldwide (Dwyer, 2023). In several faculty posts, we read that although university citizens are divided on this issue, more than half of the respondents (54%) tended to agree or strongly agree that student diversity is *a value* and indicated that they contribute in some way as a faculty member to the construction of knowledge in a shared and inclusive way in the learning process. One such supportive comment was *the* following. *I am in full support (of research and institutional development on this topic)!"*

Our data analysis has revealed some facts that are striking in terms of numbers, such as the fact that ***neurodivergent students represent the largest proportion of the*** group of *students with special educational needs* at PTE, the focus of my research in terms of equity.

As for the extent of social support for neurodivergent students during the educational *process,* the data from the PTE's Unified Study System show that during their academic progress, these neurodivergent

students benefited from dormitory services and scholarship benefits, if not to a significant extent, but still to a higher extent during the decade under study (2010-2020). At the institutional level, they received most help from the Support Service and their peers, and in their private lives from their family and friends. However, all of them missed effective mental health sessions, multicultural programmes to facilitate their foreign language learning and peer-to-peer interaction on campus. Dwyer (2023) suggested the establishment of *Disability or Neurodiversity Cultural Centers* at the University of California. Mindfulness-Based Cognitive Therapy (MBCT) sessions - a combination of the Buddhist tradition and modern psychotherapy - could also help to relieve anxiety and stress in neurodivergent students. Film-based talks, yoga and relaxation sessions and tea parties could be organised by the students themselves, with the support of a cultural centre, where they could invite professionals to give lectures and workshops. There, neurodivergent students could find community, information resources and support, thus enhancing an inclusive atmosphere. There is a definite need for community spaces that are not a service office of the university, but where they can come in, organise and connect freely (such as the community space of the WHSZ in the Sociology of Education and Romance Studies Department).

In terms of *outcome,* the most important finding was that **neurodivergent students who were diagnosed with specific learning differences and who used the Support Service graduated successfully from PTE in a higher proportion** (73.28%) than the average non-preferred student (58.59%) over the last 10 years. Shadowing these results is the fact that there is a strong stigma surrounding "special educational needs" (SNI) in public education, supported by student narratives, and therefore, students who do not recognize their diagnosis in higher education and who only have difficulty according to diagnostic protocol, The invisible number of students with or without a diagnosis of 'developmental learning disability' or 'symbolic dysfunction', ASD or ADHD, who were NOT diagnosed at one time, and who are likely to be cask BTMN or not supported by it in the national public education system, is also an estimated proportion of the total student population. The invisible number of those who are certainly not registered with the Support Service, have not received extra points or services in the admissions process during their university studies, which may increase the risk of dropping out.

The most critical quantitative training data for the target group at UP is the low rate of foreign language certificates among neurodivergent students, which indicates the need for interventions and a rethink of the relevant university policies. In this regard, I made further suggestions in the thesis, building on the modular, multi-level vocational language teaching system that has been developed earlier on this topic but has not been implemented at the PTE to date (Zank et al., 2015). According to the latest regulations, students who have been exempted from the regulations so far must also attend vocational language classes, but currently neither the student has been made interested in completing them, nor the instructor in the inclusion of the neurodivergent group and differentiation for them. This, in the light of research data, has a negative impact on the target group's participation in mobility, their academic progress and their future job prospects. However, the research data also show that in the overall student population that graduated with the elimination of training tracks*, neurodivergent students* were nevertheless *the most likely to successfully graduate from* PTE during the period studied and *least likely to pass semesters during their studies.*

In conclusion, we can assert based on the quantitative data that the Neptun database should be continuously cleaned and the disability categories used in the Neptun Unified Education System need to be reconsidered and made more inclusive, as they are outdated in the light of the current neurodiversity discourse and also based on ICD-11. As the first and most challenging limitation of my own research, I note that I did my special education training in the United States, which made me familiar with the foreign legislation of the Americans with Disabilities Act (ADA) and the constructs of the DSM-5Tr diagnostic system, while I had to become familiar with the European ICD-10 F codes and constructs during my research, which also changed for my target population while writing the text of this thesis (since 2022, ICD-11 has been used in our country with a different coding system). Despite the fact that the neurodiversity perspective is exactly opposed to the medicalised, deficit-based thinking, I consider it important to delimit the definitions of the constructs used in the scientific literature of different cultures, or rather, who is meant by my target group.

Limitations that have already emerged in the analysis of Neptun data and have been discussed in detail in the thesis were related to the fact that, although I would like to bring a newer perspective into the discourse on pedagogical excellence and inclusive excellence in higher education in Hungary, I have been constantly caught in deficit-based categories in my analyses, which made me feel uncomfortable when reporting the data and in many cases *I was challenged by the awkward-sounding terminology translated from English into Hungarian*. For example, after Pollack (2009), I translated the term '*specific* learning *differences*' (*SpLD* for short), which is less neuroaffirmatively referred to as 'developmental learning disability' by the special education profession in this country. Similarly to ASD, what in neuroaffirmative circles in our country is already called Autism Spectrum Condition NOT Disorder. A further challenge is that UK higher education professionals at the ALDinHE professional forum I attended argued against *the depoliticisation of disability*, and in the **SpLD** term letter "D" is still to be called a 'disability' and NOT difference. They argue that if we do not officially safeguard disability in an academic setting, than diagnosed SpLDs and other neurodivergent students will not receive equitable treatment, and then *neuroethics* and *the equality of opportunity for our students will be further compromised*.

As for experience and competences, I conclude that the attitudes and experiences of teachers towards inclusion in higher education range widely, and the study that will be conducted from the analysis of this data will take this into account in modelling possible interventions. The data show that there are groups of academics in all universities who have attitudes that represent academic integrity and who believe that it is not the role of academics in higher education to differentiate and flexibly accommodate student diversity. In contrast, there are also groups of teachers who teach a high percentage of humanities subjects, teacher training, even special education teachers, and even learning methodologists who could provide competence development training for their colleagues (Gelencsérné Bakó, 2020; Jolles & Jolles, 2021). A positive outcome of the research was for me that, in addition to the exploration of a large amount of national and international literature, I was able to learn about models and methods that could be learned and learned in the future from the contributions of national and international colleagues.

Furthermore, from an output point of view, it was a limitation that due to data protection laws and university data collection restrictions, I could not reach out to the graduate students at PTE during the period under study to collect data on their employment status and working conditions, as universities are also bound by GDPR regulations that they are not allowed to contact graduate students. And the graduate career tracking system monitored by the KTK does not have a category under the umbrella of disability and neurodiversity, so I could not use its data to conduct studies on the target group of this thesis and on the equality and inclusiveness of people with disabilities, as the Andalusian researchers I visited were able to do (Moriña & Biagiotti, 2022).

In comparison with the practices of partner universities, I found that there are currently no non-degree courses and programmes in Hungarian higher education for students with *disorder of intellectual development* (BNO-11 6A00.0 / ICD-11). In my research, I found a good practice in the remedial education programme at Oranim Teacher Training College, where teachers and remedial education students created a joint therapeutic art programme involving young people with disabilities from the Village of Hope community, creating together and learning about different creative styles and techniques, which had a positive impact on the well-being of all participants (Ne'eman, 2022). The national higher education curriculum, still based on the BNO-10, does not even include *intellectual disability* (F70-79) in the category of people with disabilities, as it clearly does not count them in higher education. Here it is important to underline that although the domestic special education system does not assign any special education services to these students - which I do not agree with professionally - my data show that there has been precedent of a student with this diagnosis (with a prolonged training period, but successfully!) and with the continuous learning methodology of the TSZ, who graduated with an incredibly hard-working student *with borderline intellectual disability* (still used as a v-code under DSM-5). If we think of the social responsibility and third mission activities of domestic universities, also researched in the social sciences, which extend traditional forms of education and research to an increasingly broader range of society, this includes *community and learning skills programmes*, *higher education vocational training* (specific work skills training) and *art therapy,* which can be linked to remedial education and also to programmes in the

Faculty of Arts, animal-assisted therapy and animal-assisted education activities, *mental health training* and *sensorimotor integration* linked to the activities and research of the Institute of Psychology, and *cognitive behavioural therapy* practices could be included in the training of social groups with intellectual disabilities, regardless of age, by the various institutes, as well as in the practical training of para-sport coaches and dance therapy professionals.

Almost all of the literature reviews also indicated that there remain a number of areas not yet fully covered, including *relative vs. Absolute cognitive strengths*, where *relative refers* to the cognitive strengths of individuals in areas where they have difficulties, and *absolute cognitive strengths* refers to the strengths that may be common across individuals with specific learning disabilities/differences (SpLDs) and even across different types of neurodiversity. The literature on absolute cognitive strengths is still in its infancy, and further empirical work beyond Doyle (2020) and others, especially in the field of education and higher education pedagogy would be needed to enrich research-based pedagogical practices to promote inclusive university course and seminar dynamics, such as the work of Kathryn Oleson (2023).

It would be important to consider neurodiversity together in higher education because this is how we can harness international good practice and pedagogical guidelines on Universal Design for Learning (UDL) and inclusive environments in the context of the intersection of cognitive strengths. Otherwise, cognitive diversity will become a disability issue isolated by BNO codes, treated as a medicalised problem and deficit, for which there is no clear and reliable protocol internationally anyway, nor even when looking at the activities of domestic specialised services, unless we consider the diagnostic difficulties and contradictions identified and documented in the curricular literature on *learning disabilities* (Vida, 2022, 2023). A change in attitude is important for the inclusion of higher education, as specific learning differences should not be swept under the carpet, otherwise we increase the student's spencer net vulnerability, and a sane attitude also contributes unwittingly to the perpetuation of structural barriers.

The majority of the systemic literatures reviewed in my doctoral thesis have dealt with *autism spectrum condition* and *dyslexia* from a neurodiverse target population, but qualitative data collection with students with ADHD is only locally part of the sample. It would also be important to conduct a stand-alone systematic literature review on the inclusion of students with ADHD in higher education. According to some researchers, little research and presentations on obsessive-compulsive disorder (OCD), which often co-occurs with the other conditions mentioned under neurodiversity, also appear at conferences (Mellifont, 2021).

In the doctoral thesis I worked on the academic habits of neurodivergent students. In my future research, I plan to conduct further qualitative data collection among students at PTE and other national and international partner universities, which will provide an opportunity for further investigation and deeper exploration of the above relationships, as well as for refining the macro-statistical results.

From the coding anomalies experienced during the data analysis, it was concluded that a change of perspective in the laws regulating higher education in Hungary would be important, so that *neurodiversity* could be seen as *a background variable* in intersectionality *that is not necessarily associated with disability*, or a diagnosable *learning disability*, yet many people experience it as a barrier to learning in our holistic, highly selective education system, which often does not professionally and equitably enforce differentiation, extra time and *accommodations* (*Baker & Leonard 2017)*.

The programme of the Doctoral School in Sociology of Education and Society has only reinforced in me the value system that *it is* in fact our *individual and social responsibility* to stand up for and ensure equality of opportunity and equity for those groups from whom social capital and pathways to education and a decent quality of life have historically been mined by goverment and institutional policies of our societies. Leaders who turn their backs on DEI strategies, fuelled by ultraconservative, right-wing ideologies, limit equal opportunities for those who are disadvantaged in any way beyond their control. So the focus of DEI, in the ideal situation, (and also in the case of special needs and neurodivergent students in HE) is NOT to give way reverse discrimination or to give students a short-cut, or a less rigorous education, but rather to *develop* people's *potential*, *measure their performance more fairly*, and identify and *mentor hidden* and *disadvantaged talents* in a world where not everyone has an equal chance to show what they can do.

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