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Struggling for equal access and success: disability in European higher education

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ABSTRACT

Despite many countries' efforts to secure equal participation of people with disabilities, students with disabilities in higher education remain considerably disadvantaged. Previous research revealed that students' higher education experiences and outcomes are associated with their type of disability. Assuming that the conditions of different disability and welfare regimes produce variation in disabled students' experiences, we explored the predictive power of different disability types in their sense of belonging, dropout intention, and levels of success in contrasting country contexts. Based on survey data from Eurostudent VII, covering 11 European countries, we conducted country-wise regression analyses. We found that mental health problems are the strongest predictors across all the countries considered. Contrary to our expectations, the predictive power of disabilities was lower in countries with less favourable disability regimes. We challenge higher education institutions to support diverse students more through flexible institutional and pedagogical practices, thus facilitating inclusive higher education.

KEYWORDS

Disabilities; higher education; educational outcomes; disability regimes

关键词

残疾；高等教育；教育成果；残疾制度

为平等入学和成功而斗争：欧洲高等教育中的残疾问题

摘要

尽管许多国家都努力确保残疾人的平等参与，但高等教育中的残疾学生仍处于相当不利的地位。以往研究表明，这类学生的高等教育经历和成果与他们的残疾类型有关。假定不同类型的残疾和福利制度状况会造成残疾学生经历的差异，我们探讨不同国家背景下残疾类型的不同对学生的归属感、辍学意向和成功程度的预测能力。基于涵盖 11个欧洲国家的第七轮大学生调查数据，我们进行了国别回归分析。我们发现，在所有调研国家中，心理健康问题是最强的预测因素。与我们的预期相反，在残疾福利制度较差的国家，残疾类型的预测能力较低。我们建议高等教育机构通过灵活的制度和教学实践为不同学生提供更多支持，从而促进全纳高等教育的发展。

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Introduction

As attainment levels rise, higher education (HE) has become a more crucial part of educational systems. Thus, global human rights laws mandate more inclusive settings that consider the individual needs of students in teaching and guidance. Worldwide, most countries have ratified the United Nations Convention on the Rights of People with Disabilities (United Nations 2006) to 'ensure that persons with disabilities are able to access general tertiary education, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others' (United Nations 2006, Article 24, Section 5). Yet, the reforms launched by policymakers in response to this charter are not unidirectional. In some areas, related reform attempts have led to a 'backlash', as forces supporting the status quo co-opted inclusion rhetoric and politically undermined change processes (Powell, Edelstein, and Blanck 2016). Furthermore, too often, disability is not included in HE reforms (see Limbach-Reich 2021). Thus, inclusion in HE remains a neglected field of research, although disability conceivably constitutes an axis of inequality; a structural category that shapes dis/advantages (Hadjar and Kotitschke 2021; Mauldin et al. 2020).

Attempts to make universities more inclusive involve challenging processes. Crucially, the potential to compensate for disability-related disadvantages and to facilitate the inclusion of diverse students in HE varies considerably according to the type of disability. At the nexus of these developments, access to HE has increased, particularly among historically underrepresented students, including those with disabilities. However, despite myriad efforts, the conditions and study experiences of disabled HE students still differ substantially from those of other HE students. Across Europe, impaired students have indicated higher dropout intentions than students without impairments (Haugas, Allemann, and Kendrali 2021). Prior research has also investigated the experiences of disabled HE students (e.g. Lister, Coughlan, and Owen 2020). However, it is not possible to draw inferences beyond specific universities or country cases (cf. Järkestig Berggren et al. 2016), although presumably a country's welfare or higher education policies systematically shape the experiences of disabled students.

We address this research gap by comparing the experiences of disabled and non-disabled students and by considering whether they are systematically shaped by contextual differences across countries. Thus, we explore the predictive power of disability types over educational outcomes, including sense of belonging, dropout intention and success. To explore country-specific HE and disability and welfare policies, and to identify which are more equalising in terms of disabilities, we examined the experiences of students with and without disabilities in selected European countries in three regions – the Nordic countries and Western and Eastern Europe – and thus in contrasting disability, HE and welfare regimes throughout Europe.

Sense of belonging, dropout intentions and perceived success of higher education students with and without disabilities

A rather general framework for the inequality axis of disability is the educational inequalities framework provided by Boudon (1974) for primary and secondary effects, which has also been extended by explicitly addressing tertiary effects (Blossfeld et al. 2016). This

framework centres on the (social class-specific) resources that shape achievement (primary effects), educational decisions based on cost–benefit calculations and the perceived probability of successfully completing an educational pathway (secondary effects), and the stereotypes about different student groups that drive teachers' recommendations and evaluations, thereby affecting students' admission to educational institutions (tertiary effects). More recent applications of the original Boudon (1974) framework have linked it to migration-/ethnicity-related inequalities (Kristen and Dollmann 2010) and to gender inequalities (Hadjar and Buchmann 2016). The concept was originally related to educational attainment, but we have extended it to include subjectively perceived study success and related it to the outcomes of students' sense of belonging and dropout intentions.

Applying the primary, secondary and tertiary effect framework to disability as an axis of inequality requires an examination of how resources are linked to both individual abilities and to the institutional structures that determine the extent to which a dis/ability constitutes such a resource. Primary effects refer to the disadvantages faced by disabled people in their HE achievements. At the nexus of certain impairments and the structures of HE institutions, support may not be sufficient to compensate for such disadvantages, and disabled students thus have lower achievement. Secondary effects refer to the educational decisions that disabled people make concerning their perceived resources. Disabled students would – according to this argument – decide in favour of HE institutions and courses that accommodate them well. Since disabled people may perceive more obstacles linked to their impairments and a lack of support during their studies, they may decide to drop out more often than students with no disabilities. Tertiary effects, related to teacher evaluations linked to certain stereotypes (Esser 2016), are connected to the recommendations of certain HE study advisors and admissions officials who may advise disabled people not to pursue or continue their HE studies or even not to admit them because of the many barriers they are likely to face in a typical HE environment (Preiser and Smith 2011). Nevertheless, universities have begun to provide services more systematically, though none are anywhere close to implementing universal design principles that optimally support disabled students (Powell and Pfahl 2018)

This study focuses on three educational outcomes that are theorised as relating to inequalities along the axis of disability.

Sense of belonging (SB) is both an important outcome and a vital resource in the successful completion of studies. This fact is reflected in the classic Spady-Tinto concept (Hadjar, Haas, and Gewinner 2022; Spady 1971; Tinto 1975), which postulates that (academic and social) integration differs across social groups, simultaneously affecting dropout intentions and study success. Several prior studies have found that HE students' SB to be an essential factor throughout their educational pathways, and it is strongly related to study progress, success, attainment and study-related well-being (Kleemola et al. in review; Korhonen et al. 2019; Pedler, Willis, and Nieuwoudt 2022; Ulmanen et al. 2016). SB is a basic psychological need that entails a feeling of being connected to others (e.g. Ryan and Deci 2000). It is linked to the development of students' identities and to their engagement in study-related communities (Korhonen et al. 2019, 2023). SB is constructed through various experiences during one's studies, and it is hence regulated by various factors and differs along the educational pathway (Graham, Kogachi, and Morales-Chicas 2022; Kleemola et al. in review; Korhonen et al. 2019). Teachers and

their relationships with students are important (Chiu et al. 2016; Lombardi, Murray, and Kowitt 2016; Martinot et al. 2022). Thus, poor relationships with peers and teachers result in weaker SB (Martinot et al. 2022) and even lead to an increase in dropout intentions (Contreras et al. 2022). In contrast to SB, feeling alienated from education may lead to difficulties (Morinaj, Hadjar, and Hascher 2020; OECD 2017; Salmela-Aro and Upadyaya 2014). Some earlier studies (e.g. Wentzel 1998) have also discovered positive cycles: SB can also lead to better academic achievements and social acceptance, consequently strengthening it further.

Regarding differences between the SB of persons with and without disabilities, a review by Raines et al. (2023) identified disability identity, positive co-teaching partnerships, accessibility to necessary support and social views on disability within the family and the educational environment as crucial factors in SB. Overall, the process of social and academic integration can be more difficult for minority students, including those with disabilities, as HE environments and institutional practices are not yet adequately prepared for them (Buß 2018; Carroll et al. 2020). For example, adequate on-campus accommodation for students with disabilities may be limited. In addition to such physical barriers, students with disabilities often face stigmatisation and can sense the reservations of other students, staff and faculty members, particularly in the case of non-visible impairments (Buß 2018; Moriña 2017). Furthermore, integration into HE is constituted not only on the micro level but also in the HE environment through, for example, habitus (Carroll et al. 2020; Reay, David, and Ball 2001), or in the broader macro-level context through, for example, educational regimes (see below), which shape the extent to which disablement impedes HE success (Buß 2018; Högberg and Lindgren 2023).

Related to both subjective study success and SB, dropout intention is defined as students' subjective assessment of whether they intend to continue with their studies. Dropout intention has been widely investigated, with researchers repeatedly finding that students' study commitment as well as their academic and social integration are key determinants (e.g. Tinto 1975). These determinants are shaped by individual and institutional factors (Georg 2009). Individual factors may relate to the individual availability of cultural, economic and social resources, which may systematically vary based on ascriptive characteristics, such as social origin, gender, migrant background and – the key issue of our study – disability. However, institutional factors and the way in which HE institutions adapt to the individual needs of students with disabilities are also crucial elements, including certain institutional conditions (e.g. study environment) and related institutional support (Hadjar, Haas, and Gewinner 2022; Moriña 2017).

Students with disabilities are at an overall higher risk of dropping out from HE (Koopmann, Zimmer, and Lörz 2023), but some studies have found differences between categories of disabilities. For example, students with mental disabilities are at a higher risk of dropping out than other students, but students with physical disabilities are not (Carroll et al. 2020). Several mechanisms have been suggested to explain disabled students' higher dropout risk. First, higher dropout risk can be related to processes encountered prior to entering HE, such as systematic differences in academic preparation between students with and without disabilities (Carroll et al. 2020; Schechter 2018). In this regard, students with physical or mental disabilities are disadvantaged in terms of their academic preparation during secondary education, being less well prepared for entering HE (Carroll et al. 2020). Second, dropout risk is intertwined with inclusion and

SB (e.g. Tinto 1975). Thus, a supportive attitude on campus, adequate student accommodations and inclusive design are effective in mitigating dropout risk among disabled students (Kutscher and Tuckwiller 2019; Moriña 2017). Furthermore, campus services – both those for disabled students and universal services for everyone – are related to lower dropout rates, given that many disabled students do not disclose their disability in HE (Newman et al. 2019, 2021).

Study success has traditionally been considered the most important outcome of HE, measured by retention, educational attainment, grade point average, study credits and on-time graduation (Haas and Hadjar 2020; Hyytinen et al. 2022; Richardson, Abraham, and Bond 2012). In this study, we focus on students' subjectively perceived success in comparison to that of fellow students (Trautwein et al. 2007). Study success is intertwined with our other outcome variables, SB and dropout intention (e.g. Tinto 1975), and is associated with various individual factors, such as motivation and well-being (Korhonen et al. 2019). Some of the important factors enabling students with disabilities to achieve study success are self-advocacy, motivation and the use of self-regulated learning strategies (Ju, Zeng, and Landmark 2017). Self-advocacy and self-regulated learning strategies can help students with disabilities develop compensational strategies for dealing with their challenges and encourage them to seek accommodations (Getzel and Thoma 2008). In addition to these micro-level factors, family and study environment are important for students' study success (Moriña and Biagiotti 2022). Increases in the size of their peer cohort tends to promote the study success of students who belong to minority groups – such as students with disabilities (Fletcher and Tienda 2009). Institutional support – such as disability services and accommodations – also improve the study success of students with disabilities (Kim and Lee 2016; Lombardi, Murray, and Kowitt 2016). However, Römhild and Hollederer (2023) found in their review that the effect of disability services on study success is usually small, or even non-existent. Furthermore, other studies have shown that students with disabilities are not a homogeneous group in terms of their perceived study success. While students with learning disabilities do not seemingly differ from other students (Hen and Goroshit 2014), students with mental health problems are less successful than other students (Bruffaerts et al. 2018; Eisenberg, Golberstein, and Hunt 2009).

The role of education, disability and welfare regimes

The situation of people with disabilities differs between countries (e.g. Tschanz and Staub 2017). A concept that makes it possible to theorise about such differences is ableism (Dolmage 2017), a macro characteristic that differs between societies (Drake 2001), defined as the stereotypical ability-centred evaluation of people's potential and favouring non-disabled people. Ableism manifests in persistent attitudinal, architectural and social structural barriers, which result in the exclusion of disabled and disadvantaged people from HE. From this perspective, it is not the disability that hinders students' HE integration but the way in which those students are perceived and treated. Against this backdrop, students' SB, their dropout intention and subjective success are also shaped by the institutional structures and policies of (higher) education systems and disability regimes, all of which are linked to welfare state regimes, such as the shape and design of inclusive policies and services. Thus, we expect systematic cross-country differences in the extent to

which HE systems account for heterogeneous student populations and have the capacity to include minority students – in this paper, students with disabilities. We analyse the countries based on welfare-state, HE and disability regime typologies (see Table 1).

When looking at the inequality-proneness of different welfare-regime types, which may also apply to disability-related inequalities, and when following the Esping-Andersen typology (1990, 1999) and considering later research on post-socialist and Southern welfare regimes, Finland and Sweden are classic Nordic social-democratic welfare-state regimes, with strong efforts to guarantee equality in most life spheres. Luxembourg and the Netherlands resemble more the continental or corporatist – conservative regime, characterised by a strong welfare state but also by a strong system-immanent reproduction of inequalities, presumably regarding inequalities linked not only to class or gender but also to disability. Croatia, Estonia, Hungary, Lithuania, Poland, Romania and Slovenia remain post-socialist countries, which, due to their transition to state-capitalist economies, are characterised by stronger inequalities. The countries also often have a policy mix, complicating their classification and thus leading to a regime type with intra-group heterogeneity – often characterised as hybrid (see, e.g. Czarnecki 2014; Hadjar and Kotitschke 2021).

One important aspect of welfare regimes in regard to inclusion and educational policy is whether welfare states strive for equality of conditions by compensating for, but still maintaining, present unequal conditions, such as in conservative welfare states; whether they strive for equality of opportunity by providing minimal welfare to counterbalance current

Table 1. Countries by institutional features and regime type.

	Welfare regime (based on Esping-Andersen 1990, 1999)	Higher education regime (based on Triventi 2014; government expenditure on education as a % of GDP, Eurostat 2024; information on study fees, Eurydice 2024)	Disability regime (based on Maschke 2008; Tschanz and Staub 2017; Hadjar and Kotitschke 2021; OECD 2022)
Finland	Social-democratic	Nordic(high government expenditure on HE; no study fees)	Most favourable
Sweden	Social-democratic	Nordic(high government expenditure on HE; no study fees)	Most favourable
Estonia	Post-socialist/hybrid	Post-socialist(medium expenditure; no study fees for national students)	Less favourable
Lithuania	Post-socialist	Post-socialist(medium expenditure; no fees for state-subsidised study places)	Less favourable
Croatia	Post-socialist	Post-socialist(high expenditure; tuition fees depending on institution and programme)	Least favourable
Slovenia	Post-socialist	Post-socialist(high expenditure; medium/high study fees for all students)	Less favourable
Hungary	Post-socialist	Post-socialist(high expenditure; medium/high study feeds for all students)	Least favourable
Poland	Post-socialist	Post-socialist(high expenditure; no fees for full-time students in public institutions)	Less favourable
Romania	Post-socialist/hybrid	Post-socialist(medium expenditure; medium/low study fees for all students)	Least favourable
Luxembourg	Conservative	Continental(low government expenditure on HE; rather low study fees for all students)	Less favourable
Netherlands	Conservative	Continental(high government expenditure on HE; medium study fees for all students)	Favourable

unequal conditions but enabling opportunities to improve conditions in the future, such as in liberal welfare regimes; or whether they strive for both, such as in social-democratic welfare regimes (Hega and Hokenmaker 2002; Pechar and Andres 2011; Wollscheid and Hovdhaugen 2021). Thus, we expect more students with impairments and disabilities to gain access to HE in social-democratic and liberal welfare regimes, given that such regimes are more inclusive and keep academic pathways open for the majority of school leavers (see also Moriña 2017). By contrast, conservative welfare states, which emphasise sorting and selection, might make it more difficult for students with disabilities to be admitted to HE. Yet, the former two regime types may also differ in that social-democratic welfare states not only enable access to HE but also provide more support after the student has entered HE, whereas liberal welfare states may enable broad access to HE but place the responsibility to succeed on the individual.

In considering the role of HE regimes, Pechar and Andres (2011) and Triventi (2014) have analysed the link between welfare regimes and HE systems, for example in terms of expenditure or tuition fees. Pechar and Andres (2011) have suggested the following linkage (while also noting some heterogeneity within regime types): high public expenditures – no tuition fees in social-democratic regimes, low/medium public expenditures – low/no tuition fees in conservative regimes and medium/high public expenditures – high tuition fees in liberal regimes. However, not all HE policies fit so neatly into the welfare regime typology (Wollscheid and Hovdhaugen 2021; Willemse and Beer 2012).

For our own classification of the HE regimes, we employed the work of Triventi (2014) as well as additional Eurostat and Eurydice data (Table 1). The original classification of 16 OECD countries by Triventi (2014) confirms the general cluster structure that distinguishes the Nordic (social-democratic), continental (corporatist – conservative) and Anglo-Saxon (liberal) and Anglo-American (liberal) regimes from each other. For our analyses, the description of the Nordic and the continental regimes is of particular interest: The Nordic education regime is only moderately stratified at the secondary level, with comprehensive schooling up to the age of 15 or 16, and the education system, including HE, is more strongly state-controlled and well-funded (Triventi 2014, 1697). The strong state provisions in the welfare system and the education system aim for equality in all realms of life. This means that the Nordic countries have no tuition fees, and students receive financial support and support in kind (e.g. subsidised accommodation) to reduce the barriers faced by disadvantaged social groups to successfully pursuing HE studies. The continental regime is characterised by a higher level of stratification, particularly regarding secondary education but also regarding HE, as the proportion of students on lower-tier HE tracks (short-cycle tertiary education, ISCED 5b) is more pronounced than in the Nordic countries. While the state plays an important role in financing HE and many students receive financial support, the system is still prone to inequality, as there is a gap between financial support and needs, particularly for disadvantaged groups. In such continental education systems, social selection is rather high in terms of being admitted to university. Thus, a high proportion of students originate from advantaged backgrounds, which results in less visible inequalities in study success and graduation. An interesting point made by Triventi (2014) is that the (extrinsic) value of HE degrees seems to be higher in continental compared to Nordic systems, given the larger income inequalities, whereas redistribution takes some of the premium from graduate incomes in the Nordic systems. Eastern European countries are often classified as hybrids: they exhibit aspects of

the different regimes at the same time, complicating their fit within a single common HE-welfare regime logic (Czarnecki 2014; Malinovskiy and Shibanova 2023; Willemse and Beer 2012; Wollscheid and Hovdhaugen 2021). For example, according to a study by Malinovskiy and Shibanova (2023), given its more inclusive education system but underdeveloped support for HE students, the Estonian HE system consists of policy elements that could be classified as both liberal and social-democratic.

Finally, we classified the countries based on how their disability regimes (Table 1) relate to other classification systems and data on the living conditions of people with disabilities (e.g. level of discrimination, participation in working life, social participation) (Maschke 2008; Tschanz and Staub 2017; Hadjar and Kotitschke 2021; OECD 2022).

In the real world, no country exhibits features of only one type, so Maschke (2008) chose to identify just the dominant features. While some country policies feature financial compensation for a lack of labour market participation (e.g. Greece, Italy, Austria and the Netherlands), other countries focus on the regeneration of skills and abilities and on people's (re-)integration into the workforce (e.g. France, Germany and Finland), or else they aim to guarantee equal participation in all life spheres (e.g. Ireland, Spain, the UK and Sweden).

The four-cluster typology of Tschanz and Staub (2017) includes a cluster that is most favourable for people with disabilities, featuring high social protection, high labour-market integration and high civil rights provision for people with disabilities (countries in our sample: Finland, Sweden). A second favourable cluster features high labour-market protection but rather low social protection and medium civil rights provision (country in our sample: the Netherlands). A less favourable cluster features low labour market integration, but medium social protection and medium civil rights provision (countries in our sample: Luxembourg, Poland), while the least favourable cluster is characterised by low social protection and low labour market integration (country in our sample: Hungary).

While employing a welfare-regime typology (Esping-Andersen 1990, 1999) to analyse differences in subjective well-being, Hadjar and Kotitschke (2021) also provided estimates for a labour-market participation and a social participation index that indicates the gap in these characteristics between people with and without disabilities. The Nordic countries seemingly form a distinct category with rather high labour market integration and social participation scores, while there is more heterogeneity within the other country clusters. Disability regimes and welfare regimes have some overlap, but also many differences. Based on these considerations and the institutional features listed above, we assume that the predictive power of having a disability on educational outcomes, such as SB, dropout intention and perceived study success, is weaker in Finland and Sweden, given their genuine Nordic HE and social-democratic welfare regimes, than in more conservative and post-socialist European countries.

Data and method

Data source

We used data from Eurostudent VII, collected in 2019 (Cuppen et al. 2023). Eurostudent is a self-report survey that targets all HE students in participating European countries. Sampling varies across countries and is presented in detail in Cuppen et al. (2021). It

Table 2. The sample by country.

Country	*n*
Finland	7,006
Sweden	5,129
Estonia	2,760
Lithuania	3,358
Croatia	1,840
Slovenia	2,112
Hungary	7,095
Poland	13,616
Romania	20,030
Luxembourg	719
Netherlands	16,275

explores the social dimensions of HE and produces internationally comparable data. The survey is translated and administered in each country. Only countries that included all outcome and disability items (see below) are included in this study. Two countries (Denmark, Ireland) were excluded due to excessive proportions of missing values (over 20%) within their data. We also excluded Georgia, as our focus was on Europe. The analysis is based on a sample consisting of 79,940 students from eleven countries. The countries and sample sizes are presented in Table 2.

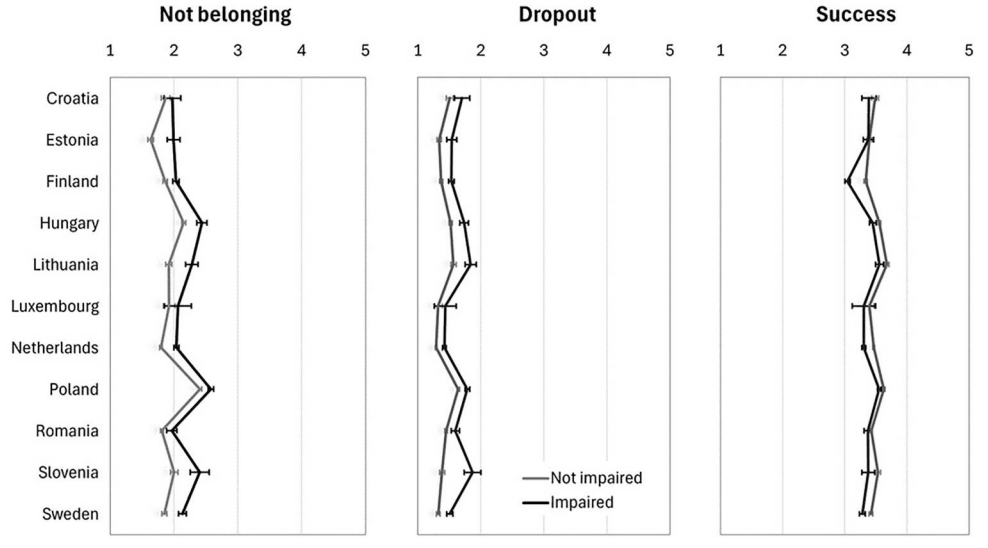
Measures

Outcome variables

Three single-item outcome variables were used to address HE experiences and outcomes. They were: the feeling of not belonging in HE ('I often have the feeling that I don't really belong in HE'), dropout intention ('I am seriously thinking of completely abandoning my HE studies'), adapted from Trautwein et al. (2007), and perceived comparative success (performance in study programme compared to that of fellow students). The single items were measured on a five-point Likert scale (ranging from strongly agree to don't agree at all or much better, somewhat better, just as good, somewhat worse and much worse). The original scales were reversed to allow for more intuitive interpretation: the higher the response, the more it applies to the respondent.

Types of disability

Originally, Eurostudent questioned the respondents about the types of impairments that limited their studies using binary items (yes/no). The impairments were: physical chronical disease, mental health problems, mobility impairment, sensory impairment (vision or hearing), learning disabilities (ADHD, dyslexia) and other long-standing health problems / functional limitations / impairments / etc. Due to the low number of 'yes' responses for some of the items, we grouped some impairments together, resulting in three types of disabilities: PI (physical impairment, including mobility and sensory impairment, other long-standing conditions), MH (mental health problems) and LD (learning disabilities). The students self-reported their disabilities, and no medical diagnosis was required. The descriptions of each outcome variable in each country are presented in Figure 1. The share of disabled students per country is presented in Figure 2.

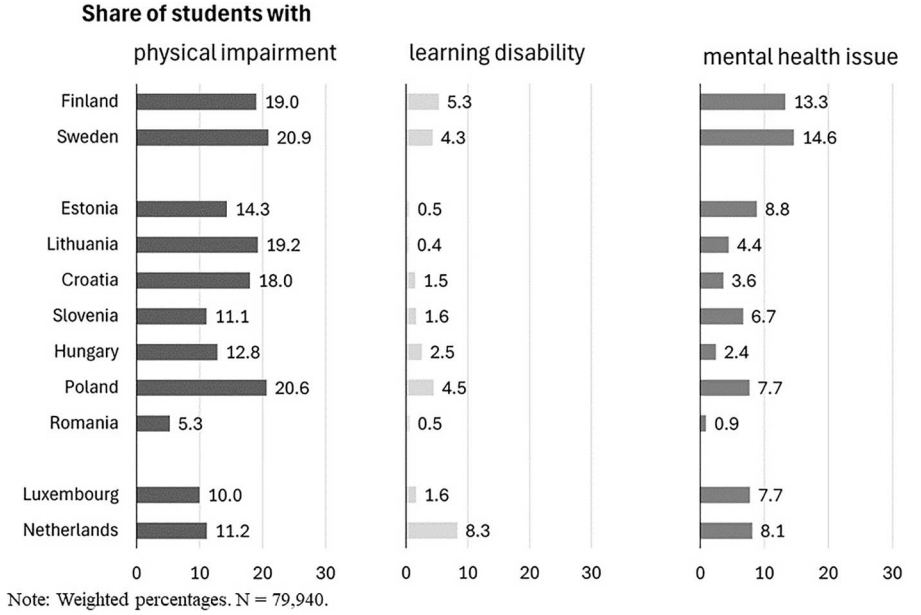


Note: Not belonging = I often have the feeling that I don't really belong in higher education (1 = Don't agree at all; 5 = Strongly agree). Dropout = I am seriously thinking of completely abandoning my higher education studies (1 = Don't agree at all; 5 = Strongly agree). Success = Performance in study programme in comparison to fellow students (1 = Much better; 5 = Much worse). Weighted means and 95% confidence intervals. N = 75,223-72,684.

Figure 1. Outcome variables for each country.

Data analyses

Ordinary least squares (OLS) regression was conducted for each country separately. The method was considered suitable since the dependent variables were five-step ordinal



Note: Weighted percentages. N = 79,940.

Figure 2. The share of disabled students per country.

variables (see Rhemtulla, Brosseau-Liard, and Savalei 2012). Separate models were estimated for each of our three outcome variables, including the type of disability as our main independent variable. Gender, age, migration background and parental education (self-reported) were chosen as the control variables due to their known effect on the outcome variables (e.g. Kleemola et al. in review). We used the weighting variable provided by Eurostudent and SPSS version 28 for the analyses.

Results

Figure 3 presents a visual summary of the standardised coefficients for each type of disability and each outcome variable by country. Unstandardised coefficients and R^2 are presented in the appendix. The tested regression model was significant in all the countries for all three outcome variables. For ease of reading, post-socialist countries are grouped in geographical groups in this section.

Social-democratic countries: Finland and Sweden

In both these countries, a stronger feeling of not belonging in HE was significantly associated with having MH or LD. The association was greater among students with MH (Finland: $\beta = .10$, $p < .001$; Sweden $\beta = .15$, $p < .001$) than among students with LD (Finland: $\beta = .09$, $p < .001$; Sweden $\beta = .06$, $p < .001$). The association was also significant among students with PI in Finland ($\beta = -.03$, $p = .029$), but not in Sweden. It's noteworthy, that the association was quite small and reversed in Finland indicates that students with PI may feel a slightly stronger SB in HE than others.

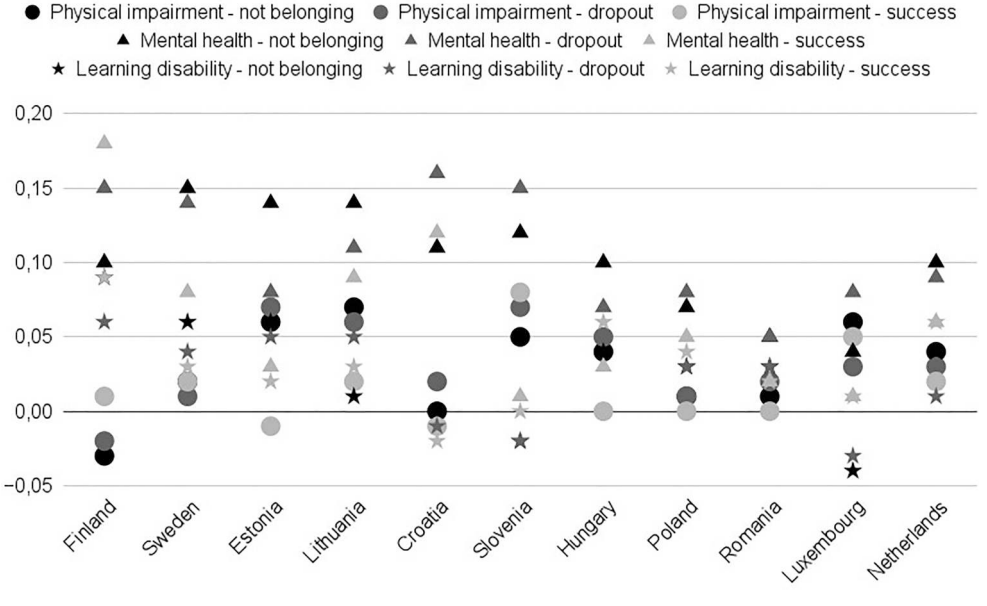


Figure 3. Standardised coefficients for each type of impairment and each outcome variable; the coefficients for perceived comparative success have been reversed for visual comparability with the other outcome variables.

As with the first outcome variable, in both countries having MH or LD significantly predicted a stronger dropout intention. In line with the first outcome variable, the association was greater among students with MH (Finland: β = .15, $p < .001$; Sweden β = .14, $p < .001$) than among those with LD (Finland: β = .06, $p < .001$; Sweden β = .04, $p = .006$).

In line with the first two outcome variables, in both countries having MH or LD significantly predicted lower perceived comparative success. Again, the association was greater among students with MH (Finland: β = -.18, $p < .001$; Sweden β = -.08, $p < .001$) than among students with LD (Finland: β = -.09, $p < .001$; Sweden β = -.031, $p = .031$).

Post-socialist, Baltics: Estonia, Lithuania

In both Estonia and Lithuania, having PI or MH significantly predicted a stronger feeling of not belonging. The association was greater among students with MH (Estonia: β = .14, $p < .001$; Lithuania β = .14, $p < .001$) than among students with PI (Estonia: β = .06, $p = .002$; Lithuania β = .07, $p = .003$). Moreover, the association was significantly greater among students with LD in Estonia (β = .06, $p = .001$), but not in Lithuania.

In both countries, having any type of impairment was significantly associated with a stronger dropout intention. As before, the association was strongest among students with MH (Estonia: β = .08, $p < .001$; Lithuania β = .11, $p < .001$), followed by those with PI (Estonia: β = .07, $p < .001$; Lithuania β = .06, $p = .001$) and finally those with LD (Estonia: β = .05, $p = .016$; Lithuania β = .05, $p = .006$)

In Estonia, none of the types of impairment predicted the outcome variable of perceived comparative success. In Lithuania, having MH significantly predicted lower perceived comparative success (β = -.09, $p < .001$).

Post-socialist, Balkans: Croatia, Slovenia

Having MH significantly predicted a stronger feeling of not belonging in both Croatia (β = .11, $p < .001$) and Slovenia (β = .12, $p < .001$). In Croatia, this was the only type of impairment that was significantly associated with the outcome variable. In Slovenia, having a PI significantly predicted a weaker feeling of not belonging (β = .05, $p = .036$).

Our findings concerning dropout intention are in line with the first outcome variable. Having MH significantly predicted a stronger dropout intention in both Croatia (β = .16, $p < .001$) and Slovenia (β = .15, $p < .001$). As before, this was the only type of impairment with a significant association in Croatia. In Slovenia, having a PI significantly predicted a stronger dropout intention (β = .07, $p = .002$)

In Croatia, having MH significantly predicted lower perceived comparative success (β = -.12, $p < .001$). In contrast, in Slovenia, having PI significantly predicted lower perceived comparative success (β = -.08, $p < .001$).

Post-socialist, central Europe: Hungary, Poland, Romania

In Hungary, Poland and Romania, having MH or LD significantly predicted a stronger feeling of not belonging. The association was greater among students with MH (Hungary β = .10, $p < .001$; Poland β = .07, $p < .001$; Romania β = .05, $p < .001$) than among those with LD (Hungary β = .04, $p < .001$; Poland β = .03, $p < .001$; Romania β

= .03, $p < .001$). Moreover, the association was significant among students with PI in Hungary (β = .04, $p = .003$), but not in Poland or Romania.

In line with the first outcome variable, having MH or LD significantly predicted a stronger dropout intention in all three countries. The association was greater among students with MH (Hungary β = .07, $p < .001$; Poland β = .08, $p < .001$; Romania β = .05, $p < .001$) than among students with LD (Hungary β = .05, $p < .001$; Poland β = .03, $p < .001$; Romania β = .03, $p = .003$). As with the first outcome variable, dropout intention was significantly associated with having a PI in Hungary (β = .05, $p < .001$), but not in Poland or Romania.

As with the first two outcome variables, having MH or LD significantly predicted lower perceived comparative success in all three countries. In contrast to the first two outcome variables, the association was similar for the two types of impairment: MH (Hungary β = -.03, $p = .037$; Poland β = -.05, $p < .001$; Romania β = -.02, $p = .027$) and LD (Hungary β = -.06, $p < .001$; Poland β = -.04, $p < .001$; Romania β = -.02, $p = .031$).

Conservative countries: Luxembourg and Netherlands

In Luxembourg, none of the types of impairment significantly predicted a feeling of not belonging. However, all the associations were significant in the Netherlands (PI β = .04, $p < .001$; MH β = .10, $p < .001$; LD β = .04, $p < .001$).

As with the first outcome variable, in Luxembourg none of the types of impairment significantly predicted dropout intention. In the Netherlands, having MH significantly predicted dropout intention (β = .09, $p < .001$), as did having PI (β = .03, $p < .001$).

As before, in Luxembourg none of the types of impairment significantly predicted perceived comparative success. In contrast, in the Netherlands having any type of impairment predicted significantly lower perceived comparative success. The association was similar for MH (β = -.06, $p < .001$) and LD (β = -.06, $p < .001$) and slightly smaller for PI (β = -.02, $p = .017$).

Discussion

The study has investigated differences in study experiences and outcomes between HE students with and without disabilities across a number of countries. While our findings indicate differences between the countries in terms of the predictive power of disabilities for educational outcomes, two clear similarities apply to all countries. First, disabled students have fared worse across all the countries and across all the outcome variables. Second, of the three disability categories, mental health problems were the strongest predictors of educational outcomes across all the countries in our sample. This was not surprising, as earlier research has repeatedly found that mental disabilities are detrimental to success in education (e.g. Bruffaerts et al. 2018; Carroll et al. 2020; Salmela-Aro and Upadyaya 2014). Some of the more robust findings can possibly be explained by the nature of mental health problems: they often make perceptions more negative. Reverse causality might also be at play: not doing well in one's studies may also give rise to mental health issues. However, HE institutions should take their students' mental health problems seriously across Europe. The issue is likely to be even more acute now, as the dataset were collected prior to the COVID-19 pandemic, which increased students' perceived challenges (Korhonen et al. 2023) and mental health problems (Parpala et al. 2021).

Learning disabilities and physical impairment varied a great deal between the countries. Some of this variation can be explained by the small share of students representing each type of disability. For instance, the sample size of students with learning disabilities varies greatly across countries. This fact is probably a sign of the inclusiveness of earlier education: without inclusive practices and disability support, few students with learning disabilities reach HE (Moriña 2017). In contrast, the variation in physical impairment might be connected to differences in cultural practices of classifying impairment. However, the findings also imply that in many countries, physical (i.e. visible) impairment is taken more seriously and support is more readily available than is the case for students with non-visible disabilities, such as learning disabilities or mental health problems (Buß 2018; Carroll et al. 2020; Moriña 2017).

In contrast to expectations, the predictive power of disabilities for educational outcomes was not weaker in the social-democratic countries of Finland and Sweden. In fact, we identified some of the strongest coefficients in both countries. They are also the most favourable countries for people with disabilities in Tschanz and Staub's (2017) typology, and they have the highest share of HE students with disabilities (see Figure 2). The higher share could mean that students have more significant disabilities, thus facing more challenges. It could also mean that the challenges are discussed more openly, and hence, their problems are more visible. However, the share is not high enough for peer support to enhance SB (see Fletcher and Tienda 2009).

It was not surprising that the post-socialist countries did not form a clear group: scholars have often viewed each of these countries as hybrid forms of a welfare regime (Czarnecki 2014; Hadjar and Kotitschke 2021). In the Baltic and Balkan countries, the predictive power of disabilities, especially mental health problems, was much stronger than in the Central European countries. Some of the Central European countries in our sample showed characteristics of the least or less favourable disability regime (Tschanz and Staub 2017; see also Table 1). The conservative countries in our sample fell somewhere between the post-socialist countries in the predictive power of disabilities for educational outcomes. Overall, the findings are counterintuitive: the predictive power of disabilities was lower in countries with less favourable disability regimes (Tschanz and Staub 2017). This result can partly be explained by the share of students with disabilities, as discussed above (Table 2). However, a major factor could also be ableism and the stigmatisation of disabilities. More favourable disability regimes could encourage students to be open about their disabilities, unlike less favourable disability regimes.

All in all, the findings reveal that disability constitutes an inequality axis and that applying an inequality framework to primary, secondary and tertiary effects (following Boudon 1974 and latest extensions of the framework by Blossfeld et al. 2016) appears to be meaningful. In addition to disentangling the various effects of differential achievement, educational decisions and stereotyped evaluations, our findings also reveal clear achievement disadvantages (primary effects) for students with disabilities in certain countries. With regard to secondary and tertiary effects, one component of the higher dropout intention of students with disabilities is likely due to students' educational decisions and (stereotypical) teacher evaluations, while another may be linked to an achievement deficit. The lack of resources allocated for students with disabilities are seemingly not compensated for by HE institutions to the extent needed, which may in turn cause even more resource lacks (e.g. regarding a lower SB). The country differences

indicate that the institutional features of HE systems and institutions do matter and moderate the roles of primary, secondary and tertiary effects.

The limitations of our study relate to the small sample sizes, particularly of HE students with disabilities, which may have affected the results for small countries like Luxembourg and may have led to an underestimation of the inequalities along the axis of disability. Additionally, the explored variables only explain a small proportion of the outcome variables. We measured the mechanisms behind such inequalities with a limited number of items. Future research could analyse more mechanisms in parallel. Panel studies focusing on HE trajectories may reveal the stages at which such inequalities occur and how they are enforced or ameliorated at later stages. Utilising the single-item approach instead of more comprehensive scales to measure SB, dropout intentions and study success may also limit the obtained results.

HE institutions are being challenged to enhance access, but also to strengthen diverse students' academic achievement and SB so that they can attain their goals. Increasing attention should be paid to supporting students with non-visible disabilities, such as mental health problems and learning disabilities. No country can consider itself successful in supporting disabled students. Clearly, myriad barriers to the full participation and social inclusion of disabled people in HE institutions persist everywhere (see also Barnes 2007). Our findings show that although entry to HE may be easier for disabled students in countries with favourable disability regimes, these students still struggle to cope with their studies. Thus, it is important to carry out measures on the HE institution level. Teachers' pedagogical expertise in such issues is of particular importance, as they are in a key position to support all students' learning and development (Buß 2018; Carroll et al. 2020). Accessibility to all activities, deeper pedagogical knowledge and better universal design can provide pathways to more accessible, inclusive HE in the future.

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Appendix 1. Regression analysis results; each cell indicates the values for Physical impairment / mental health problem / learning disability.

	Adjusted R^2	Unstandardised		
		B	SE	Sig
Croatia	.02/.03/.02			
Not belonging		-.00/.75/-.01	.08/.16/.25	.974/<.001/.970
Dropout		.06/.90/-.12	.07/.14/.22	.415/<.001/.582
Success		.02/-.66/.19	.07/.14/.21	.766/<.001/.368
Estonia	.05/.02/.01			
Not belonging		.18/.52/.96	.06/.07/.30	.002/<.001/.001
Dropout		.16/.24/.60	.05/.06/.25	<.001/<.001/.016
Success		.04/-.09/-.32	.05/.06/.26	.476/.147/.225
Finland	.03/.04/.04			
Not belonging		-.08/.33/.45	.04/.04/.06	.029/<.001/<.001
Dropout		-.03/.39/.22	.03/.03/.05	.238/<.001/<.001
Success		-.03/-.50/-.36	.03/.03/.05	.339/<.001/<.001
Hungary	.02/.01/.01			
Not belonging		.14/.86/.33	.05/.10/.10	.003/<.001/<.001
Dropout		.15/.45/.31	.04/.08/.08	<.001/<.001/<.001
Success		-.01/-.14/-.33	.03/.07/.07	.826/.037/<.001
Lithuania	.04/.03/.01			
Not belonging		.23/.85/.24	.06/.11/.35	<.001/<.001/.502
Dropout		.16/.62/.86	.05/.10/.31	.001/<.001/.006
Success		-.05/-.39/-.38	.04/.08/.25	.189/<.001/.135
Luxembourg	.01/.03/.02			
Not belonging		.21/.19/-.33	.16/.18/.36	.183/.279/.362
Dropout		.07/.24/-.21	.11/.13/.26	.543/.061/.429
Success		-.16/-.04/-.10	.13/.14/.29	.221/.773/.746
Netherlands	.02/.03/.02			
Not belonging		.14/.41/.15	.03/.03/.03	<.001/<.001/<.001
Dropout		.07/.27/.04	.02/.02/.02	<.001/<.001/.118
Success		-.06/-.18/-.18	.02/.03/.03	.017/<.001/<.001
Poland	.02/.02/.01			
Not belonging		.04/.37/.21	.03/.04/.06	.176/<.001/<.001
Dropout		.04/.35/.16	.03/.04/.05	.113/<.001/<.001
Success		.01/-.17/-.17	.02/.03/.04	.741/<.001/<.001
Romania	.02/.02/.01			
Not belonging		.04/.60/.51	.05/.13/.17	.425/<.001/.002
Dropout		.07/.50/.42	.04/.11/.14	.094/<.001/.003
Success		-.02/-.21/-.27	.04/.10/.13	.694/.027/.031
Slovenia	.03/.03/.01			
Not belonging		.19/.60/-.20	.09/.12/.23	.036/<.001/.378
Dropout		.22/.57/-.14	.07/.09/.17	.002/<.001/.427
Success		-.24/-.02/.00	.07/.08/.16	<.001/.817/.986
Sweden	.03/.02/.01			
Not belonging		.05/.48/.33	.04/.05/.08	.207/<.001/<.001
Dropout		.03/.34/.17	.03/.04/.06	.414/<.001/.006
Success		-.04/-.21/-.13	.03/.04/.06	.175/<.001/.031