



MASTERARBEIT | MASTER'S THESIS

Titel | Title

Beyond the Body: Disablism and (Dis)embodiment in the Experience of Telepresence Users within Educational Settings

verfasst von | submitted by
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angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of
Master of Education (MEd)

Wien | Vienna, 2026

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:

UA 199 507 519 02

Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:

Masterstudium Lehramt Sek (AB) Unterrichtsfach Englisch Unterrichtsfach Latein

Betreut von | Supervisor:

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Acknowledgements

My university journey has been far from easy, but along the way, many amazing people made my path slightly less daunting. For this, I want to thank you. First and foremost, thank you to my supervisor, Ass.-Prof. Mag. Dr. Katharina Wiedlack. Your expertise and patience were of great guidance to me throughout the process of writing my master's thesis, and whenever I encountered difficulties, I knew that you could help me solve them.

Secondly, I wish to mention my core family, namely my beloved mother, as well as my cats: Loki, Fenrir, Nari, and Freya. You provided the foundation for me to even start my academic career: a home filled with peace and love (and plenty of cat hair). Thank you for always being here for me, and for being my source of comfort in the face of hardship.

Thirdly, I want to thank my high school English teacher, Mag. Johannes Eichhorn. Johannes, without your highly contagious love for the English language, your commitment to your profession, and your encouragement to even pursue this study programme, I would not be here today. For this, I want to express my sincerest gratitude.

Last but not least, I want to mention two of my closest friends, without whom my studies would never have gone so smoothly. Manuel Pozzатello, BSc, and Theresa Sauer, BEd, the two of you could not be more different, but what unites you both is your borderless kindness, your unwavering loyalty, and your great sense of humour. A couple of hours in *Dead by Daylight*, *Baldur's Gate 3*, or *Mario Kart* could always make me forget about the horrors of the *oratio obliqua*.

Of course, I could go on and on about the amazing people who I have met throughout my studies. Just because I have not named you here does not mean that I do not appreciate you. But, to make it up to some of the outstanding individuals that I have not named here yet, I want to express my gratitude to my past and present colleagues at the Centre for Teacher Education, to the student representatives of the English Department, and to the lovely people I have met in my first semester at the English Department (yes, the group with the weird name). I believe that everyone is an amalgamation of every single person they have ever met. So, thank you for enriching me with your perspectives on life; thank you for making me *me*.

Abstract

With recent developments in digitalisation, new opportunities have emerged for groups previously excluded from society. One instance is the telepresence system. Especially in educational settings, telepresence systems have provided disabled students with an opportunity to participate in lessons without having to attend school in person. Yet, telepresence users may still face stigmatisation and oppression.

Previous research has tended to investigate aspects other than discrimination, such as the benefits and drawbacks of using telepresence systems in educational settings. In contrast, this thesis focuses on the following research questions: “What is the role of disablism in the experience of telepresence users in the EFL classroom?” and “What is the role of (dis)embodiment in the experience of telepresence users in the EFL classroom?” The methodology applied to answer these research questions is twofold. First, a mini corpus analysis of guidelines, handbooks and other written materials targeted at educators of students with telepresence systems is conducted. Secondly, semi-structured interviews are conducted with a telepresence user and two teachers. The interviews are analysed according to the principles of qualitative content analysis.

Conducted primarily through the lens of critical disability studies, this analysis reveals that telepresence users experience disablism in their daily lives at school, mainly at the level of structural and aversive disablism. Furthermore, the interviews uncover that telepresence systems aid disabled students in strengthening their sense of embodiment. The more anthropomorphic the model, the higher the embodiment, with AV1 being considered the best telepresence system in the interviews. These findings suggest that while telepresence systems have a considerably positive impact on their users, disabled students still experience disablism, which is why teachers should focus on dismantling systems of oppression in their classrooms and on reducing their own biases towards disabled students.

Keywords: telepresence systems, critical disability studies, disablism, embodiment

291 words

Abstract (German / Deutsch)

Mit den rezenten Entwicklungen in der Digitalisierung entstanden neue Möglichkeiten für Gruppen, die zuvor aus der Gesellschaft ausgegrenzt wurden. Ein Beispiel dafür sind Telepräsenzsysteme. Besonders in schulischen Settings haben Telepräsenzsysteme behinderten Schüler*innen die Möglichkeit gegeben, am Unterricht teilzunehmen, ohne die Schule in persona besuchen zu müssen. Trotzdem könnten User*innen von Telepräsenzsystemen immer noch Stigmatisierungen und Unterdrückungen erleben.

Die vorhergehende Forschung hat tendenziell Aspekte erforscht, die sich nicht mit Diskriminierung befassen, wie beispielsweise Vorteile und Nachteile von Telepräsenzsystemen in schulischen Settings. Im Kontrast hierzu fokussiert sich die vorliegende Arbeit auf die folgenden Forschungsfragen: „Was ist die Rolle von *disablism* in der Erfahrung von Telepräsenzuser*innen im EFL-Klassenzimmer?“ und „Was ist die Rolle von *(dis)embodiment* in der Erfahrung von Telepräsenzuser*innen im EFL-Klassenzimmer?“ Es gibt zweierlei Methoden, die angewendet wurden, um diese Forschungsfragen zu beantworten. Einerseits wurde eine Mini-Korpus-Analyse von Handbüchern und anderen schriftlichen Materialien für Lehrkräfte von Telepräsenzuser*innen durchgeführt. Andererseits wurden semi-strukturierte Interviews mit einer Telepräsenzuserin und zwei Lehrkräften durchgeführt. Die Interviews wurden mithilfe von Prinzipien der qualitativen Inhaltsanalyse untersucht.

Primär durchgeführt mithilfe der Sichtweise der *critical disability studies* deckt diese Analyse auf, dass Telepräsenzuser*innen *disablism* in ihrem tagtäglichen Leben in der Schule erleben, größtenteils durch *structural* und *aversive disablism*. Außerdem decken die Interviews auf, dass Telepräsenzsysteme behinderten Schüler*innen dabei helfen, deren Empfindung von *embodiment* zu stärken. Je anthropomorphischer das Modell, desto stärker das *embodiment*; AV1 wurde in den Interviews als das beste Modell empfunden. Diese Ergebnisse suggerieren dass, während Telepräsenzsysteme einen positiven Einfluss auf deren User*innen haben, behinderte Schüler*innen trotzdem *disablism* erleben, weswegen Lehrkräfte darauf fokussiert sein sollten, Systeme der Unterdrückung in deren Klassenzimmern zu bekämpfen und deren eigene Stereotype im Bezug auf behinderte Schüler*innen zu reduzieren.

Schlüsselwörter: Telepräsenzsysteme, critical disability studies, disablism, embodiment

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1. Invisible Students

Universitätsklinikum Krems, 2008. Surrounded by a handful of other children ranging from six to seventeen years old, a six-year-old girl looked at the teacher with wide eyes. She was recently diagnosed with asthma and was working through her parents' divorce. The teacher, a young woman working in this *Heilstättenklasse* – a hospital class, as the grown-ups called it – handed out worksheets to each child. Mathematics was the subject that the six-year-old girl was supposed to focus on that day, additions up to ten, to be precise. With a shrug, she started filling out the worksheet, slightly annoyed because she had already learned this a couple of weeks ago in school. The boy next to her, however, looked a bit puzzled as he could not even read yet. It seemed the teacher had failed to address the boy's needs. But was it even possible for the teacher to cater to the needs of these children who have such vast differences in ability, background, and experience?

A reader of this thesis may wonder what this short anecdote represents in this setting. The six-year-old girl in this story was me, and this brief passage should illustrate the time that I spent in a hospital while my peers were in school. Even as a little child, I knew that the situation in these hospital classes was less than ideal. Ever since then, I have been determined to find a way to ameliorate the circumstances of hospitalised children. The fact that they were in a hospital was already bad enough, but the isolation from their usual social environment and the loneliness may have been avoidable (Weiss et al. 158; Powell et al. 2).

Finding an answer to the previously raised question took me around fourteen years; from that moment until one day in 2022, when I encountered the technology this thesis revolves around: telepresence systems. At first glance, I was fascinated by this robot, and I knew that it could substantially improve the lives of hospitalised children. Telepresence systems can be situated in the rather lengthy line of assistive technologies that have been used to make the lives of disabled individuals easier. Dating back to the nineteenth century, when Braille and hearing aids were first invented, assistive technologies have been around for longer than one might think (Gonzalez and White 2). In the subsequent century, the use of hearing aids was facilitated by their reduced size, and a portable Braille typewriter was first developed in 1951 (Gonzalez and White 2). Furthermore, in the second half of the twentieth century, a wide range of new assistive technologies became commercially available, such as an electronic speech

synthesiser, more modern wheelchairs, and the Kurzweil reading machine, which employed scanning technology to read books out loud (Gonzalez and White 2). Before the turn of the millennium, a variety of other assistive technologies were developed, such as devices that enabled disabled individuals to communicate through eye movement, improved text-to-speech programmes, and frequency-modulated systems that aided people who were hard of hearing (Gonzalez and White 2).

Among these technologies, the telepresence system is also one of the devices with roots in the late twentieth century. While the concept of telepresence has been more frequently applied in other areas, such as for military and industrial initiatives, which use telepresence robots to explore hazardous areas (Ijsselstein 19), the first telepresence robots in educational settings have been employed since the 1990s (Soares et al. 2). Even before the turn of the millennium, this solution was already being applied to support the education of hospitalised children and teenagers (Soares et al. 2). In more recent decades, the telepresence system has been refined and a range of models were developed, such as the AV1 by *No Isolation*, which is the system that is currently in use in Austria, Germany, Norway, and other European countries. By June 2023, approximately 2,500 robots were in active use in these countries (Nordtug and Johannessen 1684). What distinguishes this model from others, such as the QB robot developed by *Anybots* or the VGo model (Tsui et al. 12), is that the AV1 has anthropomorphic elements, yet cannot move on its own. For instance, it has a one-way camera, meaning the user can see the robot's surroundings, but others cannot see the user. Combined with a microphone and a display that can show a range of emotions via emoji faces, the AV1 is "explicitly designed to allow socializing" (Nordtug and Johannessen 1688). Especially the humanoid shape is credited with encouraging social contact between the user and their peers (Nordtug and Johannessen 1689). Distinguishing itself from videoconferencing systems, telepresence systems such as the AV1 are designed with a remote pilot in mind, in particular to have the telepresence system act as a stand-in for the user, signifying their presence (Turner et al. 26).

Despite the fact that the benefits and drawbacks of the implementation of telepresence robots in educational settings have received some scholarly attention, only a small number of researchers explicitly consider how disablism, or in other words, the oppression of disabled individuals, affects the experience of telepresence users. Investigating the combined impact of

disablism and (dis)embodiment on the experience of telepresence users has been even rarer in the literature. In light of this background and research focus, the present thesis intends to fill this research gap by finding answers to the research questions of what role disablism plays in the experiences of telepresence users and what role (dis)embodiment plays in the experiences of telepresence users. Smaller, supporting questions are “How do telepresence users in educational settings perceive their body? Is the telepresence system freeing or another form of disembodiment?” and “Which types of disablism are most commonly experienced by telepresence users in educational settings?” While telepresence systems can be employed across a variety of fields, all of these research questions exclusively refer to users in educational settings and their experiences. Given the crucial impact that negative experiences such as disablism and disembodiment can have on affected individuals, primarily manifesting in a lack of self-worth, it is vital to investigate this issue in more detail. Embodiment, on the contrary, is also worth exploring as it can cause a range of benefits, such as a newfound sense of belonging.

To establish a sensible scope for the thesis, the answers to the research questions are limited to EFL classrooms in the European context. This choice has been made for the reason that the regional variable may influence the data that can be retrieved. For instance, the experiences of telepresence users in North America or Asia may be completely different from those in Europe, based on cultural differences. Since the phenomena of embodiment and disembodiment are crucial in the EFL classroom, as the learning of a foreign language has been acknowledged as a particularly embodied experience (Macedonia and Knösche 197), the project is designed to focus on how telepresence systems are employed in EFL classes. Lastly, other subjects are excluded from the research focus as the experiences of telepresence users may vary widely across different subjects. For instance, some may have a less explicit focus on embodied experience, and others, such as physical education, might be inaccessible for the remote pilot of the robot.

To answer these research questions, I adopt the theoretical lens of critical disability studies. This approach is an ideal fit for this research endeavour as it “seek[s] to change conventional notions of disabled people as pitiable, tragic victims who should adjust to the world around them” (Reaume). Therefore, this lens proves especially useful for analysing phenomena of disablism, disembodiment, and re-embodiment that telepresence users in educational

settings experience. While the experience of telepresence users in particular has not been investigated by scholars in the field of critical disability studies to date, this theoretical lens still helps expose instances of disablism and other obstacles that telepresence users in educational settings face, and it seeks to empower affected individuals.

The methodology of this thesis is twofold. Firstly, I conduct a mini corpus analysis of written material, such as guidebooks or manuals aimed at the educators of telepresence users. The content of these written materials is analysed according to the steps of qualitative content analysis suggested by Mayring and discourse analysis, combining Fairclough's approach with the tools suggested by Gee (*How to do Discourse Analysis* v-vi). Among the various strands of discourse analysis, I use critical discourse analysis because it focuses on how language reinforces power dynamics and ideologies (Fairclough ix). Therefore, critical discourse analysis in particular seems suitable for the present thesis. After the mini corpus analysis, I conduct semi-structured interviews with telepresence users in European secondary schools, their teachers, and their legal guardians. The transcripts of these interviews are also analysed using the principles of qualitative content analysis and critical discourse analysis.

Combining the theoretical lens with the methodology chosen for this research project, the hypothesis is that telepresence users in educational settings experience disablism due to the disablism within societal and educational structures. Concerning disembodiment and re-embodiment, the hypothesis is that the anthropomorphic elements of the robot, as well as the possibility to personalise and decorate it, help the users gain a sense of re-embodiment. This sense of re-embodiment might be represented by a certain affect, namely a sense of belonging, and a feeling of identification with the robot. In addition, striving to develop high-fidelity versions of telepresence systems may also enhance users' quality of life. Another hypothesis is that manuals and other instructional materials, such as checklists, on the usage of telepresence systems in educational settings, intended for educators of remote learners, contain disablism. I argue that these manuals are not geared towards the best possible experience of telepresence users in educational settings, but rather to maximise the comfort of educators and peers of telepresence users.

This thesis is highly relevant for two reasons. Firstly, it seeks to fill a research gap, as the experiences of disablism and (dis)embodiment among telepresence users in educational settings have not yet received much scholarly attention. Secondly, this research project not

only aims to add to the existing body of literature on telepresence systems but also actively benefits society by raising awareness of the obstacles that telepresence users in educational settings experience. Educators often do not realise that the option of implementing telepresence robots exists, and it can be argued that they are especially unaware of the stigma and discrimination telepresence users encounter. For this reason, this thesis furthers the third mission of academia as it intends to transfer academic knowledge to help resolve the issues that telepresence users face, which can be seen as a societal challenge (University of Vienna).

The thesis is divided into seven sections. Following the introduction, titled “Invisible Students,” the second section provides additional information about telepresence systems and their applications in educational settings, as well as studies conducted on this topic. Next, Section Three outlines the theoretical background of the thesis on disembodiment, re-embodiment, and disablism. Section Four elaborates on the methodology, while Section Five presents and analyses the results of the mini corpus analysis and the interviews. Afterwards, Section Six relates the results to the theoretical background and discusses them, before Section Seven concludes the thesis.

2. The Robot in the Room

Coined in 1979 by Marvin Minsky, the term *telepresence* refers to a situation where the user of this technology “develops a sense of being physically present at a remote location through interaction with the system’s human interface” (Ijsselsteijn 5). Furthermore, this technology incorporates “the user’s actions and the subsequent perceptual feedback he/she receives via the appropriate teleoperation technology” (Ijsselsteijn 5). Since its introduction, the concept of telepresence has been partially applied in cinema and television. In this field, the viewer’s (tele)presence in the action that is shown on screen was seen as the ideal, especially for many early film producers, who intended to reproduce reality as closely as possible (Ijsselsteijn 19). However, significant driving forces behind the development of telepresence systems have been industrial and military initiatives, which have implemented the technology for particularly hazardous missions (Ijsselstein 19). While this invention has its roots in other fields, telepresence systems have also been applied in educational settings for several decades,

dating back to the 1990s, when so-called mobile robotic telepresence solutions were first employed to aid the education of hospitalised children (Soares et al. 2).

Telepresence, however, does not have a one-size-fits-all definition. It can be further divided into the categories of *observational telepresence*, *simple telepresence*, *enriched telepresence*, and *high-fidelity telepresence*, denoting different levels of interaction (Dolezal 210). To be more precise, *observational* telepresence only allows the user to observe a remote environment passively; *simple* telepresence facilitates a basic physical interaction with the said environment; *enriched* telepresence includes multisensory feedback; and *high-fidelity* telepresence entails total multisensory immersion (Dolezal 210). Among these different realisations, I argue that enriched and high-fidelity telepresence have the greatest potential in educational settings.

One subtype of the telepresence technology is the telepresence system, which is usually categorised as enriched telepresence. This tool can facilitate access to education for chronically ill students who are hospitalised or homebound, enabling them to participate virtually in their lessons without attending school in person (Pletschko et al., “Life Happens Wherever You Are” 19). It takes the form of a small, anthropomorphic robot equipped with a microphone and a camera. In the case of the most commonly used model in Europe, AV1, the camera is one-way, meaning that the user can see the environment where the robot is placed, but the individuals who are in physical proximity to the telepresence system are unable to see its user (No Isolation, *Über AV1*). The design of this tool also carries important implications, as it may either have a positive or a negative impact on its user and their social environment. Especially inevitable design tensions, such as when the robot does not appear anthropomorphic enough, could engender adverse affects in the individuals who interact with the telepresence system, like perceiving it as “off-putting or uninviting” (Paterson et al. 4). I claim that these negative reactions towards telepresence systems are not caused by the technology itself, but by disablist ideas.

In the context of this thesis, the terms *telepresence system*, *telepresence robot*, and *telepresence avatar* are used synonymously to describe the same tool: an object that allows a homebound or hospitalised pupil to participate in lessons virtually, regardless of the exact appearance of this device. I use the term *telepresence system* as an umbrella term, while *telepresence robots* and *telepresence avatars* denote specific realisations of this technology.

The former term, *telepresence robots*, is only used to describe robotic devices, and the latter term, *telepresence avatars*, specifically refers to mobile robots, as defined by Turner and her colleagues (17).

As I focus on the Austrian context, the situation of telepresence systems in the Austrian educational setting should be considered. As of 2024, around 20,000 Austrian pupils are too sick to attend a regular school in person (AAU). While many of these learners choose to be taught in specific schools intended for children who are hospitalised for an extended period, which are also referred to as *Heilstättenschulen*, others choose telepresence systems. At the moment, around 200 telepresence robots of the model AV1, produced by the company *No Isolation*, are in use in Austrian schools (Teleavatar, “Avatare für langzeitkranke Kinder”). The company *Die Berater* handles the distribution of these tools. Despite its proven benefits for hospitalised or homebound students, as of August 2024, the Austrian Ministry of Education does not fund or even document the usage of telepresence systems in educational settings since it is unaware of the benefits of this technology, according to Polaschek (1). Instead, the tool is usually privately financed or funded by companies that donate to *No Isolation* or to partnering institutions (No Isolation, “VKKK Ostbayern”). Acknowledging the shortcomings of the Austrian context, telepresence systems are primarily distributed to students with physical disabilities and illnesses (Pletschko et al., “Life Happens Wherever You Are” 20), thereby neglecting students with mental health difficulties and neurodivergence, who may also profit from the usage of a telepresence system to participate in lessons (Zhang et al. 3).

While it is still a relatively little-known tool in the educational context, some scholars research the impact of telepresence systems in educational settings. For instance, Pletschko and his team focus on the implementation of the telepresence robot AV1 in Austrian schools (“Life Happens Wherever You Are” 19). Furthermore, Johannessen and his team work on similar research questions in the Scandinavian context (153). Both working groups agree that employing telepresence systems to facilitate access to education for hospitalised or homebound pupils yields a range of benefits, entailing an improvement of the students’ learning outcomes as well as their mental health (Pletschko et al., “Life Happens Wherever You Are” 21; Johannessen et al. 166). However, both teams also point out that there are still obstacles that need to be overcome, such as bureaucratic hurdles and inadequate technical infrastructure (Johannessen et al. 162; Pletschko et al., “Life Happens Wherever You Are” 21).

Elaborating on the benefits, different studies demonstrate that students who employ a telepresence system to participate in school lessons achieve significantly better learning outcomes than hospitalised students who do not use a telepresence system (Pletschko et al., “Life Happens Wherever You Are” 21; Johannessen et al. 166). In a specific case described by Pletschko and his team, a pupil who employed a telepresence system due to being hospitalised with a brain tumour was even able to finish the academic year as the academically best-performing student of her class (“AV1 as a Therapeutic Tool” 21). Supported by the tool, she was able to mitigate learning shortcomings that the severity of her disease might otherwise have caused (Weiss et al. 158; Powell et al. 2). In contrast to Austria, in other European countries, telepresence robots are also used to specifically assist students with anxiety disorders. By enabling them to participate in group activities and presentations, their learning outcomes are enhanced. Once they are able to complete these tasks virtually, students tend to describe them as more feasible (Weibel et al. 6).

Not only are learning outcomes strengthened by using a telepresence robot, but the mental health of affected individuals is also significantly improved. Since hospitalised or homebound students now profit from a sense of inclusion into their original classrooms instead of having to spend their daily lives without peers, many negative side effects of their hospitalisation or home-boundness are reduced significantly. Examples are feelings of anxiety or isolation (Zillner et al. 228). These negative side effects are reduced by establishing a sense of normalcy (Peres and Suárez 70; Ahumada-Newhart et al. 10). Especially when the telepresence robot also accompanies extracurricular activities and breaks, the students’ sense of connection is significantly increased (Ahumada-Newhart and Olson 22). While in some cases, students report that using a telepresence system may even cause more anxiety for them due to a lack of control (Zhang et al. 9), the majority of users claim that their loneliness is reduced by being able to keep up with their peers again (Virkus et al. 60).

In addition, I argue that the current school system in Austria still needs to overcome some obstacles concerning telepresence systems in educational settings. More precisely, the models currently used for telepresence robots still have technical issues, such as audio-visual problems, and thus need improvement (Zhang et al. 7). Especially the audio-related issues can aggravate the symptoms of individuals who are easily overstimulated, such as neurodivergent pupils (Zhang et al. 7). Moreover, from an administrative perspective, students have to prove

they are ill enough to benefit from a telepresence system, but not too sick to still be able to use it (Johannessen et al. 159). Lastly, another obstacle is the lack of formal and informal acceptance of telepresence systems at the school of the affected student (Johannessen et al. 161-162; Pletschko et al., "Life Happens Wherever You Are" 20). In summary, telepresence users in educational settings face a range of issues.

Because of these obstacles, it can be deduced that telepresence users face disablism. For instance, I argue that, under the guise of an inadequate technical infrastructure, more complex assistive technologies, such as telepresence systems, may be easily dismissed. This would be an example of structural disablism. In order to analyse these occurrences of disablism, it is possible to use the specific theories that scholars developed relating to the usage of telepresence systems in various settings. While most of these studies do not specifically refer to educational usages of the tool, they still have rich implications for the use of telepresence systems for hospitalised or homebound students. Among the studies not specifically focused on telepresence in education, the one by Boudouraki et al. (63) contains valuable implications about how robots are often the objects of othering and of not being perceived as ordinary. I claim that this, in turn, victimises the user of the robot as their assistive technology is perceived as unusual.

A small number of projects investigate a connection between critical disability studies and telepresence systems in educational settings in particular, such as Elmimouni et al. (2), who build on the work by Williams (229). Williams claims in her article that all robots are disabled, while Elmimouni et al. counter her argument by elaborating that telepresence systems may have limited sensory and mobility capabilities, but should not be classified as inherently disabled (2). Another difference between the two studies is that Elmimouni and her colleagues recommend, with a focus on students' needs, various best-practice examples of teachers who work with telepresence users (16). The work by Williams is more focused on theory rather than on praxis (229).

Similar to the previous two scholars, Lee and Takayama raise the question of whether a robot "is (ontologically) a person" in their study (41). They argue that, since the robot is steered by a remote human pilot, it could be considered a person. When referring to this question, Lee and Takayama claim that the connection between robot and pilot can be considered a "technical embodiment" as peers of the telepresence user have the feeling that they are

genuinely in the room with them (41). Since their study joins robots and embodiment, this connection is relevant for the present research project.

As telepresence systems in educational settings are still a relatively new phenomenon, multiple research gaps can be identified. Apart from further research on the impact of telepresence systems on students with mental health issues and neurodivergent learners (Zhang et al. 3), Elmimouni et al. suggest that future research should focus on the difference between occasional and continued use of telepresence systems (18). Additionally, they suggest studies on telepresence users who are less technologically savvy, since their own study was conducted in a Computer Science department (Elmimouni et al. 18). Furthermore, only little research focuses on the psychological dimensions of the experience of telepresence users in educational settings. As a result of this research gap, the research that is conducted as a part of this master's thesis focuses on the phenomena of disablism and (dis)embodiment in the experiences of students who employ this tool to participate in lessons.

3. Between Opportunity and Limitation: Literature Review

In order to answer the research questions, the first step is to establish the theoretical background since this research project builds on various theories, such as critical disability studies, as well as previous research. The following literature review is divided into three chapters, describing critical disability studies, (dis)embodiment, and disablism, respectively.

3. 1 Critical Disability Studies

The theoretical lens I use for this thesis is critical disability studies. Critical disability studies have been significantly influenced by Mairian Corker, who was one of the first scholars to develop this approach, as well as Shelley L. Tremain, Dan Goodley, and Fiona K. Campbell (Watson 197). Disability studies emerged as an academic field from the disability movement in the 1970s, particularly gaining prominence with the International Year of Disabled People in 1981, intending to criticise the normative, disablist status quo (Meekosha and Shuttleworth 48). During its development as a field, particularly since the beginning of the twenty-first

century, the term critical disability studies became the “preferred nomenclature by many scholars” over disability studies (Meekosha and Shuttleworth 47).

The reasons behind this choice are manifold, with one of the primary factors being that the term critical disability studies signals “a move away from the preoccupation with binary understandings – social v medical model, British v American disability studies, disability v impairment” (Meekosha and Shuttleworth 50). Critical disability studies criticise such binary understandings since scholars often argue that they are exclusionary for perpetuating a rather narrow definition of disability (Meekosha and Shuttleworth 50). These binary understandings refer to rigid either/or distinctions that frame disability in mutually exclusive terms instead of the complex and fluid phenomenon that a disability really is. To counteract this tendency, critical disability studies extend and critique previous studies, including critically evaluating their own findings (Shildrick 233). Another essential aspect of critical disability studies is that they view knowledge production as contextual to “particular people, places, and sociohistorical environments,” thereby also emphasising that knowledge production is historically contingent (Gilman 29). Furthermore, as Meekosha and Shuttleworth state, critical disability studies, as opposed to just disability studies, “incorporat[e] a more complex conceptual understanding of disability oppression in [their] work” (50). Thereby, I claim that they are focusing more on the task at hand, which is advocating for disabled individuals and their rights, while still theorising.

Moreover, the term *critical* in critical disability studies signifies a closeness to other theories and studies that include the term *critical*. Examples are critical race theory, critical queer theory, and critical legal theory. The former, for instance, focuses on depicting race as a socially constructed concept (Meekosha and Shuttleworth 51). By strengthening the connection to these other theoretical movements through its nomenclature, critical disability studies emphasise how they follow the “theoretical, conceptual and methodological examples” of, for example, critical race theory (Meekosha and Shuttleworth 51). Elaborating further on this connection, an interdisciplinary approach between critical disability studies and critical race studies is proposed and applied by Campbell (151). Lastly, the difference between critical disability studies and disability studies is that critical disability studies “represent[] a distancing from those who have coopted disability studies for simply normalising [...] regulatory and controlling undertones” (Meekosha and Shuttleworth 51). To elaborate on this argument,

some governmental and special education institutions use a language similar to that common in the field of disability studies, yet still treat disability in a way that emphasises deficiency (Meekosha and Shuttleworth 51; Minich 4).

One of the most significant aspects in the history of critical disability studies is the recognition that the social model of disability is foundational for disability studies, but insufficient for critical disability studies. The social model of disability views disability as socially constructed, and therefore as a counterpoint to the medical model of disability, which reduces disabilities to health conditions that ought to be treated by medical professionals so that the person 'suffering' from it can be returned to a path of normalcy (Shakespeare, "The Social Model of Disability" 266). While Hosking still includes the social model of disability in his understanding of critical disability studies (7), Meekosha and Shuttleworth claim that the focus of critical disability studies should rather be a more complex conceptual understanding of disability oppression that uses a range of tools to uncover those structures of oppression (50).

Moreover, various scholars in the field argue for a broader notion of disability instead of solely focusing on the social model of disability (Morris 85; Shakespeare, "Cultural Representation of Disabled People" 283; Corker 221). Critical disability studies are rooted in the philosophical ideas of Foucault, Butler, Derrida, Deleuze, and Guattari, who all base their work around knowledge and power (Watson 197). Being based on this variety of ideas, critical disability studies are understood as a "diverse, interdisciplinary set of theoretical approaches" (Hall). The main aims of this research field are to analyse and combat societal structures that promote ableism, and to create more inclusion for disabled people (Goodley et al., "Critical Disability Studies" 492), as well as to analyse "disability as a cultural, historical, relative, social, and political phenomenon" (Hall).

Foucault's theory influences critical disability studies significantly through his work on biopower (Tremain 12). Biopower is a form of power that influences humans at two different levels: at the individual level, referred to as anatomo-politics, and at the population as a whole, the so-called concept of biopolitics. The latter defines, among other things, bodily norms and objectivises individuals (Foucault 141). These norms further determine which types of individuals or bodies are to be considered normal or valuable, and which are depicted as deficient (Tremain 13). Furthermore, in his work, Foucault identifies different practices of

“division, classification, and ordering around a norm” in society, which corresponds with the structures of ableism that the field of critical disability studies seeks to dismantle (Tremain 14). Judith Butler influences the field of critical disability studies through their text *Bodies that Matter: On the Discursive Limits of ‘Sex’*, which focuses on elaborating their concept of performativity of gender and is the Butlerian text most often cited by scholars in the field of critical disability studies (Samuels 59). Butler’s idea of performativity is considered applicable to critical disability studies by proponents of the field. For instance, Samuels argues that the concept of performativity both “reinscribes and calls into question matters of embodied identity” (66). Samuels’s claim that disability can be considered an embodied identity renders Butler’s concept of performativity applicable to the field of critical disability studies (66). *Bodies that Matter* especially influences the understanding of the body. In this text, they claim that the body, too, is constructed by culture (Garland-Thomson, “Feminist Theory” 290). Yet, they do not dismiss the material body (Loizidou 32). A range of scholars, therefore, apply Butler’s ideas to criticise bodily norms that constitute bodies that deviate from this norm as ‘freakish’ (Samuels 62-63; Cho 18). Especially in Butler’s theoretical exploration of which “lives [are considered] worth protecting, [...] worth saving, [...] worth grieving” (Butler, *Excitable Speech* 15), Butler resonates with some of the topics that scholars in the field of critical disability studies focus on as they explore which conditions render bodies liveable (Samuels 60).

Nevertheless, Butler’s *Bodies that Matter* is also criticised for not mentioning disability explicitly enough. As Samuels states, Butler only vaguely mentions bodies that endure illness, but does not thematise disability as such (59). She also cites this as the reason why Butler’s texts are not included in well-known anthologies or particularly important texts on disability (Davis, *Disability Studies Reader*; Shakespeare, *Disability Reader*; Wendell, *The Rejected Body*; Garland-Thomson, *Extraordinary Bodies*). However, Samuels’ claim can actually be refuted since in her article for Davis’ *Disability Studies Reader*, Garland-Thomson refers to Butler’s work (“Feminist Theory” 290). While *Bodies that Matter* is not elaborated on in much detail, Garland-Thomson clearly refers to Butler in her line of argumentation. Still, I argue that Butler’s influence on the field of critical disability studies is debatable, or at least not as clear-cut as Foucault’s impact, which is why I situate them as a peripheral contributor to the field. While the opinions on Butler’s impact on the field of critical disability studies differ, the debate is

relevant to this thesis as Butler's ideas on normativity and bodily norms are useful for analysing how telepresence users are discriminated against in educational settings.

Another concept relevant to the field of critical disability studies is intersectionality. Disability itself is inherently intertwined with various categories of difference, marginality, and political activism (Goggin). Moreover, the predecessor of critical disability studies, disability studies, is also deeply connected with other minorities, such as people of colour or members of the queer community, through shared struggles against discrimination. A reason for this is that all of them reject the rigid standards established by society (Goodley, "Dis/entangling Critical Disability Studies" 87; Hunt 151). An additional instance of intersectionality is the overlapping of disability and femininity, which were historically combined in conditions such as hysteria or post-natal depression (Goodley, *Disability Studies* 46). To go into more detail, women's bodies have often been pathologised and categorised in a way that not only targets women, but also disabled individuals. For instance, "labels such as anorexia, hysteria, and agoraphobia are feminine roles enlarged to disabling conditions that blur the line between 'normal feminine' behaviour and 'pathology'" (Goodley, *Disability Studies* 46).

Another significant aspect of critical disability studies is their commitment to praxis, which foregrounds the lived experience of disabled individuals and prioritises action-oriented research and education (Richardson et al. 349). I apply the main aim of critical disability studies to my research, as it also aims to unravel ableist structures in the educational context by analysing the instances of disablism that telepresence users experience. At the same time, I consider the discourses in which these occurrences are situated.

A further study relevant to the background of this research project is one conducted by Goodley and his team, who draw connections between affect studies and critical disability studies ("Feeling Disability" 197). In their project, they research the experience of children with life-threatening or life-limiting diseases. Based on their insights, they argue that critical disability studies "must challenge cultural norms that risk further pathologising disabled people" (Goodley et al., "Feeling Disability" 213). At the moment, one of these current cultural norms is that everyone should strive for a long, healthy life. In turn, disability is frequently perceived as something to be pitied or even feared, as it represents the opposite of what is considered the ideal (Goodley et al., "Feeling Disability" 208).

While Goodley's research works with critical disability studies, I claim that the research on telepresence systems in educational settings does not seem to draw on critical disability studies by, for instance, analysing and combating the forms of discrimination that telepresence users face. Instead, the focus seems to be on the educator, who may even perceive the telepresence user as a nuisance, as well as the peers of the telepresence user, who also need to learn to deal with a robot in their classroom. This becomes particularly apparent when reading specific handbooks or research papers aimed at educators. In one of these studies, the researchers employ the highly emotive phrase "extremely tragic" when referring to the death of a telepresence user (Charteris et al. 2485). Furthermore, they suggest that the telepresence system "should be removed quickly from the room and processes put in place to support students and teachers as they work through their grief" (Charteris et al. 2485). While under the guise of "inclusion," as the article's title promises, the idea of removing anything that can be associated with the dead child favours an ideology of death that is imbued with shame and fear. Especially in the case of young individuals passing away, this does not meet the criterion of a long, happy life, which is the ideal in today's society (Goodley et al., "Feeling Disability" 211).

Another crucial aspect of this thesis is the view of critical disability studies scholars on educational institutions. More precisely, representatives of this field often view schools critically since these institutions tend to prescribe certain norms, such as striving for financial success or self-sufficiency (Sullivan 185). Furthermore, schools, through "systemic pervasiveness" (Karmiris 99), frequently glorify a myth of normalcy and perpetuate hierarchies of exclusion (Baker 664; Slee 895). Especially the special education model, while representing a rhetoric of care, relies on "the hierarchies of eugenicists" (Baker 683), a sense of exclusion (Michalko 71), as well as the idea that in these institutions, disabilities are fixed or cured (Slee 897). I agree with this line of argumentation as I am also convinced that special education institutions create a hierarchy between disabled and able-bodied individuals, and that they exclude disabled people from society. In the meantime, public schools represent a site of compulsory able-bodiedness that specialises in producing an ideal learner (Karmiris 109). Thereby, schools are constructed as normative, inherently ableist spaces that are in need of more inclusive practices (Karmiris 109).

Lastly, while he is not directly involved in the field of critical disability studies, this point of view coincides with the line of argumentation of Freire, who sees schools as an instrument of oppression and social control (40). I argue that this critique is particularly relevant for the EFL classroom, where participation, communication, and physical presence are central expectations that may disadvantage disabled students, or, in the case of this thesis, telepresence users. Therefore, the idea that schools are seen as spaces of oppression goes hand in hand with the aim of critical disability studies: to critique and dismantle oppressive structures.

In summary, the aspects of critical disability studies that are most crucial to this thesis are the following. Firstly, critical disability studies intend to counteract the binary understandings of disability that have occurred over time. In other words, they criticise rigid either/or distinctions of disability that deny the complexity of this phenomenon. Secondly, critical disability studies are characterised by their intersectionality. Historically, this field has been connected with other 'critical' disciplines, such as critical race theory, and critical queer theory. Thirdly, another aspect that is significant in my thesis is the commitment of critical disability studies to praxis and to the lived experience of disabled individuals. I realise this characteristic in my thesis by conducting an interview with a telepresence user and by analysing real-life guidebooks for educators of telepresence users.

3. 2 A Part of Me, or Apart from Me?

(Dis)embodiment, one of the main phenomena analysed in this thesis, is heavily thematised in medical contexts, such as in connection with patients with schizophrenia (Martin et al. 1). In this context, Fuchs understands embodiment as "mediated immediacy" (95). The study of Martin and her colleagues, in turn, regards embodiment as the phenomenon in which the lived body is the "transparent medium or background to our experience of the world" (Martin et al. 2). Disembodiment, on the other hand, is referred to as "a fundamental disturbance of the embodied self," as it, for instance, occurs in patients with schizophrenia (Martin et al. 2). More precisely, this state of disembodiment is characterised by "a weakening of the basic sense of self, a disruption of implicit bodily functioning and, as a result, a disconnection from the intercorporeality with others" (Martin et al. 2).

From a more philosophical standpoint, the concept of embodiment can be traced back to Plato, who argues for the immateriality of the soul, leading to a split between the immaterial soul and the material body (Buongiorno 310). This understanding is further developed in Cartesianism, the school of thought led by Descartes, which refers to this issue as the mind-body problem, prompting philosophers to try and re-unite what is divided (Buongiorno 311). Therefore, in the view of philosophers, embodiment is understood as the union of body and mind, with disembodiment referring to the split between these two entities (Buongiorno 311). I argue that for this thesis, the more philosophical definition is more relevant. The neuroscientific definition contains highly medical vocabulary that can be seen as disablist.

In the field of philosophy, the digital turn and the subsequent ubiquity of human-computer interactions – since computing is no longer just limited to computer screens, but is now characterised through portable devices – led to a new understanding of (dis)embodiment. This new understanding caused the introduction of the concept “new digital Cartesianism” (Boler, “New Digital Cartesianism” 331). The central idea behind this term is that the phenomenon of disembodiment is more prevalent, especially due to “promises of anonymity and fluid identities” in cyberspace culture (Boler, “Hypes, Hopes, and Actualities” 140). This narrative is also strengthened in marketing discourses, which focus on promoting technologies that transcend bodies, differences, space, and place (Buongiorno 311; Boler, “Hypes, Hopes, and Actualities” 143).

However, Buongiorno questions whether this new trend even represents a form of disembodiment (311). Drawing on the work by Richardson and Harper on virtual corporeality (1), discussions on virtual reality and cyberspace tend to “deny the corporeal dimension of these technological experiences and posit them as new media of disembodiment” (Buongiorno 311). For instance, proponents of this thesis, like Kirby (52), claim that digital subjectivity is to be understood “as a post-corporeal subjectivity configured in purely IT and immaterial terms” (Buongiorno 317). Buongiorno, similarly to Merleau-Ponty (162), who rejects the Cartesian dualism in his work *Phenomenology of Perception*, criticises this line of argumentation as it radicalises the Cartesian mind-body split by rendering the body unnecessary (318). In response, she proposes revising the commonly utilised embodiment-disembodiment-re-embodiment (E-D-R) scheme, replacing it with a double-layered scheme

that accounts for the bilaterality of embodiment in a digital world (Buongiorno 319). More precisely, Buongiorno claims the following:

We are increasingly technologizing ourselves, i.e. our bodily and cognitive abilities. This technologization implies a double-embodiment process: as we extend ourselves into reality by means of digital devices, these in turn become embedded into our bodies, increasingly blurring the lines between the organic and the digital dimension. Double-embodiment involves the subjective side (embodied experience) as well as the objective side (embodied technologies) of our relationship to the digital world (Buongiorno 320).

Buongiorno contends that both extension and incorporation are related to the phenomenon of (re-)embodiment (325). This line of argumentation draws on De Preester, who argues that the usage of technology does not imply disembodiment, but instead re-embodiment (120). She further suggests that there is a distinction between bodily extension and the incorporation of non-bodily objects, with only the latter prompting re-embodiment. Following De Preester, to achieve (re-)embodiment, certain conditions must be met, namely a “change in the feeling of body ownership [...] ownership of thoughts [and] [...] a change in subjective experience” (137). While according to De Preester, limb extensions would be, as technological incorporations into the physical body, a prime example of embodiment (125), Buongiorno claims that this phenomenon can even be extended to mere digital extensions of the self, such as smartphones, tablets, laptops, or joysticks as “their use is deeply changing the physiology of our bodies – or, at least, our own perception of it” (323). In conclusion, I agree that adding technology to the equation does not automatically imply disembodiment, but is a chance for re-embodiment. For this phenomenon to occur, certain conditions need to be met, such as a change in subjective experience.

This sort of technologised embodiment can also be applied to telepresence systems. For instance, referring back to the four different types of telepresence suggested by Dolezal – observational telepresence, simple telepresence, enriched telepresence, and high-fidelity telepresence – the latter would be the form that promotes (re-)embodiment the most (210). Dolezal claims that through enriched or high-fidelity telepresence, the users can counteract feelings of disembodiment and transformed them into experiences of re-embodiment (210). Translated into the language of affects, I hypothesise that through enriched or high-fidelity telepresence, positive affects, most notably a sense of belonging and identification with the telepresence robot, can be created in the telepresence user.

Another line of thinking that can be applied to telepresence systems is the idea that, originating from the area of embodied cognition, perception can be viewed as a form of action, meaning that it is considered to be an embodied engagement with the world instead of just passively receiving input (Riener and Stefanucci 169). I claim that this line of argumentation is vital for research on telepresence systems since both perception and action are mediated through the robot in the case of its usage, which would be taken into account in the field of embodiment.

3. 3 Disablism

Firstly, the concept of disablism, sometimes also spelt as disableism, was coined by Thomas (28). She also distinguishes between direct and indirect forms of disablism (Thomas 28). Parallel to terms such as racism or sexism, the term *disablism* has been invented to address the oppression of disabled individuals (Swinton 445). The concept refers to disabling situations caused by the actions or words of others around the affected individual (Thomas 28). One of the key manifestations of disablism is “psycho-emotional disablism,” which represents oppression targeted at the psycho-emotional level (Thomas 28).

Apart from psycho-emotional disablism, other forms of this oppression include structural (Reeve 99), cultural (Goodley and Runswick-Cole 607), and aversive disablism (Deal 93). Structural disablism is classified as having an immediate influence on what individuals can or cannot do, and it “refers to the disabling barriers which operate at the public level, such as exclusion from the built environment, discrimination in the workplace or information in inaccessible formats” (Reeve 100). In other words, Reeve differentiates structural and psycho-emotional disablism by stating that the former is associated with barriers, and the latter is aimed at the private level, “restricting who people can be” (100). Cultural disablism, on the other hand, which is also sometimes referred to as sociopolitical (Nishida) or systemic disablism (Wolbring and Fast 26), can be understood as the societal and cultural norms that are “reproduced through processes of domination, ideology, and oppression that shape the inner world of our psyches” and thereby constitute a cultural form of disablism (Goodley and Runswick-Cole 606). Lastly, aversive disablism is characterised as a more subtle form of prejudice that may be unintentional, arising from underlying beliefs a person may be unaware

of (Deal 93). Drawing on the aversive racism theory (Dovidio et al. 4) and the distinction between blatant and subtle forms of prejudice by Meertens and Pettigrew (55), Deal argues that aversive disablism may, for instance, be realised by well-meaning social policies that actually turn out to have an adverse effect on disabled individuals (96). An instance would be “supporting segregated schooling due to the belief that it can offer a higher quality education to disabled children [and] supported/sheltered businesses rather than job coaching schemes” (Deal 96).

Contrasting these four different categories of disablism with the concept of ableism, the main distinction between them is that the former typically refers to discrimination at the individual level. At the same time, the latter is utilised to describe oppression at a more societal level (Jun 199-200). Another distinction is made by Goodley, who writes that “ableism is the system from which forms of disablism, hetero/sexism and racism emanate and has in mind a ‘species-typical’ human being” (*Dis/ability Studies* 22). He understands ableism as the broader system that impacts everyone, with disablism focusing more on the individual (Goodley, *Dis/ability studies* 22). Some scholars consider these terms to be interchangeable as they both revolve around the discrimination and oppression that disabled individuals encounter in their daily lives (Bogart and Dunn 651). For the context of this thesis, I use the term *disablism* because it is better suited to focus on how society and individuals actively discriminate against disabled people and restrict their full participation in society, while ableism addresses the privilege of able-bodied people, organising the society around their abilities and needs.

4. Reading Between the Lines: Methodology

Building on the theory outlined in the previous section, this section provides an overview of the project’s methodology. First, the choices made in the study design are elaborated on, including the data collection method, before the variables are operationalised. Finally, the methods of data analysis are defined and explained.

To reiterate the aims of this thesis, the present project investigates what role disablism plays in the experiences of telepresence users and what role (dis)embodiment plays in the experiences of telepresence users. Smaller, supporting questions are “How do telepresence users in educational settings perceive their body? Is the telepresence system freeing or

another form of disembodiment?” and “Which types of disablism are most commonly experienced by telepresence users in educational settings?”

4. 1 Choices in Study Design: Data Collection

To retrieve answers to the research questions, the method of semi-structured interviews with telepresence users, as well as their guardians or teachers, is selected. Primarily, the qualitative interview method is chosen because it makes the voices of telepresence users heard and amplifies them by connecting them back to the theory. Semi-structured interviews “allow much more space for interviewees to answer on their own terms than structured interviews” (Edwards and Holland 3). This method, therefore, provides the most flexibility to the interview partners and allows them to shape their narrative in the way they perceive to be most suitable (Edwards and Holland 3).

These semi-structured interviews are based on a set of sixteen or seventeen questions, depending on whether the interviewee is a telepresence user or a teacher, and are expected to last approximately 30 minutes. At the beginning, general questions are asked, such as how long the person has been using a telepresence system or how long the person has been teaching telepresence users. The typical demographic questions, such as their age, are avoided in order to further protect the identity of the interviewees. Afterwards, questions related to disablism are asked. Lastly, the final set of questions revolves around the experiences of (dis)embodiment of the telepresence users. The complete list of questions for the semi-structured interviews can be found in Appendix A.

Given the sensitive nature of these questions and the study population's vulnerability, specific measures are taken to ensure adequate ethical standards are maintained. More precisely, before the interviews are conducted, the interviewees, as well as their legal guardians, if the interviewees are minors, are thoroughly informed about the aims and contents of the study and are required to sign a consent form. Moreover, the interviews are not recorded, but instead, notes are taken during the interview without including any personal information, thereby rendering it nearly impossible to trace the transcript back to a specific person. The information revealed in the interviews is handled confidentially, and the notes of the interviews are only available to the author of this thesis. Lastly, the notes are turned into

transcripts, and each transcript is assigned a pseudonym code, for instance, P1. This is done to refer to the interview answers more easily, while protecting the interviewee's identity. The information from the interviews is used solely for this research project, and the transcripts are not made available in the appendix of the thesis. To ensure high ethical standards, the project was presented to the University of Vienna's ethics committee before conducting any interviews and was accepted under number #01450. The waiver of the ethics committee is attached to this thesis and can be found in Appendix B.

Since the research project focuses on telepresence users and their experiences, the study population predominantly consists of telepresence users. The chosen sampling method is purposive sampling as study participants with certain characteristics, namely telepresence users and their social environment, are selected (Rapley 54). In order to create a well-rounded picture of the situation, classmates, teachers, and legal guardians of the affected individuals are included in the study population as well. However, the input prioritised for answering the research questions is the telepresence users' own experience. Therefore, three individuals are selected as interview partners, one of them being a student who used a telepresence system in the past, and the other two being teachers who are either currently teaching telepresence users or have done so in the past. Since this is a relatively small number, a full scope of all telepresence users' experiences cannot be guaranteed, and the generalisability may be limited. Nevertheless, because before this research project, only a minuscule number of other projects have interviewed telepresence users in educational settings, this project promises to close this research gap.

In order to support the interpretations gained from the interview study, additional research is conducted through a mini corpus analysis consisting of manuals and various other written materials, such as prior research and training materials, intended for an audience of educators of telepresence users. The material is selected based on two criteria: the author's credibility (institution, academic professional, or licensed educator) and publication date (published after 2015). The publication date is relevant as older materials may describe telepresence models that are no longer in use. After selecting four different manuals or other materials, I intend to apply close reading strategies. While reading, all instances of language that contain notions of disablism, as well as any negative affects that are mentioned regarding telepresence users, are highlighted. In this case, the affects that the author of the material experiences towards

possible telepresence users and conveys while writing the text are meant. By analysing these instances of disablism and affects, the research question of how telepresence users in educational settings experience disablism is answered as structural instances of disablism are uncovered. More precisely, by analysing the materials, prejudices against possible telepresence users, as well as anticipated obstacles and institutional hurdles, are revealed. These issues are then explored in the interviews. Lastly, these insights are used to find answers to the research questions.

4. 2 Operationalisation of Variables

To analyse the collected data properly, the variables relevant to the research questions need to be operationalised, i.e., their definitions clarified. The variables that are relevant to this research project are *disablism*, *disembodiment*, and *embodiment*.

The former variable, disablism, drawing on the definitions of Thomas (28) and Goodley (*Dis/ability studies*, 3), is, in the context of this thesis, understood as acts of discrimination and oppression that are, as opposed to ableism, focusing on the restrictions that disabled individuals experience rather than the privilege of able-bodied individuals. Moreover, the different subcategories – structural (Reeve 99), cultural (Goodley and Runswick-Cole 607), and aversive disablism (Deal 93) – are taken into account.

The variables *disembodiment* and *embodiment* are two sides of the same coin. In relation to telepresence systems and in the context of this thesis, embodiment is operationalised as a sense of identification with the robot, or, in the words of De Preester, perceiving it as an extension of the self, and causing the student to feel present in the classroom through the usage of the telepresence system (121). Disembodiment, on the other hand, is understood as a state in which this identification with the telepresence system is not given, or when the affected individual feels detached or absent from the classroom despite their virtual participation.

4. 3 Choices in Study Design: Data Analysis

Having specified the variables to be analysed, the data analysis is elaborated on in this subsection. The data analysis of this research project is informed by both Mayring's qualitative content analysis and discourse analysis, as outlined in Fairclough's model. Both of these methodologies allow for the identification of patterns of meaning within a specific dataset. However, the aim is not generalisation. Instead, the findings are interpretative rather than objective facts.

The former is considered to be a suitable method of data analysis since it combines the advantages of quantitative content analysis with the steps of qualitative-interpretative analysis (Mayring 3). The quantitative element is realised by counting the "frequency of coded categories" and letting this frequency inform the interpretation of the qualitative analysis (Mayring 4). In this qualitative content analysis, two subcategories can be defined: the deductive and the inductive approach (Selvi 446). Because this research project employs both predefined codes inspired by previous research and leaves room for new codes to reflect telepresence users' narratives, it can be said that this project draws upon a combination of deductive and inductive approaches. The deductive approach refers to the procedure in which codes are predefined before analysing the transcripts, while the inductive approach means that some codes only emerge after analysing the transcripts. To ensure that the interviewees are given as much room for their own thoughts and opinions as possible, only very few codes are pre-defined, such as *perceived disablism*, *positive attitudes towards the telepresence system*, and *negative attitude towards the telepresence system*. A more detailed overview of all codes and categories of the semi-structured interviews can be found in the coding manual in Appendix D. The coding manual for the mini corpus analysis is in Appendix C.

For the interview evaluation, qualitative content analysis is applied by first conducting and taking notes during the interviews. For the analysis, the software QDA Miner Lite is utilised. Thereupon, while reading the notes, instances of the predefined codes are identified, and new codes are formed by highlighting the respective passages and entering the information of the new code into the coding manual. New codes are always formed when a certain recurring pattern emerges in one or multiple transcripts (Mayring 4). While working through the transcripts, the coding scheme is modified accordingly (Schreier 174). After coding all interview transcripts, categories are formed to summarise the codes that pertain to a similar

topic. As a last step, key themes are deduced from the categories, which are then used to answer the research questions (Mayring 4).

For the mini corpus analysis consisting of manuals and various other written materials, a combination of Mayring's qualitative content analysis and Fairclough's model of discourse analysis is applied. The steps suggested by Mayring are carried out by first carefully reading the selected materials and, following a mixed approach of inductive and deductive qualitative content analysis, highlighting both preformulated codes as well as forming newly emerging patterns (Selvi 444). Thereupon, the codes are allocated to different categories, which are then used to draw key themes from the findings of the various written materials in order to answer the research questions.

Discourse analysis is selected as a second approach to inform this analysis since, according to Powers, it is particularly useful to scholars who wish to uncover and dismantle oppression (1). The aim of this methodology is to acknowledge that language is always produced in a context and from a perspective (Gee, *Introduction to Discourse Analysis* 2). Therefore, the intention is to analyse the underlying power dynamics hidden in texts, thereby providing a deeper understanding of the context of and the power relations represented in said text (Gee, *Introduction to Discourse Analysis* 9). Within the different strands of discourse analysis, critical discourse analysis is selected for this thesis as it focuses on how language reinforces power dynamics and ideologies (Fairclough ix). To examine these power dynamics and ideologies, critical discourse analysis draws on both linguistic theory and critical theory, including influences from a range of scholars, such as Foucault and Bourdieu (Fairclough 6-7). Critical discourse analysis becomes particularly relevant to the present research project as this method has been traditionally applied to analyse discourses around disability (Grue 308).

In this thesis, several of Gee's tools are applied to analyse the transcripts of the interviews as well as the textual material. Generally speaking, discourse analysis is applied after the same material has already been analysed according to Mayring's principles of qualitative content analysis. While qualitative content analysis is mainly used to identify the common patterns and themes that emerge in the material, discourse analysis seeks to examine how language constructs dynamics of power within the material. Some of the tools that are expected to yield the most insightful results are the "fill in tool," which focuses on trying to identify what is not being said overtly, but may be inferable (Gee, *How to do Discourse Analysis* 11), and the "doing

not just saying tool,” intending to analyse not only what is said in the text, but what the text tries to do (Gee, *How to do Discourse Analysis* 42). Furthermore, the “politics building tool [, which] ask[s] how words [...] are being used to build [...] what count[s] as social goods and to distribute these to or withhold them from listeners or others” is considered crucial for the analysis (Gee, *How to do Discourse Analysis* 121). Lastly, the “figured worlds tool,” centring around the archetypal stories of a certain socio-environment and which values the listener may derive from them, is also employed (Gee, *How to do Discourse Analysis* 173). These concepts are applied by keeping the central ideas of these tools in mind and by extracting the hidden values, power dynamics, and implications from the texts.

5. Findings & Analysis

Building on the theoretical background as well as the methodologies of this thesis, the following subsections present the findings. In the first subsection, the findings from the mini corpus analysis are examined. Thereafter, in the second subsection, the findings from the semi-structured interviews are explained. While a lot of insights can be gained from both the mini corpus analysis as well as the semi-structured interviews, the subsequent two subsections explicitly only focus on information that is relevant to answering the research questions of this thesis.

5. 1 Findings from Mini Corpus Analysis

Firstly, a mini-corpus analysis of written materials pertaining to telepresence systems and their usage in educational settings, such as handbooks, guidelines, and practice-oriented research papers, is conducted. Four documents are investigated: 1 and 2, two guidelines for schools, published by InClass, a project led by the University of Southern Denmark and other European researchers; 3, a teacher handbook written in the context of the European project ABILITI; and 4, a research paper from the *International Journal of Inclusive Education*, written by Australian scholars. While this thesis focuses on telepresence systems in European contexts, this research article is still within the scope of this thesis. The scholars not only write about the Australian context, but also research telepresence systems in a more global setting. In addition, the work

of two of the scholars co-authoring this article is also well-received by European scholars (SDU, *InClass Guidelines* 14). Lastly, some passages in this research article provide significant insights into forms of disablism in the experience of telepresence users in educational settings.

The first two analysed works are titled *How to use the robot in school: Recommendations and guidelines for school administrators, teachers, parents and students* and *How to introduce and use telepresence robots in schools? Guidelines for schools, parents, students*. For reasons of brevity, they are referred to as Handbook 1 and Handbook 2, respectively. Both handbooks are written and published in the context of the EU-funded project InClass, which is coordinated by the University of Southern Denmark and includes project partners from various other European countries, such as the Cyprus Computer Society and the Leuphana Universität Lüneburg (SDU, *InClass Guidelines* 17). The scholars identify “help[ing] children with health issues attend and integrate into their classrooms by means of telepresence robots” as well as “understand[ing] how telepresence robots can stimulate innovative learning and teaching practices” as their goals (SDU, *InClass Guidelines* 17). Upon further investigation of the project website, it becomes apparent that these researchers are not directly involved in the production or distribution of telepresence systems, but rather conduct needs analyses, develop guidelines and recommendations, and “inform the design of future TRPs” (SDU, “InClass Website”).

5. 1. 1 Handbook 1

First, *Handbook 1* is to be analysed (SDU, *InClass Recommendations and Guidelines*). Already on the first couple of pages, the most predominant code becomes apparent: *privacy*. Throughout the entirety of Handbook 1, the authors elaborate on the privacy concerns that need to be raised concerning telepresence robots, which guidelines they recommend, and which special steps should be taken to ensure a safe experience, not for the telepresence user themselves, but their peers. In almost all instances of this code, the authors are concerned with the privacy of students and teachers, but not with the privacy of the child steering the telepresence robot. Some of the instances of this code are “to protect sensitive information transmitted by telepresence robots,” “cyber threats,” “ensuring that the technology enhances the educational experience without compromising the privacy and security of the students” (SDU, *InClass Recommendations and Guidelines* 4), “assign a data protection officer (DPO)

responsible for overseeing GDPR compliance related to the use of telepresence robots” (SDU, *InClass Recommendations and Guidelines* 8), and “strict privacy standards related to telepresence robot usage” (SDU, *InClass Recommendations and Guidelines* 16).

Moving on to the analysis of this code, the language used in these example quotes is predominantly rather distant in tone. Therefore, using the “doing and not just saying tool” (Gee, *How to do Discourse Analysis* 42), it can be deduced that this association of telepresence robots with security concerns does not only compare them at a linguistic level, but draws a conceptual comparison between the assistive technology and, as it has been framed in the manual, “cyber threats” (SDU, *InClass Recommendations and Guidelines* 4). This comparison is dehumanising to the user of the telepresence robot, almost framing them as a threat to the other pupils and the educators. Therefore, this constitutes a form of disablism. Furthermore, this framing of the telepresence robot and, by extension, its user as a security threat portrays them as outsiders, thereby enabling an ‘us-versus-them’ mentality.

This mentality also becomes apparent in the concept of *integration*, a term used within the manual instead of the more commonly used *inclusion*. An example is: “seamlessly integrate sick pupils into the classroom environment” (SDU, *InClass Recommendations and Guidelines* 8). Particularly in combination with the term *seamlessly*, incorporating the idea that no difference should be perceived between the ‘normal’ students and the ‘other’ represented by the telepresence user, this, again, reinforces othering, an ‘us-versus-them’ mentality, and exclusion.

Similar to these notions of disablism, other codes also highlight negative stereotypes and harmful mindsets regarding telepresence systems. For instance, the code *telepresence robots as challenging* presents this assistive technology, as the name of the code suggests, as something that lets the various people in the social environment of the telepresence user, predominantly the teachers, experience challenges. This tendency is presented in the quote “challenges and considerations” (SDU, *InClass Recommendations and Guidelines* 2). In comparable passages, the code *burden to the teacher* emerges. Sentences and phrases bundled under this code are of a two-fold nature, with one side highlighting the workload or other miscellaneous hindrances for teachers, and the other side praising teachers who take on this burden. Examples of these characteristics are “much of the daily operation can also be delegated to the fellow students, who will often be both more technologically savvy and

excited to take over” (SDU, *InClass Recommendations and Guidelines* 11) or “minimize disruptions in the classroom” (SDU, *InClass Recommendations and Guidelines* 19), and “to be willing to test” (SDU, *InClass Recommendations and Guidelines* 3), respectively.

Lastly, the code *disability as a nuisance* signifies similar harmful, negative stereotypes about disabled individuals and telepresence users in particular. As the name suggests, it appears in passages in which the disability or sickness of the learner steering a telepresence robot is portrayed as a burden, either to themselves or to others. Examples can be found in “hinder their academic progress and social development,” “clear vision and perspective for a life after the illness” (SDU, *InClass Recommendations and Guidelines* 5), and “strict health and safety protocols” (SDU, *InClass Recommendations and Guidelines* 6). The former two quotations in particular suggest that, without the learner’s respective disability or sickness, their life would be better, or that they should strive for a life without their disability or sickness. The latter example, by contrast, imposes a burden on others, predominantly on the educators and other school staff, who have to design, implement, and uphold “strict health and safety protocols” for the sake of the telepresence user (SDU, *InClass Recommendations and Guidelines* 6).

In conclusion, the first handbook entails a very clinical, cold language that becomes particularly observable when safety threats associated with telepresence systems are discussed. The handbook almost exclusively refers to the robot instead of the student behind it, and also dehumanises them at other levels pertaining to disablism. An example is that disability is repeatedly portrayed as a nuisance. Concerning the topic of embodiment in this handbook, the equation of the telepresence robot and its pilot may be seen as some form of embodiment. Embodiment would also require blurring the lines between the human and the machine. However, as embodiment is mainly concerned with the feelings of the person experiencing this phenomenon, only the telepresence user would be able to judge whether this equation of the telepresence system and its pilot aids with embodiment or not.

5. 1. 2 Handbook 2

Moving on to the analysis of the second handbook, it can be observed that already in the table of contents, the needs, hopes, and expectations of the schools and teachers are listed before the needs of the actual telepresence user (SDU, *InClass Guidelines* 2). Moreover, in a similar

vein to Handbook 1, the terminology used in this manual is *integration* instead of the more commonly used term *inclusion* (SDU, *InClass Guidelines* 1). However, as explained in the previous section, in the educational sciences and especially in the field of inclusive pedagogy, the term *inclusion* is preferred as *integration* can carry notions of normalcy. More specifically, *integration* can denote a wish to approximate disabled individuals to normalcy. Using the “doing and not just saying tool” proposed by Gee, it can be argued that this choice of wording is not simply a term, but it carries a deeper, underlying ideology (*How to do Discourse Analysis* 42). In this case, the word *integration* not only says something, but also does something: it excludes disabled individuals.

The text proper contains a variety of codes that can be investigated via qualitative content analysis. First and foremost, the notion of the disabled student as a burden to their parents or legal guardians is represented in the code *burden to parents*. Instances of this code are “[...] it would relieve their parents of the burden of having to organize their education and engagement [...]” (SDU, *InClass Guidelines* 4), “worry less about taking care of their education” (SDU, *InClass Guidelines* 5), and “hoping that she would get back to school as soon as possible” (SDU, *InClass Guidelines* 10). Similarly, the code *burden to educators* contains instances in which the handbook voices the sentiment that disabled students are considered a burden to their teachers. Examples are the following: “Teachers can devote less time to helping the student catch up and reintegrate into class, having more stable groups to work with” (SDU, *InClass Guidelines* 5), “[...] a telepresence robot would require much time and effort from the teacher” (SDU, *InClass Guidelines* 14). Another code that can be identified in this manual is *harmful stereotypes*. An example is the sentence “Telepresence robots make [the disabled students] autonomous” (SDU, *InClass Guidelines* 5). This carries the notion that without the telepresence system, the disabled students are helpless and cannot be autonomous. Since this is not true, and the capabilities of disabled individuals can vary greatly in terms of autonomy, this generalised notion therefore constitutes a harmful stereotype. Another instance of this code can be found in “this therapy makes her body weak” (SDU, *InClass Guidelines* 6).

These three codes can clearly be organised into one of the categories of *disablism*, more precisely, *aversive disablism*. The idea that disabled individuals are automatically a burden to their parents or educators because of their disability is a prejudice, which may be caused by underlying beliefs that the person voicing it holds. This corresponds to the concept of *aversive*

disablism by Deal (93). An additional instance of the code *aversive disablism* can be found in the privacy debates in the section “potential concerns and solutions” (SDU, *InClass Guidelines* 14). This paragraph focuses on how “uncomfortable” it may be for both the teacher who may feel “observ[ed]” and for the parents who may have privacy concerns about the telepresence robot (SDU, *InClass Guidelines* 14). Other emotions that are voiced in this section are “fears” and “concerns” (SDU, *InClass Guidelines* 14). Even though these negative emotions are directed at the telepresence robot and not at the disabled child, it can still be interpreted as a case of *aversive disablism*. The telepresence robot, in its function as assistive technology, represents an aid for the disabled individual. Feeling “uncomfortable” or expressing “fear” of this tool (SDU, *InClass Guidelines* 14), then, can be argued to be an instance of *aversive disablism* as it may stem from subconscious prejudices about disability.

Apart from *aversive disablism*, also manifestations of cultural disablism can be found in Handbook 2. To recapitulate, cultural disablism describes the societal and cultural norms that are “reproduced through processes of domination, ideology, and oppression that shape the inner world of our psyches” (Goodley and Runswick-Cole 606). The most apparent incident of cultural disablism in this handbook is the code *normalcy as the ideal*. An instance of this code can be found in “almost like a normal student” (SDU, *InClass Guidelines* 7). Another instance, yet in a slightly different manifestation, is the sentence “All the child needs is an internet connection and a regular internet browser” (SDU, *InClass Guidelines* 4). While not directly representing disablism, this utterance expresses discrimination against individuals who are more economically challenged and may not be able to afford a computer or laptop, let alone a stable internet connection. Moreover, this sentiment favours people living in more urban areas over those living in more rural areas. In conclusion, this finding suggests that disablism often does not come alone, but is accompanied by other forms of discrimination as well, thereby rendering disablism an issue of intersectionality. This line of argumentation is why the abovementioned sentence can also be categorised under the code *intersectionality*.

Similarly, the manual describes anxiety as a stereotypically feminine issue by giving an example of a fourteen-year-old girl called Florence, who cannot attend school in person due to her anxiety (SDU, *InClass Guidelines* 9-10). It can be argued that the choice of portraying the person suffering from anxiety as a girl is a coincidence. However, there are also some reasons that speak against this reasoning. Firstly, the gender of the telepresence user is specifically

marked in this instance, which is only the case in a handful of other examples. Secondly, among these other examples, only two telepresence users are described as male, with one of these male students using a telepresence robot because he is on the youth swim team and cannot attend school as often. In contrast to this athletic hobby associated with the male telepresence user, the female telepresence users suffer from severe illnesses, such as cancer or social anxiety. Thirdly, other gender-related stereotypes can be found in this handbook as well. In all images apart from one, more traditionally feminine roles, such as caregivers, teachers, and museum guides, are represented by women in this handbook. Only one male teacher is depicted in the handbook, and no male caregivers are present. The paragraphs describing this situation can, therefore, also be seen as pertaining to the code of *intersectionality*.

Apart from the text, the pictures used in the manual also provide information on the ideology that is infused in the content. Because there are no words present in the visuals, the “figured worlds tool,” proposed by Gee, is employed to analyse these depictions. This “figured worlds tool” is based on the concept of normalcies that people hold, which often discriminate against people who defy this normalcy (Gee, *How to do Discourse Analysis* 168). The visuals presented in this manual can be analysed according to this tool as they represent stereotypical depictions of disabled individuals. For instance, one of the very first pictures in the first chapter of the manual shows a white, smiling girl with glasses interacting with an androgynous, bald, white telepresence user. Their facial expression is not clearly visible, but judging from their eyebrows and their downcast eyes, they appear to be sad. This tendency continues throughout the manual, with the telepresence user repeatedly presented as unhappy. In the case of the telepresence user with anxiety, the user is depicted as a white girl with long, black hair, wearing a pink sweater and a pink headband. It is also noticeable that her back faces the camera, while the other person in the scene, a smiling woman, is fully visible, thereby shifting the focus on this other person. Lastly, there are also two instances in which the telepresence user is either depicted as very blurry or their facial features are entirely left out, rendering them a faceless being.

All of these pictures centre around the stereotypes associated with various disabilities. For anxiety specifically, as can be seen in the visual featuring the girl with anxiety and another woman, it is presented as a stereotypically female issue, with the reasons for this line of argumentation being presented before. Furthermore, the telepresence user is associated with

shyness as she turns her back to the camera. Regarding the other, more general representations of disability, it is striking that all of the disabled individuals in the manual are depicted as unhappy due to their condition. These pieces of evidence point toward a central stereotype, namely that the authors of this manual hold the belief that disabled individuals are inherently sad. Nevertheless, many disabled people can find happiness despite (or even with) their disability. The case of telepresence users in particular shows that the usage of a telepresence system in an educational setting often alleviates symptoms of loneliness (Weiss et al. 158; Powell et al. 2). This means that they would, in more realistic depictions, most likely be happy or at least emotionally neutral.

These stereotypes are also represented in the language used in the manual, in particular when describing the situation of a cancer patient in comparison to a student who uses the telepresence robot because their parents travel a lot. When speaking of Lia, the student with cancer, the authors of the manual employ highly emotive words such as *unfortunately*, *weak*, *excluded* or *not properly*. On the contrary, the words associated with Nina's situation, the girl whose family is often abroad, requiring her to use a telepresence robot to participate in school, are *glad*, *connect*, and *lots of fun*. Even though both Lia and Nina utilise the same technology, in the case of Lia, her situation is rendered as extremely tragic. In contrast, for Nina, assistive technology is turned into a fun little gadget. Therefore, this language use represents the stereotype of diseases and disabilities being tragic, turning the disabled or diseased person's life, in turn, equally into tragedy.

In terms of the categories of *disembodiment* and *embodiment*, this manual provides valuable insights. On the one hand, the code *gendered pronouns for referring to the robot* can be identified, for example, in the sentence "[...] her classmates come and get her before every lesson" (SDU, *InClass Guidelines* 7). As the writers do not differentiate between the telepresence robot and its pilot here, it can be argued that the lines between machine and human are blurred. Therefore, as elaborated on in the previous section, the telepresence system could be seen as an extension of the student steering it. Furthermore, another code that supports the idea of embodiment can be observed in the manual: *equation of human and robot*. This idea can be identified in the sentence "the robot became her" (SDU, *InClass Guidelines* 14). In this example, the robot and the human child are metaphorically becoming one. This sentiment is quite similar to the concept of embodiment, in which the lines between

robot and machine become blurred. On the other hand, the authors utilise the code *absence of telepresence user*, for instance, in the phrase “[...] they remain part of the class despite their absence” (SDU, *InClass Guidelines* 5). In the case of embodiment, one could argue that the telepresence user is conceptually present in the classroom. Therefore, since this statement proposes the idea that the telepresence user is absent from the classroom, it represents the concept of disembodiment. In conclusion, the insights concerning disembodiment and embodiment remain inconclusive in this manual, yet slightly favour the idea of embodiment.

From this amalgamation of codes and categories derived from the manual, two key themes are identified. These are the following: (i) While trying to portray itself as inclusive, the guidebook contains various instances of disablism, appearing to stem from subconscious biases and stereotypes. (ii) Concerning embodiment and disembodiment, the guidebook conveys a mixed perspective: On the one hand, the potential of embodiment through a telepresence robot is praised. On the other hand, some instances clearly describe disembodiment.

5. 1. 3 Teacher Handbook

Next, the teacher handbook written in the context of the European project ABILITI, which is an abbreviation of the project title Avatar Based Interaction and Learning in Times of Illness, is to be analysed (Turner et al.). With 60 pages, this document is the longest of the analysed written materials. As with the other analysed written materials, this work is also abbreviated and is referred to as the Teacher Handbook in the subsequent paragraphs. Like the previous two documents, the Teacher Handbook stems from an international collaboration among multiple partner organisations in various European countries, including universities such as the University of Klagenfurt and Tallinn University, as well as companies such as *Die Berater* and *Bednet*. Furthermore, this project is co-funded by the Erasmus+ programme of the European Union. By consulting the website of ABILITI, it can be reported that the goal of this initiative is to “develop[...], test[...] and scientifically evaluate[...] pedagogical strategies and methods for including ill children in school activities using telepresence systems” (ABILITI). In short, they describe their project in the following way: “ABILITI develops an innovative, research-based teacher education programme for providing comprehensive support to a particularly vulnerable target group.” (ABILITI)

Although the Teacher Handbook is the most inclusive of the analysed materials so far, which is elaborated on later, it also contains instances of disablism similar to the previous manuals. Firstly, the code *disability as a nuisance* is also present here. Again, this code signifies sentences and phrases in which the sickness or disability of the respective student is portrayed as a liability to their social environment, mostly for their teachers or their peers. Examples include phrases with emotive language, such as “very stressful illness process,” “discomfort and uncertainty,” and “interruption of usual social and school routines” (Turner et al. 4). There are also some sentences that more explicitly refer to the impact on others, namely “behavioural and emotional reactions that affect the individual and group functioning of the family and social environment” and “involve treatments that have a negative impact on the pupil and those around them, both physically and mentally” (Turner et al. 4). One example in particular – “[...] describe that a lack of knowledge about the illness is accompanied by a negative attitude towards it” (Turner et al. 8) – is noteworthy. This sentence sticks out because it describes an alleged nuisance to the social environment, as they have to learn about the illness. In addition, it casually mentions that if they do not acquire knowledge on the disability, they will have a negative attitude towards it. As the notions expressed in this code are deeply entwined with societal norms of what the ideal life and body should look and function like, it can be argued that this is an example of cultural disablism. This form of disablism is also built upon societal norms that harm disabled individuals.

Comparable to the previously analysed written materials, this sentiment of disablism is also conveyed in other codes. To be precise, the code *burden to the teacher* is present in some of the examples of this Teacher Handbook. Specific instances in which this code is observable are the following passages: “Including any technology in a classroom can easily be viewed as an infringement on the domain of the teacher if such inclusion is not initiated by the teachers themselves (or if they are not involved in the process).” (Turner et al. 25) “In drastic cases, where teachers are informed of the inclusion of technology late or not at all, it is sometimes even viewed as a direct violation of their professional space.” (Turner et al. 26) “Even if the telepresence system could be perceived as unnatural and possibly disruptive at the beginning” (Turner et al. 36). As can be derived from these examples, the code *burden to the teacher* is concerned with sentences and phrases that carry the notion that the telepresence users are a liability to their educators.

However, this code is not the only instance that prioritises the opinions and feelings of the social environment over the experiences of the telepresence users themselves. The code *feelings of the peers* is concerned with the sentiments of the students in the telepresence user's class, which are explained at length in the Teacher Handbook. Instances of this code are represented in the following passages: "whole class are affected" (Turner et al. 39), "understanding to the class" (Turner et al. 40), and "[a telepresence user] was afraid that he would be a burden to the class and he did not want to cause a stir" (Turner et al. 41). The latter sentence is particularly interesting to analyse as it contains the experience of telepresence users perceiving themselves as a liability to their social environment. It can be argued that they are socialised to believe that they are a burden to the individual around them, pointing to a form of internalised disablism. Again, this may be a form of cultural disablism, which is focused on societal norms. As the student compares himself to the image of an ideal student, he subconsciously applies disablist concepts to himself. To conclude this line of argumentation, the codes *disability as a nuisance*, *burden to the teacher*, and *feelings of the peers* can be bundled together to form the category *preferring others' feelings*.

Apart from more disablist perspectives, this manual also recognises the feelings and experiences of telepresence users. A code that argues for this is *explicitly mentioning discrimination*. As the name may already suggest, this code entails instances in which discrimination against the telepresence users is explicitly mentioned and criticised. Examples can be found in the following sentences and phrases: "A long absence from school should not be a reason to exclude, discriminate, or stigmatise someone." (Turner et al. 4) "Chronic illness is a risk factor for rejection by other children and adolescents and for bullying." (Turner et al. 7) and "victimised more frequently by bullies" (Turner et al. 13). Although the description is rather neutral at times, and the authors could therefore advocate more strongly for the telepresence users, the Teacher Handbook at least acknowledges how problematic disablism can be.

Nevertheless, there are also other aspects of the Teacher Handbook that do not criticise disablism, but instead reproduce it, even if it may also happen subconsciously, which is relevant as this would be a sign of aversive disablism. Represented in the category *the ideal*, the two codes *normalcy* and *medical terminology* draw the picture of the ideal, 'normal' student, and use medical terminology to present disabilities and illnesses as a purely clinical

problem instead of a holistic phenomenon that also entails cultural dimensions. Referring back to the theoretical background of this thesis, especially critical disability studies scholars criticise narrow, oftentimes medical definitions of disability (Meekosha and Shuttleworth 50). To elaborate on examples of the former code, *normalcy*, it includes the following two passages: “it is important that they continue the normal process of cognitive, emotional, and social development” (Turner et al. 4) and “[disabled students] are those who desire integration and ‘normal’ treatment to a special degree” (Turner et al. 8). Particularly the latter example provides room for interpretation. The authors write that disabled individuals aim for the normalcy that they describe. Yet, they do not base this unsupported claim on any actual sources, for instance, interviews with disabled people. Using the “fill in tool” proposed by Gee, it is possible to interpret what is left unsaid (*How to do Discourse Analysis* 12). For instance, one can argue that since the authors point out that disabled students “desire integration” (Turner et al. 8), it would mean that they are not integrated into their peer group yet, or in other words, that they are excluded. Analysing this further, it can be argued that since they “desire [...] ‘normal’ treatment” (Turner et al. 8), it would mean that they are, currently, not treated in a ‘normal’ way. Combining these sentiments, it subtly points out the ways in which disabled individuals are currently excluded from society, but also holds the potentially harmful belief that they wish to be ‘integrated’ into society, requiring that they are not a part of society in the first place. Hence, the authors draw a clear divide between disabled and healthy individuals.

The code *medical terminology* fulfils a similar purpose of alienating healthy individuals from disabled people, as it creates a difference between the ideal of health and disabilities or illnesses. It presents the latter as “curable” (Turner et al. 7) and thereby implies that disabled individuals should strive to have their respective disability or sickness cured. Again, one can employ the “fill in tool” here to analyse what is left unsaid (Gee, *How to do Discourse Analysis* 12). The notion that something is “curable” (Turner et al. 7) or ‘fixable’ may be caused by an underlying ideal of having to be healthy to live a fulfilling life. Drawing on the social model of disability, this medical view of disability can and should be criticised as it reduces disabilities to something that ought to be cured (Shakespeare, “The Social Model of Disability” 266). Disabilities, namely, include much more than just a medical dimension; for instance, socially constructed aspects (Shakespeare, “The Social Model of Disability” 266).

In a similar vein to the previously analysed written materials, the Teacher Handbook engages in the debate between the terms *integration* and *inclusion*. This choice of wording falls within the code *integration vs inclusion*. In contrast to the former materials, however, the Teacher Handbook also employs the word *inclusion* or *include* in certain contexts. Yet, some instances in which the term *integration* or *integrate* is used remain, which can be observed in the following phrases and sentences: “they are those who desire integration and ‘normal’ treatment to a special degree” (Turner et al. 6), “integration in the classroom once treatment is over,” and “Is the pupil well integrated into the class community?” (Turner et al. 16) As this finding is also analysed in the previous manuals, it is only briefly summarised here: The choice of wording of *integration* over *inclusion* signals a difference between disabled and healthy individuals, thereby further reproducing exclusion.

In addition, the Teacher Handbook not only provides insights into disablism towards telepresence users, but also sheds some light on the topic of embodiment. Selected examples can be observed in the following passages: “Telepresence systems represent [...] the presence of a human, controlling the technology from a remote setting, and hereby enabling the (tele)presence of the human,” “represents or illustrates its human counterpart” (Turner et al. 17), “A child who identifies more directly with the telepresence system representing them will often feel more included within the remote setting and be more socially involved” (Turner et al. 20), “boundaries between human and machine are blurring” (Turner et al. 35), and “Then, at the break, everyone came over to me.” (Turner et al. 33) The quote that is cited last stems from a report of a telepresence user and refers to a scene in which their peers came over to the telepresence robot during the break. What is noticeable here is that the student does not refer to the telepresence system as such, but employs the personal pronoun *me* to allude to the device. Applying the “doing not just saying tool” (Gee, *How to do Discourse Analysis* 42), utilising anthropomorphic personal pronouns shows that the speaker, perhaps subconsciously, considers the telepresence system a sentient being rather than a machine. In this case, the speaker uses first-person pronouns. In uttering the word *me*, therefore, the person also does something: creating a connection between themselves and the telepresence system. Hence, it can be argued that this person considers the telepresence robot a part of themselves. This tendency is also mirrored in the aforementioned quote, “boundaries between human and machine are blurring” (Turner et al. 35). Therefore, the Teacher Handbook clearly acknowledges the idea of embodiment through telepresence systems.

The aspect of anthropomorphism also recurs in the code *embodiment: important aspects for peers*, which entails factors that influence whether or not the peers of the telepresence user consider the telepresence robot to strengthen embodiment. Instances of this code are listed in the following: “technological systems that look like humans (anthropomorphic)” (Turner et al. 18), “Moreover, classmates of the ill pupil are more likely to accept an entity, that is, to some extent, identified explicitly as a familiar subject, rather than a visually ‘default’ technology” (Turner et al. 20), “This implies that some form of humanisation of the robot must take place; in other words, the robot must be ‘brought to life’,” and “communicate with the robot as if it were the pupil” (Turner et al. 23). To summarise, the more anthropomorphic the robot looks, the more likely it is for the peers to accept it. In addition, by ‘humanising’ the device, such as by personalising its appearance, this acceptance is enhanced. Lastly, other learners addressing the telepresence robot with anthropomorphic pronouns can be seen as a sign of embodiment taking place, at least from the perspective of the user’s social environment.

In conclusion, the key themes that can be derived from the qualitative content analysis of the Teacher Handbook summarise its contents and implications for telepresence users. This manual has some clear instances of disablism, but it is more inclusive than the other materials so far, as it also tries to raise awareness for discrimination. Furthermore, it clearly mentions embodiment and argues that telepresence systems strengthen embodiment. Still, there is a heavy focus on the feelings of others, such as teachers and peers, and the impact of the telepresence system on them rather than on its own user.

5. 1. 4 Research Article

In contrast to the previously analysed written materials, the next text analysed is not targeted at educators or parents of telepresence users, but primarily at other researchers. More specifically, the paper entitled “Virtual inclusion through telepresence robots: an inclusivity model and heuristic,” published in the *International Journal of Inclusive Education* in 2024, intends to communicate its findings to other scholars, but potentially also to educators, since they play a significant role in their research. This article is written by professor and teacher educator Jennifer Charteris, as well as her colleagues Jeanette Berman, an Australian teacher

educator and teacher, and Angela Page, an education researcher. In the following, their work is referred to as Research Article.

Firstly, once again, the common theme of the code *disability as a nuisance* is observable in the Research Article. Comparable to the previously analysed written materials, this code signifies the stereotype that disability is perceived as a nuisance, both by the affected person themselves and also their social environment. Furthermore, it supports the idea that a disability should be cured so that one can live a fulfilled life. The following passage exemplifies the manifestation of this code in the Research Article: “removing ‘the sense of intrusion or limitation, so those with the assistive technology do not feel the need to apologise’” (Charteris et al. 2480). Although the sentence highlights a constructive idea here, namely the attempt to make the telepresence user more comfortable with their assistive technology, it also suggests that there has been a reason in the first place why the telepresence user may feel like they are intruding, as it has been worded in the exemplary passage. This underpinning points toward the existence of some form of disablism: in this case, aversive disablism. Aversive disablism often occurs subconsciously (Deal 93), and while the authors may have tried to advocate for the telepresence users here, they also combined this with a harmful stereotype.

Similarly, another code that has already been explored in the other materials recurs: *burden to the teacher*. Once more, this code entails passages in which the authors allude to the teacher being burdened by the telepresence system or its user. Some examples of this code are the following sentences and phrases: “However, teachers do not have access to the screen of the student operating the robot and they cannot directly supervise the activity to assist them.” (Charteris et al. 2483) “Teachers are busy practitioners and it will always require some adjustment to have a robot in the classroom.” and “There is work required in ensuring children know the protocols for interacting with the robot and understand that the child operating the robot may choose to turn their monitor off if they are feeling tired.” (Charteris et al. 2484) All of these quotes suggest that there is a considerable amount of work required from educators to teach a student who uses a telepresence system. In addition, the former example implies that because teachers are not able to directly supervise the activities of the remote learner, they may not comply with the class rules. This, in turn, strengthens the harmful belief that these learners may (mis)use their telepresence robot to avoid facing consequences. Since this idea can be categorised as a form of subconscious prejudice towards disabled individuals, it

can be argued that this is another instance of aversive disablism. This form of disablism is also mostly subconscious, but still entails prejudices that are harmful towards disabled people (Deal 93).

Another code that has been occurring across multiple analysed pieces is *privacy*. This code represents passages that thematise privacy in relation to telepresence systems. Although the focus is also sometimes on the remote learner's privacy, the Research Article is predominantly concerned with the privacy of educators and the participants in the on-site classroom. The following sentences and phrases exemplify this code: "access protocols," "school privacy policies," and "Adults without this clearance who are connected with the child remaining at home may be able to access the classroom through telepresence." (Charteris et al. 2481) Particularly, the latter sentence plays into the fear of the unknown that educators and peers may have when they encounter a telepresence system. Due to the fact that most telepresence robots that are currently in use feature one-way cameras, the participants in the classroom cannot see the other person on the robot. However, this line of thought resembles the idea expressed in the former code, namely that the remote student may misuse the telepresence system. Hence, this reinforces a theme of mistrust towards the disabled student, even though this may not happen consciously. Therefore, I argue that this code can also be an instance of aversive disablism.

To conclude the number of codes that also occur in the previously analysed written materials, the following paragraph analyses the occurrences of the code *normalcy* in the Research Article. In more detail, similar to the previous manuals, the authors of the Research Article introduce notions of normalcy in certain passages. For instance, they claim that "a sense of normalcy" (Charteris et al. 2482) should be developed around the telepresence system in the classroom. They also note that telepresence users would not want to receive too much attention (Charteris et al. 2482). Even if this idea is not intended to discriminate against telepresence users, it paints a fairly negative picture of them. By claiming that the classroom should revert to 'normalcy' after the introduction of the telepresence robot, they insinuate that the robot, per se, is something abnormal. This code can, therefore, be interpreted as a mix of cultural disablism, as it plays with the idea of norms, as well as aversive disablism, as this manifestation of disablism may occur subconsciously.

A theme that is unique to this written material can be found in the code *disablism regarding death*. To explain, this theme presents death and dying, in this case related to a disabled person, as something extremely tragic and as something that must be hidden from other individuals. The most significant example is retrieved from the following passage: “Sometimes children with chronic illnesses die and this is extremely tragic for the school community. The robot should be removed quickly from the room and processes put in place to support students and teachers as they work through their grief.” (Charteris et al. 2484-2485) In these sentences, the idea that the telepresence robot should be removed as soon as possible after the death of its user, in particular, represents a view of death that may be informed by disablism. Death is portrayed as an almost unnatural experience that should remain taboo. Moreover, this perception plays into the ideal of a long and healthy life, and that short lives, especially ones that are shortened by a disability or a disease, do not meet these criteria. Therefore, it can be argued that this view of death is a manifestation of cultural disablism, as this form is also concerned with social norms that people need to meet to be considered normal.

This Research Article does not only portray a negative view towards dying, but also towards the usage of telepresence systems in educational settings as a whole. Collected in the code *negative attitude towards telepresence systems*, the authors warn of various disadvantages that employing telepresence robots may cause. Instances of this code are the following passages: “[...] salutary warning against using the technology to merely support interaction and passive attendance,” “little substantive engagement in learning or serious scope for contribution in the social relationships of the classroom, the use of telepresence for social presence may be little more than tokenistic,” “telepresence technologies can serve to reinforce real world segregation,” and “paradoxically sustains dislocation and segregation” (Charteris et al. 2480). While these utterances may mainly be informed by disablism, it is also important to acknowledge that they also point towards a non-negligible issue: finances. As of 2026, telepresence systems are still relatively costly, with a cost of 3,351€ per device annually for the most commonly used model (Teleavatar, “Sponsoring”). They could therefore, indeed, “reinforce real world segregation” (Charteris et al. 2480). Nevertheless, especially the notion that telepresence systems only support “passive attendance [and] [...] little substantive engagement” (Charteris et al. 2480) can be argued to be a manifestation of cultural disablism. More specifically, the same cultural norms for healthy students are also imposed on disabled

students: that they should actively participate in the classroom to be considered an ideal student. What this participation should actually look like is also often imbued by various societal norms, from which oral participation is usually the most frequently used norm. This discriminates against individuals who cannot or do not want to participate orally, such as learners with selective mutism or social anxiety. In short, as the ideals of active participation and engagement, which are clearly alluded to in the abovementioned examples, are inspired by these disablist societal norms, it can be argued that the occurrence of this code in the Research Article is also an instance of disablism.

Apart from these codes that can be extracted from the Research Article using qualitative content analysis, it is also possible to uncover various themes using tools from discourse analysis. For instance, as it has already been observed in the previous manuals and handbooks, the Research Article also has a specific stance on the terms *inclusion* and *integration*. While the authors use the term *inclusion* in their title, the body of their work sometimes also employs the term *integration*. However, *integration* is not used in conjunction with the students, but with the technology, for instance, in “implementation and integration of ICT into the school and home environments” (Charteris et al. 2478). Therefore, in contrast to the previous handbooks and guidelines, the Research Article is, so far, the only analysed piece that solely uses the terms *inclusion*, *include*, and *inclusive* when referring to people. Employing the “doing and not just saying tool” (Gee, *How to do Discourse Analysis* 42), it can be argued that this choice is made deliberately by the authors to position themselves within the discourse of inclusion in education. Especially in this field, the use of the word *integration* is already considered outdated, which means the authors may use the term *inclusion* instead to publish state-of-the-art research.

In addition to this choice of terminologies, another feature of the authors’ language use can be observed and analysed with the help of discourse analysis. More particularly, in the Research Article, the telepresence user is predominantly referred to as ‘the robot’ or even as “robot child” (Charteris et al. 2484). On the one hand, this choice of words can be interpreted as a sign of embodiment. On the other hand, however, it diminishes the existence of a disabled individual and dehumanises them by comparing them to a robot. Hence, it can be argued that the decision to refer to the disabled student as a “robot child” (Charteris et al. 2484) constitutes a form of disablism, namely psycho-emotional disablism. This form of disablism is

used for situations that actively disable an individual through the usage of specific words (Thomas 28).

While this word choice discriminates against disabled individuals, the authors of the Research Article also point out instances of discrimination themselves, which can be categorised in the code *discrimination*. An instance of this code can be found in the following phrase: “another student in the class referred to the robot as ‘a vacuum cleaner’” (Charteris et al. 2482). Similar to the previous paragraph, the disabled student is once again dehumanised as they are compared to an object. It can be argued that this example is even more discriminating than the instance in the previous paragraph, as a vacuum cleaner is considerably less anthropomorphic than a telepresence robot. Regardless, this code can also be argued to be an example of psycho-emotional disablism. Even though this form of disablism is not imposed upon the learners by the authors themselves, it is still evidence for telepresence users in educational settings experiencing disablism.

Apart from the manifestations of disablism in the Research Article, the authors also allude to embodiment in specific passages. To be more precise, they specifically use the term *embodied* in their work, which points towards their knowledge of the concept of embodiment. Among others, the following passages are represented in the code *embodiment*: “They exert an embodied presence in classrooms through operating a remote-controlled robot.” “project a presence into their classroom” (Charteris et al. 2479), and “child who is embodied in the robot” (Charteris et al. 2482). As their descriptions match the findings that are presented in specific studies on embodiment, it can be said that their reports are pieces of evidence for the existence of embodiment in telepresence users in educational settings.

In conclusion, the Research Article encompasses both instances of disablism and embodiment of telepresence users in educational settings. To summarise, instances of both psycho-emotional disablism and cultural disablism are identified in the text. However, the authors also exhibit a more progressive attitude in certain passages, for instance, when they specifically use the term *inclusion* instead of *integration*, and when they point out moments of discrimination. Moreover, the authors argue for the embodiment of telepresence users in educational settings.

Overall, a similar tendency is displayed across all the analysed written materials. In all four analysed texts, both instances of disablism and embodiment can be observed. To explain,

occurrences of psycho-emotional, cultural, and aversive disablism can be uncovered, with the latter two forms being the most frequently observed in this mini-corpus analysis. Embodiment is portrayed in a slightly more mixed way, with some manuals arguing against its existence among telepresence users. At the same time, all of the analysed materials provide at least one passage that can be used to argue for the embodiment of telepresence users in educational settings.

5. 2 Findings & Analysis: Semi-Structured Interviews

To substantiate the results that can be yielded from the mini corpus analysis and to amplify the voice of the telepresence users, three semi-structured interviews are conducted. Due to recruitment difficulties, only one interview is conducted with a person who used a telepresence system to attend school. The other two interviewees are educators of remote students. To protect the privacy of the interviewees, the former telepresence user is referred to as P1, while the two teachers are referred to as P2 and P3. It is noteworthy that in all three interviews, the telepresence system is referred to as an avatar, in allusion to the model of the device, AV1. Moreover, it is noteworthy that the interviews are conducted in German, the participants' native language, and are subsequently translated into English by me.

5. 2. 1 Findings & Analysis: Semi-Structured Interviews, P1

Firstly, it is observable that P1 has an almost exclusively positive attitude towards the telepresence robot. She shows gratitude for having this opportunity, especially since she was using the device to attend school during her final year of high school: „Gott sei Dank hab' ich den Avatar in der Maturaklasse bekommen“ [Thank God I got the avatar in my final year of high school¹]. Moreover, she notes that her overall experience was better with the telepresence system than it was before, when she was participating via Zoom between her freshman and junior years of high school. More specific advantages are summarised and coded as *benefits*, where she lists, among others, the following advantages of using a telepresence robot: „Schulalltag erleichtert“ [everyday life at school was made easier], „besser kommunizieren, weil man flüstern kann“ [communicating better because you can whisper],

¹ I translated this interview passage, as well as any subsequent ones, myself.

„bessere Kameraauflösung, das war ein großer Punkt“ [better camera resolution, that was a big point], „super, weil man soziale Kontakte mehr anknüpfen kann“ [great because you can form more social bonds].

Beyond these benefits of the telepresence robot, it is crucial that she emphasises how her social contacts were improved by the telepresence system. This idea is further enhanced by the code *inclusion*, which signifies passages in which P1 described how, through the use of the telepresence system, she felt more included. An example of this code is the sentence „Ich war dadurch dann auch mehr integriert“ [Because of this, I was more integrated]. Rooted in the overarching category of *positive attributes of the telepresence robot*, this code demonstrates that despite potential moments of disablism, she experienced moments of inclusion as well. It is also noteworthy that she chooses to employ the term *integrate* instead of *include*, even though *include* is thought to be the more suitable term. Still, I argue that the sense of belonging outweighs the pejorative connotations of the term *integrate* here.

Nevertheless, these moments of disablism are also present in her recounting. The overall category of *disablism* represents the codes *exclusion* and *privacy*. While the former code describes overall instances of exclusion that P1 encountered, the latter code is used to address passages in which other individuals argue that the telepresence robot may violate their privacy. More precisely, examples of the code *exclusion* are the following: „oft war es bei Gruppenarbeiten dann so, dass es keiner mit dem Laptop machen wollte“ [often, during group work activities, nobody wanted to do the activity with the laptop], „beim Avatar war das Problem dann, wie ich von Schülern gehört habe, dass sie es peinlich finden, wenn sie mit dem Roboter durch die Schule rennen müssen“ [with the avatar, the problem was, as I have heard from students, that they consider it embarrassing when they had to run through school with the robot], „negative Erfahrungen hatte ich bei älteren Lehrkräften, die waren nicht so offen mit dem Avatar“ [I had negative experiences with older teachers, they were not as open with the avatar], „in anderen Klassen war ich ihnen manchmal nervig oder peinlich“ [in other classes, I was annoying or embarrassing for them], and „manche Lehrer haben mich schon eher mit Vorsicht behandelt, und waren zurückhaltender“ [some teachers have treated me rather cautiously, and were more reserved]. In terms of analysis, the first example in particular is noteworthy. In this passage, P1 refers to herself as a laptop before using the telepresence robot, describing that during group work, no one wanted to work with her. The other passages

describe how the people surrounding her felt about her and her telepresence robot, including negative feelings such as embarrassment, annoyance, and reticence. Especially reticence and embarrassment resemble the sentiments often associated with aversive disablism. As a consequence, it can be concluded that the code *exclusion* signifies instances of aversive disablism as the social environment of P1 exhibited behaviours of disablism, but may not have done so consciously. Subconscious biases, or “subtle forms of prejudice,” are often associated with aversive disablism (Deal 93).

From another perspective, most of the examples signified by the code *exclusion* can also be counted towards the code *feelings of the social environment*. Together with the code *feelings of the telepresence user*, they make up the overarching category of *feelings*. As the name suggests, the latter code entails passages in which P1 elaborates on her feelings in various situations involving her telepresence system. Examples are the following phrases and sentences: „Das ärgert mich, weil ich es einfach nicht nachvollziehen kann, weil [es] in meiner Hinsicht größere Probleme gab. Das war einfach nicht nachvollziehbar“ [It angers me because I simply cannot understand it because, in my opinion, there were bigger problems. That was simply not understandable], „Als ich noch per Teams vorne am Lehrertisch war, wollte keiner mit mir die Gruppenarbeit machen, das kann ich auch verstehen“ [When I was on the teacher’s desk via Teams, nobody wanted to do the group activities with me, which I can also understand], and „Ich war richtig begeistert von dem Avatar“ [I was really enthusiastic about the avatar]. The most notable of these examples may be the second-to-last, as by saying „das kann ich auch nachvollziehen“ [I can also understand that], P1 shows understanding towards those students who excluded her. It can be argued that this reaction occurs because the disablism she experiences is so deeply interwoven with the structures of society that she does not feel more outraged by experiencing it. In this case, the form of disablism present here can be interpreted as cultural disablism, as this manifestation is also closely related to cultural and societal norms.

Apart from the various forms of disablism that P1 experienced while using a telepresence system to attend and graduate from high school, themes of embodiment can also be found in the interview transcript. The category *(dis)embodiment* is comprised of the codes *personalisation*, *disembodiment*, and *embodiment*. The code *personalisation* signifies passages in which P1 describes how she personalised the telepresence robot she received. It

is closely intertwined with the category of *(dis)embodiment* as the interviewee attributes an increase in embodiment to this personalisation. An example of this code is the following statement: „Den Avatar finde ich richtig cool. Ich konnte ihn auch selbst verzieren. Als ich ihn bekommen habe, habe ich ihm Wimpern aufgeklebt und eine Kette umgelegt“ [I think the avatar is really cool. I could also decorate it myself. When I got it, I put fake eyelashes on it, as well as a necklace]. I suggest that the reason why the personalisation she describes helped her feel a sense of embodiment is that she was able to liken the appearance of the telepresence robot to her own. When asked why she chose false eyelashes and a necklace as tools of personalisation, she explains that these are accessories that she would wear as well. Therefore, it implies that the more the telepresence robot resembles a human, in particular the user who is using it, the more likely the user is to experience embodiment.

On a more general level, the latter two codes, *disembodiment* and *embodiment*, focus on instances in which P1 describes either feelings of disembodiment or embodiment in relation to her usage of the telepresence system. When specifically asked what her telepresence robot means to her, and if she perceives it as a separate object or an extension of herself, P1 states, as her first reply, that the avatar is just an object to her. It can, therefore, be interpreted that the following quote, „Der Avatar war für mich nur ein Gegenstand“ [The avatar was only an object for me], is an instance of disembodiment. However, after a few seconds, P1 adds the following sentences: „Irgendwie war es aber schon eine Erweiterung von meiner Selbst ins Klassenzimmer. Dadurch war ich dann wieder viel mehr in den Unterricht einbezogen, vorher war ich nur am Zuhören, eigentlich“ [In some way, it was also an extension of myself into the classroom. Because of it, I was much more included in the lessons. Before that, I was only listening in, basically]. To explain, after a first response that points towards disembodiment, she adds a statement that can be interpreted as a manifestation of embodiment. The telepresence robot becomes an extension of herself into the classroom, a recurring theme in the literature on technological devices and embodiment (Buongiorno 325; De Preester 125). Furthermore, when P1 is asked whether or not she felt physically present in the classroom when using her telepresence system to attend school, she states the following: „Ja schon, vor allem durch das Flüstern und Aufzeigen fühlt es sich so an, als wäre ich wirklich da“ [Yes, especially because of the whispering and being able to raise your hand, it feels like I was really there]. To clarify, the function of whispering is that, when using a telepresence robot, the remote pilot can select a mode in which only their neighbour can hear them. This simulates a

whispered conversation that they would potentially also have if they were both on-site in the classroom. In comparison, other forms of hybrid teaching typically broadcast the remote student via a loudspeaker, so they would not be able to hold a discreet conversation with their seat neighbour. Being able to raise their hand refers to the function that if the remote student presses a specific button to signal that they want to raise their hand, the telepresence robot starts blinking green. Both of these features enhance embodiment, as they resemble actions one could also take in an on-site classroom. Therefore, it could be concluded that the better the telepresence robot can replicate the feeling of sitting in an on-site classroom, the more embodiment its pilot experiences.

In general, it can be summarised that P1 experienced both disablism and moments of (dis)embodiment while she used her telepresence robot during her final year of high school. Compared to the two other interviewees, her insights are particularly relevant to this thesis, as she can recount the experiences of a telepresence user in an educational setting firsthand. Her overall attitude towards the avatar, as she refers to it, is positive, particularly compared to the mitigation attempts she had used before when she joined class via Zoom. I conclude this from the analysis of the key theme, a *general positive attitude towards the telepresence robot*, which is mainly informed by the category of *positive attributes of the telepresence robot*. Despite this positive attitude, it can be seen that she experienced various forms of disablism, most notably aversive and cultural disablism, not only from her peers but also from her educators. This can be concluded from the key theme *occurrences of disablism, mainly in the form of cultural and aversive disablism*. In terms of (dis)embodiment, it can be observed that P1 encountered both instances of disembodiment and embodiment. It is noticeable that both experiences of disembodiment and embodiment are mentioned, with a clear emphasis on experiences of embodiment. According to her statements during her interview, the situations in which she experienced embodiment outweigh the disembodiment. Particularly, the anthropomorphic and personalised appearance of the telepresence robot, as well as specific features, such as being able to whisper to one's seat neighbour, can help with embodiment.

5. 2. 2 Findings & Analysis: Semi-Structured Interviews, P2

Both P2 and P3 are teachers who have been in the field of education for a considerable number of years and who have already taught students who used a telepresence system to attend class

for some time. In the following subsection, the codes and categories applied to P2's interview transcript are elaborated on. Similar to the other subsections in section 5.2, the focus is on disablism and (dis)embodiment in order to retrieve answers to the research questions of this thesis.

Overall, many of the themes already present in the written materials analysed for this thesis recur in this interview. This line of argumentation can also be summarised by one of the three key themes of this interview: *themes that are very similar to the analysed written materials*. More specifically, codes already present in the more educator-focused materials, such as *burden to teachers* and *privacy*, can be retrieved from this transcript. However, interviewing P2 also yields new codes and, therefore, new insights, such as *comparing telepresence robots to other objects*, as well as specifics in certain terminology, such as the lexical choice between the German words *Beeinträchtigung* [impairment] and *Behinderung* [disability].

Firstly, the category *general aspects concerning telepresence systems* can be identified in the transcript. As one may already infer from the title, this category contains codes that cover more general aspects of telepresence systems. These are not inherently related to disablism and (dis)embodiment, but could provide valuable insights if analysed from the angle of critical disability studies. In more detail, the codes present in this category are *technical aspects*, *downsides*, and *design*. The former two codes seem innocuous, with *technical aspects* describing details such as how the connection of the telepresence robot works, and *downsides* elaborating on problems that could arise when using a telepresence system. The following two quotes represent the first and the second code, respectively: „Da verbindet man sich über MDM, in das Gerät gibt man den WLAN-Code ein und verbindet das Gerät mit dem WLAN vor Ort [...]“ [You connect via MDM, you enter the WiFi password into the device and connect the device to the WiFi on-site], and „Wir haben dort nicht so gut Empfang, wir sind aber gerade dabei, unsere Avatare mit ID ins Bildungsnetz in das stabile Internet einzuloggen [...]“ [We do not have a great connection there, but we are currently trying to connect our avatars with ID to the educational network, to the stable Internet]. Nevertheless, the fact that using a telepresence robot in an educational setting is usually associated with these hurdles that need to be overcome to fully participate in lessons can be interpreted as structural disablism. Structural disablism, too, is concerned with the barriers that disabled individuals encounter. In

this situation, P2 seems to be willing to resolve the problems for the telepresence users, but the existence of these problems in the first place can be a sign of structural disablism.

The third code in the category of *general aspects concerning telepresence systems, design*, however, can be used to uncover more explicit evidence of manifestations of disablism in this interview. To elaborate, the following examples are used to illustrate this argument: „und es ist für die Klasse eben auch, sie reagieren sehr positiv, weil das Design sehr lieb gemacht ist [...]“ [and it is also for the classroom, they react very positively because the design is made in a very lovely way], as well as „sonst sind die Technologien nicht so sympathisch wie das, ich habe auch die Systeme aus den Niederlanden und Belgien kennengelernt, vom Design ist das das norwegische Ding da“ [the other technologies are not as pleasant as this one, and I have also gotten to know the systems from the Netherlands and Belgium, and concerning the design, it is comparable to the Norwegian thing here], and „aber auch ein tragbares Kastl, nicht so sympathisch vom Design“ [but also, it is a portable box, it is not as pleasant with regard to the design]. The latter two sentences refer to a telepresence robot that is a different model from the AV1. Although the code is meant to focus primarily on different designs of the various telepresence robot models, the value judgments that are included in these quotes become quite apparent. P2 judges the different models based on how pleasant or unpleasant [„sympathisch“ or „nicht so sympathisch“, respectively] they are for her and her students, and how the students react [„sie reagieren sehr positiv“]. These notions are closely related to the essence of cultural disablism and aversive disablism. On the one hand, the value judgements present in this code seem to be based on societal and cultural notions of what is pleasant to look at and what does not fulfil this norm. In this case, robots that look more anthropomorphic are considered more pleasant to look at, and thereby fulfil this cultural norm. For this reason, this example can be linked to cultural disablism. On the other hand, it can be argued that the quotes in this code are instances of aversive disablism as they may be uttered due to subconscious prejudices towards disabled individuals. This point can be made since the interviewee clearly does not harbour conscious prejudices towards disabled individuals, as she also intends to help this group of people. However, some of the statements that are uttered in the interview can be considered disablist, which would be an argument in favour of subconscious biases towards disabled individuals.

Furthermore, another aspect that is noticeable is the choice of terminology in this code. In order to refer to the telepresence systems, P2 does not use words such as avatar or robot here, but instead, she calls them “portable box” [„tragbares Kastl“], or “that thing there” [„das Ding da“]. Especially in the case of the first example, the pejorative tone is strengthened by the use of a more colloquial term, such as *Kastl* [box]. As the “politics-building tool,” recommended by Gee, is also concerned with how words can construct and destroy social goods, this becomes a suitable tool for analysing these language choices (*How to do Discourse Analysis* 121). Social goods, in this case, are understood as either physical resources or more abstract opportunities that are distributed to different individuals. Furthermore, it implies that certain groups of people are neglected in this distribution. More precisely, as one of the tools employed for discourse analysis, it intends to analyse this distribution of social goods and how cultural norms influence what is considered a valuable social good. By employing this politics-building tool, it becomes observable that by using pejorative terms such as „Kastl“ [box] or “that thing there” to refer to a telepresence system, the value of the telepresence system as a social good is reduced. Furthermore, its actual value to the user is not considered. Consequently, it can be argued that because these models are devalued due to their appearance, this has to do with cultural norms of beauty, or, in other words, what is deemed to be a ‘normal’ appearance. Therefore, this choice of words can also be interpreted as a case of cultural disablism.

With regard to disablism, many more codes can be analysed that fall under this category. Apart from the already listed *design*, the codes *comparing telepresence robots to other objects*, *unaware of disablism*, *telepresence robots for autistic people*, *privacy*, and *burden to teachers* can each be interpreted as different manifestations of disablism in this transcript. These codes predominantly represent examples of cultural and aversive disablism, but also contain instances of structural and psycho-emotional disablism. In the following, these manifestations are elaborated on.

Starting with *comparing telepresence robots to other objects*, this code signifies quotes that aim to draw comparisons between telepresence systems and other objects, typically household objects. For instance, P2 states the following sentences: „[...] ein sehr sympathisches Ding, sehr, wie eine Mensch-ärgere-dich-nicht Figur“ [a very pleasant thing, very, like a playing piece from *Man, Don't Get Angry*], „zuerst wirkt es wie eine Kaffeemaschine, weil es vertraut ist, weil es von der Größe und vom Handling wie eine

Kaffeemaschine ist“ [at first, it resembles a coffee machine because it is familiar, and because with regard to the size and the handling, it is like a coffee machine]. Though these utterances may seem innocuous and P2 may not have malicious intentions, the abovementioned comparisons trivialise telepresence systems. In particular, when drawing a parallel between a telepresence system and a „Mensch-ärgere-dich-nicht Figur“ [a playing piece from *Man, Don't Get Angry*], it can be argued that this comparison downgrades the assistive technology of a telepresence robot to the level of a mere toy. While it should be rather clear that this contains pejorative connotations, it is less clear which form of disablism this constitutes. I argue that this comparison is an instance of psycho-emotional disablism. Based on the above, I suggest that a two-tiered society of healthy and non-healthy individuals is created. The benefits and the necessity of the telepresence robot for its disabled users are downplayed and belittled by comparing it to a toy. For healthy individuals, this toy or coffee machine does not stand for something that is a necessity for them to participate in day-to-day school life, but rather like an accessory. Therefore, I claim that this comparison is a form of psycho-emotional disablism. Nevertheless, these parallels may also be drawn because P2 may be unaware of the importance of telepresence systems to their remote users. In this case, it may be an example of aversive disablism. On the one hand, this reasoning is based on the assumption that both aversive disablism and the state of mind that P2 may be in are characterised by subconscious beliefs. On the other hand, a certain ignorance can be identified that goes hand in hand with not being able to identify with a certain population, and not trying to ameliorate this circumstance. In conclusion, the code *comparing telepresence robots to other objects* may either be interpreted as an example of aversive disablism or psycho-emotional disablism.

Similar to the second interpretation of the aforementioned code, *unaware of disablism* is characterised by its focus on subconscious beliefs, but also by a form of ignorance. As the name of this pattern already suggests, *unaware of disablism* represents quotes by P2 in which she denies the existence of disablism in the experience of telepresence users within an educational setting. For instance, when asked specifically about the occurrence of disablism against telepresence users, she states the following: „Nein. Im Zuge des Avatargebrauchs? Nein. Ich denke nicht, dass das vorkommt“ [No. While the avatar is used? No. I do not think that it happens]. In addition, when asked how her colleagues and other educators at different schools react when they first encounter a telepresence robot in their classroom, she insists that they always react positively [„immer positiv, eigentlich“]. From the interview with the

telepresence user, but also from the analysed written materials, as well as the literature, it can be said that disablism does, in fact, exist in the experience of telepresence users in educational settings. Therefore, denying this evidence cannot be interpreted as an opinion, but rather as ignorance or simple unawareness. Consequently, as the concept of unawareness and subconscious beliefs plays a significant role in this context, it can be argued that this code is another form of aversive disablism. As it is already established, aversive disablism combines prejudices against disabled individuals with biases that may be subconscious, which can also be observed in this case.

In addition to these more general forms of disablism, *telepresence robots for autistic people* is a code that describes the opinions of P2 with regard to the usage of telepresence systems specifically for individuals with autism. The following phrases and sentences exemplify this code: „Einsatz bei Autismus, wo wir jetzt auch schon ein bisschen vorsichtig in die Richtung gehen, kann man aber nicht alles abdecken“ [the usage for autism, where we are also, cautiously, moving into this direction, but you cannot cover everything], „zum Einsatz bei Autismus: im psychiatrischen Bereich muss man genauer hinschauen, man braucht eine Begleitung mit Gelingensfrage um zu evaluieren, oder ob man unerwünschte Symptome verstärkt [...] das Hauptziel ist die Reintegration, auf jeden Fall“ [concerning the usage for autism: You have to look more closely in the psychiatric field, you need a supervision and a guiding question to evaluate it, or whether you strengthen unwanted symptoms [...] the main goal is re-integration, in any case], and „wir haben zwei, die jetzt unter Vorsicht im Autismusbereich erstmalig eben versuchsweise eingesetzt werden, wir haben also schon begonnen uns drüberzutrauen“ [we have two that are, cautiously, being used in the area of autism for the first time, as an attempt, so we have started to dare it]. It is noticeable that the language that is used in these quotes comes from the field of fear and overcoming said fears. This tendency becomes particularly obvious in the phrases of ‘cautiously moving into this direction’ [„vorsichtig in die Richtung gehen“] and ‘we have started to dare it’ [„wir haben also schon begonnen uns drüberzutrauen“]. Instead of other emotions that may be sparked at the prospect of being able to aid an autistic person to continue their education, such as happiness or curiosity, P2 chooses to speak of fear and reluctance. Therefore, this language of avoidance is closely connected with aversive disablism. Both the feelings described by P2, as well as the ideas behind aversive disablism, may be constructed subconsciously.

Moving back to the patterns and forms of disablism that are represented across multiple interviews and written materials, the next code is *privacy*. As it has already been elaborated on in the context of this thesis, this code bundles together statements in which educators or other individuals in the social environment of the telepresence user claim to be worried about the telepresence system's implications for the privacy of its social environment. In the interview with P2, the following utterances are made: „[...] und es gab skeptische Stimmen, weil man sich als Lehrerin ja ‚outet‘“ [...] and there have been sceptical voices because you 'out' yourself as a teacher], „diese Vorstellung, wer anderer von außen schaut zu, das ist nicht immer angenehm; wenn die Leute vergessen, dann ist das sofort entlastend“ [this imagination that someone else from the outside is watching, that is not always pleasant; once the people forget about it, then it is instantly relieving], „die [Kollegin] sagt so: ‚naja ist eh lieb, aber weiß nicht ob ich ihn immer zuschauen lassen will,‘ aber sie dreht ja ab und auf, [...] müssen bestätigen dass auch nur das Kind schaut, aber wenn ein lustiges Geschwisterkind reinredet, kann Lehrkraft abdrehen“ [the colleague says something along the lines of: 'well, it is nice, but I do not know if I always want him to watch', but she switches it on and off, [...] they have to confirm that it is only the child who is watching, but when there is a funny sibling who is talking, the teacher can switch it off]. These quotes represent the different imaginations that educators have when they have a telepresence system in their classroom. They seem to assume the worst, for instance, that another, unauthorised person uses the device to 'spy' on them in the classroom. In addition, P2 claims that the 'feeling of being watched' in general is not comfortable for the teachers [„diese Vorstellung, wer anderer von außen schaut zu, das ist nicht immer angenehm“]. Both observations can be combined to conclude that educators apparently feel fear of the unknown when encountering telepresence systems. However, this negative reaction to this assistive technology resembles a manifestation of aversive disablism. Again, while these feelings may emerge subconsciously, they represent a prejudice against disabled individuals, as the teachers in these examples have an avoidant attitude towards them.

A similar negative view towards telepresence systems, which also comes up in other interviews as well as the analysed written materials, can be found in the code *burden to teachers*. This code contains sentences and phrases that aim to express how the usage of telepresence systems is perceived as a liability to the educators. Some of the examples are mentioned in the following: „ihr entscheidet wann er aufgeschaltet wird und wann nicht, euch kann niemand

zwingen [das Telepräsenzsystem aufzudrehen]“ [you decide when it gets switched on and when it does not, nobody can force you to switch on the telepresence system], „[...] nicht zu bekleben weil es aufwändig ist, die Avatare sauber zu kriegen, das ist rein pragmatisch. Wir haben so wenige Ressourcen, [...] da kann man nicht auch noch den Avatar putzen“ [not to stick anything on it because it is time-consuming to clean the avatars, that is simply pragmatic. We have so few timely resources, I cannot clean the avatar as well], „eine Kollegin von der Firma hat einfach gesagt: ‚das mach‘ ich nimmer““ [a colleague from the company simply said, ‘I do not do that anymore’]. To provide more context with regard to the second quote, it can be said that this statement is made while referring to the personalisation that telepresence users can choose. However, P2 explains that her school no longer offers this, as it is too exhausting for the teachers to clean the telepresence robots once users no longer need them. In combination with the first quote, which refers to teachers choosing when and when not to switch on the robots, it can be argued that educators primarily consider their own resources when deciding what to do for their telepresence users. The benefits that this extra mile may have for the remote user, such as being able to personalise their telepresence robot, are not considered. In conclusion, it can be interpreted that this is an example of psycho-emotional disablism. By putting themselves first instead of their disabled students, and by upholding the harmful prejudice that they are too much work, it might be argued that educators are actively disabling their learners as they are keeping them from valuable experiences, such as personalising their telepresence robot.

To finalise the findings related to disablism in this interview, the lexical choice between the German words *Beeinträchtigung* [impairment] versus *Behinderung* [disability] is analysed. Throughout the interview, P2 consistently refers to disabilities as *Beeinträchtigungen* [impairments] instead of *Behinderungen* [disabilities]. Generally, *Beeinträchtigung* [impairment] is considered the more inclusive term than *Behinderung* [disability]. The fact that P2 actively chooses to express her thoughts and experiences using the word *Beeinträchtigung* [impairment] may symbolise that she is trying to employ a mindful, inclusive wording. This observation, in turn, underlines the line of argumentation that some of the previously noticed forms of disablism in her interview strongly lean towards aversive disablism, as she may have some unexplored biases and prejudices towards disabled individuals. In the end, however, she appears to mean well. Particularly, the usage of Gee’s “doing, not just saying tool”

substantiates the argument that a choice of wording is not only a mere lexical choice, but usually also carries a deeper meaning (*How to do Discourse Analysis*, 42).

Apart from disablism, some insights concerning embodiment and disembodiment, particularly the view of educators on telepresence users' embodiment and disembodiment in educational settings, can be gained as well, which is bundled in the category of *(dis)embodiment*. The following phrases and sentences are used to exemplify the opinions and experiences that P2 describes in the interview: „[...] dass man wirklich sagen kann, das ist der Stellvertreter in der Klasse, der steht auch am Platz von dem Kind, zum Beispiel“ [so that you can really say that this is the child's representative in class, it is also on the desk of the child, for instance], „man muss nichts benennen, sondern bekommt einfach so die Stimmung repräsentiert über diese Augen“ [you do not have to vocalise anything, but you simply see the mood in the eyes], „ja, es ist anwesend, weil man ja aktiv interagieren kann, kommunizieren kann, dadurch ist Präsenz gegeben“ [yes, it is present because you can actively interact and communicate. Because of this, you are present], „der wurde verziert, aber meiner Meinung nach findet da nicht so ein embodiment statt“ [it was decorated, but in my opinion, embodiment does not happen here], and „[...] eher ein eigenständiger Gegenstand, weil die Kinder daheim haben in Wahrheit keine haptische Verbindung mit dem Ding, [...] eigentlich eine passive Bildübertragung, weil es one-way ist“ [rather an object on its own because the children at home do not have a haptic connection with the thing, in reality [...] rather a passive stream because it is one-way]. Generally, the former three quotes represent embodiment, while the latter three symbolise disembodiment in the context of telepresence users in educational settings. Therefore, the views of P2 on embodiment and disembodiment seem to be fairly balanced. While she explicitly states that she does not think personalising the telepresence robot helps with embodiment, she also claims that the remote student is represented by the telepresence system in class. In addition, it needs to be acknowledged that her stance on personalisation contradicts the findings from the literature, from the interview with P1, as well as the mini corpus analysis. Consequently, it can be argued that P2's stance on embodiment and disembodiment is rather mixed.

In conclusion, it can be said that both instances of disablism and *(dis)embodiment* can be retrieved from the interview with P2. A common theme throughout the interview is that, being an educator herself, she predominantly advocates for teachers rather than telepresence users,

which is represented in codes such as *burden to teachers*, as well as *privacy*. However, P2 also shows some degree of awareness of disablism as she tries to use inclusive wording when speaking about disabilities. Concerning (dis)embodiment, the findings are rather mixed and inconclusive, with some passages denying embodiment, and others favouring its existence in telepresence users in educational settings. For the teacher, however, the avatar is never embodying the student.

5. 2. 3 Findings & Analysis: Semi-Structured Interviews, P3

Just like P2, P3 is also an educator with multiple years of experience. However, she does not have as much experience with telepresence systems as P2. Still, she is teaching a learner who is using a telepresence robot to attend class in the academic year of 2025/2026. While P3 generally acknowledges the potential of telepresence robots in educational settings, which is represented by the code *benefits*, some of her statements throughout the interview can also be counted as instances of disablism. Moreover, some valuable insights can be gained in relation to embodiment and disembodiment.

First, statements pertaining to the category of *perceived disadvantages of telepresence systems* can be found in the interview transcript. Codes that can be classified as belonging to this category are the following: *misuse of telepresence systems*, *lack of control*, and *suitable disability*. It is notable that these disadvantages are listed by P3, an educator; therefore, the downsides of using telepresence systems in a classroom are predominantly from the teachers' perspective rather than the users'.

On the one hand, *misuse of telepresence systems* recurs across the different interviews as well as the findings of the mini corpus analysis. Closely intertwined with a certain fear that the teacher's voice, namely that the telepresence robot may be employed by other people apart from the intended user, this code expresses thoughts around how the actual usage of the telepresence robot diverges from the intended use. The following sentences and phrases provide examples for this code: „dann ist Übertragung über Avatar wie ein Netflix Lite Entertainment für zuhause“ [then the transmission via the avatar is like a Netflix Lite entertainment for the child at home], „wenn es dann so benützt wird, das Fernsehkastl nebenbei läuft, und dann wird irgendwann gearbeitet [...] geht es für mich am Sinn vorbei“ [if

it is used like that, if the TV runs at the same time, and sometimes, they are working [...] then it misses the point], and „der Avatar ist eigentlich für Kinder erfunden worden, die aufgrund von Chemotherapie nicht in die Schule kommen dürfen“ [the avatar was developed for children that cannot come to school because of their chemotherapy]. While it is more apparent that the former two examples contain instances of disablism due to the almost derogatory language, the latter quote may be seen as rather subtle. To be more specific, the idea that the telepresence robot was invented exclusively for learners undergoing chemotherapy is a very narrow view of who can benefit from a telepresence system. Moreover, this idea creates a hierarchy of different disabilities. In doing so, P3 takes it upon herself to judge who is ‘suitably disabled’ for a telepresence robot; a sentiment that has already been reflected in the mini corpus analysis. Therefore, it can be argued that this code is a manifestation of structural disablism as P3 shares a judgment on who deserves a telepresence system and who does not, thereby structurally oppressing those who do not fit this criterion of being ‘suitably disabled’.

On the other hand, *lack of control* is something that is alluded to in some other sources, such as the other interviews and the analysed written materials, but only explicitly occurs in the interview transcript of P3. In more detail, this code signifies quotes in which P3 states that she perceives the lack of control that she has over the education of the telepresence user, since they are not physically present in her classroom, as a considerable disadvantage of this assistive technology. In the following, some examples are listed: „keine maßgebliche Kontrolle für Leistung der Kinder, der Avatar alleine ersetzt den Unterricht nicht“ [no real control over the performance of the children, the avatar alone does not replace classes], and „man braucht schon ein komplettes System: die Lehrer und Eltern müssen sich konkret absprechen [...] nur dann erhält das Kind wirklich sinnvollen Unterricht“ [you need a complete system: the teachers and parents need to make arrangements [...] only then, the child receives a meaningful education]. This code entails the assumption that learning and teaching in an on-site classroom is the best possible option for all parties involved. Moreover, it supports the notion of a rather teacher-centred way of imparting knowledge, in which the teacher would have the most control over the learning processes of the students. Therefore, it can be argued that this is deeply intertwined with the idea of cultural norms, in this case, particularly with cultural norms revolving around learning and teaching. Consequently, this code would be an instance

of cultural disablism, as cultural and societal norms also play a significant role in this form of disablism.

As it has already been alluded to in the description of the code *misuse of telepresence systems*, *suitable disability* is yet another pattern that comes up in the interview with P3. This idea is also argued for in the Research Article analysed for the mini corpus analysis. More specifically, it is connected with the notion that in order to benefit from using a telepresence system in an educational setting, the user needs to be 'suitably disabled'. In this case, being 'suitably disabled' refers to a person who is healthy enough to take part in the lessons actively, but, at the same time, 'disabled enough' so that they require a telepresence robot to attend school. The following quotes exemplify the occurrences of this pattern in the interview transcript: „da stößt du aber ewig an deine Grenzen, verlierst du die Freude, dann benützt du das Ding nicht mehr, weil dir visualisiert wird, was du können solltest, aber nicht können kannst“ [you will be stretched to your limits forever, you lose your joy, then you will not use the thing anymore because you are shown what you should be able to do, but you cannot be able to do], „wo es Sinn macht, dass das Kind darüber unterrichtet werden kann, und es nicht wie Fernsehshow ausartet“ [where it makes sense that the child is taught via the telepresence system, and it does not turn into a TV show], and „was auch schade für diese Technik ist, wo die Kosten-Nutzen-Frage komplett auseinander geht“ [which is a pity for this technology, if the cost and the benefit do not match]. Similar to the interpretation of the code *misuse of telepresence systems*, this code is also deeply intertwined with a narrow view on who deserves a telepresence robot and who does not. Subsequently, I argue that this code also has to do with structural disablism since individuals who do not match the description provided in the quotes are, in the view of P3, not suitable for the usage of a telepresence robot.

In addition to all of the abovementioned codes, a number of other codes can also be added to the category of *disablism*. More specifically, the patterns of *privacy*, *unaware of disablism*, as well as *negative emotions*, can be identified in the interview transcript. All of these codes are also identifiable in other sources, either in other interviews or in the results of the mini corpus analysis. However, as they are now also occurring in the interview with P3, this adds a further layer of evidence to the line of argumentation that telepresence users in educational settings experience these forms of disablism. In the following paragraphs, these codes are elaborated on.

As in the other interviews and the results of the mini corpus analysis, the code *privacy* can be retrieved once more. Again, this pattern is focused on statements related to the privacy of the social environment of the telepresence user, predominantly the teachers' privacy. In the following statements, this code is exemplified: „es gibt auch Sicherheitsvorkehrungen, dass dieses Tablet, mit dem der Avatar verbunden ist, nicht gescreenshottet werden kann, sodass wir auch unsere Privatsphäre und unseren safe space haben“ [there are also safety measures, so that the tablet that is connected to the avatar cannot be screenshotted, so that we also have our privacy and our safe space], and „man bekommt eine Einschulung, dann bist du safe, dass dir da nix passiert, wegen deiner Privatsphäre“ [you receive an instruction, then you are safe and nothing will happen to you concerning your privacy]. Both quotes present the telepresence robot as a threat to the educators' privacy. Implementing Gee's "fill in tool," the implications P3 deliberately leaves out can be interpreted (*How to do Discourse Analysis* 11). By alluding to a 'safe space' as well as 'nothing being able to happen' [„dass dir da nix passiert“], it suggests that the opposite of this safe space, namely a certain threat, exists as well. In this case, I claim that the worst-case scenario for teachers is that an unauthorised person gains access to the telepresence robot and starts recording what is happening inside the classroom. Especially the passage in which P3 describes the safety measures [„Sicherheitsvorkehrungen, dass dieses Tablet, mit dem der Avatar verbunden ist, nicht gescreenshottet werden kann“] alludes to this fear. Consequently, the telepresence robot is associated with negative emotions and the imagination of worst-case scenarios instead of seeing it as what it truly is: an assistive technology for disabled learners. Thus, it can be argued that this code is a manifestation of aversive disablism since this form of disablism is also often associated with negative sentiments that one may not be aware of consciously.

Comparable to this finding, the code *unaware of disablism* represents this state of being unaware of oppression against disabled individuals that happens around oneself. Similar to the interview with P2, P3 exhibits behaviours that may show how unaware of, and unaffected by, disablism she is. Once again, the following sentences and phrases provide examples of how this code is realised in the interview: „an diesem Thema der Diskriminierung bin ich gleich hängen geblieben, aber in all diesen vier Jahren kann ich das nicht bestätigen“ [I instantly noticed this topic of discrimination, but in all of these four years, I cannot confirm this], and „von den vierzehn Schülern gibt es vielleicht ein bis zwei, die mit den Kindern nix anfangen können, aber auch hier ist es kein Diskriminieren, die haben einfach keine Bindung“ [out of the

fourteen students there are maybe two that do not know what to do with the children, but that is not discrimination, they simply do not have a bond]. Furthermore, as she is asked if her students who are using a telepresence system are being discriminated against or excluded in any way, she responds that they are not excluded at all [„nein, überhaupt nicht“]. It is particularly noticeable that P3 asserts herself as an authority by underscoring her years of experience [„in all diesen vier Jahren kann ich das nicht bestätigen“]. This substantiates the necessity of analysing the underlying power dynamics of this code, and this utterance in particular. Employing Gee’s “identity building tool,” the type of persona P3 enacts in this code can be interpreted (*How to do Discourse Analysis* 110). In more detail, P3 presents herself as a knowledgeable expert on the topic, which suggests that she does not wish to be questioned or challenged on her view. In particular, the quantifiable experience underlines this tendency as she does not base her expertise on feelings, but on numbers, or in other words, on facts. However, most likely unintentionally, she also characterises herself as a person who is unaware of disablism as she vehemently denies its existence. Subsequently, the code *unaware of disablism* can be interpreted as a manifestation of aversive disablism.

As it is also alluded to in the previous codes, a common theme in this interview is the negative emotions with regard to telepresence robots and, by extension, their users. These negative emotions are bundled in the eponymous code *negative emotions*. In this code, various statements in which the negative emotions with regard to telepresence users or telepresence systems are either explicitly mentioned or alluded to are compiled. The following sentences or phrases exemplify this code: „ich muss gestehen, anfangs hatte ich Skepsis dem Avatar gegenüber“ [I have to admit, in the beginning, I was sceptical of the avatar], „[...] ein neues, verstärkendes Internetkastl, das haben wir auch in der Klasse stehen, auf dem Fensterbrett, dort stört es niemanden“ [a new, Wi-Fi modem, we also have it in the classroom, on the windowsill; it does not bother anyone there], „es ist einfach zu bedienen [...] dann kann die Stimmung dem Ding gegenüber gar nicht negativ sein“ [it is easy to operate [...] then, the mood towards the thing cannot be negative at all]. It is observable that the emotions that the teachers feel, or in this case, P3 specifically feels, seem to be conditional. More specifically, if the telepresence robot or its supplementary equipment, such as a Wi-Fi modem [„verstärkendes Internetkastl“] only takes up little space, or if the assistive technology is easy to operate [„es ist einfach zu bedienen [...]“], negative emotions are less likely to occur. The idea that disabled individuals and their assistive technology are supposed to take up as little

space as possible in order not to interfere with anybody else can be interpreted as an instance of disablism. This line of thought intends to reduce disabled people to a bearable minimum. This phenomenon can be described as a form of psycho-emotional disablism since it actively disables and oppresses disabled individuals, prescribing to them how they should behave.

After this analysis of the category of *disablism*, attention should be drawn to the lexical choice of the German words *Behinderung* [disability] versus *Beeinträchtigung* [impairment], as well as other terms that P3 uses in order to refer to disabled individuals. It is noticeable that P3 uses a relatively broad range of terms to refer to her disabled learners, beginning with „schwerbehinderte Kinder“ [severely disabled children] at the beginning of the interview, continuing with „Kinder mit Handicap“ [children with a handicap], and lastly, „besondere Kinder“ [special children]. The latter is most likely the most noteworthy phrase in terms of analysis, especially in the context in which it is used: „die besonderen Kinder sind den anderen Kindern auch abgegangen, der eine ist mit seinem elektrischen Rollstuhl wie ein Rennfahrer gekommen“ [the other children have missed the special children, one of them entered the classroom like a racing driver in his electric wheelchair]. On a surface level, this sentence may seem very positive as the wheelchair is compared to something prestigious: a race car. However, at a deeper level, this utterance would be a form of benevolent disablism, since, even though P3 may have meant well, this sentence serves to distinguish the disabled person from the rest of the group. Therefore, an ‘us versus them’ mentality is created and upheld. In conclusion, these lexical choices can be seen as a form of disablism: aversive disablism.

Apart from the instances of disablism that recur throughout the interview, insights regarding the concepts of embodiment and disembodiment can also be drawn. These insights are captured in the category *(dis)embodiment*. In general, P3 seems to agree with the concept of embodiment in telepresence users in educational settings. However, she believes that in the case of her student, this phenomenon is not taking place due to the specific circumstances that her remote learner is in. These thoughts are represented in the following quotes: „wenn man aufgrund von Krankheit für ein paar Monate zuhause bleiben muss und deswegen einen Avatar hat, [...] dann identifizierst du dich eher damit, glaube ich“ [if you have to stay at home for a few months because of a disease and you have an avatar because of it [...] then you identify with it, I believe], „ich glaube nicht, dass meiner das tut, glaube ich nicht“ [I do not think that mine does that, I do not think so], „dieses abwesend sein, das hatte nichts mit Avatar

zutun, [...] das war wirklich, weil Dinge von ihm verlangt waren, die er nicht mehr konnte“ [this state of being absent, it did not have anything to do with the avatar [...] that was really because things were expected of him that he could not do anymore]. Overall, she underlines the importance of identification with the telepresence robot, but denies that this phenomenon is taking place with her student, based on this student’s personal capabilities.

In conclusion, various instances of disablism can be identified in the interview with P3. In addition, P3 agrees to the existence of embodiment in telepresence users in educational settings, but states that this is not the case for the remote learner in her class. A particularly noticeable feature is how P3 presents herself as an expert on the topic of telepresence robots. Furthermore, she seems to prefer it when assistive technology takes up as little space as possible in her classroom.

In general, the interviews provide insights into how disablism and (dis)embodiment are perceived by telepresence users and their educators alike. Some of the codes recur across multiple interviews, such as *privacy* or *unaware of disablism*, while others are unique to singular interviews, such as *telepresence robots for autistic people*. Concerning embodiment, it can be noted that the overall consensus is that embodiment exists, even if not all of the interview participants can verify the existence of embodiment in telepresence users in their own specific settings.

6. Discussion

In the subsequent sections, the findings are summarised and connected to the theoretical background in order to find answers to the research questions of this thesis. Furthermore, implications for the future of telepresence systems in educational settings are drawn. To structure this discussion section, the interpretations and implications are divided into three subsections. The first subsection is concerned with the topic of disablism, the second with disembodiment and embodiment, and the third focuses on the implications for the future.

6. 1 The role of disablism

First and foremost, the research question that is answered in this subsection is “What role does disablism play in the experience of telepresence users?” In addition, the interpretations and implications elaborated on in this subsection are also guided by the supporting question “Which types of disablism are most commonly experienced by telepresence users in educational settings?” To answer these research questions, the findings from the previous sections are to be connected to the theoretical background established at the beginning of the thesis.

Particularly in the interview with P1, it can be seen that she experiences disablism and has mixed reactions to it, even though she no longer uses a telepresence system. On the one hand, she expresses negative emotions such as anger and disbelief at manifestations of disablism in her life. However, on the other hand, she states that she understands some of the reactions of her social environment, which are classified as examples of disablism. Subsequently, it can be argued that disablism plays the role of ‘a necessary evil’ in her life. She seems to have grown accustomed to its existence, and while some instances trigger negative emotions in her, she does not seem to be overly shocked when she encounters disablism. Relating this finding back to the theoretical background, it can be said that this status quo – the acceptance of disablism in society – is to be questioned (Meekosha and Shuttleworth 48). Teachers, especially, should do this in order to establish a more respectful environment for their disabled students.

To answer the supporting question of which types of disablism are most commonly experienced by telepresence users in educational settings, the occurrences of the codes that occur in the mini corpus analysis, as well as the interviews, are counted. This clearly shows that aversive disablism is the most frequent form of disablism in both the analysed written materials and the interviews. It can be found in two of the selected written materials and in all three interviews. In total, thirteen instances of aversive disablism can be counted. Closely following this, cultural disablism is present in three of the handbooks and other materials, and all three interviews, with ten manifestations in total. In comparison, psycho-emotional and structural disablism are both rather rare. The former occurs in one handbook and in two interviews, while the latter is present only in two of the interviews, but not in any of the analysed written materials. In total, five instances of psycho-emotional disablism can be identified, and three examples of structural disablism. In conclusion, the answer to the

supporting question is that aversive disablism and cultural disablism are the most frequently experienced forms of disablism by telepresence users in educational settings.

While it is not explicitly mentioned in prior academic analyses which types of disablism are the most frequent, reasons why aversive disablism occurs the most often can be deduced from the literature. To be more precise, Deal argues that this form of disablism often goes unnoticed by the victims, but most importantly, also by the perpetrators (93). In some cases, aversive disablism may even be the result of well-meaning policies that actually oppress and segregate disabled people (Deal 96). An example would be an educational institution that supports segregated schooling for disabled individuals, even though this harms them (Deal 96). Neither in the analysed written materials, nor in the interviews does the idea of segregated schooling occur. However, similar notions that may be well-meaning but in the end oppress disabled individuals can be observed. An example of this phenomenon is the following sentence by P3: „[D]ie besonderen Kinder sind den anderen Kindern auch abgegangen; der eine ist mit seinem elektrischen Rollstuhl wie ein Rennfahrer gekommen“ [The other children have missed the special children; one of them entered the classroom like a racing driver in his electric wheelchair]. Even though she may intend to strengthen the confidence of her disabled student by comparing them to a race driver, in the end, she segregates them from the rest of the students by creating a difference between them and the other learners through the emphasis on the wheelchair. By comparing this assistive product to something as extraordinary as a race car, in turn, she also treats the wheelchair as something unusual. In conclusion, this reasoning matches the description of aversive disablism in the work of Deal (93).

Apart from aversive disablism, cultural disablism is another frequent theme in the mini corpus analysis, as well as in the interviews. As critical disability studies focus on pointing out the ideas of societal norms that oppress disabled individuals, it is not surprising to see that cultural disablism is a commonly occurring theme. Particularly, the ideas of the scholars that apply Butler's ideas to criticise bodily norms that constitute bodies that deviate from this norm as 'freakish' are significant in this part of this thesis (Samuels 62-63; Cho 18). Throughout the analysed written materials, but especially in the interviews, value judgements concerning the design of telepresence robots are made. While robot 'bodies' cannot be completely equated with a human body, they can at least be likened to it, especially because telepresence models such as the AV1 are intended to have an anthropomorphic appearance. Especially P2 makes

remarks based on the design of the telepresence robots, explicitly preferring those models that look more pleasant or more anthropomorphised [„sympathisch“]. While she does not explicitly call the other models that do not fulfil this criterion freakish, she clearly devalues telepresence robots that do not match her aesthetic ideals. These value judgements, in turn, also discriminate against the remote user. In this case, P2 judges the appearance of the disabled students’ assistive technology or, following the idea of embodiment, an extension of their own selves into the classroom. In conclusion, as these ideals and norms are closely intertwined with societal values of beauty and aesthetics, they can be seen as cases of cultural disablism as defined by Goodley and Runswick-Cole (606).

6. 2 The role of (dis)embodiment

For the subsection on disembodiment and embodiment, the most relevant research question is: “What role does (dis)embodiment play in the experience of telepresence users?” Moreover, the supporting questions “How do telepresence users in educational settings perceive their body? Is the telepresence system freeing or another form of disembodiment?” are intended to further structure the insights.

In terms of the main research question, the answer is relatively straightforward. In the interview with P1, embodiment plays a significant role in her everyday school life, allowing her to experience a sense of belonging in the classroom. Specific functionalities of the telepresence robot, such as being able to whisper to her seat neighbour, or being able to virtually raise her hand, strengthen this feeling. Furthermore, being able to personalise her telepresence system by decorating it with fake eyelashes and a necklace increases this sense of embodiment. Most of the analysed written materials also acknowledge the potential of embodiment. However, the opinions of P2 and P3 concerning embodiment are rather mixed, and they are not as convinced by this phenomenon as P1. Still, as this thesis focuses on the experience of telepresence users, the views of P1 are weighted more strongly than those of the other interview participants.

Concerning the supporting question of how telepresence users in educational settings perceive their body and whether the telepresence system is freeing or another form of disembodiment, the findings are not as clear. In the interview with P1, the body image is not

explicitly mentioned. However, she shows a feeling of gratitude towards the telepresence robot, and after some initial doubt, she ultimately states that she felt embodied through it. This rather mixed perspective aligns with the literature. Especially in this increasingly technologised society, boundaries between machines and humans are blurring, and it is not fully clear-cut where one begins and the other ends (Buongiorno 320). This phenomenon is also referred to as the embodiment-disembodiment-re-embodiment scheme, demonstrating a complex fluidity rather than a clear-cut process (Buongiorno 318). Taking these aspects into consideration, I argue that the telepresence system can be liberating for telepresence users due to the positive aspects that are voiced by P1.

6. 3 The future of telepresence robots in educational settings

The most crucial insight from the previous subsections is that both disablism and (dis)embodiment play a significant role in the experience of telepresence users in educational settings. Therefore, it is important to consider these phenomena when discussing the future of telepresence robots in educational settings. In the following, suggestions for a more inclusive education and for future research are made.

Particularly, the findings from the interviews with P2 and P3 suggest that teachers need to be further educated on the topic of disablism and (dis)embodiment in the experience of telepresence users in educational settings. A multitude of the codes present in the interview transcripts suggests that both P2 and P3 show limited awareness of disablism in educational settings, including their own disablist tendencies. Moreover, the phenomenon of embodiment is rather unknown to the teachers, especially concerning the possibility of personalisation. P2, for instance, claims that cleaning the telepresence robot after the user finishes using it is too much effort for her, implying that she does not like her students personalising their telepresence systems. It may be possible that, were she made aware of the positive impact that personalisation could have on telepresence users and their sense of embodiment, she would not be as opposed to this procedure as she currently is. Therefore, courses and professional development seminars that specifically target disablism and (dis)embodiment in the experience of telepresence users in educational settings could be a beneficial measure. As

a consequence, the educators' awareness could be raised, and they would be able to support their learners more.

A topic that should specifically be targeted in these seminars would be the currently dominating understandings of disability, such as the social versus the medical model, or the differentiation between disabled and non-disabled individuals (Meekosha and Shuttleworth 50). Learning about these different models and why certain understandings, such as the medical model, can harm disabled individuals would be important, as this would allow teachers to develop more understanding towards disabled students. Trying to put individuals into certain categories can contribute to discrimination against these people and can perpetuate a rather narrow definition, which is why it should be avoided. However, these narrow definitions of only viewing certain people as 'suitably disabled' are often present in the analysed written materials, as well as the interviews. For instance, P3 states that only students who are undergoing chemotherapy should have a telepresence system, as this technology was originally intended for them. Similarly, disability is often thematised in a way that emphasises deficiency (Meekosha and Shuttleworth 51; Minich 4). Applying the medical model, the medical language that is often used in the written materials, but also in the language used by the educators in the interviews, is an instance of this deficit-based behaviour. Subconsciously or not, it seeks to reduce disabled individuals to a medical diagnosis and its symptoms. In conclusion, these harmful beliefs and linguistic choices with pejorative connotations, such as a focus on deficits represented by overly medical language, should be counteracted by providing educators with informative professional development courses that explain why these behaviours can be problematic.

Lastly, it is crucial that these seminars not only inform about disablism, but about the concept of intersectionality. Historically, disability and femininity have frequently overlapped as diseases such as hysteria or post-natal depression have been associated with individuals who are assigned female at birth (Goodley, *Disability Studies* 46). Even today, these overlapping discriminations still exist. An example can be seen in the analysed written materials, namely in Handbook 2, where anxiety is depicted as a stereotypically feminine issue. Therefore, I suggest that different forms of discrimination cannot be tackled in isolation, but need to be investigated and combatted in conjunction.

While important insights are gained with regard to these topics, some research gaps still remain unexplored due to the scope of this thesis. Future research studies could, for instance, conduct a study that is similar to the one conducted in this thesis, but could aim for a larger sample size. In doing so, the findings would be more generalisable, and the conclusions drawn from this thesis could be either verified or falsified. Another possible option would be to investigate the potential of high-fidelity telepresence systems – telepresence systems that allow total multisensory immersion, as explored in the literature review – in educational settings (Dolezal 210). A possible research question would be whether more immersive telepresence robots enhance the embodiment in telepresence users. Especially as the findings of this thesis already suggest that the more anthropomorphic a telepresence system looks, the more it has the potential to strengthen embodiment, a study of this type could provide valuable insights.

7. Conclusion

In conclusion, the aim of the present thesis was to analyse the current state of telepresence systems in educational settings. In more detail, the research questions of which role disablism and (dis)embodiment play in the experience of telepresence users were investigated. To retrieve answers to these research questions, a mini corpus analysis of guidebooks and research articles mainly targeted at educators, as well as semi-structured interviews with a telepresence user and two teachers, were conducted. In the subsequent paragraphs, the main findings of each section of this thesis are elaborated on.

Building on this methodological background, Section Five encompassed the findings and analysis of the results of the mini corpus analysis, as well as of the semi-structured interviews. Overall, instances of disablism could be found in each document, including the interview transcripts, with aversive and cultural disablism being the most prominent forms of disablism. Most frequently, disablism occurred because teachers either had fears regarding the telepresence system and what the use of this assistive technology would mean for their privacy or because the telepresence user did not match their societal norms and expectations. For instance, one interviewee believed that only individuals with certain diseases and disabilities, specifically mentioning cancer, should be able to use a telepresence system to attend school. Therefore, a hierarchy between specific disabilities could be identified. When directly asked

about disablism, however, the teachers denied that it existed in the experience of telepresence users. The telepresence user who was interviewed openly reflected on the disablism that she experienced, and she remained indifferent towards certain manifestations, or even claimed that she could understand certain forms of disablism. As such, disablism assumed the role of a necessary evil in her life.

With regard to embodiment and disembodiment, the telepresence user who was interviewed ultimately stated that she experienced embodiment because of her telepresence robot. Especially the possibility to personalise her telepresence system by decorating it with false lashes and a necklace enhanced this phenomenon of embodiment. This line of argumentation was also supported by the findings from the mini corpus analysis. The teachers who were interviewed, however, were a bit more sceptical of embodiment. Furthermore, they did not see the value in personalising the telepresence robot, and they claimed that it was too time-consuming for them, which is why they did not let their students personalise their telepresence systems any longer.

Due to these findings, Section Six intended to synthesise the findings, link them back to the theoretical background, and find answers to the research questions. In addition, the current state of telepresence systems in educational settings was analysed, and suggestions for the future of telepresence robots were made. Mainly because of the instances of disablism in the interviews with teachers, but also in the mini corpus analysis, measures such as professional development courses were suggested. Lastly, suggestions for future research projects were made, as the present study provides valuable insights, but some research gaps remained unexplored. For instance, the potential of high-fidelity telepresence systems for educational settings was highlighted.

Overall, the implications of this thesis should predominantly be important for teachers as they are confronted with the reality of disabled students and telepresence users in their classes. Educators are legally obliged to treat all their students with the best interests in mind, regardless of whether they attend their classes in person or participate virtually. Thus, the findings of this thesis unveiled areas where educators may need to reflect on their subconscious biases in order to provide all students with the education that they deserve.

29791 words

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9. Appendix

9. 1 Appendix A: Questions from Semi-Structured Interviews

Hinweis: [Note:]

Avatar/Telepräsenzsystem wird hier synonym benutzt. [The terms avatar/telepresence system are used as synonyms here.]

Nachdem es sich um semi-structured interviews handelt, werden nicht unbedingt alle Fragen in jedem Interview gestellt werden. Der nachfolgende Leitfaden dient lediglich als Stütze. [As the interviews are semi-structured interviews, not all questions are going to be asked in every interview. The following questions are only used as a support.]

Für Schüler*innen: [For students:]

Seit wann benutzt du einen Avatar/Telepräsenzsystem, um am Unterricht teilzunehmen?
[Since when have you been using an avatar/telepresence system to participate in class?]

Wie bist du/wie sind deine Eltern darauf gekommen, einen Avatar zu benutzen? [How did you/your parents come up with the idea to use an avatar?]

Was magst du an der Arbeit mit deinem Avatar? [What do you like about working with your avatar?]

Was magst du an der Arbeit mit deinem Avatar nicht? [What do you dislike about working with your avatar?]

Bereich disablism: [Questions about disablism:]

Fühlst du dich von deinen Schulkolleg*innen ausgegrenzt? Falls ja, inwiefern? [Do you feel excluded by your colleagues? If yes, to what extent?]

Hast du schon einmal Situationen erlebt, in denen du wegen deinem Avatar schlecht behandelt (diskriminiert) wurdest? [Have you ever experienced situations in which you were treated badly/discriminated because of your avatar?]

Wie hast du dich in solchen Situationen gefühlt? [How did you feel in these situations?]

Wie reagieren Lehrkräfte auf den Avatar? [How do your teachers react to the avatar?]

Wie reagieren Mitschüler*innen auf den Avatar? [How do your peers react to the avatar?]

Hast du das Gefühl, dass dich Lehrkräfte gleichberechtigt behandeln? [Do you feel like teachers treat you the same way as they treat other students?]

Bereich (dis)embodiment: [Questions about (dis)embodiment:]

Wie stehst du zu deinem Avatar? [How do you feel about your avatar?]

Was bedeutet er für dich? [What does your avatar mean to you?]

Siehst du deinen Avatar als Teil deiner Selbst an, oder ist er für dich ein eigenständiger Gegenstand? [Do you see your avatar as a part of yourself, or is it just an object to you?]

Fühlst du dich körperlich im Klassenzimmer anwesend? [Do you feel physically present in the classroom?]

Konntest du deinen Avatar schmücken (personalisieren)? Wie sieht er aus? [Could you decorate/personalise your avatar? What does it look like?]

Gibt es Momente, in denen du dich besonders anwesend oder abwesend fühlst? [Were there moments in which you felt particularly present or absent?]

Für Lehrkräfte/Schulleitungen: [For teachers/principals:]

Seit wann sind an Ihrer Schule Avatare/Telepräsenzsysteme im Einsatz? [Since when have avatars/telepresence systems been used in your school?]

Wie haben Sie erstmals von Avataren erfahren? [How did you find out about avatars?]

Was empfinden Sie an der Arbeit mit Avataren als gelungen/was fällt Ihnen leicht? [What do you like about working with avatars/what is easy for you?]

Was empfinden Sie an der Arbeit mit Avataren als weniger/nicht gelungen/was fällt Ihnen schwer? [What do you dislike about working with avatars/what is hard for you?]

Bereich disablism: [Questions about disablism:]

Haben Sie das Gefühl, dass Schüler*innen, die ein Telepräsenzsystem verwenden, von ihrer Klasse ausgegrenzt werden? Falls ja, inwiefern? [Do you feel like students who use a telepresence system are excluded from their class? If yes, to what extent?]

Haben Sie schon einmal Situationen erlebt, in denen die betroffenen Schüler*innen Diskriminierung erfahren haben? [Have you ever experienced situations in which the affected students have experienced discrimination?]

Wie haben Sie in einer solchen Situation agiert? [How did you act in these situations?]

Was war Ihre erste Reaktion auf den Avatar? [What was your first reaction to the avatar?]

(Wie) hat sich Ihre Einstellung in Bezug auf den Avatar im Laufe der Zeit geändert? [How did/did your opinion on the avatar change over time?]

Wie reagieren Kolleg*innen auf den Avatar? [How do your colleagues react to the avatar?]

Wie gehen Sie vor, wenn ein Avatar erstmals in einer Klasse benutzt wird? Inwiefern sensibilisieren Sie die Schüler*innen? [How do you act when an avatar is used in a class for the first time? To what extent do you sensitise your students?]

Wie reagieren Schüler*innen auf den Avatar? [How do your students react to the avatar?]

Bereich (dis)embodiment: [Questions about (dis)embodiment:]

Nehmen Ihre Schüler*innen die Möglichkeit wahr, den Avatar zu personalisieren? Wenn ja,

wie sieht dies üblicherweise aus? [Do your students personalise their avatars? If yes, what do they normally look like?]

Was bedeutet Ihrer Meinung nach der Avatar für die betroffenen Schüler*innen? [From your perspective, what do you think the avatar means to the affected students?]

Denken Sie, dass die betroffenen Schüler*innen den Avatar als Teil ihrer Selbst ansehen, oder als eigenständigen Gegenstand? [Do you think the affected students see the avatar as a part of their own self, or just as an object?]

Haben Sie das Gefühl, dass der*die Schüler*in, der*die einen Avatar benutzt, im

Klassenzimmer anwesend ist? Wieso/wieso nicht? [Do you think that students who use an avatar are present in the classroom? Why/why not?]

Gibt es Momente, in denen Sie die betroffenen Schüler*innen als besonders anwesend/abwesend empfinden? [Are there moments in which you perceive the affected students as particularly present/absent?]

Für sonstige im Bereich Telepräsenz tätige Personen: [For miscellaneous individuals working with telepresence systems:]

Seit wann arbeiten Sie im Bereich von Telepräsenzsystemen? [Since when have you been working with telepresence systems?]

Wie sieht Ihre Arbeit genau aus? Arbeiten Sie direkt mit Schüler*innen, die Telepräsenzsysteme benutzen? [What does your work look like? Do you directly work with students who use telepresence systems?]

Wie haben Sie erstmals von Avataren erfahren? [How did you find out about the avatars?]

Was empfinden Sie an der Arbeit mit Avataren als gelungen/was fällt Ihnen leicht? [What do you like about working with avatars/what is easy for you?]

Was empfinden Sie an der Arbeit mit Avataren als weniger/nicht gelungen/was fällt Ihnen schwer? [What do you dislike about working with avatars/what is hard for you?]

Bereich disablism: [Questions about disablism:]

Haben Sie das Gefühl, dass Schüler*innen, die ein Telepräsenzsystem verwenden, von ihrer Klasse ausgegrenzt werden? Falls ja, inwiefern? [Do you feel like students who use a telepresence system are excluded from their class? If yes, to what extent?]

Haben Sie schon einmal Situationen erlebt, in denen die betroffenen Schüler*innen Diskriminierung erfahren haben? [Have you ever experienced situations in which the affected students have experienced discrimination?]

Wie reagieren Lehrkräfte üblicherweise auf den Avatar? [How do teachers normally react to the avatar?]

Wie reagieren Schulleitungen üblicherweise auf den Avatar? [How do principals normally react to the avatar?]

Wie gehen Sie vor, wenn ein Avatar erstmals in einer Klasse/in einer Schule benutzt wird? [How do you act when an avatar is used in a class for the first time?]

Bieten Sie besondere Sensibilisierungsworkshops für Lehrkräfte an? [Do you offer professional development workshops to sensitise teachers?]

Wie reagieren Schüler*innen auf den Avatar? [How do students react to the avatar?]

Bereich (dis)embodiment: [Questions about (dis)embodiment:]

Nehmen die Schüler*innen die Möglichkeit wahr, den Avatar zu personalisieren? Wenn ja, wie sieht dies üblicherweise aus? [Do students personalise their avatars? If yes, what do they normally look like?]

Was bedeutet Ihrer Meinung nach der Avatar für die betroffenen Schüler*innen? [From your perspective, what do you think the avatar means to the affected students?]

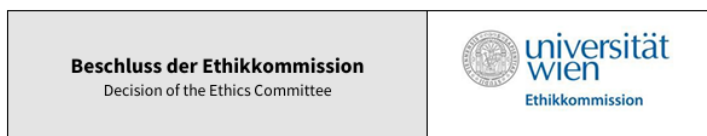
Denken Sie, dass die betroffenen Schüler*innen den Avatar als Teil ihrer Selbst ansehen, oder

als eigenständigen Gegenstand? [Do you think the affected students see the avatar as a part of their own self, or just as an object?]

Haben Sie das Gefühl, dass der*die Schüler*in, der*die einen Avatar benutzt, im Klassenzimmer anwesend ist? Wieso/wieso nicht? [Do you think that students who use an avatar are present in the classroom? Why/why not?]

Gibt es Momente, in denen Sie die betroffenen Schüler*innen als besonders anwesend/abwesend empfinden? [Are there moments in which you perceive the affected students as particularly present/absent?]

9. 2 Appendix B: Waiver from Ethics Committee



Antragsteller*in / Applicant: [REDACTED]
Bearbeitungsnummer / Reference Number: **01450**
Projekttitle / Title of Project: **Beyond the body: The role of disablism and (dis)embodiment in the experience of telepresence users in the EFL classroom**

Die Stellungnahme der Ethikkommission erfolgt aufgrund folgender eingereichter Unterlagen / The decision of the Ethics Committee is based on the following documents:

10.11.2025

- Einverständniserklärung Erwachsene
- Einverständniserklärung Kinder
- [REDACTED] proposal MEd thesis_ver3_comKw

13.11.2025

- 01_25_Antragsformular_Ethikkommission_MAtthesis [REDACTED]
- Interviewleitfaden

05.01.2026

- 01_25_Antragsformular_Ethikkommission
- cover letter
- Einverständniserklärung Erwachsene
- Einverständniserklärung Kinder
- Einverständniserklärung Lehrkräfte_Firmenvertreter
- Interviewleitfaden
- [REDACTED] proposal MEd thesis_ver3_comKw

Die Kommission fasst folgenden Beschluss (mit X markiert) / The Ethics Committee has made the following decision (marked with an X):

Zustimmung: Es besteht kein ethischer Einwand gegen die Durchführung der Studien. / Consent: There is no ethical objection to conduct the study as proposed.

Negative Beurteilung: Der Antrag wird von der Ethikkommission abgelehnt. / Negative evaluation: The proposal is rejected by the Ethics Committee.

Inhaltliche Abänderungen müssen der Ethikkommission vorgelegt werden. / Amendments to the content must be presented to the Ethics Committee.

Unterschrift / Signature

[REDACTED SIGNATURE]

Datum / Date

08.01.2026

Vorsitzender der Ethikkommission / Chair of the Ethics Committee

[REDACTED NAME]

9. 3 Appendix C: Coding Manual from Mini Corpus Analysis

Code	Definition	Example quote
privacy		“to protect sensitive information transmitted by telepresence robots” (SDU, <i>InClass Recommendations and Guidelines</i> 4)
telepresence robots as challenging		“challenges and considerations” (SDU, <i>InClass Recommendations and Guidelines</i> 2)
burden to the teacher		“much of the daily operation can also be delegated to the fellow students, who will often be both more technologically savvy and excited to take over” (SDU, <i>InClass Recommendations and Guidelines</i> 11)
disability as a nuisance		“hinder their academic progress and social development” (SDU, <i>InClass Recommendations and Guidelines</i> 5)
harmful stereotypes		“Telepresence robots make [the disabled students] autonomous” (SDU, <i>InClass Guidelines</i> 5).

normalcy as the ideal		“almost like a normal student” (SDU, <i>InClass Guidelines</i> 7).
intersectionality		“All the child needs is an internet connection and a regular internet browser” (SDU, <i>InClass Guidelines</i> 4)
gendered pronouns for referring to the robot		“[...] her classmates come and get her before every lesson” (SDU, <i>InClass Guidelines</i> 7)
equation of human and robot		“the robot became her” (SDU, <i>InClass Guidelines</i> 14)
absence of telepresence user		“[...] they remain part of the class despite their absence” (SDU, <i>InClass Guidelines</i> 5)
burden to parents		“[...] it would relieve their parents of the burden of having to organize their education and engagement [...]” (SDU, <i>InClass Guidelines</i> 4)
explicitly mentioning discrimination		“A long absence from school should not be a reason to exclude, discriminate, or stigmatise someone” (Turner et al. 4)
medical terminology		“curable” (Turner et al. 7)
integration vs inclusion		“they are those who desire integration and ‘normal’ treatment to a special degree” (Turner et al. 6)

feelings of the peers		<p>“[a telepresence user] was afraid that he would be a burden to the class and he did not want to cause a stir” (Turner et al. 41)</p>
embodiment: important aspects for peers	<p>entails factors that influence whether or not the peers of the telepresence user consider the telepresence robot to strengthen embodiment</p>	<p>“Moreover, classmates of the ill pupil are more likely to accept an entity, that is, to some extent, identified explicitly as a familiar subject, rather than a visually ‘default’ technology” (Turner et al. 20)</p>
disablism regarding death		<p>“Sometimes children with chronic illnesses die and this is extremely tragic for the school community. The robot should be removed quickly from the room and processes put in place to support students and teachers as they work through their grief” (Charteris et al. 2484-2485).</p>
negative attitude towards telepresence systems		<p>“It is pertinent to offer a salutary warning against using the technology to merely support interaction and passive attendance. With little substantive engagement in learning or serious scope for</p>

		contribution in the social relationships of the classroom, the use of telepresence for social presence may be little more than tokenistic" (Charteris et al. 2480)
--	--	--

Categories:

aversive disablism: burden to parents; burden to the teacher; harmful stereotypes

preferring others' feelings: disability as a nuisance; burden to the teacher; feelings of the peers

disembodiment: absence of the telepresence user

embodiment: gendered pronouns for referring to the robot; equation of human and robot

the ideal: normalcy as the ideal; medical terminology

Key Themes:

(i) While trying to portray itself as inclusive, the guidebook contains various instances of disablism, most likely due to subconscious biases and stereotypes.

(ii) Concerning embodiment and disembodiment, the guidebook conveys a mixed perspective: On the one hand, the potential of embodiment through a telepresence robot is (subconsciously) praised. On the other hand, some instances clearly describe disembodiment.

9. 4 Appendix D: Coding Manual from Semi-Structured Interviews

Code	Definition	Example quote
benefits		P1: „besser kommunizieren, weil man flüstern kann“ [communicating better because you can whisper]

inclusion		P1: „Ich war dadurch dann auch mehr integriert.“ [Because of this, I was more integrated.]
exclusion		P1: „oft war es bei Gruppenarbeiten dann so, dass es keiner mit dem Laptop machen wollte,“ [often, during group work activities, nobody wanted to do the activity with the laptop]
privacy		P1: „negative Erfahrungen hatte ich bei älteren Lehrkräften, die waren nicht so offen mit dem Avatar,“ [I had negative experiences with older teachers, they were not as open with the avatar]
feelings of the social environment		P1: „in anderen Klassen war ich ihnen manchmal nervig oder peinlich,“ [in other classes, I was annoying or embarrassing for them]
disembodiment		P1: „Der Avatar war für mich nur ein Gegenstand,“ [The avatar was only an object for me.]
embodiment		P1: „Irgendwie war es aber schon eine Erweiterung von meiner Selbst ins

		<p>Klassenzimmer. Dadurch war ich dann wieder viel mehr in den Unterricht einbezogen, vorher war ich nur am Zuhören, eigentlich.“ [But somehow, it was also an extension of myself into the classroom. Because of it, I was included into the lessons much more. Before that, I was only listening in, basically.]</p>
personalisation	<p>signifies passages in which P1 described how she personalised the telepresence robot she received</p>	<p>P1: „Den Avatar finde ich richtig cool. Ich konnte ihn auch selbst verzieren. Als ich ihn bekommen habe, habe ich ihm Wimpern aufgeklebt und eine Kette umgelegt.“ [I think the avatar is really cool. I could also decorate it myself. When I got it, I put fake eyelashes on it, as well as a necklace.]</p>
burden to teachers		<p>P2: „ihr entscheidet wann er aufgeschaltet wird und wann nicht, euch kann niemand zwingen [das Telepräsenzsystem aufzudrehen],“ [you decide when it gets switched on and when it does not, nobody</p>

		can force you to switch on the telepresence system]
unaware of disablism		P2: „Nein. Im Zuge des Avatargebrauchs? Nein. Ich denke nicht, dass das vorkommt.“ [No. While the avatar is used? No. I do not think that it happens.]
telepresence robots for autistic people		P2: „Einsatz bei Autismus, wo wir jetzt auch schon ein bisschen vorsichtig in die Richtung gehen, kann man aber nicht alles abdecken,“ [the usage for autism, where we are also, cautiously, moving into this direction, but you cannot cover everything]
comparing telepresence robots to other objects		P2: „[...] ein sehr sympathisches Ding, sehr, wie eine Mensch ärger dich nicht Figur,“ [a very pleasant thing, very, like a playing piece from <i>Man, Don't Get Angry</i>]
negative emotions		P3: „ich muss gestehen, anfangs hatte ich Skepsis dem Avatar gegenüber,“ [I have to admit, in the beginning, I was sceptical of the avatar]

misuse of telepresence systems		P3: „dann ist Übertragung über Avatar wie ein Netflix Lite Entertainment für zuhause“, [then the transmission via the avatar is like a Netflix Lite entertainment for the child at home]
lack of control		P3: „keine maßgebliche Kontrolle für Leistung der Kinder, der Avatar alleine ersetzt den Unterricht nicht“, [no real control over the performance of the children, the avatar alone does not replace classes]
suitable disability		P3: da stößt du aber ewig an deine Grenzen, verlierst du die Freude, dann benützt du das Ding nicht mehr, weil dir visualisiert wird, was du können solltest, aber nicht können kannst,“ [you will be stretched to your limits forever, you lose your joy, then you will not use the thing anymore because you are shown what you should be able to do, but you cannot be able to do]
technical aspects		P2: „Da verbindet man sich über MDM, in das Gerät gibt

		man den WLAN-Code ein und verbindet das Gerät mit dem WLAN vor Ort [...]“, [You connect via MDM, you enter the WiFi password into the device and connect the device to the WiFi on-site.]
downsides		P2: „Wir haben dort nicht so gut Empfang, wir sind aber gerade dabei, unsere Avatare mit ID ins Bildungsnetz in das stabile Internet einzuloggen [...].“ [We do not have a great connection there, but we are currently trying to connect our avatars with ID to the educational network, to the stable Internet.]
design		P2: „und es ist für die Klasse eben auch, sie reagieren sehr positiv, weil das Design sehr lieb gemacht ist [...]“, [and it is also for the classroom, they react very positively because the design is made in a very lovely way]
feelings of the telepresence user		P1: „Das ärgert mich, weil ich es einfach nicht nachvollziehen kann, weil [es] in meiner Hinsicht größere Probleme gab. Das war einfach nicht

		nachvollziehbar,“ [It angers me because I simply cannot understand it because in my opinion, there were bigger problems. That was simply not understandable.]
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Categories:

positive attributes of the telepresence robot: benefits; inclusion

disablism: exclusion; privacy; design; comparing telepresence robots to other objects; unaware of disablism; telepresence robots for autistic people; burden to teachers; misuse of telepresence systems; lack of control; suitable disability; negative emotions

feelings: feelings of the social environment; feelings of the telepresence user

(dis)embodiment: personalisation; disembodiment; embodiment

general aspects concerning telepresence systems: technical aspects; downsides; design

perceived disadvantages of telepresence systems: misuse of telepresence systems; lack of control; suitable disability

Key Themes:

themes from the interviews with the teachers are quite similar to the analysed written materials