

Article

All Inclusive?! Empirical Insights into Individual Experiences of Students with Disabilities and Mental Disorders at German Universities and Implications for Inclusive Higher Education

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Received: 30 June 2020; Accepted: 26 August 2020; Published: 28 August 2020



Abstract: In the context of the ratification of the UN Convention on the Rights of Persons with Disabilities (CRPD), the German Rectors' Conference has expressed the goal of empowering inclusive education at German universities. The German study "beeinträchtigt studieren" from 2018 indicates that the situation of disabled university students needs to be improved (1). The present case study uses a mixed-methods approach to re-examine the situation of disabled students against the background of individual narratives. One important focus is on accessibility in teaching (2). The study shows that students with disabilities have to deal with many special barriers, among them learning environments, learning materials, and attitudes of teachers—a situation that is further exacerbated by the COVID-19 pandemic (3). Given the results, the question arises as to what measures are useful in ensuring that students do not suffer from stigmatizing or discriminatory experiences during their studies (4). There is a need for further training and development of inclusive teaching methods, such as the Universal Design for Learning (5).

Keywords: disability studies; inclusive higher education; disability; universal design for learning; reflexive inclusion; UN CRPD; accessibility in university studies

1. Introduction

What factors help students with mental illness or disabilities to study successfully? As early as in the 1970s, this question was already investigated in detail with a focus on academic and social integration [1,2]. The American studies of Tinto as well as Morrison and Silverman showed that for students with and without health problems, academic integration is important for academic success. In other American quantitative studies in particular [3], students were divided into groups according to certain criteria and it was examined whether these groups differ in terms of their academic success. This refers to 1. the type of health impairment, 2. its immediate visibility for third parties, and 3. the status of the health impairment. These three criteria have an impact on the students' success. The decisive factor is, on the one hand, the visibility of the impairment and, on the other hand, whether an impairment has been officially confirmed or not. According to Pingry O'Neill, Markward, and French, the form of impairment is also related to academic success. Their study involved 1289 students at three American universities, and the results suggest that students with physical impairments are more successful in their academic studies than those with cognitive impairments [3]. Another study examined how the form of impairment affects the students' ability to remain in higher education in the medium and long term [4,5]. In this panel study, 23,090 students at 1360 universities were interviewed, including 890 students with impairments. According to this study, a key criterion for academic success is whether the students make a successful transition from the first to the second

year of study and then stay at the university beyond that. A central and highly interesting result is that students with learning impairments and physical disabilities are significantly more successful in their studies than students suffering from mental illness (especially depression) [4,5]. According to Fisseler, the results indicate that universities are less well prepared for certain impairments than for others [6]. This does not allow any conclusions to be drawn as to whether students with certain impairments are more or less successful. The visibility of disabilities and mental illness for third parties is, in most cases, significantly limited and can unintentionally lead to a disadvantage or the perception of disadvantage in the students' academic endeavors [6]. A longitudinal study by Wessel et al. examined 17,317 students, including 173 students with disabilities and mental disorders, and showed that academic success does not depend on health restrictions [7]. These findings are supplemented by the results of a study by Adams and Proctor with 230 students, including 115 students with disabilities [8]. The researchers were able to show that students with health impairments are more likely to feel that they do not belong at a university. As a consequence, disabled students are more likely to think about quitting. There were also differences within the group of students with disabilities. Students with rapidly recognizable impairments were more successful in adjusting to their studies. The authors see one reason for this in the fact that these students have to explain themselves to third parties less often than students with imperceptible impairments [8]. According to Fisseler, these results suggest that visibility is more likely to affect the attitudes and behavior of others towards students with disabilities. These attitudes can have an impact on how the impaired students are dealt with, and also on the provision of services for these students, which then has an effect on their academic success [6]. In our own study we will examine this point in more detail.

Among the many factors that can affect the academic success of students with disabilities or mental illness, institutional factors are becoming increasingly important—most notably, the provision of services for students with disabilities (such as implementation services, counselling services, special work spaces), compensation for disadvantages, and appropriate precautions (such as extended processing times, alternative examination offers, accessible materials). The attitudes of staff and teachers towards students with health impairments constitute another institutional factor (see below). Various studies show that students with disabilities or mental illness have the same academic success as others when they have access to institutional support systems, indicating that the institutional level is indeed of great importance [7,9–11]. Nevertheless, this form of support is not established at all universities. For example, a study from Norway showed that students with disabilities or mental disorders still have problems in their studies [12]. In view of the different results, it would be interesting to investigate how students with disabilities or mental disorders perceive the situation at German universities.

On the basis of various studies, it can be cautiously deduced that the attitudes of employees and teachers at universities also have an influence on academic success. For example, the qualitative study by Shevlin, Kenny, and Mcneela in Ireland reported various problems: problems with taking the transcriber's assistant to courses, problems with teachers who do not provide materials for implementation, and a general ignorance of the needs of students with health impairments [13]. A similar study was conducted by Fuller, Bradley, and Healey in the UK [14] (173 questionnaires and 20 narrative interviews). One of the obstacles mentioned is the teachers' attitudes towards the topic of disability, which results, among other things, in the refusal to compensate for disadvantages. Similarly, the students interviewed also reported positive experiences in connection with teachers who have contributed to their academic success [14]. Duquette evaluated the attitude of teachers as a factor influencing academic integration and thus indirectly also the students' remaining in the university. However, she does not support this argument empirically [15].

It seems obvious that including didactic concepts for higher education may positively influence the academic success of students with and without impairments. However, according to Fisseler, relatively little research has been conducted into the effects of didactic factors on the academic success of students with disabilities, even though the universal design concept is very widespread in the

American region [6]. It is true that there are some studies that identify teaching as a critical factor that can be both a barrier and a positive experience for students with health impairments [12,16–18]. However, what is lacking in the field of higher education research is a systematic investigation of influencing factors or an evaluation of different teaching concepts. One of the few empirical studies in this field was conducted by Schelly, Davies, and Spooner (2011) [19]. The researchers examined how effective it is to train teachers on Universal Design for Learning (UDL) and whether students are aware of the implementation of the principles of UDL. A total of 1223 students and 9 teachers took part in the study. The authors found that students noticed a significant difference in some aspects of teaching and perceived positive changes in the design of teaching. Schelly, Davies, and Spooner (2011) therefore saw positive effects of UDL training on the learning experiences of all students [19].

Looking at international research on the situation of students with disabilities or mental disorders, it becomes clear that the students' situation is largely dependent on local conditions. On this basis, it is worthwhile to take a closer look at the experiences of students with disabilities or mental disorders at German universities.

In the context of the implementation of the UN Convention on the Rights of Persons with Disabilities (CRPD) at German universities, the recommendations issued by the German Rectors' Conference (Hochschulrektorenkonferenz, HRK) and the Standing Conference of the Ministers of Education and Cultural Affairs (Kultusministerkonferenz, KMK) in 2015 call on universities not only to prepare their students for the situation of inclusion in German schools and society, but also to lead by example [20]. The researchers Dannenbeck and Dorrance describe inclusion in the university context as follows: "Rather, inclusion would only prove itself in the effort to effectively counteract barriers and discrimination processes that can affect students in all their different life situations. [...] From the perspective of inclusion theory, this would result in the need to focus on discrimination and disadvantage mechanisms instead of being content with just a slightly higher level of integration of disabled people" (own translation) [21,22].

In Germany this perspective has gained in importance over the last years. Teaching inclusion inclusively has become one of the main topics of several teacher education programs at many different German universities [23,24]. In order to translate this understanding of inclusive education into practice, TU Dortmund University has launched the DoProfiL research project (Dortmunder Profil für inklusionsorientierte Lehrer/-innenbildung—Dortmund profile for inclusion-oriented teacher education), an interdisciplinary project funded by the German Federal Ministry of Education and Research. In this research project, inclusion at schools and universities is investigated and developed in different sub-projects [25]. With the present article, I would like to contribute to my own sub-project on reflective inclusion and point out one important perspective of inclusive teacher education [26,27]. This perspective focuses on university teachers and their efforts to make seminars and lectures as inclusive as possible. This approach indicates that lecturers at TU Dortmund University and other universities recognize the diversity of their students. Therefore, they want to consider the different individual learning conditions of all students without overlooking the support needs of disabled students. This is based on a certain understanding of disability. At TU Dortmund University and other higher education institutions, disability is not understood as a physical or mental disorder affecting a person. Rather, disability is seen as the result of an interaction between a person and his or her environment. This means one has to ask oneself over and over again whether someone is disabled or whether this person's disability results from other people's actions and/or other circumstances [10,21,28].

I am a researcher and lecturer, and I have a disability. Therefore, it is a matter of special concern for me to not only preach inclusion, but to show my students what inclusive teaching can look like by making it part of my courses [28,29]. It is important to me that all students can participate in learning processes without problems. Together with other colleagues at TU Dortmund University, I have been organizing my courses in an inclusive way for three years [28]. In doing so, we have been using the Universal Design for Learning (UDL) Guidelines [30,31]. The Universal Design for Learning developed in the U.S. is a promising method to constructively manage diversity in inclusive learning

processes. It can help to identify learning barriers in advance and manage different learning strategies and levels [30,31]. The three basic principles of Universal Design for Learning help to focus on the different learning requirements of students:

1. Offering various options for task processing (representation);
2. Providing possibilities of active learning and expression (action and expression);
3. Inspire motivation for learning (engagement) [30,31].

The first principle can be realized by ensuring that students have access to information in different formats. Based on various empirical studies, it is assumed that learning is effective when learners have different approaches to learning materials [8,30,31]. Students who are visually oriented can use printed texts. Students who have difficulties processing visual information can listen to voice recordings of texts. This form of representing learning content does not only help students who are blind or visually impaired, however—students who are affected by dyslexia can also benefit from this form of representation. Over the years, we have seen that students with children also make use of auditory formats because they can listen to recordings on their way to university. In some of my interviews in the context of using Universal Design for Learning at universities students reported that learning in a less visual form was good for them.

According to our experiences it is important that students have a choice. The second UDL principle (action and expression) can be implemented by actively encouraging students to learn. This means, for example, letting them choose how they wish to present their results from a group work session. For instance, students who are afraid of speaking in front of large groups may organize a digital writing conference to discuss their results with others. Others, for example, who do not want to give a traditional oral presentation may make a film, organize a panel discussion, or record a podcast. The possibility of new forms of expression enables students to develop individually. The third central UDL principle is engagement. This means that students should learn in a way that is guided by their interests as much as possible. In teacher training, this can be implemented by including practice-oriented formats such as visits to schools to enhance motivation. If student teachers can develop a didactic concept of their choice in the framework of a university seminar and then try it out in real life, their motivation to work is definitely stronger than in a purely theoretically-oriented learning setting. Furthermore, it seems to make sense to let students have a say and make their own suggestions.

Even though there are efforts to make teaching at universities inclusive, students with disabilities at various German universities have pointed out to me that they are facing difficulties in their studies. These problems are related to their disability and are not only of a structural nature. Rather, they are indications that learning processes themselves are designed in such a way that they put people with disabilities at a disadvantage [32].

According to the results of the study “beeinträchtigt studieren 2”, which was conducted with 20,987 participants in 2016/17, 11 percent of a total of 2.8 million students in Germany are affected by a disability [33]. Of these persons, 96 percent state that their disability is not immediately visible to others. Ninety percent of the participants pointed out that they have many difficulties in their studies because of their disability. Forty-four percent of the statements referred to the social interaction at the university. Thirty percent of the students with disabilities in Germany make use of disadvantage compensation in their studies. The study also found that 30 percent of the students ask their family members to help in difficult situations [33]. These results are astonishing. In 2009 the UN CRPD created a binding legal basis for ensuring the rights of people with disabilities [34]. This means, for example, that people with disabilities must neither be discriminated against nor stigmatized on the basis of their disability. Furthermore, it means that people with disabilities have the right to participate fully in society, and thus also in education. The study “beeinträchtigt studieren” shows that we still have a long way to go to an inclusive university. At the same time, the study does not provide detailed insights into the individual situations of disabled students in the context of learning processes. My own case study should help us to understand more precisely what problems and difficulties disabled students

face. The learning process itself is examined and reflected upon more closely. Based on the results, new further implications for inclusive university didactics are formulated.

In the study presented below, I have followed up on the question of how disabled students experience inclusive higher education at German universities in general and what individual experiences they have made in this context exactly. Within the framework of the study I have deliberately taken a critical perspective. What kind of (learning) barriers can be identified? Are there problems concerning the interaction with teachers or with other students? What do disabled students suggest in order to improve their situation? These were the questions which led me to conduct the study, aiming to get closer insights into the experiences of disabled students at German universities. In order to be able to answer the above-named questions in a differentiated manner, a mixed-methods approach is considered helpful [35]. Within the framework of the quantitative research approach, the following research hypotheses, which were developed on the basis of the study “beeinträchtigt studieren”, are to be tested:

1. Students with disabilities report to have encountered problems in their studies that are related to their disability;
2. Students with disabilities report to have encountered problems with spatial barriers;
3. Students with disabilities report to have encountered no problems with the learning materials used in their studies;
4. Students with disabilities report to have encountered no problems with their lecturers;
5. Students with disabilities report to have encountered no problems with other students;
6. Students with disabilities report to have encountered problems regarding the effects of coronavirus on their studies.

The quantitative data will provide insights into overarching trends in student perception about inclusive education at universities in Germany. Furthermore, it seems promising to interview students qualitatively in order to gain more individual and differentiated insights into their experiences [26].

2. Materials and Methods

As mentioned before, I chose a combination of quantitative and qualitative survey methods for this study, with the intention of not only providing general insights into the situation of disabled students at German universities but also of gaining some more individual insights into the experiences of disabled students. With the mixed-methods-approach, I aimed to achieve a better understanding of the learning situation of disabled students at German universities [35,36]. A total of 45 students with different disabilities from 35 universities took part in the survey. They were interviewed quantitatively as well as qualitatively. Both data sets were collected over a period of 12 weeks (March–June 2020). In the quantitative part of the survey, the disabled students had the opportunity to describe their experiences with regard to six main items: problems encountered during their studies because of disability (1), problems concerning spatial conditions at universities (2), problems concerning the learning materials used in lectures at universities (3), problems concerning the attitudes of lectures at the universities (4), problems concerning the interaction with other students at their universities (5), and problems concerning the special situation of the COVID-19 pandemic (6). On a Likert scale of 1–6, the surveyed students were able to indicate how pronounced these problems are for them [37]. A value of “1” means that the respondent strongly disagreed with the respective statement and a value of “6” means that the respondent strongly agreed with the respective statement. In the qualitative part of the study the students were interviewed in narrative interviews [36]. The students’ description of their current study situation and their understanding of their own disabilities served as the basis for the interviews, which lasted between 40 and 60 min. The leading question used for the interviews was: as a person with a disability or mental illness, would you please tell me about your academic studies and your experiences at university? In this way 12 students were interviewed.

In a first step, the data of this survey were analyzed using uni- and multivariate statistical methods (evaluation of frequencies and location parameters, checking for significant independence of prominent subsets) [35]. The characteristics “age”, “gender”, “study region”, and “type of disability” were treated as independent variables and the students’ statements on the items “problems regarding their studies”, “problems with spatial barriers”, “problems with learning materials”, “problems with lecturers”, “problems with other students”, and “problems regarding the effects of coronavirus” were treated as dependent variables. The analysis procedure was implemented using the “R” programming language [38]. Chi-square goodness-of-fit tests were used in the sample analysis to ensure the balance of the sample [39]. This was possible due to the sample size of $n > 20$. In contrast, Fisher’s exact test was used to identify possible dependencies between the values of dependent and independent variables, because single features are likely to be observed less than five times [40,41].

As part of the quantitative analysis, the above-mentioned variables based on global judgements of the study participants were evaluated in relation to the hypotheses formulated above. The results of this investigation determined the selection of the sample for the qualitative sequence, in which fine-grained dependent variables were to be explored [35,36]. The selection criteria for data sets of the qualitative sample were (1) prototypical examples with an intermediate-level representation of the dependent variables, (2) prototypical representatives of distinct subgroups with significantly different assumptions about the study situation, and (3) outliers. The qualitative dataset was analyzed using Mayring’s qualitative content analysis method [42] with the objective of structuring the students’ comprehensive reports. As regards data evaluation, the deductive approach was chosen. This means that in order to find answers to the research question, the following seven categories were defined: detailed information about problems during university studies because of disability (1), individual problems concerning spatial conditions at universities (2), closer insights into problems concerning the learning materials used in lectures at universities (3), individual reports about problems concerning the attitudes of lectures at universities (4), insights into problems concerning the interaction with other students at universities (5), individual perspectives on problems concerning the special situation of the COVID-19 pandemic (6), and the suggestions put forward by disabled students to solve the problems (7).

3. Results

On the one hand, the results of the present study provide new insights into barriers that only become visible when individuals concerned talk about inclusive structures at German universities. On the other hand, the results also paint a very critical picture of what still needs to be done on the way to an inclusive university and society in Germany. Since participation in the study was voluntary, it was likely that especially those students who deal with specific barriers in their everyday life and who want to point them out by participating in the survey would take part in the survey. From this it can be concluded that the results reflect the individual perspectives of students and are by no means a representative basis for the overall situation at German universities. For a balanced picture, further studies with larger samples will be needed.

3.1. Description of the Sample (Independent Variables)

The sample consisted of 42 specific data sets of students aged 20 to 41 years with one or more disabilities. The respondents were enrolled in different universities across the Federal Republic of Germany. In some cases, they were supported by assistants. In detail, the sample was composed as follows.

3.1.1. Age, Gender, Place of Study

The sample had an approximately normal distribution with regard to age (X -squared = 10,533, $df = 16$, p -value = 0.8373). The age range was between 20 and 41 years; 50% of all respondents were between 24 and 31 years old. The average age was 27 years (cf. Figure 1a). The distribution of the gender characteristics in the sample showed a slight, but not randomly high surplus of female

respondents (distribution: 38.1% male and 61.9% female; X-squared = 2.6889, df = 1, p -value = 0.1011; cf. Figure 1b).

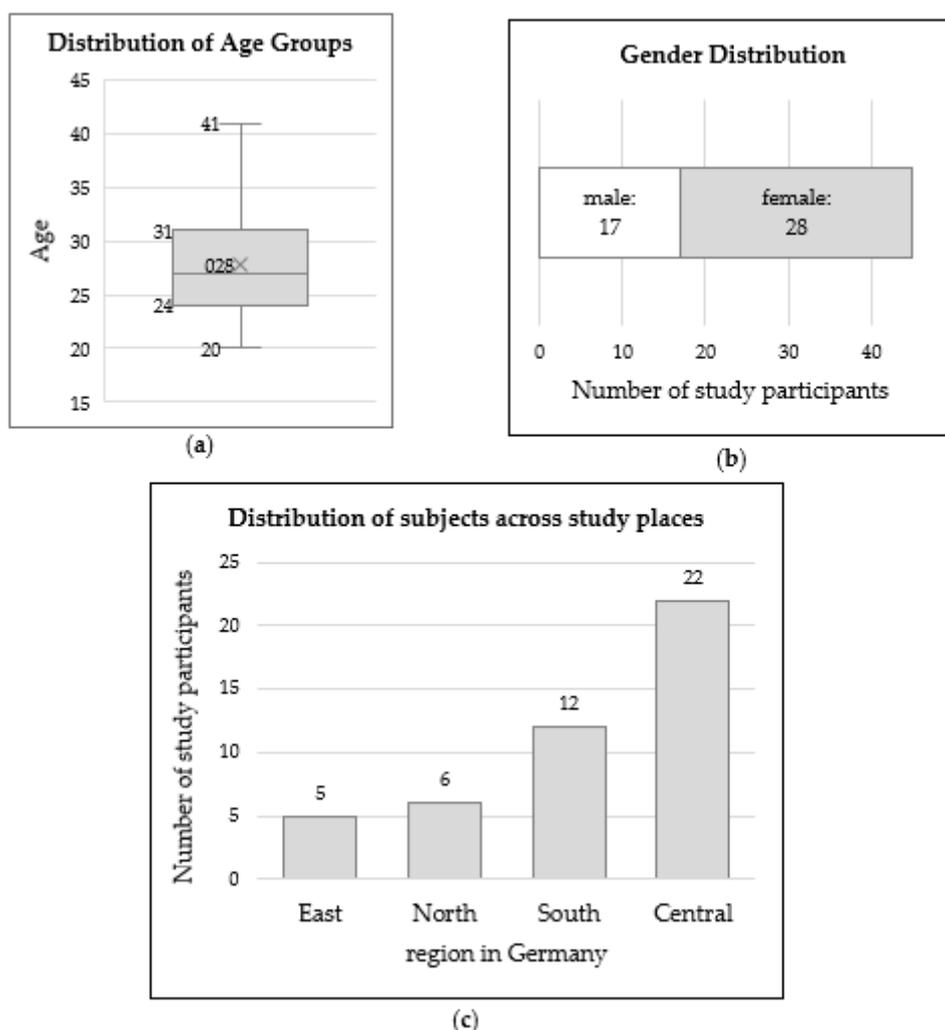


Figure 1. (a) Distribution of age groups in the sample; (b) Distribution of female and male subjects; (c) Distribution of subjects across study sites in different regions of Germany.

The study regions of the interviewed persons with disabilities were not evenly distributed, given the small sample (X-squared = 16,244, df = 3, p -value = 0.00101). Almost half of the respondents came from the center of Germany, especially from university towns in North-Rhine Westphalia. Another quarter of the participants studied in the south of Germany: Bavaria and Baden-Württemberg. The remaining respondents were spread over study locations in the east and north of Germany (cf. Figure 1c). Due to the unbalanced distribution, the sample did not allow any conclusions to be drawn about possible regional correlations. However, the composition of the sample with respondents from all regions of Germany fundamentally improved the significance of the results of the study for students with disabilities throughout Germany.

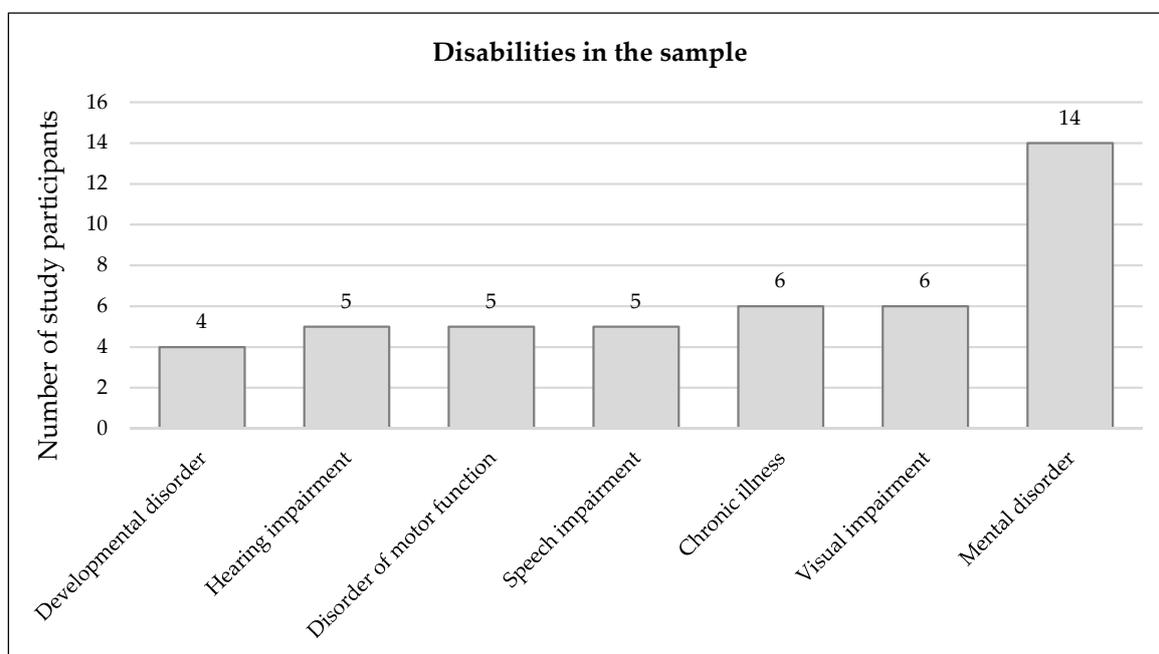
3.1.2. Disability and Compensation of Disadvantages through Study Assistance

Respondents with impairments in the areas of developmental disorders, hearing impairments, disorders of motor function, speech, chronic diseases, visual impairments, and mental impairments took part in the study. With a relative frequency of one third, the latter had by far the largest share in the sample (the relative frequencies of the other impairments were between 8% and 13%, cf. Figure 2a). However, the differences are not significant, and the sample was therefore at least approximately

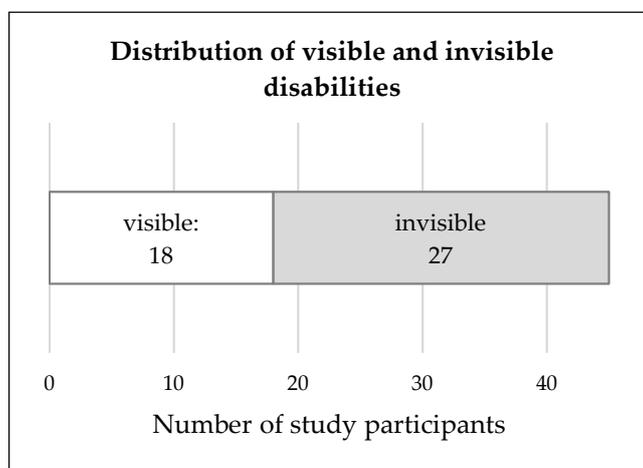
balanced ($X^2 = 10,844$, $df = 6$, $p\text{-value} = 0.0933$). It was also assumed that mental impairments clearly predominate among the students in the population.

In order to test the hypotheses developed above (cf. 1.), it was also important to determine the dependence or independence of certain variables in relation to the visibility of a disability. For this reason, the visibility or non-visibility of each disability was also surveyed. Although the non-visible disabilities predominated in a ratio of three to two (cf. Figure 2b), the distribution can be understood as approximately random ($X^2 = 1.8$, $df = 1$, $p\text{-value} = 0.1797$).

Some of the students with disabilities receive support from student assistants as compensation for their disadvantages. Possible available assistance or the need for assistance was therefore also surveyed in the study presented here. The survey revealed that about one-third of the sample had study assistants assigned (cf. Figure 2c). Thus, the sample and the population were not balanced with regard to this characteristic ($X^2 = 3.7556$, $df = 1$, $p\text{-value} = 0.05263$). In addition, only half of the respondents expressed a need for assistance (cf. Figure 2d). However, it turns out that not all students who claim to have a need for study assistance have access to such services.



(a)



(b)

Figure 2. Cont.

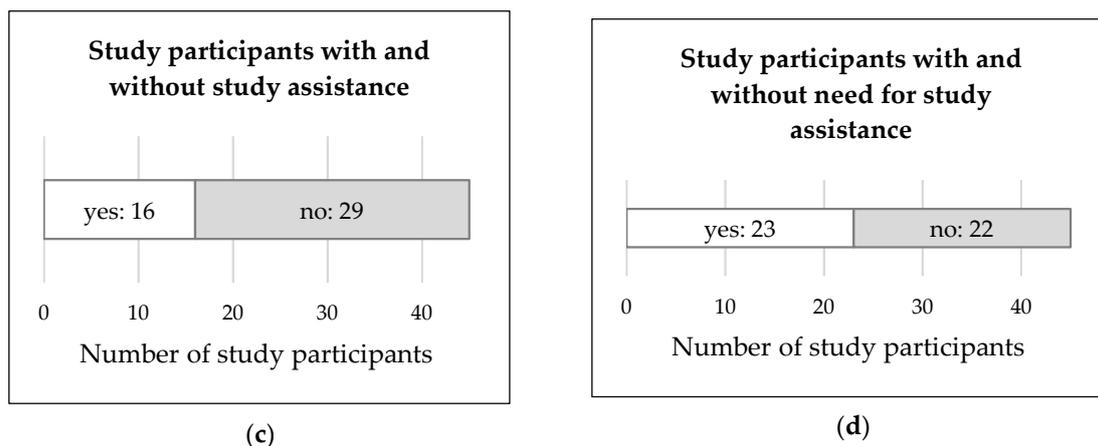


Figure 2. (a) Distribution of different disabilities in the sample; (b) Distribution across the categories ‘visible’ and ‘invisible’ disability; (c) study participants with and without study assistance; (d) Subjects with and without the need for study assistance.

3.2. Presentation of the Study Situation of Students with Disabilities in Germany (Dependent Variables)

3.2.1. Conditions in the Context of the Study Situation

The surveyed students with disabilities in the sample consistently perceived their study situation as very or extremely difficult (cf. Figure 3). Three quarters of the respondents chose categories 5 and 6 on the six-level answer scale; the median was 5. This applies regardless of the specific disability of the respondents. The fact that the three mentions of category 3 all came from students with invisible disabilities (cf. Table 1) is statistically negligible (Fisher’s exact test: p -value = 0.2804).

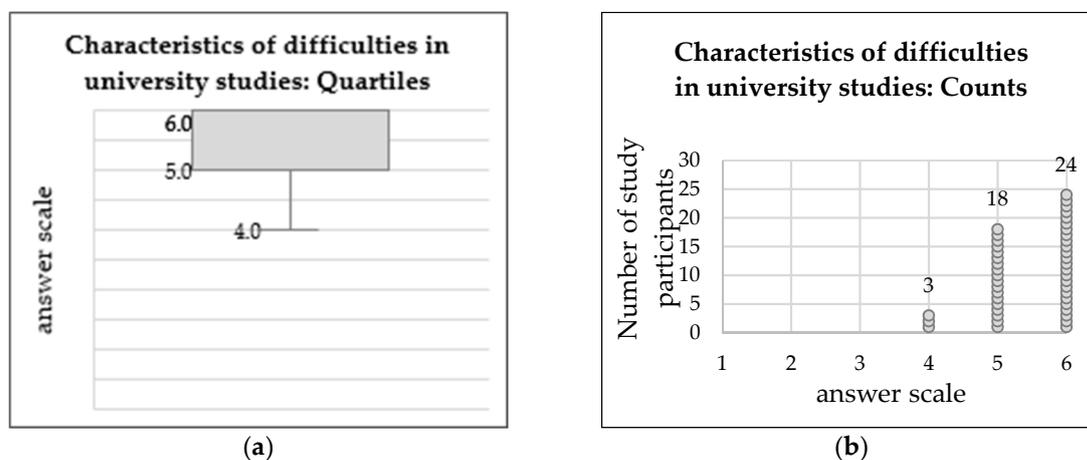


Figure 3. The extent of the perceived difficulties in university studies (participation in courses, etc.): (a) Distribution over quartiles; (b) Counts.

Against the backdrop of the qualitatively collected data sets, these results were further illustrated by individual statements from disabled students. Their real names are withheld to protect their privacy. One student, for example, described her experiences as follows: “My name is Nicole and I am 26 years old. I am studying teacher education at a university in North Rhine-Westphalia [...]. Due to my blindness I am not making fast progress in my studies and I am still in my bachelor’s degree [...]. I notice that studying is slower for me than for my friends, who started their studies the same time I did. For example, if a lecturer recommends a book in a lecture, other students can simply borrow the book from the library and read it immediately [...]. I myself must have it adapted so that I can read it. That takes a lot of time and I am often behind schedule. In order for a book to be readable

for me, my assistant has to adapt everything accordingly. Besides, I am constantly busy with a lot of administration matters during my studies. I have to inform my lecturers about my disability. But I also have to do all the administration concerning the work with assistants. The assistant is a great help, but the whole bureaucratic administration is really very exhausting. In addition, I simply cannot read as fast as a sighted person. I realize that I have to work very hard to make it through my studies day after day. And even if I try hard, I only manage half of what non-disabled people can do [. . .].” According to Nicole, her university studies are made more difficult by the additional expenditure of administration and information about the disability. According to her, the blindness causes a generally slow pace of work, which can be only be improved to a limited extent with the help of technical aids or the support of an assistant. This individual perspective is quite similar to other results of international studies [4–6,13].

Table 1. Distribution of the perceived difficulties in university studies (participation in courses, etc.) across the disabilities.

Answer Scale	1	2	3	4	5	6
Chronic illness				2	1	3
Hearing impairment					3	2
Disorder of motor function					2	3
Mental disorder				1	7	6
Visual impairment					2	4
Speech impairment						5
Developmental disorder					2	2
Visible					9	9
Invisible				3	9	15

Another student named Mark also reported difficulties in his studies. He is 31 years old and is studying mechanical engineering at a university in the southern part of Germany. At the age of 22 he unexpectedly fell ill with rheumatism and had to be treated in hospitals for two years. “[. . .] When my disease broke out, I was still in the bachelor’s program and then had to interrupt my studies. When I came back to the university after the many treatments, many things were different. There were new lecturers, new students, and the study regulations had changed as well. It took me a while to understand the subject matter again [. . .]. Even today, my illness still forces me to study in a way that prevents me from studying as it is intended. For example, I can never be sure that I can really take an exam at the end of a semester. It could always happen that I get severe pain and need to be treated. I also often have pain in everyday life and then I cannot concentrate on studying. If I have had one or two pain attacks in one day, I often don’t have the strength to sit down at my desk and study. But this again leads to the fact that you make much less progress than other students. It is also always very time-consuming to inform all lecturers about your illness and explain to them what effects this has on my participation in courses [. . .]. The many medical therapies also cost a lot of time and energy. When I sometimes complain about it, I am often asked why I study at all, as it’s obviously too much work for me [. . .]. I don’t understand how anyone can think like that. Access to education is a right and I want to study mechanical engineering. I would like to finish my studies successfully so that I can be successful in my job later. I think that I have the right to point out my problems and to question whether our study programs have to be so tightly scheduled [. . .].” In the further course of the interview it became apparent that the studies at the university where Mark is enrolled are not geared towards chronically ill students. Thus, there are no counselling services at this university that support chronically ill students in organizing their studies. Also, the above research shows that this university does not plan for students to be absent from university for a longer period of time due to illness. For example, students who have not completed a course at a certain time cannot repeat it until a year later. According to Mark, no exceptions are made at his university. This example shows

that there are apparently not only internationally, but also in Germany, some universities that are not prepared for certain health impairments [4–6].

Gudrun's experience can be mentioned as a third example. She is studying law at a university in northern Germany: “[...] I am Gudrun and I am 21 years old [...]. I suffer from an eating disorder and in stressful situations it is especially bad for me [...]. I have had my disorder since I was 14 years old. Even today I can hardly eat when I am writing exams or have oral exams. Before every test, I am scared of failing. Actually, there is no reason for it. I was always very good at school and my studies are going well. But before every exam I feel very bad and I have to visit my therapist regularly. [...]. Due to the restructuring of the study program at my university there are unfortunately even more exams and a high pressure to perform. Therefore, I often have panic attacks and on some days it is difficult for me to keep calm. Because in my study program I am only allowed to fail an exam three times. If I don't pass, my university studies might be over from one day to the next [...]. People often ask me why I study at all. They mean well, because they want to spare me the stress. But I think I have a right to decide for myself what I want to do with my life. I want to become a lawyer and specialize in the rights of mentally ill people. So for me there is a kind of vocation behind my choice of studies. I would like to help other people to enforce their rights. I think that's something worth fighting for [...]. And I fight every day. I have to organize much more than others. I have the therapies, the exceptions with lecturers and also days when I'm just completely exhausted. But: I am sure that I will manage my studies in spite of everything [...].”

These three student reports show that:

1. The students' disabilities restrict their learning speed in different ways; 2. their everyday lives are characterized by additional administrative and medical expenses; and 3. the compensation of disadvantages, which for a successful course of study requires a lot of additional effort and individual commitment, is not a complete compensation after all.

At the same time, the reports also indicate that these disabled students are confronted with “barriers in the heads of other people” in their everyday lives. Mark and Gudrun are under a certain pressure to justify themselves because they pursue their studies despite their disability. Considering that the issue of inclusion has been discussed in German society for over 10 years [20], these experiences of students do not represent a satisfactory result.

3.2.2. Accessibility of Study Materials and Premises

A more differentiated picture emerges when assessing the accessibility of study materials. The assessments of the respondents were distributed over the whole range of the answer scale, 50% of the answers lay in the range between categories 2 and 6 (cf. Figure 4). However, even in the area of study materials, the respondents' problematic assessment of their own study situation predominated (median: 5, cf. Figure 4a). The positive assessments in the first quartile were significantly disability-specific (Fisher's exact test: p -value = 0.03257). Less difficulty with study materials apparently tends to be experienced by students with (typically invisible) disabilities in the areas of chronic diseases and disorders of motor function. Of the students in the sample with developmental disorders, at least as many respondents chose the categories 1 or 2 as categories 4 and 5. What was surprising was the predominantly poor evaluation of study materials by the group of respondents with mental disorders (cf. Table 2).

The interviews told us that there are different barriers in dealing with learning materials. While blind or visually impaired students struggle with the formats or learning materials because they are not readable for them, students with mental disorders are facing completely different challenges. Martin, for example, told me: “[...] I am 32 years old and have been trying to get my master's degree for two years. One of my big problems is the timely provision of learning materials. [...] I am studying at a university where a digital learning platform is used. Lecturers upload their learning materials and students work with them. The materials include texts, tasks, slides and sometimes videos or other useful links. Theoretically, it's a good idea. If the lecturers regularly maintained

the learning platform, I would be able to cope much better with my studies [. . .]. Since the age of 21 I have been suffering from anxiety disorders, and I need structure and security in my everyday life. For example, if the lecturers always uploaded all materials a week in advance, I could plan my workload for the week much better. However, it often happens that materials are uploaded 1–2 days before. That throws my everyday life into confusion, because I can hardly read 40-page texts. I need fixed times and structures to plan my everyday life. When this is not possible, I often panic. I often ask myself: Is it really not possible to provide the learning materials in a structured way? All students would benefit from this. [. . .].” When inclusion at German universities is discussed, the focus is always on the accessibility of learning materials. The reports of Martin and other students in a similar situation show that it is also important to make the materials available in a well-structured and target group-oriented way. That this is particularly important in the context of mental disorders is a new insight in comparison to previous international studies [6,19].

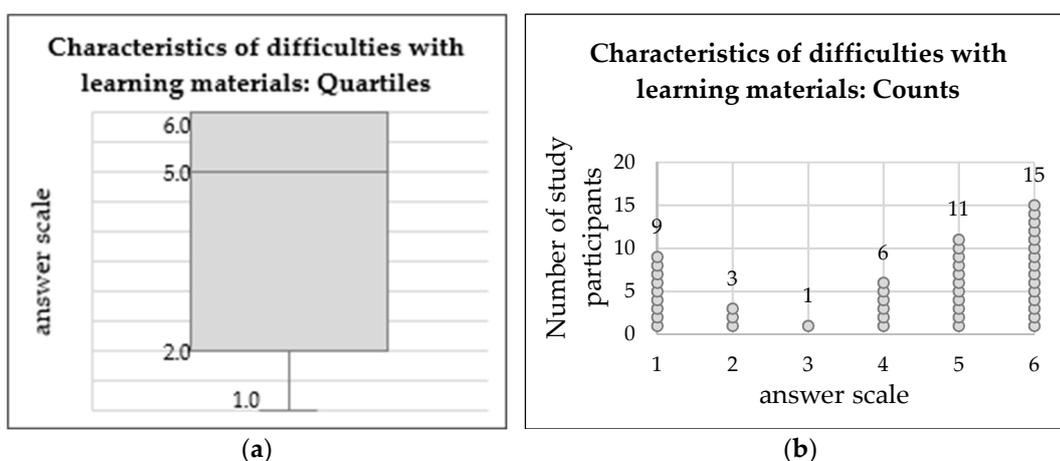


Figure 4. Characteristics of perceived difficulties with study materials: (a) Distribution across quartiles; (b) Counts.

Table 2. Distribution of perceived difficulties with materials across the disabilities.

Answer Scale	1	2	3	4	5	6
Chronical illness	3		1		2	
Hearing impairment					2	3
Disorder of motor function	1	2			1	1
Mental disorder	2			3	1	8
Visual impairment				1	2	3
Speech impairment	1	1		1	2	
Developmental disorder	2			1	1	
Visible	3	2		3	6	4
Invisible	6	1	1	3	5	11

A similar picture emerges for the assessment of the accessibility of lecture and seminar rooms by the study participants. The selected answer options were again distributed over the entire scale. However, the position of the median at category 3 even reveals a slight overall bias towards the first categories, which are to be rated as more favorable (cf. Figure 5). With regard to this item, too, two ‘camps’ differed significantly depending on the type of disability (Fisher’s exact test: p -value = 0.002755), with visual and hearing impairments on the one hand and chronic diseases, linguistic impairments, and partial performance disorders on the other (cf. Table 3). Surprisingly, there was a striking accumulation of negative assessments in categories 4, 5, and 6, again from students with mental impairments, and a balanced distribution of positive and negative assessments from students with physical and motoric disabilities.

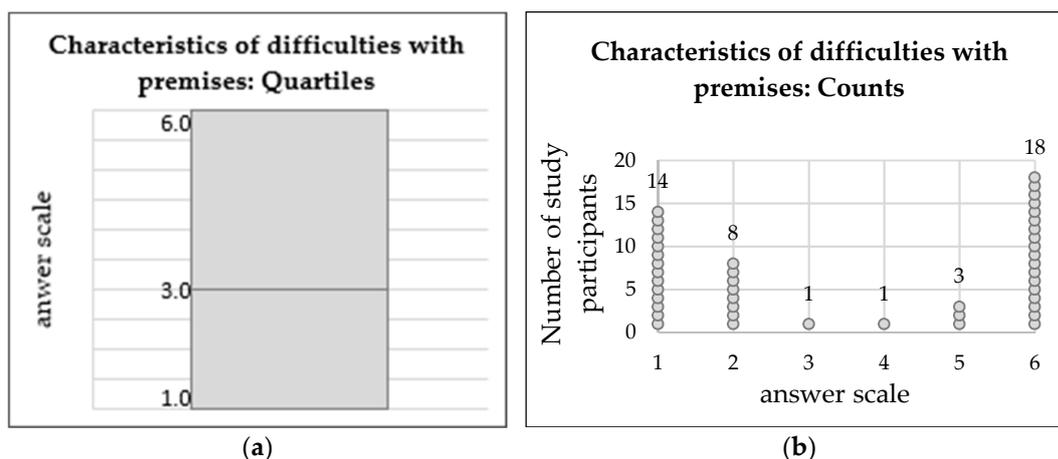


Figure 5. Characteristics of perceived difficulties with premises: (a) Distribution across quartiles; (b) Counts.

Table 3. Distribution of perceived difficulties with premises across disabilities.

Answer Scale	1	2	3	4	5	6
Chronic illness	2	3	1			
Hearing impairment		1				4
Disorder of motor function						5
Mental disorder	7	2		1	1	3
Visual impairment	1					5
Speech impairment	3	2				
Developmental disorder	1				2	1
Visible	1	2			2	13
Invisible	13	6	1	1	1	5

What difficulties are there exactly? Is it about steps, missing lifts, or signage? Looking into the qualitative dataset gives us some completely new insights. Since the ratification of the UN Convention on the Rights of People with Disabilities, many people have become aware of the fact that spatial changes must be implemented in order to achieve accessibility [24]. High-contrast signs, tactile signs in braille, and elevators are often standard at German universities. Even if, according to some students with visual or physical disabilities, much remains to be done in this area, other aspects of interior design at universities that represent difficulties for students with disabilities have not even been recognized as problematic so far. For example, a student with hearing impairment pointed out that seminar rooms and lecture halls have acoustics that are catastrophic for him. This makes it difficult for him to perceive auditory information without gaps.

The report from Luisa reveals another problem concerning locations: “[...] I am 20 years old and started my studies a few months ago. I want to be a teacher one day. Unfortunately, studying at university is not what I had imagined [...]. My university is very large and my courses take place in many different buildings. Between classes I have half an hour to get from one building to the next. There are often several kilometers between the buildings. Since I have had an anxiety disorder since childhood, mastering these paths costs me a lot of energy. It stresses me out that I always have to hurry and that I must be on the road so much between classes. It’s definitely not a break [...]. When I talked to someone about this problem, that person just said that young people should like to get some exercise. Obviously, he didn’t understand the problem. It’s not that I don’t want to get exercise. But the buses are not on time, the paths within the university are simply congested and cycling is not possible because there is no place to park the bike properly. All this is already stressful, but for me it is a huge strain. In class, I am hardly able to concentrate on the subject matter, because I am already busy figuring out how to reach the next class in time. Being on time is very important if

you want to have a seat at all in the cramped conditions. I attend mass lectures and on some occasions I had to sit on the floor in the lecture hall because there was no other place to sit. The seminar rooms are totally cramped, too. I always try to get a place near the door or where I am at least be able to look out the window to control my panic attacks. I've also tried to get us larger rooms, but I don't think that's possible. For me, these spatial conditions mean that I cannot learn well. I'm busy all the time trying not to have a panic attack and to stay calm when the room is crowded and windowless and I have to sit on the floor. I don't understand at all why the university can't or doesn't want to organize it differently. All students have a right to rooms that are well equipped, large and friendly. [...]"

Luisa's report provides insights into a university that seems to be overflowing with students. Overcrowded lecture halls and seminar rooms are a clear indication that there is a lack of (financial) resources and that one has to find other ways to ensure that classes take place in a well-equipped environment [20,23].

The example of Celia shows that spatial congestion is also bad for learning: "[...] I am 31 years old and have been continuing my studies at a German university for four semesters. Almost three years ago I had to flee Syria with my sister [...]. It was a terrible experience. Escaping from the country was bad, as were all the things we had experienced before in Syria. I can't really talk about it to this day because it's so awful. Here in Germany I feel safe and I am very grateful for this and also for the therapies to deal with my post-traumatic stress disorder. Even though all this is very exhausting, I have my studies well under control. But there is this one situation that always makes me panic [...]. A lot of people study at my university and classes are always full [...]. Once I had to sit on the floor in the lecture hall because I could not get a seat. For a terrible moment, I believed that I was back on the refugee boat. There we all sat very close together. Then I panicked and had to run out of the lecture hall. I couldn't go back to the university that day [...]."

There is certainly a need for action here. The tragic thing is that the individual needs and requirements of students are lost in the masses. The interviewed students with disabilities are likely to find it particularly difficult to point out their problem areas. At this point some parallels to findings from international research become apparent [4,9,10].

The experience of 25-year-old Sophia also confirms this impression: "[...] I'm studying at a university with faculties that are spread out all over the city. Between classes, I have to move quickly from one building to another. This is often very tight and difficult. The signs are very small and I cannot orientate myself well [...]. When I arrive in a lecture hall it is really difficult to find a seat, because I have a visual impairment that constantly restricts me. At my university, I have already suggested that the signs should be bigger and with more contrast so that it is easier to find the rooms. Another suggestion was that I attend courses in rooms where the window can be darkened. I am sensitive to bright light and have to have the window behind me. [...] Usually you don't get a seat like this because all students want to sit there. Especially in the summer semester this is very much in demand. Changing places sometimes works, but often it does not. I have also told some lecturers that a place is reserved for me. But in the mass of students I often get lost with my visual impairment and people forget to make reservations [...]."

3.2.3. Dealing with Lecturers and Fellow Students

Contrary to my expectations with regard to results of international research [6], dealing with lecturers was difficult for the majority of the sample. Fifty percent of the judgments determined were in categories 4 to 6, the median was 5 (cf. Figure 6a). It is true that individual study participants, especially those with invisible disabilities in the areas of chronic illnesses, psychological disabilities, and visual impairments, assessed their interaction with lecturers as less problematic (cf. Table 4). Statistically, however, this group was negligible (Fisher-Yates: p -value = 0.3228).

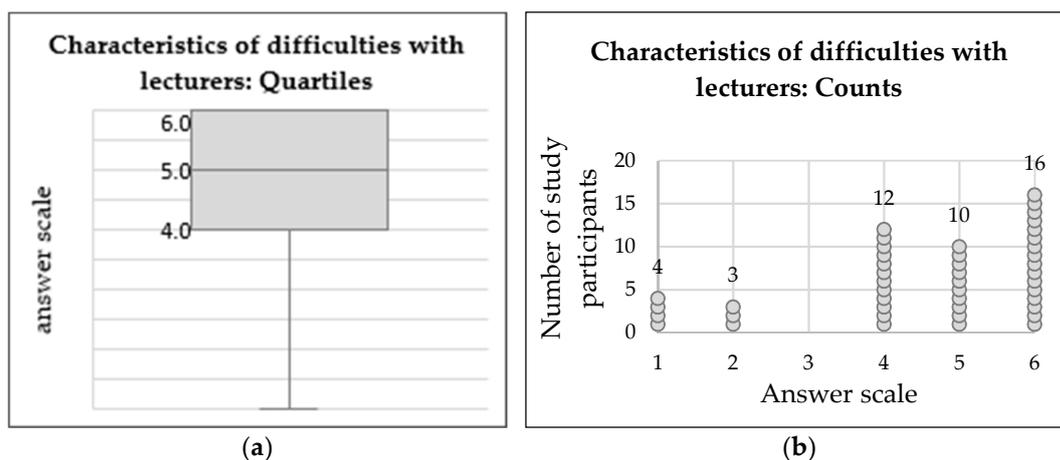


Figure 6. The nature of the perceived difficulties with lecturers: (a) Distribution across quartiles; (b) Counts.

Table 4. Distribution of perceived difficulties with lecturers across the disabilities.

Answer Scale	1	2	3	4	5	6
Chronic illness	2	1		2		1
Hearing impairment				2		3
Disorder of motor function				3		2
Mental disorder	2			3	4	5
Visual impairment		2		1	1	2
Speech impairment					3	2
Developmental disorder				1	2	1
Visible		2		7	2	7
Invisible	4	1		4	8	9

A look at the qualitative data set shows us that the problems with lecturers varied greatly among the students. Based on the following three cases, I would like to present the spectrum of challenges reported by the surveyed students.

At the beginning a rather classical example from Christoph is to be mentioned: “[...] I study special education at a university in the south of Germany [...]. Due to my paraplegia, I have many appointments with doctors and physiotherapists in addition to my studies, so that all in all, I study more slowly than other people. But there are also other problems [...]. Once I had a lecture on human rights in a lecture hall that I could not enter with my electric wheelchair. So I asked the lecturer if we could use another lecture hall for the course. The answer was that it was not possible. So I asked if there was a possibility to participate in the course in a different way, for example by writing a paper on a topic of the lecture. The professor giving a lecture on Human Rights, mind you, then told me that this lecture would take place in another lecture hall next semester and that I should attend it then. For me this would mean that I would have to study half a year longer and I explained to him that I had had to prolong my studies because of my disability and that I would like to finish them now. To crown it all, the lecturer told me that he would not break his back just so I could finish my studies. It was my own fault if I had been lazy these past few years. You also have a disability, Mrs. Bartz, so I don’t have to explain to you how impertinent and hurtful such a statement is. [...]”

This is the student’s description of the incident. It is not possible to get a complete picture, as we have no description from the lecturer involved. This notwithstanding, it is quite strange that a student was denied access to precisely a lecture on human rights. Moreover, the example of Christoph clearly shows that he is confronted with the prejudice of being lazy. In this respect, other students with disabilities also encounter problems.

Andrea was born in Somalia and has a speech impediment. In our interview she reported the following experience with a lecturer: “[. . .] My name is Andrea and I was born in Somalia. I have had a speech impediment since I was three years old and even though I am now 41 years old, I simply cannot control it [. . .]. This is also due to the fact that there were no good therapies available in Somalia. 10 years ago, I came to Germany and decided to study teaching. The studies are very difficult, but I get along very well. I try very hard and am also very successful. Due to my language disability, I have applied for and been granted compensation for disadvantages in oral examinations. I have more time to answer in oral exams so that people understand me better or I can write an exam instead [. . .]. I am very glad that the UN Convention on the Rights of Persons with Disabilities exists and that such adjustments are now possible. But there are still problems with some lecturers. Last semester I informed one of my lecturers about my disability and the impact it would have on the oral exam. I also informed him about the approved compensation for disadvantages. The lecturer did not want to have extra work with me and therefore she did not want to prepare a written exam. So we agreed on the oral examination [. . .]. I then took the test with her and it went quite well overall. At the end of the exam the second examiner told me that my German was quite good and that she hadn’t expected me to speak German well, because otherwise I always stuttered so much. She had also been unaware that foreigners had a special right to be given more time during exams. [. . .] This was a racist statement in my opinion, and I told her and explained again that I stutter because I have a speech impediment and not because I am black and stupid.”

The second examiner linked Andrea’s stuttering to her migration background. She also apparently did not understand that Andrea had been granted compensation for her speech impediment. At the same time, this examiner allowed herself to comment on a characteristic, in this case the student’s migration background and knowledge of German. This was certainly well-intentioned, but also condescending. Here, a person who is already in a more powerful position due to the exam situation, takes the liberty to behave unprofessionally by making this personal remark without understanding that it is hurtful for the student. Experiences of this kind were reported by all five students with disabilities and a visible migration background. Various studies have investigated the effects of the visibility of an impairment on study success [3,12,13]. Against the background of these individual reports, it would be interesting to examine in the future to what extent the visibility of migration background plays a role in connection with health impairment.

This example shows that lecturers need reflective training on how they deal with students in various situations. This is also evident in the example of Jo: “[. . .] I study special education and have a mental disorder. In order to be able to arrange my studies with my many doctor’s appointments, I need the learning materials in advance [. . .]. The best thing is if I can get all materials weeks in advance. Often things work out quite well. But I really had difficulties with one of the lecturers last semester. I had informed him about my impairment and about the fact that I need the documents earlier due to my additional workload. He then simply told me that he had a lot to do and didn’t have the time to do it. I can understand that. Lecturers are often under great pressure to do a lot of research [. . .]. They tell us that often. The courses are not that important, and they have to do that somehow on the side. However, the lecturer told me something else that I cannot understand. He told me that I was just a little bit scared and that I should see the missing documents as training for my fear. I could then work on myself and learn to deal with stress much better. It was not like I was really dependent on the learning materials. He said that I was not blind - with blind students it was much more understandable that the documents had to be handed out in advance [. . .].”

An interesting phenomenon can be observed here. A student pointed out the conditions that enable her to learn well, but in response, she was lectured and her impairment compared with other forms of disability. This was apparently done by a lecturer who works in special needs education and, against this background, considers himself an expert. When I asked her in the interview how she reacted or what went through her mind, Jo said the following: “[. . .] That statement really left me speechless. It came from a lecturer in special needs education who allows himself to judge my

disability [...]. He seemed to know about it and I wish he had taken me seriously as an expert in my experience and not patronized me. I am very disappointed that one disability is compared to another. It's hard enough to come out as a mentally ill person. That makes it all the worse for me to justify myself [...]."

Fortunately, dealing with other students was unproblematic for the majority of the sample (32 judgements fell into the first category alone; cf. Figure 7 and Table 5). The nine judgements in categories 4 and 5 are to be treated as outliers and do not form a significantly independent subset (Fisher's exact test: p -value = 0.1304).

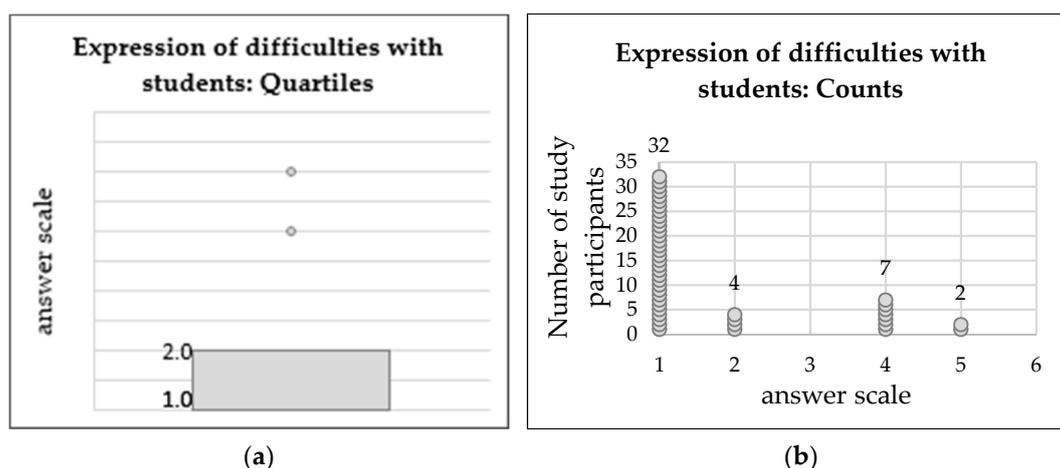


Figure 7. The characteristics of perceived difficulties with other students: (a) Distribution across quartiles; (b) Counts.

Table 5. Distribution of perceived difficulties with other students across disabilities.

Answer Scale	1	2	3	4	5	6
Chronic illness	2	1		1	2	
Hearing impairment	5					
Disorder of motor function	4	1				
Mental disorder	11			3		
Visual impairment	5	1				
Speech impairment	2	1		2		
Developmental disorder	3			1		
Visible	14	1		3		
Invisible	18	3		4	2	

A closer look at these outliers in the qualitative study reveals individual experiences in dealing with students with and without disabilities. The report from Sven is certainly helpful for illustration: "[...] I study mathematics and pedagogy and I have to say that although I need more time for my studies than other students, I am satisfied with myself [...]. I have a chronic illness and apart from my studies I have to make many appointments at the hospital so that I can get the right medication. This is quite exhausting, and I often miss classes. I have to say that the other students treat me very well and that I really get a lot of understanding. I also deal very openly with my chronic illness and answer all their questions. Especially in the subject mathematics this is very unproblematic. I have most problems in the pedagogy courses [...]. Due to my constant stays in hospitals, I am often slower, sometimes unreliable. For example, once I was absent from a seminar because I had an important operation. A student in my presentation group was quite angry with me because the group had to take over my part of the presentation and I could not finish the seminar. She told me I was irresponsible and had no right to put all the work on her. By the way, the topic of the presentation was team teaching. It really bothered me for a long time that she said that to me like that [...]."

What is interesting about the example of Sven is that students of a technical subject like mathematics show more solidarity and understanding regarding his condition than students of a pedagogical subject. Whether this is a single experience or whether there might be a broader pattern will have to be investigated more closely in future studies.

3.2.4. Studying with Disability during the COVID-19 Pandemic

As expected, the current exceptional situation of the COVID-19 pandemic causes great difficulties, also and especially for the situation of students with disabilities. More than 80% of the study participants assessed the current situation as very or extremely stressful (cf. Figure 8). This result is not disability-specific. The few judgments in category 4 were statistically negligible (Fisher’s exact test: p -value = 0.8775). The one answer in category 3 was classified as an outlier (cf. Table 6).

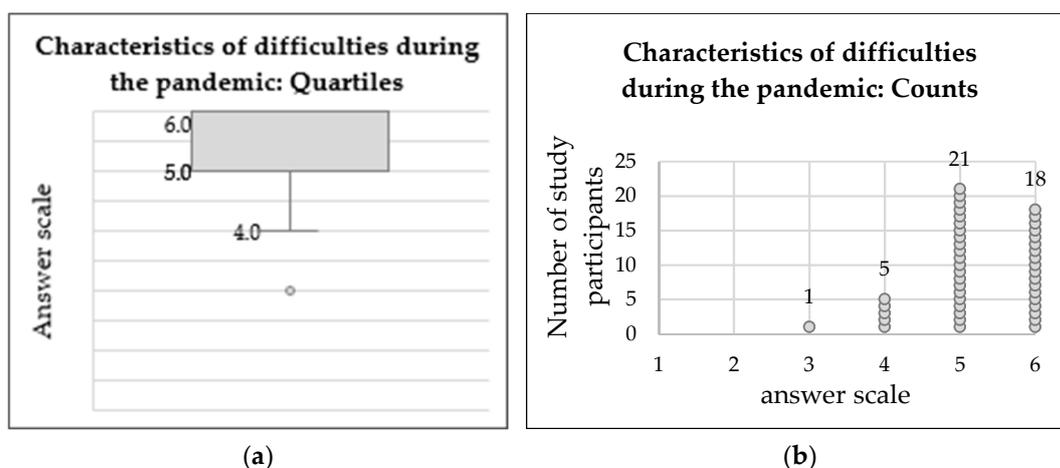


Figure 8. Characteristics of perceived difficulties during the COVID-19 pandemic: (a) Distribution across quartiles; (b) Counts.

Table 6. Distribution of the perceived difficulties during the COVID-19 pandemic across the disabilities.

Answer Scale	1	2	3	4	5	6
Chronic illness				1	2	3
Hearing impairment					2	3
Disorder of motor function				1	3	1
Mental disorder			1	2	5	6
Visual impairment				1	2	3
Speech impairment					3	2
Developmental disorder					4	
Visible				1	10	7
Invisible			1	4	11	11

The interviews showed that the challenges are mainly focused on digitized teaching and the time required for this. A blind student told me that her tools were not well suited for certain video conferencing programs. A hearing-impaired student said that he had enormous difficulties understanding the lecturers because lip-reading was not well transmitted and poor battery power means that he does not get much out of the lectures. However, his example also included another important component:

“[...] I’m David and I’m studying psychology. Classes at our university are digital this semester. Due to my hearing impairment, I have problems understanding all that is being said in the video conferences. I informed one of my lecturers about this and told him that it is really difficult for me to understand everything this semester [...]. This course is one of my last at the university. So it is very

important for me to complete this course. The lecturer told me that he was not willing to allow me to take part in any other way. I told him that I wanted to finish my studies this semester and that the situation with the coronavirus already entails many challenges for me given my disability. I do not want to experience any disadvantage and continue studying for another semester. The lecturer told me of a student with a child who couldn't attend the course either. Her situation was the same as mine and everyone was affected by the pandemic. All of them could not achieve their goals and I should not make such a fuss. I don't understand how someone can say things like that. He allowed himself to judge me and my disability. For me there is a crucial difference between my situation and that of a parent. [...] Since I happen to know the student, I know that she made a conscious decision to have her child. I did not choose my disability and the years of discrimination. I also do not understand how you can compare a child with a disability. I have now decided to take legal action and fight for my right!"

This example shows that there are people at German universities who are not familiar with the concept of disability. According to the UN Convention on the Rights of Persons with Disabilities, the negative effects of a disability should be compensated as far as possible [20]. This is not achieved by making comparisons with other individual situations.

3.2.5. Suggestions from Students to Improve Their Situation

During the qualitative survey, students were asked what they think necessary to improve their situation at the university. For Nicole as a blind student it is important to raise awareness for the problems of students with disabilities: "[...] For me it is important that non-disabled people are aware of the problems of people with disabilities. At the university it means that lecturers know, for example, that disabled students need more time and support in their studies. As a disabled student, when I make suggestions for improvement, I want them to be taken seriously. [...]". So, it is important to Nicole that the challenges of studying with a disability are taken seriously. In addition to this, Emma's perspective should be added as another individual point of view. Emma described good experiences regarding how people at her university deal with her disability, but with regard to the structural aspects, she criticized: "[...] I can also tell you about good experiences that I've made during my studies. Due to my disability I have difficulties in my everyday life which make learning complicated. [...] A lecturer has given me the opportunity to hand in a paper at a later date, even though at our mass university it is much more work for the lecturers to arrange individual examination dates. On the one hand, good interpersonal relationships are important to manage disability and diversity at a university. But on the other hand, there should also be structural solutions. The university should have more human resources to provide inclusive education and to respond appropriately to students with disabilities [...]."

The students' answers can be summarized in three viewpoints:

1. The overall situation at the universities can be improved. Changes should be made with the participation and advice of people with disabilities. Only then can an effective improvement be achieved; for example, in the redesign of rooms or learning materials. Gudrun's case is a good example. Her psychological impairment confronts her with a lot of challenges that many people are not aware of. Engaging in a dialogue with some of her lecturers, she has succeeded in changing her own situation and that of other students with psychological disorders. The dialogue was initiated by a lecturer who was interested in creating better study conditions for students with a mental disorder. This gave Gudrun the opportunity to point out problems that at first glance did not seem relevant. She reported: "[...] When Mr. B. asked me if I could inform him about the barriers I encounter in my everyday life, I was pleased with the offer, and I was able to point out that the design of seminar rooms is important when working with students with mental disorders [...]. It was also important for me to explain to him that fixed deadlines often create a lot of pressure and that there should always be a possibility for students with mental disorders to arrange alternative dates for submissions, etc. The examination regulations should also allow for more than three attempts to complete a module [...]."

2. At mass universities in particular, it is difficult to consider students' individual prerequisites. Conflicts with lecturers arise especially when they work under time pressure and performance pressure. Students with disabilities would prefer smaller courses so that more personalized work is possible and lecturers can have an eye on the individual person and deal differently with additional workloads due to disabilities. This is illustrated by the example of Sven: "During my studies of mathematics I have made very different experiences. Unfortunately, I often cannot follow lectures because I am sometimes distracted by my pain. The professor didn't notice this. In a later semester I attended a seminar with the same professor. We were only twelve students. The professor was able to interact with each one individually and explain everything in detail. [...] When I was in pain, he willingly took short breaks so that I had some time to recover. I passed the exam with a very good grade. That strengthened my conviction that I am not too stupid to obtain an academic degree. It is often the conditions that should change [...]. Smaller courses will certainly help all people with disabilities to better cope with their studies and not be overlooked by lecturers. And I also think that all students would benefit from smaller courses."

3. The barriers in students' minds suggest that lecturers are still not aware of the situation of disabled students. It is important that lecturers of all subjects receive concrete training in this respect. The experiences of David, Jo, and Andrea document incorrect behavior of lecturers. In the case of David and Jo, their disability was compared with other life circumstances or disabilities. Andrea has experienced discrimination because of her migration background. Other examples from students also show that lecturers need further training. David, Jo, and Andrea suggest that these training courses for lecturers should take place in collaboration with them or other experts concerned. Jo says: "There are too many lecturers at the university who think they know about disability or mental illness. But they don't know at all. Even if you have a friend, a wife, or a child with a disability, as an unaffected person you just don't know. University life is particularly difficult for us, and the lecturers have a right to be trained in this respect [...]."

4. Discussion

Looking at the results of the study, the following picture emerges with regard to the research hypotheses and research questions (cf. 1.).

1. It has been confirmed in many ways that students with disabilities report to have encountered problems in their studies that are associated with additional expenses due to their disability. The interviews provided vivid insights into the diversity of the problems. At this point it can be said that my own study with regard to German universities confirms the results of international research in this field [6,12,13]. In the course of the further implementation of the UN Convention on the Rights of Persons with Disabilities at German universities, these diverse and individual problems should be listened to by those responsible. The UN Convention on the Rights of Persons with Disabilities, in particular Article 5, mentions that people with disabilities should be treated equally and not be discriminated. According to Article 5 paragraph 3, the contracting states are committed to taking all necessary steps to promote equality and eliminate discrimination at universities. The individual experiences of students show that there is still potential for improvement at German universities in order to achieve this important goal. The students' individual statements can be an indication that the responsible persons at German universities should take a closer look at equal rights and discrimination in the context of disability and mental illness. In addition, the contracting states have undertaken to provide access to higher education for people with disabilities (Article 24, paragraph 5). The individual reports of the interviewed students showed that it is not enough to guarantee access to a university. Rather, in view of the international findings regarding the academic success of disabled students, it is more important that people with disabilities and mental illness are supported in such a way that they can successfully complete their studies. If there are problems in achieving this goal, these problems not only complicate the students' everyday lives, but also jeopardize equal and continuous access to education and the retention of students with disabilities or mental illness.

2. Students with disabilities pointed out problems regarding spatial barriers. The present study has shown that not only students with physical disabilities have problems with the design of university premises, but that there are also considerable and comprehensible barriers for students with mental disabilities, which, according to the students' statements, have not yet arrived in people's consciousness. The students' experiences indicate that there is still a need for action with regard to accessibility at German universities. It is vital to raise awareness of the individual barriers faced by disabled students when planning and implementing university lectures. Particularly impressive are the comments from students with mental disabilities. In addition to structural changes, a dialogue between the parties involved is also important and useful in order to reveal barriers and find common solutions. Even a poorly equipped room can result in learning being hindered. Changes in this respect would certainly be of great benefit to all students.

3. The results in connection with the learning materials are astonishing. It is generally assumed that digitization leads to a greater accessibility of learning materials. According to the information provided by students with disabilities, this does not seem to be entirely true. Also, it is interesting to note that the timing of the provision of learning materials is very important, especially for students with mental disorders. Accessibility of materials therefore means more than producing well-formatted document. For the future, it is recommended that lecturers are comprehensively informed about the accessibility of learning materials. It is imperative that lecturers consider which barriers students might encounter when creating learning materials. A timely provision of materials in different formats seems to make sense here, in accordance with the Universal Design for Learning. However, it is also important to determine the quality of the learning materials in feedback formats with all students and to change them if desired. If this is not possible, for example, due to the high workload of lecturers, access to education for students with disabilities is restricted—and this is a problem that should be solved on the structural level.

4. The results are particularly reflective of the experiences disabled students have had with their lecturers. A large proportion of the students stated that they have had problems with lecturers. The case studies showed that these problems are very diverse and sometimes involve additional work for the lecturer. What is also frightening is that university teachers make statements such as those described by the students which, in my opinion, are quite discriminating. If a disabled student cannot enter a lecture hall with their wheelchair, ways and means have to be found to remedy the situation. The fact that disabled students are not taken seriously as experts on their disabilities is particularly alarming when such an attitude is adopted by lecturers who should be familiar with the subject of disability. These individual, interpersonal problems between disabled students and lecturers indicate that a lot of information and exchange is still needed in these concrete cases. Certainly, these examples are not generally representative of the situation of disabled students at German universities. Nevertheless, it is irritating that in a country like Germany, which is committed to human rights and the rights of disabled people, some people at universities have to experience extreme forms of prejudice and discrimination with regard to disability and skin color. Even if such experiences occur occasionally, they show, especially with regard to Article 5 and Article 24 of the UN Convention on the Rights of Persons with Disabilities, universities should devote more attention to discrimination processes and develop solutions for more equality because there is a gap between policy and practice.

Based on the interviews with study participants, the following needs for action can be identified for the implementation of the UN CRPD at German universities in order to close the existing gap between diversity policy and higher education practice: (a) lecturers should be made aware of the situation of students with disabilities and trained as a matter of obligation; (b) there is a need for more precise knowledge of why lecturers deny students certain rights. In particular, it remains to be clarified whether it is a matter of personal attitude or increased workload; (c) disabled students in particular should have the right to equal participation in German higher education without being discriminated against or having to justify their situation.

5. Fortunately, the interaction between students with and without disabilities is predominantly positive. However, the example of Sven (cf. 3.2.3.) shows that barriers in people's minds have still not been broken down. Certainly, values such as empathy and understanding are difficult to implement in a performance-oriented environment like the university. The interviews generally gave the impression that students at large universities think more of themselves and find it difficult to understand the situation of disadvantaged fellow students. For instance, some study participants reported that fellow students compare their disability with everyday challenges such as stress in their studies or compatibility of leisure time and studies. This shows that in some cases there is a lack of awareness that a disability is not comparable. From the interviews, it became clear that many students with disabilities spend their "free time" visiting a doctor or undergoing therapy or dealing with bureaucracy and administration. This is not a time for rest. It turns out that it is important to make others aware of the additional costs that arise from a disability.

Nevertheless, the overall results allow us to draw the cautious conclusion that students with and without disabilities get along well with each other when taking the individual vulnerability of the other person seriously [33]. This form of encounter should be positively supported and extended to other areas of university life and teaching in the future.

6. Looking at the data concerning the information provided by disabled students on their experiences in connection with COVID-19, one can observe that even in the context of enormous challenges, students with disabilities are on the losing side. The empirical data of the study essentially show that the pandemic is making the strong stronger and the weak weaker. This lack of solidarity and understanding is particularly evident in the lecturer's statement equating a person's disability with the situation of raising a child. This line of argumentation is not comprehensible, because the comparison of two fundamentally different individual situations is absurd. From a scientific point of view, it can be expected that even in a pandemic situation people will act in such a way that people with disabilities will not experience discrimination. According to the preamble of the UN Disability Convention, disability is a construct that arises from the interaction between people with disabilities and the barriers of attitudes and environment that prevent them from participating in society fully, effectively, and on an equal footing. In the context of higher education, this means that special consideration should be given to the situation of people with disabilities, particularly during this pandemic. Barriers caused by the pandemic should be dismantled if possible in order to alleviate further barriers in everyday life. Drawing comparisons between individual life situations is not helpful [32,43]. It should not become the norm for a person unaffected by disability to judge the situation of a person with a disability. Students with disabilities have almost certainly not chosen their disability and are permanently restricted. If they point out barriers, it should be possible to meet them respectfully and take them seriously as experts of their situation [20]. Comparisons with other groups of people or situations are not appropriate.

This case study has shown that for disabled people access to education at German universities is sometimes restricted. A special focus was placed on the accessibility of learning processes. It turns out that these learning processes are hampered by individual prerequisites, but also by external influences.

By applying Universal Design for Learning in their own courses, I believe that lecturers could identify many learning barriers in advance [20,21]. A conscious examination of possible problems in the processing of the learning material helps to focus on the individual learning processes of students and to motivate and support each individual person. However, the inclusive design of courses also requires structural support. In the interviews, the disabled students at large universities reported of lecturers who are overburdened at various levels. They are under great pressure due to the large number of course participants, with courses being subordinate to actual research work. Within the framework of concrete studies on the working conditions of lecturers in inclusive learning settings, it should be clarified which stress factors prevent lecturers from making their courses inclusive. In view of the information provided by the students surveyed here, structural support is required. There is a need for qualification programs, expanded personnel and material resources, and an appreciation of the focus on inclusion.

However, in order to enable this constructive approach to diverse learning, a reflective and critical attitude is also necessary [34,44]. In accordance with the concept of reflective inclusion [26,27,44], students in the context of teacher education are made aware of how diversity can be used constructively [17,34]. Such awareness should also be the subject of further training in the didactics of higher education. If one wants to learn from the statements of the surveyed students with disabilities, it is not enough to create barrier-free documents. It is much more important to be prepared to design courses in a participative and exemplary way. If the stigmatizing experiences reported in the study are to be considered, a stronger awareness is needed that the individual study situation of a person has a considerable influence on the learning situation and learning success. What is needed is an attitude of lecturers to allow students continued access to education, because it is their right.

5. Conclusions

The situation of the disabled and mentally ill students who have taken part in the survey shows that continued access to and retention in higher education is restricted by various factors. The barriers lie in the provision of learning materials, in the accessibility of premises, and in the relationships with lecturers. In order to make inclusive education at German universities possible in the long term, it is necessary to have an eye for students. It is particularly important to consider the individual situation of disabled students when planning and conducting courses. Inclusive methods in teaching, such as the Universal Design for Learning, help to deal proactively with different student requirements. In addition, the study carried out has once again shown that it is important that disabled and mentally ill students are taken seriously as experts on their respective disability and that solutions to existing barriers are developed collaboratively. At the same time, it is becoming apparent that the problems faced by disabled and mentally ill students in their studies need a long-term and structural solution at German universities. Further research should take this aspect more into account.

Funding: This research received no external funding.

Acknowledgments: I would like to thank Rebecca Steffen and Thomas Bartz for their valuable feedback while preparing this article.

Conflicts of Interest: The author declares no conflict of interest.

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