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The Theoretical and Empirical Dimensions of Inclusive Education

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"I want to thank me for believing in me, I want to thank me for doing all this hard work. I wanna thank me for having no days off. I wanna thank me for never quitting. I wanna thank me for always being a giver and trying to give more than I receive. I wanna thank me for trying to do more right than wrong. I wanna thank me for being me at all times, […]." **Snoop Dogg**

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Abbreviations

UN-CRPD	United Nations – Convention on the Rights of Persons with Disabilities
LPA	Latent profile analysis
UPIAS	Union of the Physically Impaired against Segregation
LRE	Least-restrictive environment
SEN	Special educational need

List of Original Publications

Selisko, T. J., Eckert, C., & Perels, F. (2024). Models of disability as distinguishing factor: A theoretical framework of inclusive education and the application to a literature review. *Cogent Education*, *11*(1), 2379681. https://doi.org/10.1080/2331186X.2024.2379681

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Selisko, T. J., Eckert, C., & Perels, F. (accepted). The Who and What of Inclusive Education – Profiles of Student Teachers' Attitudes Toward Inclusive Education. *Frontiers in Education.*

Summary

The dissertation aims to provide a new approach to the conceptualization of inclusive education. A clear distinction between definitions of inclusive education, as well as their implications, is necessary for comparable findings; this is especially important concerning attitudes toward inclusive education.

This cumulative dissertation consists of three articles that share a common theoretical background, which is described in Chapter 2. It derives the main theoretical aspects that are relevant to the field of inclusive education and establishes the relationships between them. The framework of inclusive education that emerges sets the scene for the systematic literature review (i.e., Selisko, Eckert, et al., 2024), the network analysis of attitudes toward inclusive education (i.e., Selisko, Klopp, et al., 2024), and the latent profile analysis (LPA) of attitudes toward inclusive education (i.e., Selisko et al., accepted).

The first article presents a systematic literature review that derives the framework of inclusive education from theory and applies it to a body of literature on the topic of inclusive education (Selisko, Eckert, et al., 2024). By applying qualitative content analysis, the framework was used as a template to assort peer-reviewed articles since the United Nation Convention on the Rights of Persons with Disabilities (UN-CRPD, 2006). Results show a consistent increase in publications with inclusive education as the subject of discussion since the UN-CRPD and the predominant role of qualitative research in this field.

The second article applies the framework of inclusive education, in terms of an online questionnaire, to a sample of $N = 191$ student teachers and psychology students. This sample was analyzed using a quantitative, variable-based approach. The application of a Spinglass algorithm enabled the detection of two distinct communities in the network: an exclusion community and an inclusion community (Selisko, Klopp, et al., 2024). Additionally, further variables were incorporated into the network, including empathy, contact, authoritarianism, and social Darwinism to enrich the validity of the framework variables. The results revealed a firm exclusion community and a generalized inclusion community, which combines all aspects that are considered inclusive.

The third article takes a person-centered approach. As an additional perspective on the existing data, LPA was applied to detect patterns within the data of the student

teachers (N = 138). Like the variable-centered approach of the second article, the most viable solution revealed two classes that combine exclusion variables in the first class and all the inclusion variables in the second. While transmissive beliefs, a medical model of disability, and exclusion as preferred placement form a coherent combination of variables, constructivist beliefs, social- and relational models of disability, and full- and functional placement also combine possibly contradicting attitudes toward inclusive education.

The results show that the framework of inclusive education is applicable to the broader range of research on inclusive education and especially to the field of attitudes toward inclusive education. It provides a necessary concept to the core aspects of inclusive education and allows the deduction of conflicts that arise from upholding competing standpoints. The application to attitudes shows that the assessment of inclusive education is characterized by two, partly conflicting attitudes: a firm and coherent exclusive attitude on one hand, and an inclusive attitude on the other.

Zusammenfassung

Die Dissertation zielt darauf ab, einen neuen Ansatz zur Konzeptualisierung inklusiver Bildung zu bieten. Eine klare Unterscheidung zwischen den Definitionen inklusiver Bildung sowie deren Implikationen ist notwendig um die Vergleichbarkeit im Diskurs zu gewährleisten; dies ist besonders wichtig in Bezug auf Einstellungen zur inklusiven Bildung.

Diese kumulative Dissertation besteht aus drei Artikeln, die einen gemeinsamen theoretischen Hintergrund teilen, der in Kapitel 2 beschrieben wird. Es werden die wichtigsten theoretischen Aspekte abgeleitet, die für das Feld der inklusiven Bildung relevant sind, und die Beziehungen zwischen ihnen hergestellt. Das Rahmenmodell inklusiver Bildung, welches daraus entsteht, bildet die Grundlage für das systematische Literaturreview (Selisko, Eckert, et al., 2024), die Netzwerk-Analyse der Einstellungen zur inklusiven Bildung (Selisko, Klopp, et al., 2024) und die latente Profilanalyse (LPA) der Einstellungen zur inklusiven Bildung (Selisko et al., eingereicht).

Der erste Artikel besteht aus der theoretischen Herleitung des Rahmenmodells schulischer Inklusion und einem systematischen Literaturreview, welches die Kategorien des Rahmenmodells auf aktuelle Veröffentlichungen zum Thema inklusive Bildung anwendet (Selisko, Eckert, et al., 2024). Durch die Anwendung der qualitativen Inhaltsanalyse wurde das Rahmenmodell als Vorlage verwendet, um peer-reviewte Artikel seit der UN-Konvention über die Rechte von Menschen mit Behinderungen (UN-BRK, 2006) zuzuordnen. Die Ergebnisse zeigen einen konstanten Anstieg der Veröffentlichungen zum Thema inklusive Bildung seit der UN-BRK und die vorherrschende Rolle der qualitativen Forschung in diesem Bereich.

Der zweite Artikel wendet das Rahmenmodell inklusiver Bildung in Form eines Online-Fragebogens auf eine Stichprobe von $N = 191$ Lehramtsstudierende und Psychologiestudierende an. Diese Stichprobe wurde mit einem quantitativen, variablenbasierten Ansatz analysiert. Die Anwendung eines Spinglass-Algorithmus ermöglichte die Aufdeckung von zwei unterschiedlichen Communities im entstandenen Netzwerk: Eine Exklusion-Community und eine Inklusions-Community (Selisko, Klopp, et al., 2024). Zusätzlich wurden weitere Variablen in das Netzwerk integriert, darunter Empathie, Kontakt, Autoritarismus und Sozialdarwinismus, um die Validität des Rahmenmodells zu erhöhen. Die Ergebnisse zeigten eine kohärente Exklusions-

Community und eine generalisierte Inklusions-Community, die alle als inklusiv betrachtete Aspekte kombiniert.

Der dritte Artikel nimmt eine personenzentrierte Sichtweise ein. Als zusätzliche Perspektive auf die bestehenden Daten wurde eine LPA angewendet, um Muster innerhalb der Daten der Lehramtsstudierenden (N = 138) aufzudecken. Ähnlich dem variablenzentrierte Ansatz des zweiten Artikels zeigte die praktikabelste Lösung zwei Profile. Ein Profil vereinte alle exklusiven Variablen, während ein zweites Profil alle inklusiven Variablen anwendete. Während transmissive Überzeugungen, ein medizinisches Modell von Behinderung und eine bevorzugt exklusive Platzierung eine kohärente Kombination von Variablen bilden, kombinieren konstruktivistische Überzeugungen, soziale und relationale Modelle von Behinderung und vollständige und funktionale Platzierung ebenfalls (möglicherweise) widersprüchliche Einstellungen zur inklusiven Bildung.

Die Ergebnisse zeigen, dass das Rahmenmodell inklusiver Bildung auf das breite Spektrum der Forschung zur inklusiven Bildung und insbesondere auf das Feld der Einstellungen zur inklusiven Bildung anwendbar ist. Es bietet ein notwendiges Konzept zu den Kernelementen der inklusiven Bildung und ermöglicht die Ableitung von Konflikten, die aus dem Festhalten an konkurrierenden Standpunkten entstehen. Die Anwendung auf Einstellungen zeigt, dass die Bewertung der inklusiven Bildung durch zwei teilweise widersprüchliche Einstellungen gekennzeichnet ist: Feste und kohärente exklusive Einstellungen auf der einen Seite und lose, teils widersprüchliche inklusive Einstellung auf der anderen.

1 Introduction

In a perfect world, *inclusive education* would just be *education*. The inclusion of children with disabilities is not a revolutionary concept but is, at its core, the reversal of exclusion. The how and why of inclusion signifies the starting point of this dissertation, and it ends with a comprehensive assessment of attitudes toward inclusive education. Defining what is and is not inclusive education has been a continuous debate in the public and political domains as well as in academia (Ahrbeck & Felder, 2020; Ainscow, 1998; Göransson & Nilholm, 2014; Smyth et al., 2014). This debate has led to a lack of comparability, especially in research on inclusive education. For example, in large-scale and multi-national research, the only common denominator of inclusive education is the placement of children with and without special educational needs within the same educational environment, without the consideration of further aspects (e.g., Oh-Young & Filler, 2015; Szumski et al., 2017; Van Mieghem et al., 2020). This dissertation contributes to dissolving this conflict between conceptualizations by providing a framework that allows the allocation to broad categories of standpoints that share a coherent perspective on the education of children with disabilities. These core perspectives are:

- The model of disability, which determines the identification of the target group for inclusive education.
- The learning theory, which covers how learning and teaching occur. Consideration of the present or intended learning theory determines the assessment of heterogeneity of the student body.
- The placement of children with disabilities. Depending on national approaches to inclusive education, placement can either refer to how much time children with disabilities spend in the regular education classroom or the proportion of children with disabilities who are educated in regular education.

Because the framework suggests a holistic conceptualization of inclusive education it must, therefore, also be applicable to specific fields of empirical research. One very contested area of research is attitudes toward inclusive education (de Boer et al., 2011; Lüke & Grosche, 2018a; Navarro-Mateu et al., 2019). The application of the framework to attitudes provides insight into the relationship with previously established variables, as well as possible conflicts. By applying a variable-based approach, the

reciprocal relations within the framework can be assessed. In contrast, a person-centered approach can assess whether individuals hold personal convictions and beliefs that are in accordance with the framework.

Inclusion began as an activist movement during the 1970s in the wake of the fight for racial justice (Shakespeare, 2017; Winzer, 1993). Reinforced through the sociological concepts of stigma (Goffman, 2006), inclusion gained a considerable amount of momentum. Initiated by parents of children with disabilities, it grew into a movement that involved self-representation and equal rights in all facets of life (Rotatori et al., 2011), a development that ultimately led to an international aspiration for inclusive education and the United Nations-Convention on the Rights of Persons with Disabilities (UN-CRPD). Article 24 states:

> *1. States Parties recognize the right of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels and lifelong learning directed to:*
>
> *a. The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity;*
>
> *b. The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential;*
>
> *c. Enabling persons with disabilities to participate effectively in a free society.*

(UN-CRPD, 2006)

Despite a clear commitment to an inclusive education system, the UN-CRPD did not mark the end of exclusive settings. They continue to exist, especially in countries with a longstanding tradition of special education institutions (e.g., Ahrbeck & Felder, 2020).

However, this dissertation marks a contribution to inclusive education as a continuing process, driven not by the *right to inclusive education* but rather by the specific implications for education.

For the most part, the dissertation refers to persons with disabilities as the focus of research. Although the academic discourse has advanced to the inclusion of persons with other characteristics (e.g., migration, gender, and sexuality; Cerna et al., 2021), disability is formally assessed in the form of special educational needs (SENs) and can be a legitimate reason for spatial exclusion from regular education into special education institutions (Ainscow, 2007). In the context of inclusive education, the reasoning behind the process – from the identification of persons with disabilities to their exclusion – appears to be somewhat implicit and usually involves an argument involving learning performance and the discrepancy to normalcy in terms of prerequisites to regular education (Whitburn, 2017).

Therefore, the dissertation begins with the systematic derivation of the core principles of inclusive and exclusive education.

Firstly, the definition of disability as a central reference to the targeted group is examined. It refers to specific models of disability, which incorporate assumptions regarding the nature of disability and its relation to impairment on one hand, and barriers to participation on the other.

Secondly, theories of learning and teaching are examined. In the present case, these are considered along the spectrum from transmissive to radical constructivist. Specifically for inclusive education, it is necessary to consider the context and functioning of the system, which is supposed to include a broader range of persons. These theories are closely related to the appraisal of heterogeneity within classes.

Lastly, the placement of persons with disabilities in the educational system is examined. What appears to be the most obvious component of inclusive education is considered to be inseparable from the first two aspects. Placement refers to the different degrees of inclusive education and its feasibility for the educational system. The spectrum ranges from the complete exclusion of persons with disabilities from regular education to full inclusion.

Following this, the theoretical background of the dissertation is introduced. The focus lies predominantly on the components of the framework of inclusive education because it signifies the core principle of the dissertation. Most important is the reciprocal effect between the components of the framework because it lays the foundation for the hypotheses of article II and III.

2 Theoretical Background

The purpose of the dissertation is to develop a robust theoretical framework for research on inclusive education. It is apparent that the common ground in current research on inclusive education is not suitable for revealing differentiated results. First and foremost, there is an oversimplified conceptualization of inclusive education in large-scale and multinational studies that considers the placement of children with and without disabilities in the same learning space as a sufficient definition (e.g., Oh-Young & Filler, 2015; Szumski et al., 2017; Van Mieghem et al., 2020). Such definitions necessarily omit any consideration of how disabilities are assessed and how adaptations might be realized. On a smaller scale, but perhaps more importantly, the *attitudes* toward inclusive education are greatly confounded by competing definitions of inclusive education. Two questions arise:

Does a framework of inclusive education consisting of models of disability, learning theory, and placement provide sufficient and coherent perspectives on inclusive education? Furthermore, are these perspectives also applicable to attitudes toward inclusive education?

The development of the framework is therefore driven by three further questions, the answers to which form the prerequisites to a coherent definition of inclusive education:

1. *Who is the target group of inclusive education?*
   The target group is established through the model of disability, which sets the background for identifying those persons who need to be included. At one end of the spectrum, the medical model of disability can identify objectively the functioning of a person. On the other end, the social model identifies barriers to participation that cause the exclusion of persons with certain characteristics.

2. *How is learning and teaching understood?*
   Learning theory determines the feasibility of inclusive education. Learning, understood as a transmissive process from one person to another, generally assumes passive recipients of knowledge who can be more or less receptive. Heterogenous groups necessarily put pressure on differentiating the input. Constructivist beliefs on the other hand, already assume learning to be an

active construction and sense-making. Because individualization is understood as a precondition to learning, heterogeneity can only support a richer learning environment.

3. What is the preferred placement?

   Placement appears to be the main focus of discussion (Göransson & Nilholm, 2014). Exclusive placement is applied as an exclusion from general education, for example in special schools or classes. This exclusion can occur all the time or most of the time, as well as to all students with disabilities or only to some. This is the difference between exclusion and functional inclusion. Functional inclusion is the joint education of children with and without disabilities based on the severity of the disabilities and environmental factors; therefore, it becomes a matter of negotiation. Full inclusion is seen as full participation, all of the time.

The following section is concerned with the derivation of the framework of inclusive education (Selisko, Eckert, et al., 2024). It is divided into the main components: the model of disability, learning theory, and placement. In combination, these components form coherent conceptions of inclusive education: exclusion, functional inclusion, and full inclusion.

An account of the extensive history of special education and disability is beyond the scope of the dissertation; therefore, I refrain from reciting Winzer (1993, 2009), Rotatori et al. (2011), and Ellger-Rüttgardt (2008). However, these authors describe in detail the historical tradition of shame, isolation, and alleged inferiority of persons with disabilities, as well as the innovative work of early special educators and the activist movements that shaped societal shift toward inclusion.

2.1 Model of Disability

As the first major part of the dissertation, the three essential models of disability are discussed, which signify the spectrum between disability as an individual characteristic and disability as a social barrier to participation (e.g., Dunn, 2015; Gallagher, 2015; Gebhardt, Schurig, Suggate, Scheer, & Capovilla, 2022; Retief & Letšosa, 2018; Shakespeare, 2017; Waldschmidt, 2020). Because there are numerous

models of disability, each with considerable overlap but different emphasis (Waldschmidt, 2020), the discussion is limited to the medical, social, and the relational models. Neighboring models of disability are mentioned in the respective chapter.

The purpose of the model of disability in the dissertation is not to give a definitive answer to the question of what disability is or which model is *right*. The purpose is to provide a theoretical background that enables the assessment of subjective theories of disability.

Inclusive education, especially when understood as a counteraction to exclusion, involves a consideration of *who needs to be included?* Because disability signifies the fundamental characteristic on which a person is excluded, it is essential to determine what disability means and what implications are associated with it. Therefore, the first step is to examine different models of disability.

Over time, the term disability has undergone substantial changes (e.g., Ellger-Rüttgardt, 2008; Retief & Letšosa, 2018; Waldschmidt, 2005). The moral/religious model of disability is considered to be the earliest model of disability, according to which disabilities are essentially considered a punishment from god due to the individual or their family not abiding by certain rules (Retief & Letšosa, 2018). Similar to this view—and still present in the work of Rudolf Steiner institutions—is the belief that disability is the result of bad karma, involving either a punishment for the individual or a chance for other people to do good (Steiner, 2010). Neither, of course, holds value in terms of an adequate definition, although they (especially the religious one) persist as explanations of the origin of disability (Olkin, 2002). Compared to these socially destructive views, the medical, social, and relational models focus on underlying causes of disability that are not attributed to blame or shame (Dunn, 2015).

2.1.1 Medical Model

According to the medical model, disability is an objective and measurable pathological fact (LoBianco & Sheppard-Jones, 2007). It does not differentiate between impairment and the societal implications of the disability for the individual (Oliver, 1996). Nonetheless, the practical implementation of the medical model has several negative effects on persons with disabilities (Owens, 2015). First and foremost, it assumes that

diagnoses are generally comparable and manifest in the same way across different individuals. That means that also certain needs can be accurately deduced (Waldschmidt, 2020). The ambition of the medical model is to identify and cure the disability (LoBianco & Sheppard-Jones, 2007).

As an alternative to the medical model, Oliver (1996) and others (e.g. Waldschmidt, 2005) refer to an individualizing model; this model attributes issues with disabilities to individual limitations in functioning, independent from environmental factors. Because the pathologization of disability is such a central component of the individualizing model, I will refer to the medical model interchangeably with the individualizing model.

2.1.2 Social Model

The social model of disability can be understood as a counterargument to the medical model. Instead of tracing issues with a disability to the functional limitations of the individual concerned, it locates them within the environment. In short, it is not that the person is disabled but rather that the environment is disabling (Oliver, 1996). Disability is thus redefined from being synonymous with impairment to a restriction in participation which is exclusively caused by environmental factors (Finkelstein, 2001; Oliver, 1996; Shakespeare, 2017; Waldschmidt, 2005).

The social model was established by the Union of the Physically Impaired against Segregation (UPIAS) and is essentially a product of political activism rather than scientific analysis (Shakespeare, 2017). On one hand, the model initiated and supported fundamental political changes, especially in the United Kingdom but also internationally (e.g., Salamanca Statement, 1994; UN-CRPD, 2006; Smyth et al., 2014). On the other hand, the social model is under scrutiny as having a simplistic and materialist conceptualization of disability that undermines the existence of an impairment (e.g., Anastasiou & Kauffman, 2013; Gallagher, 2015; Owens, 2015). The issue has been addressed and thoroughly discussed by proponents and opponents (c.f., C. Thomas, 2004). In short, the social model attempts to redefine disability as something that only occurs in the social realm, factoring out any impairment-related functional restrictions (C. Thomas, 2004). For example, wheelchair users are not disabled by their inability to walk

but by the lack of accessibility. The same argument would be made in an educational context: a person with a cognitive impairment is disabled due to a rigid educational system without appropriate adaptations.

Other models of disability, such as the minority model or the cultural model, are henceforth subsumed under the social model because it inherently involves an argument of disability as predominantly socially constructed and depending on barriers to participation (Anastasiou & Kauffman, 2013; Gallagher, 2015; Oliver, 1996; Waldschmidt, 2005).

2.1.3 Relational Model

The relational model is positioned between the medical and social models of disability and attempts to reconcile them (Gallagher, 2015). It takes environmental factors into account, as well as body functions, which reciprocally determine the degree of participation.

The most widespread relational model is the International Classification of Functioning, Disability, and Health (ICF) model (World Health Organization, 2001; see Figure 1). The ICF model can best be understood as a bio-psycho-social model that attempts to combine aspects influencing participation as holistically as possible (Arnold et al., 2009). What had so far been understood as impairment is now subsumed under body functions and structure, as well as health conditions (Dunn, 2015; McDougall et al., 2010). Activity and participation allow for the distinction of the influence on impairment based on the action in question. How an impairment impacts an activity does, therefore, depend on both the impairment and the activity in question. Furthermore, personal (such as age, values, and socio-economic status) and environmental factors also influence activity or the lack thereof (McDougall et al., 2010). Thus, by expanding the view of disability and participation, reciprocal effects can be taken into account.

Figure 1

The ICF-model of Disability (International Classification of Functioning, Disability, and Health)
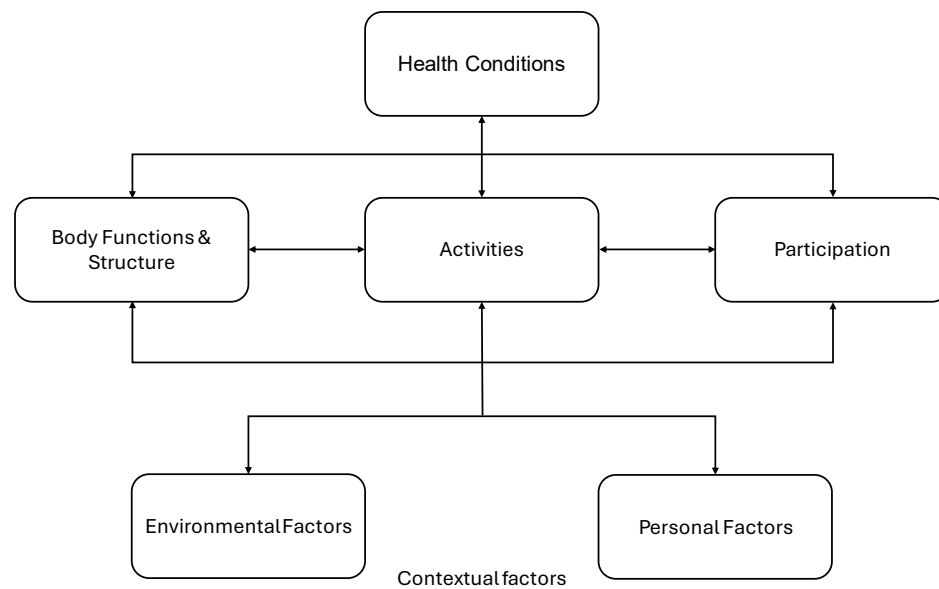
The main criticism of the ICF model is that it does not incorporate further factors that would also have an impact on participation and activity, such as life quality and development over time (Arnold et al., 2009; McDougall et al., 2010). In classifying disability, the main issue that arises from the ICF model (and any other relational model) is the lack of clear, practical implications. For example, it is unclear how strongly environmental factors influence activity and hence participation, compared to personal factors or impairment; determination of these relative influences becomes a matter for negotiation.

Models of disability that generally incorporate arguments of functional limitations and impairment in combination with environmental factors, such as the social-relational model, bio-psycho-social model (ICF model), and also the analytical model are henceforth considered relational (Arnold et al., 2009; Dunn, 2015; C. Thomas, 2004; S. Wilson, 2003).

2.2 Learning Theory and Epistemological Beliefs

Learning is a highly diverse construct that occurs in everyone's life almost every day; it is innate to all humans. Learning includes developing new skills or gathering more knowledge on a particular subject, as well as acquiring new habits or preferences (Hasselhorn & Gold, 2022). Inclusive education, in contrast to inclusion *per se*, requires an argument of how knowledge is acquired in order to determine feasible ways of learning in formal education.

Despite the vast literature on epistemological beliefs and learning theory, the primary concern of the dissertation is beliefs regarding how knowledge is acquired and, specifically, how teachers understand this process. I refrain from drawing a distinction between sophisticated and naïve epistemological beliefs mainly because of the implication that one is better than the other, although research appears to be contradictory (e.g., Elby & Hammer, 2001; Klopp & Stark, 2016). Nonetheless, epistemological beliefs lay the foundation for the distinction between transmissive and constructivist learning theory, and the development of each learning theory, and distinction between them will be mentioned where appropriate. Following the basic structure of existing models, epistemological beliefs range from knowledge as absolute, existing outside the learner and controlled by authorities, to subjective, individually constructed and contextual (Hofer & Pintrich, 1997). The following subsections further examine what Hofer and Pintrich (1997) describe as "source of knowledge" (p. 120). There are a range of views about the source of knowledge. At one extreme is the conviction that knowledge comes from authorities who may transmit knowledge to the learner, while at the other, knowledge is viewed as constructed individually by interaction with others and the environment. A further distinction is made by King and Kitchener (1994), who describe a shift from a passive object in learning to becoming an active constructor of meaning. However, because of the focus on educational processes and the role of the teacher, the distinction between stages of epistemological beliefs (c.f. Perry, 1968; Schommer-Aikins, 1990) is not further discussed in detail.

In the context of inclusive education, the distinction between transmissive, cognitivist, and constructivist beliefs has profound consequences on the perception of heterogeneity in educational settings and, therefore, the feasibility of inclusive education.

2.2.1 Transmissive Beliefs

In incorporating behaviorism, epistemological beliefs, and transmissive beliefs about learning and teaching, the dissertation broadly follows the conceptualization of Voss et al. (2013). Rooted in the works of Pavlov (1927), Thorndike (1901), Watson (1913), and Skinner (1954), behaviorism signifies the background to transmissive beliefs of learning and teaching that describe learning as a process of transmitting universally defined information (Land et al., 2012; Voss et al., 2013). One flaw in exclusively behaviorist beliefs is the bypassing of the cognitive process by focusing on observable behavior. Furthermore, Case and Bereiter (1984) have determined three specific criticisms:

- The principle of reinforcement neglects the question of the content that can or should be learned.
- The objectives of school learning need to be translated into observable behavior to determine the desired outcome.
- The appropriate steps toward the desired behavior must be identified.

Transmissive beliefs describe the conviction that knowledge is transferred from the teacher to the student, ideally in the same shape and form (Weißeno et al., 2013). What is also referred to as a traditional approach to learning is centered around behaviorism, which assumes that learning is essentially a change in behavior (Jonassen & Land, 2012). Knowledge is generally factual and objective (Weißeno et al., 2013), which also serves as justification for authority who hold the knowledge and are fit to assess this knowledge. Based on transmissive beliefs of learning, the environment (e.g., teachers) fully controls the learning process and determines which stimuli are adequate and what responses are to be expected (Ertmer & Newby, 1993). Typically, transmissive learning situations involve some sort of repetition process (Bower & Hilgard, 1981; Schunk, 2019). The learner is viewed as a passive recipient of knowledge who merely has to comply with the process (e.g., Ertmer & Newby, 1993; King & Kitchener, 1994).

In terms of inclusive education, the conviction that knowledge is factual and can be transmitted from one person to another has the consequence that a group of learners ideally show the same response to a given educational stimulus (DeVane & Squire, 2012). The more homogenous a given group of learners is, the more economical the process becomes because the environment and the given stimuli will result in the same (or

comparable) responses. The inclusion of more internal processes in educational settings can be attributed to advances in cognitive psychology.

2.2.2 Cognitivism

Cognitive psychology provided a first shift away from the transmissive concept based on behaviorism (Jonassen & Land, 2012). Thus, the acquisition of knowledge becomes an active process that incorporates complex internal processes "[…] such as thinking, problem solving, language, concept formation and information processing" (Ertmer & Newby, 1993, p. 50). It steps away from understanding learning as directly observable and focuses on unobserved, internal activity (Jonassen, 1991). The main difference between a behaviorist and cognitivist learning theory is the perception of what is learned: in a behaviorist perception new behaviors are learned, while in a cognitivist perception, knowledge is learned, which then allows for changes in behavior (Woolfolk, 2008, p. 307).

The incorporation of internal processes also directs attention toward the function of memory in the learning process (Ertmer & Newby, 1993). In cognitive theory, the process starts with the perception of new information or experiences, and it is then guided by executive processes into short-term memory and, ideally, encoded (integrated into and related to the existing concepts) into long-term memory (Schunk, 2019; Spector et al., 2014; Woolfolk, 2008). Therefore, teachers who work under a cognitivist principle are not only required to provide adequate content and monitor educational gains, but they also need to consider connections between different concepts and provide a way to meaningfully integrate new and existing knowledge (Lowyck, 2014).

In terms of inclusive education, cognitivist learning theory acknowledges and accepts different preconditions of learners. Motivation, previous experiences, and existing skills determine the successful acquisition of knowledge (Weißeno et al., 2013). Nonetheless, the process itself, although internal, is believed to be comprehensible and have objective outcomes (Ertmer & Newby, 1993; Woolfolk, 2008). Given a classroom with a wide range of students from different backgrounds, all of these experiences and preconditions must be considered in shaping the learning environment. Compared to a behaviorist/transmissive approach, the incorporation of internal processes further

complicates the education of larger groups, and inclusive education signifies an intentional increase in heterogeneity.

2.2.3 Constructivism

Counteracting what Jonassen (1991) describes as *objectivism* and Terhart (2003) as *instructivism,* constructivism questions the accessibility of an objective reality. Both behaviorism and cognitivism generally assume an objectively accessible world with principles and concepts that can be transferred from one person to another. On the other hand, constructivism states that all knowledge is individually and socially constructed. The mind, which in cognitivism works as a tool to access the outside world, becomes the inventor of reality (e.g., Ertmer & Newby, 1993; Jonassen & Land, 2012; Terhart, 2003). More important than the content to be learned are the learning context and the individual experience. Consequently, authentic, meaningful, and situated approaches gain importance in constructivist educational settings (Hasselhorn & Gold, 2022; Jonassen & Land, 2012).

The main issue with a radical constructivist view is that if all knowledge is individually constructed, and experiences and realities cannot objectively be determined as right or wrong, then the core principles of the educational system as comparable and content-oriented cannot be upheld (Terhart, 2003).

In terms of inclusive education, constructivism does provide an argument for the importance of the socio-cultural context in which learning occurs (Lowyck, 2014). When knowledge needs to prove useful and meaningful in order to be learned, shared experiences and socially constructed realities can be a precondition to social inclusion: joint education provides an opportunity to construct a diverse reality. On the other hand, segregated settings would inhibit students from conceiving the world as diverse. For example, barriers for persons with disabilities cannot be perceived as an issue by persons without disabilities if it is not socially and shared constructed knowledge.

In accordance with the stages of epistemological beliefs, we can assume a spectrum of learning theories that range from considering the role of the mind as virtually non-existent (i.e., everything is behavior) at one end, to "the mind is everything" at the other. This variability becomes even more evident considering mixed approaches, such

as from behaviorist and neo-behaviorist to cognitive-behaviorist (Case & Bereiter, 1984) or cognitive-constructivist (Anderson, 1990; Weißeno et al., 2013) to radical constructivist approaches (Terhart, 2003).

2.3 Placement

Initially, inclusive education was concerned with the segregated schooling of children with and without disabilities (Smyth et al., 2014). In many cases, and despite the continued existence of special education institutions, the field of inclusive education has transcended disability as the single defining characteristic of inclusion. National and international legislation and conventions now incorporate other characteristics, such as cultural background, socio-economic background, and gender (Cerna et al., 2021). In order to structure this discussion, three forms of placements are relevant to the present chapter: exclusion, functional inclusion, and full inclusion. These forms of placements represent a spectrum of possibilities, ranging from special schools for all persons with disabilities to no special education whatsoever.

2.3.1 Exclusion

The terminology of exclusion can be applied in two ways. The first concerns the exclusion from all forms of formal education. At a time when disabilities—especially cognitive and sensory disabilities—were seen as inhibiting learning, exclusion meant no formal education at all (e.g., Rotatori et al., 2011). The second, as it is applied here, refers to the exclusion from general education (and consequent allocation to special education institutions) based on a particular individually determined characteristic; this characteristic is predominantly a disability, although special classes for refugees could also be included in this definition of exclusion.

In Europe, special educational needs provision has been mainly realized in segregated institutions. During the 20th century, changes in such placement have been handled very differently in different countries. While Spain implemented a means of inclusive education as early as the 1970s, countries like the Czech Republic promoted the exclusion from compulsory education until the 1990s (Smyth et al., 2014).

2.3.2 Functional Inclusion

What is understood as "inclusion" today was called "integration" when it was first initiated in the 1970s (e.g., Feuser, 2013; Smyth et al., 2014). This is the main reason why the term functional inclusion is applied instead of integration. Compared to (full) inclusion, functional inclusion is mainly concerned with the placement of children with disabilities without creating appropriate and inclusive educational adaptations for a wide range of students.

> *Furthermore, the right to participation in inclusive learning environments has often been narrowly interpreted to mean access to existing facilities rather than the facilitation of access to an environment that is designed to meet the learning and social needs of disabled children/young people. Few European states have explicitly included reasonable accommodation clauses to guarantee equitable access to learning environments.* (Smyth et al., 2014, p. 436)

Consequently, there is a limit to functional inclusion. The mere access to regular education only includes those who can adapt (or can be adapted) to the existing regular education system. Probably the most wide spread representation of functional inclusion is the application of the least-restrictive environment (LRE). Since 1975, United States law has required that children with disabilities should be educated in regular education to the maximum possible extent (Turnbull et al., 2006). Hyatt and Filler (2011) argue that the education of all children with disabilities would be a violation of the concept of LRE, which requires alternative settings if regular education cannot meet the educational needs of children with disabilities. Therefore, functional inclusion requires, on one hand, the distinction between regular and special education and, on the other, the identification of disability, which allows the logical derivation of educational needs.

2.3.3 Full Inclusion

In 1977, Italy took matters one step further, enacting Law 517, which was aimed at abolishing all forms of segregated settings (Saloviita & Consegnati, 2019). Although the practical implications and effects are contested (e.g., Anastasiou et al., 2015), Italy implemented an educational system that is among the most inclusive worldwide (Anastasiou et al., 2015; Saloviita & Consegnati, 2019). Full inclusion in terms of

placement means that there is no spatial segregation whatsoever based on disability or special education needs.

2.4 Conceptualization by Göransson & Nilholm (2014)

Placement is the only common ground on which to assess inclusivity, especially when it comes to cross-cultural studies (e.g., Oh-Young & Filler, 2015; Ruijs & Peetsma, 2009; Szumski et al., 2017; Van Mieghem et al., 2020). This is a problem that not only drives the work described in this dissertation but has also driven previous conceptualizations of inclusion. For example, based on their literature review, Göransson and Nilholm (2014) suggest a hierarchical relationship between different definitions of inclusion (see Figure 2).

Figure 2

Conceptualization by Göransson and Nilhom (2014)
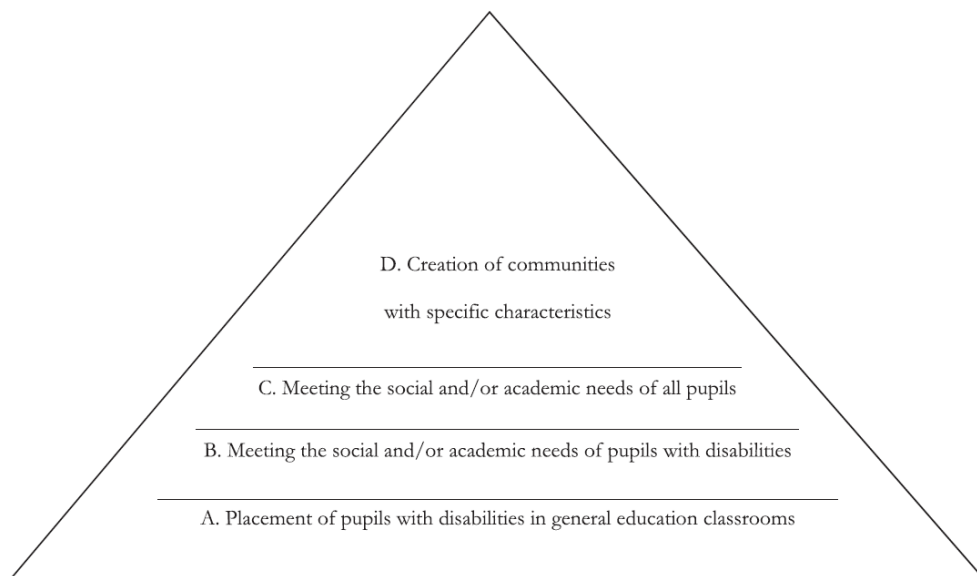
As shown in Figure 2, the fundamental dimension of inclusion is category A, which describes the placement of pupils with disabilities in general education. Placement is seen as fundamental, regardless of circumstances, and is the primary goal of inclusive education. Justification and practical implementation are subordinate and not an integral part of the definition. Category B expands this understanding and combines it with social and academic aims for students with disabilities. Special

education support, resources, and social outcomes are defined as aims of inclusion, but they are only relevant to students with disabilities. Category C does not rely on the identification of disabilities but understands inclusive education as meeting the social and academic needs of all students. Rather than being concerned with a specified group of students, who also need to be identified, general education should become a better place for all students via inclusion. Finally, category D focuses on the creation of community through inclusion; all students are (and should be) valued participants in classroom communities. Thus, inclusion becomes the counteraction to previous marginalization.

Furthermore, Göransson and Nilholm (2014) describe variations within the categories, depending on the interpretation of meeting special educational and social needs, as well as the difference between personal growth and development and pre-set goals.

Göransson and Nilholm's (2014) concept can generally be applied to explain different approaches to inclusive education, especially within the academic discourse. However, it lacks reasoning and beliefs underlying the categories, and it focuses on the descriptive aspects of the goals of inclusive education. For example, there is no supporting argument for why students with disabilities should be educated alongside their peers in general education (category A), and category C appears to already incorporate category D because meeting the social and academic needs of all students would also mean counteracting marginalization.

The following chapter uses these considerations as a basis for further developing a framework of inclusive education that incorporates aspects of identifying disability, what is considered as preferred placement, and theories of learning and teaching that function as preconditions to the assessment of inclusive education.

2.5 The Framework of Inclusive Education

The framework of inclusive education (see Figure 3 and Selisko, Eckert, et al., 2024) emerges from these considerations. It can be divided into two principal categories. To the left of the Objectivity-Rubicon, education is conceptualized as a functional-technical process for the acquisition of knowledge; on the right, education is perceived as the (social-) construction of knowledge, which can be externally facilitated or inhibited

(Terhart, 2003). Behaviorism and cognitivism define knowledge as factual, thereby establishing an objective outcome (Boghossian, 2006; Ertmer & Newby, 1993; Land et al., 2012; Marten & Booth, 1997; Voss et al., 2013). The close relationship between behaviorism and the medical model necessitates separate consideration (Danforth & Naraian, 2015). This inter-individual standardization forms the basis for segregation.

Figure 3

Framework of Inclusive Education
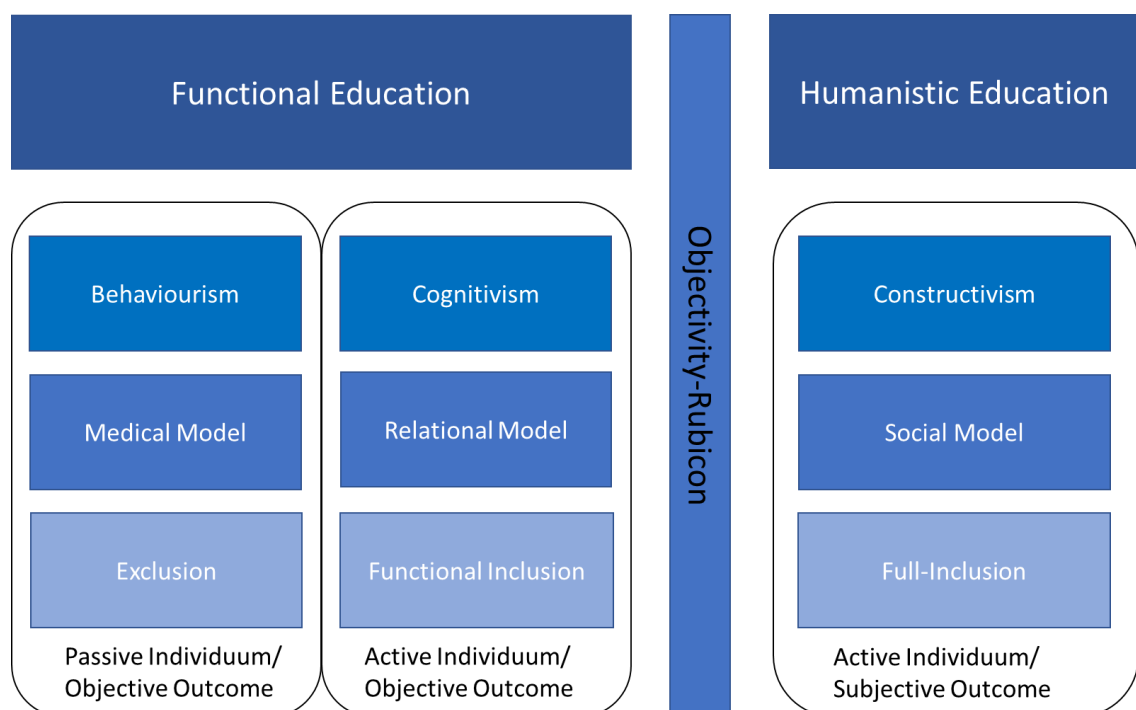
The fundamental divergence in inclusive education pertains to the perception of knowledge acquisition. From a behaviorist standpoint, learning occurs via a stimulus-response mechanism (Ertmer & Newby, 1993; Voss et al., 2013) and the individual is regarded as a passive recipient of knowledge (King & Kitchener, 1994; Reid, 2005). In contrast, cognitivist theory incorporates individual internal processes and strives for deeper understanding, such as the application of problem-solving rather than mere reproduction (Ertmer & Newby, 1993; Jonassen & Land, 2012; Woolfolk, 2008). Learning is thus viewed as a process influenced by both individual activity and environmental factors. Consequently, the inclusion of persons with disabilities can be partially realized through environmental adjustments. Nonetheless, the inclusion process

necessarily involves an argument over the scope of general education (given minimal barriers) and a conflict between optimal learning environments and the inclusion of persons with disabilities. The ongoing debate about the extent of possible inclusion reflects the underlying cognitivist principle. Concepts such as the LRE (Hyatt & Filler, 2011) are integral to this discussion. Full inclusion is frequently perceived as a systemic burden, necessitating accommodation for individuals who may not achieve the status quo.

To the right of the Objectivity-Rubicon, education aims to support the process toward maturity and autonomy. Unlike the functional understanding of education, humanist education (Whitburn, 2017) emphasizes individual (subjective) development and experiences. The role of the educator (teacher) is reconstructed as a facilitator of individual learning. Universal, objective, and comparable learning outcomes cannot constitute the goal of education. Due to its close relationship with human rights perspectives and the historical origin of the social model, the full inclusion approach aligns with demands for social justice and equality. Conversely, the call for social justice does not imply a social model or constructivist learning theory. The distinction between functional and full inclusion can be best elucidated by comparing Rekus (2016) with Florian and Spratt (2013). Rekus (2016) advocates for "one school each" as opposed to "a school for all" positing an overarching objective goal for education. In contrast Florian and Spratt (2013) emphasize the significance of (co-)constructing knowledge. The former approach supports differentiation by ability, while the latter underscores the importance of shared learning experiences.

2.6 Attitudes Toward Inclusive Education

In order to realize not only a theoretical but also an empirical perspective on the relations within the framework of inclusive education, articles II and III are concerned with attitudes toward inclusive education. Research on attitudes towards inclusive education has intensified over time, but results remain limited and sometimes conflicting (e.g., Guillemot et al., 2022; Lüke & Grosche, 2018b; Saloviita & Consegnati, 2019). In particular, teachers' attitudes toward inclusive education are commonly emphasized as an important predictor of facilitating inclusive education (Sharma & Sokal, 2016).

Within the dissertation, the aspects of the framework are considered beliefs, which together form an attitude. Beliefs are conceptualized to represent "[…] an individual's

representation of reality or what an individual holds to be true, whether or not there is evidence to support that representation. Beliefs have enough personal validity and credibility to guide behavior and thought" (Fives & Buehl, 2016, p. 115). In other words, the vertical triads of beliefs, form coherent attitudes toward inclusive education (see Figure 3).

Attitudes toward inclusive education are predominantly measured by questionnaires that apply either pre-existing or newly developed scales and generally focus on different aspects of attitudes toward inclusive education (e.g., cognitive or behavioral; de Boer et al., 2011; Guillemot et al., 2022). One issue that arises from this is that attitudes toward inclusive education are measured as a one-dimensional but highly contested construct (Lüke & Grosche, 2018a).

The framework of inclusive education by Selisko et al. (2024) takes a different approach to the measurement of teachers' attitudes toward inclusive education. Based on Eagly and Chaiken's (2007) inclusive concept of attitude, attitudes consist of conscious and nonconscious evaluations of an entity and respective positive or negative responses. Instead of conceptualizing inclusive education as one entity, the framework of inclusive education consists of three entities each of which represents a coherent standpoint: exclusion, functional inclusion, and full inclusion. Moreover, attitudes are behavioral, affective, or cognitive (Eagly & Chaiken, 2007). The models of disability and learning theory are cognitive elements, while the overall evaluation of integrated education can be attributed to an affective factor. The practical and observable behavioral aspect is beyond the scope of this dissertation.

The advantage of the framework of inclusive education is that it does not leave judgment about the scope of inclusion to the participants. Aspects derived from the framework can be investigated separately from relying on a common implicit conceptualization of *inclusive education* by the participants. Furthermore, the investigation of the aspects enables us to reveal contradictory standpoints and potential routes for intervention in teacher education.

Additionally, it has been discovered that attitudes toward inclusive education are positively correlated with empathy (Navarro-Mateu et al., 2019). From an affective point of view, empathy is the capacity to feel another person's emotions, but from a cognitive point of view, empathy is the capacity to comprehend another person's sentiments (Aldrup

et al., 2022). While both are associated with inclusive education, this is particularly true for the latter, since it is necessary when taking into account the educational requirements of a varied student body (Makoelle, 2019).

Authoritarianism and social Darwinism are also taken into consideration in this analysis because of their close theoretical relationship to views toward people with disabilities. Submissiveness, conventionalism, and authoritarian violence are characteristics of authoritarianism; on the other hand, social Darwinism describes the particular devaluation of individuals who are viewed as weak and aberrant from the norm (Altemeyer, 1988; Crowson & Brandes, 2014; Petak et al., 2021). Given their theoretical consequences, the qualities necessitate a rationale for identifying this deviant group, and the medical model of impairment is the only one that can supply it.

Alongside the above, there are several commonly investigated predictors of attitudes toward inclusive education, which are briefly considered below.

Gender

In an intervention study, Forlin et al. (2009) discovered a substantial interaction impact between gender and attitudes toward inclusive education. Despite starting at the same level, sentiments of the male participants after the intervention were noticeably more positive than those of female participants (Forlin et al., 2009). Some researchers have discovered that attitudes toward inclusive education are more favorable among female student teachers (Navarro-Mateu et al., 2020; Saloviita, 2019). A considerable amount of studies have shown inconsistent results regarding the influence of gender on attitudes toward inclusive education (Fernandez et al., 2023; Forlin et al., 2009; Orakci et al., 2016)

Educational Stage

The attitudes of primary school teachers have also been the focus of many prior studies (Avramidis & Norwich, 2002; Börnert-Ringleb et al., 2020; Fernandez et al., 2023; Saloviita, 2019). Challenges to implementation rise with age and educational aspirations, even though all teachers will eventually encounter inclusive education if progress continues. Thus, compared to student teachers at later educational stages, primary student teachers are more likely to have positive attitudes about inclusive education when they have the immediate prospect of teaching diverse classes (Avramidis

& Norwich, 2002; Szumski et al., 2017). Studies generally show a decrease in positive attitudes toward inclusive education with increasing educational stage (Galović et al., 2014; Gigante & Gilmore, 2020) and, in particular, among pre-service teachers (Costello & Boyle, 2013). Guillemot et al. (2022) hypothesize a greater focus on individualization in lower grades as underlying reason for more positive attitudes toward inclusion.

Self-Efficacy

Teachers' self-efficacy, especially in the context of inclusive education, has been thoroughly investigated (Avramidis et al., 2019; Hosford & O'Sullivan, 2016; Savolainen et al., 2012; Weber & Greiner, 2019; Woodcock et al., 2023). This is likely because it is closely related to a willingness to implement inclusive education and because it indicates the application of innovative teaching strategies, which are especially important for diverse classes. Teachers' belief that they can successfully affect their students' learning performance is generally referred to as their self-efficacy (Guskey & Passaro, 1994). Additionally, teachers who have a high sense of their abilities report lower levels of strain and burnout (Friesen et al., 2023; Oetjen, 2023). A study by Avramidis et al. (2019) found that peer tutoring, one type of inclusive teaching strategy, was more likely to be applied by teachers with higher self-efficacy.

3 Research Aims

This chapter provides an overview of the research aims. These follow the same pattern as the dissertation, being divided into the systematic literature review, the network analysis, and the LPA. The overall research aim is the validation and empirical application of the framework of inclusive education. In the first part, this is achieved by transforming the framework into observable categories. These are then used in a literature review that determines whether and how aspects of the framework are currently applied to research. Next, a variable-based approach is applied to determine whether the structure of the framework can be replicated, applying it to a sample of student teachers and psychology students. Additionally, the network considers relevant variables that have previously been associated with attitudes toward inclusive education: empathy, contact, social Darwinism, and authoritarianism. Finally, a person-centered approach is applied. Latent profiles are estimated to further solidify the assumed relations among the aspects of the framework of inclusive education. Previously relevant predictors are included to further emphasize the relevance of the framework of inclusive education and reveal possible conflicts.

3.1 Systematic Literature Review

The first research project involved applying the framework of inclusive education to the current literature. After establishing general aspects affecting inclusive education, it was assumed that the current literature can be assorted in the same way. Based on the previous experience of Oh-Young and Filler (2015) and Ruijs and Peetsma (2009) in their meta-analysis/reviews, it was assumed that not all the results of a literature review on inclusive education would fulfill every aspect of the framework of inclusive education because the placement of children with disabilities in regular education is often the only common denominator among different studies, especially in large-scale comparative studies. This means that such studies compare research on inclusive education solely according to whether children with and without special educational needs are educated together. Such an approach considers neither the models of disability nor educational theory supporting inclusive education.

Nonetheless, the first study aimed to analyze the current literature based on the framework of inclusive education. The goal was to identify the three concepts (exclusion, functional inclusion, and full inclusion) of the framework (see Figure 3) in the discourse

between 2006 and 2020 and thereby reproduce the theoretically determined relationships between models of disability, learning theory, and placement. Of further interest was how the distribution of concepts varies internationally, regarding whether the distribution is stable across countries and over time. As an exploratory aspect of the literature review, data regarding the methodology used in different studies were also collected. Based on the inherent conflict with objectivity, it was assumed that quantitative methods would be less frequently applied to research based on a fully inclusive perspective.

The following research questions were investigated:

1. Can the theoretical categories of inclusive education be reproduced by analyzing current literature on inclusive education?
2. Is the distribution of categories internationally stable?
3. Exploratory: How did the distribution of inclusive education concepts change since the UN-CRPD?
4. Exploratory: Do implications of functional and full inclusion result in different applications of methodology? Quantitative methods, in particular, are assumed to be applied less frequently in reports with a full inclusive perspective due to their constructivist basis.

3.2 Network Analysis

Starting with the framework of inclusive education, the goal of the network analysis was to empirically determine aspects that form coherent perspectives toward the evaluation of inclusive education. In addition to the framework's aspects authoritarianism and social Darwinism were examined as supporting variables of exclusion, as well as empathy and contact as supporting variables of inclusion. The network approach was chosen to determine whether the structure of the framework could be replicated by respective communities. It was therefore assumed that positive relations[1] exist between those aspects of the framework that form coherent perspectives on inclusive education (e.g., the social model – constructivism – full inclusion). Previous research has suggested positive relations between empathy and contact with attitudes toward fully and functional inclusive aspects (Navarro-Mateu et al., 2019; Scior et al., 2013), while exclusive

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[1] *relation* in the context of network analysis refers to pairwise interaction.

attitudes (consisting of a medical model, transmissive beliefs, and exclusion) are related to authoritarianism and social Darwinism (Petak et al., 2021).

The following hypotheses were investigated:

1. The framework of inclusive education (Selisko, Eckert, et al., 2024) posits positive relations within the triads consisting of placement, the model of disability, and the beliefs regarding learning and teaching, as well as negative relations between the aspects of exclusion and full inclusion. These aspects are assumed to have a reciprocal effect on each other, as well as on the additional factors of empathy, contact, authoritarianism, and social Darwinism.

2. In line with previous research (Navarro-Mateu et al., 2019; Scior et al., 2013), empathy and contact are associated with attitudes toward fully and functionally inclusive aspects. Authoritarianism and social Darwinism are associated with attitudes toward exclusion (Petak et al., 2021).

3.3 Latent Profile Analysis (LPA)

Changing the perspective from a variable-based to a person-centered approach, an LPA was applied to a sample of student teachers to determine relevant profiles that are consistent with the framework of inclusive education. Based on the current discourse, constructs were added if they were found to be relevant in terms of affecting attitudes toward inclusive education. These constructs were gender (e.g., Forlin et al., 2009; Navarro-Mateu et al., 2020), educational stage (e.g., Avramidis & Norwich, 2002; Börnert-Ringleb et al., 2020), and self-efficacy (e.g., Savolainen et al., 2012; Woodcock et al., 2023).

The following hypotheses were investigated:

1. In accordance with the framework of inclusive education, there is a three-profile structure within the data showing exclusive, functional, and fully inclusive attitudes.

2. In accordance with the existing literature, there is no difference in the gender distribution between attitudinal profiles.

3. Primary school student teachers are more likely to be represented in a functional or fully inclusive profile than student teachers from other educational stages.

4. Student teachers' self-efficacy differs significantly based on their attitudinal profile.

Three studies were conducted to investigate these research questions. Chapter 4 provides a summary of these studies.

4 Summary of Publications

The studies that were conducted resulted in three publications, which are combined in this dissertation to describe a new way to think about inclusive education beyond simple joint education. The overarching idea is to provide a framework that enables the assessment of inclusive education as well as the determination of conflicts that arise from implicit preconditions. The triads within the framework illustrate three coherent standpoints toward inclusive education; therefore, a mix between aspects of different triads causes conflict (see Figure 3). For example, a requirement for full inclusion is incompatible with a transmissive belief about learning and teaching. The framework of inclusive education can be applied to existing and future research to transparently show the preconditions of scientific contributions. It provides a background to the understanding of attitudes toward inclusive education without falling back on one-dimensional or conflicting definitions of inclusion (Göransson & Nilholm, 2014; Lüke & Grosche, 2018a).

4.1 Study I: Theoretical Basis and Systematic Literature Review

Selisko, T. J., Eckert, C., & Perels, F. (2024). Models of disability as distinguishing factor: A theoretical framework of inclusive education and the application to a literature review. *Cogent Education*, *11*(1), 2379681. https://doi.org/10.1080/2331186X.2024.2379681

The first study is a two-part article. The first part comprises the theoretical derivation of the framework of inclusive education. The main part has already been explicated in the theoretical background (Chapter 2), but the core principle and reasoning behind this project are stated here. The second part is concerned with a systematic literature review based on the relations within the framework.

The following research questions were investigated:

1. Can the theoretical categories of inclusive education be reproduced by analyzing current literature on inclusive education?
2. Is the distribution of categories internationally stable?
3. Explorative: How did the distribution of inclusive education concepts change since the UN-CRPD?

4. Explorative: Do implications of functional and full inclusion result in different applications of methodology? Quantitative methods in particular are assumed to be applied less frequently in reports with a full inclusive perspective due to the constructivist basis.

4.1.1 Theoretical Background

Since the UN-Convention on the Rights of Persons with Disabilities (UN-CRPD), inclusion has gained momentum, particularly in light of article 24, which states an inclusive educational system that can be accessed by all children and at all levels, regardless of individual preconditions, such as a disability (UN-CRPD, 2006).

Unfortunately, the ratification of the UN-CRPD has not resulted in the near worldwide adaptation of inclusive education; instead, it appears to still be a work in progress. To some extent, this is due to unclear or vague definitions, as well as the marginalization of persons with disabilities (e.g., Artiles & Dyson, 2005; Dignath et al., 2022; Göransson & Nilholm, 2014; Wilde & Avramidis, 2011; Winzer & Mazurek, 2019). Instead of abstract demands for social justice and human rights (Slee, 2013), the framework of inclusive education applies aspects with direct implications for educational settings (Chapter 2). Evidently, social justice and human rights are important arguments in support of inclusive education, but they lack the implication for actual implementation of inclusion in a none-inclusive system.

Historically, a disability was considered to inhibit the potential to learn at all. In particular, children with cognitive and multiple impairments were viewed as uneducable and, therefore, were excluded from mandatory formal education (Ellger-Rüttgardt, 2008, p. 152). Before mandatory education, support and care were essentially provided by the church or the family, and the degree of education varied considerably (Rotatori et al., 2011, p. 92). In contrast to today's conceptualizations of disability, there was no distinction between impairment as measurable functioning and disability as the social implication. The church explained disability only in terms of a punishment from God which deemed disability a taboo subject that predominantly caused shame in affected families (Rotatori et al., 2011).

Only in the late 19th and early 20th centuries was the groundwork for special education established (Ellger-Rüttgardt, 2008). International advances provided examples of the educability of persons with different disabilities, and a specialized system for special educational needs evolved (Ellger-Rüttgardt, 2008). By the mid-20th century, after the systematic murder of millions of persons with disabilities in the Nazi regime, special education was under scrutiny for reinforcing stereotypes and exclusion from society (Bank-Mikkelsen, 2005; Goffman, 2006). The aforementioned social model of disability suggested a new way of thinking about disability as a predominantly social phenomenon that states a lack of participation based on social- and environmental barriers (Oliver & Barnes, 2010). Although there was a shift from the medical to the social model of disability, the medical model remained the dominant concept in education (Ainscow et al., 2019; G. Thomas, 2013). In retrospect, this shift led to what can today be described as the integration approach: the placement of children with disabilities into regular education without appropriate provision (Feuser, 2013). The feasibility of integration was closely connected to the adaptability of students with disabilities and ultimately the distinction between special and regular education was upheld (Skrtic, 1991).

The Salamanca Statement (Salamanca Statement, 1994) did not cause a wide reaching structural change, despite its inclusive intentions (Winzer & Mazurek, 2020). In search of an amicable approach toward inclusion, the UN-CRPD suggested a relational model of disability: the bio-psycho-social model (WHO, 2018). The interaction between impairment and participation results in a certain degree of participation (or a lack thereof); the outcome is what is understood as the disability.

In an educational system that strives for objective and observable outcomes, such as the PISA study (OECD, 2020), the hierarchical assessment of performance poses a barrier to full and equal participation in school (Rezai-Rashti et al., 2017; Tomlinson, 2015). Consequently, and under a neo-liberal principle, this leads to a competition for resources that favors high-performing students (Romstein, 2015).

In combination with a transmissive perspective of learning and teaching, this results in a tendency to segregate children with disabilities from children without disabilities. The medical model generally allows the derivation of educational needs. However, the heterogeneity in (for example) social or emotional disability—and sometimes contradicting implications—complicates the appropriate identification

(Tomlinson, 2015). This issue is also present in the focus on diagnostics in the special needs discourse.

Taking into account the environmental and individual characteristics of education, a cognitivist perspective is associated with the relational model of disability (Ertmer & Newby, 1993; Riffert, 2018). There is still an objective assessment of educational performance and impairment, but the learning process is not purely a technical process; it depends on individual preconditions and can be supported or inhibited through environmental factors.

Because the social model does not allow the attribution of the disability within an individual, segregation based on a particular characteristic itself is deemed a disability (Oliver & Barnes, 2010). However, individualization of the learning process is necessary to meet the needs of a wide variety of students within an inclusive classroom (Feuser, 2013; Terhart, 2003).

Based on Luhmann's systems theory (2017), Lambrecht (2019) links the general education system's two underlying presumptions—the first being the social pressure to operate as a selective institution and the second being the categorical differentiation of children with disabilities—to the contradiction between general and special education (Lambrecht, 2019, p. 105). By examining the connection between systems, Luhmann's system theory makes it possible to evaluate social institutions (Luhmann 2017). The tension between the individual's right to education as the foundation for democracy and economic demands in terms of potential workers lies at the heart of both Lambrecht's (2019) conclusion and Luhmann's system theory regarding the education system. When these factors are combined, discrepancies are created between general education and special education (Norwich 2009).

These considerations lead to the conclusion that the purpose of inclusive education also relates to the societal purpose of the educational system as a whole. The conflict between full inclusion and economic (functionalist) demands of education, which is also symbolic as the rubicon in the framework of inclusive education, can be reconstructed in the past and current debate on inclusive education (Ahrbeck, 2017; Anastasiou et al., 2015; Opertti, 2015; J. Wilson, 1999; Wocken, 2010).

4.1.2 Methods

Complementary to the proposed theoretical framework of inclusive education, which is the starting point of both the first article and the dissertation, a systematic literature review was conducted which applied the aspects of the framework as a foundation. In doing so, the best practice guide by Siddaway et al. (2019) and the PRISMA standards (Preferred Reporting Items for Systematic Reviews and Meta-Analyses; Page et al., 2021) were followed.

The search term was constructed with consideration of (and largely based on) Göransson and Nilholm's (2014) earlier literature review:

(Inclusive schools OR Mainstreaming) AND (Culture OR Policy OR Principles OR Effectiveness OR Practice* OR Development OR Improvement OR Innovation OR Change) AND (Schools OR Teaching methods OR Educational methods OR Classroom environment) AND (Mainstreaming OR Inclusion) AND (special needs students OR disability).

The literature databases ERIC (Education Resources Information Center) and EBSCO (Elton Bryson Stephens Company) were used to conduct the search. It included all reports concerned with inclusive education that were published in Europe and North America since the UN-CRPD in 2006, up and including 2021. To realize the universal aspect of the framework of inclusive education, reports on specific or individual types of special educational needs or disabilities were excluded (e.g., Hughes et al., 2013). Moreover, specific school subjects (e.g., Greenstein & Baglieri, 2018) or case studies applying inclusion to a limited context (e.g., Kuranishi & Oyler, 2017) were also excluded. Owing to the characteristics of the suggested framework, reports pertaining to categories other than disability or special education needs, such as gender or migration, were also excluded. The literature evaluation was restricted to primary and secondary education, even though inclusion is not constrained to the setting of mandatory schooling. The goal of early childhood education varies too much across national borders, whereas post-secondary education typically depends on some form of performance-based exclusion.

The screening was conducted in three rounds: (1) by headline, (2) by abstract, and (3) by full text. Initially $n = 2768$ articles were identified, of which $n = 1428$ reports were sought for retrieval after the second round of screening. The last round of screening was

simultaneously utilized for coding. Coding was conducted by two researchers who, in order to ensure intercoder reliability, coded the first $n = 300$ reports simultaneously and discussed conflicting cases (Mayring, 2015). The PRISMA 2020 flow chart is accessible in the Appendices (Appendix 2).

The coding of the results was based on structuring content analysis (Mayring, 2015). The previously developed categorical system (the framework of inclusive education, see Chapter 2) was applied deductively to the collected data. It is therefore, inverse to the inductive process of Göransson and Nilholm (2014).

The three triads of the framework, which are the vertical set of three aspects that form a coherent perspective on inclusive education, each served as a category:

- Coded with a 1 were reports that show a predominantly exclusive concept of education based on a medical model of disability and a behaviorist learning theory.

- Coded with a 2 were reports that understand the education of children with special educational needs as functionally inclusive. Joint education of children with and without disabilities is possible if the disability is not too severe and the environment is able and willing to adapt (relational model). Generally, the heterogeneity in learning is acknowledged and considered (cognitivist learning theory).

- Coded with a 3 were reports that show an unconditional support for full inclusion. Disability and learning are socially and individually constructed; therefore, learning differs for all children, regardless of impairments.

- Coded with an 'x' were reports without sufficient definition for coding. These included contradicting statements and *inclusion as placement* definitions.

Beforehand, and in line with the coding guidelines provided by Mayring (2015), anchor examples demonstrating prototypical cases were developed.

The rule was applied that indicators of at least two of a concept's three aspects must be present for it to be coded as one concept or the other (without conflict). The development of intersecting categories, 1|2 (exclusive/functional) and 2|3 (functional/full), was prompted by the volume of reports demonstrating full and functional inclusive characteristics (and consequently contradicting aspects).

4.1.3 Results

Ultimately, $N = 685$ reports were included in the literature review (see Figure 4). Overall

- $n = 300$ (43.80%) were sorted into category 3 (full inclusion),

- $n = 52$ (7.59%) were sorted into category 2|3 (full/functional inclusion),

- $n = 183$ (26.72%) were sorted into category 2 (functional inclusion),

- $n = 8$ (1.17%) were sorted into category 1|2 (exclusion/ functional inclusion),

- $n = 8$ (1.17%) were sorted into category 1 (exclusion),

- $n = 133$ (19.42%) were allocated to category "x".

Figure 4

Coded Concept of Inclusive Education: Total
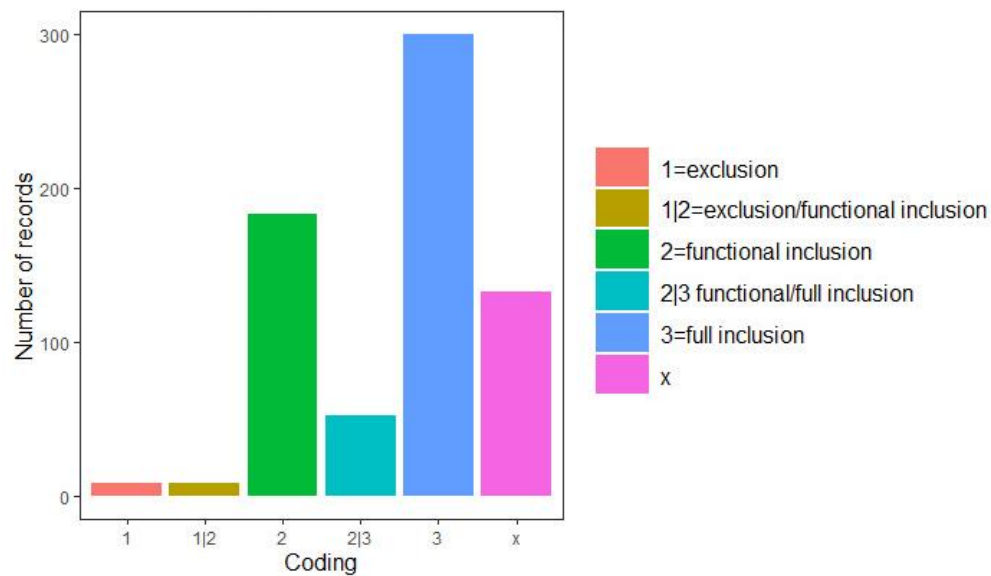
Table 1 shows the top five countries in terms of the number of reports included in the literature review. These were the USA: $n = 245$ (35.77%); the UK: $n = 113$ (16.50%); Canada: $n = 54$ (7.88%); Germany: $n = 26$ (3.80%); Ireland: $n = 22$ (3.21%). A total of 42 countries were included in the analysis.

Table 1

Coded Definition of Inclusive Education by top Five Countries

	Top Five Countries[a]									
	USA		UK		Canada		Germany		Ireland	
	n	%	n	%	n	%	n	%	n	%
Coding										
1[b]	3	1.22	0	0	0	0	2	7.69	1	4.55
1|2	3	1.22	2	1.77	0	0	1	3.85	0	0
2[c]	86	35.10	25	22.12	10	18.52	4	15.38	8	36.36
2|3	14	5.71	5	4.42	3	5.56	0	0	1	4.55
3[d]	99	40.41	53	46.90	28	51.85	13	50	8	36.36
x[e]	40	16.33	28	24.78	13	24.07	6	23.08	4	18.18

Note. $N = 460$ reports. [a]Top 5 countries by total publications. [b]1 = exclusion definition. [c]2 = functional inclusion definition. [d]3 = full inclusion definition. [e]x = insufficient definition.

The five countries with the highest number of included reports comprised 67.15% of the total sample. The distribution by inclusive education concept appeared to be roughly equal among those countries and replicates the general conflict between functional and full inclusion, although reports from the USA and Ireland showed higher proportions of functional inclusion than reports from the UK, Canada, and Germany. Figure 5 shows the number of records by year of publication over the considered timeframe.

Figure 5

Concept of Inclusive Education by Year of Publication

Since the UN-CRPD (2006), there has been a continuous increase in the number of reports concerned with inclusive education. From Figure 5, we can deduce that this increase was predominantly due to reports featuring a full inclusion.

Figure 6 shows information about methodologies in the sample, grouping reports in qualitative, quantitative, mixed-method, or theoretical reports.

Figure 6

Concept of Inclusive Education by Methodology
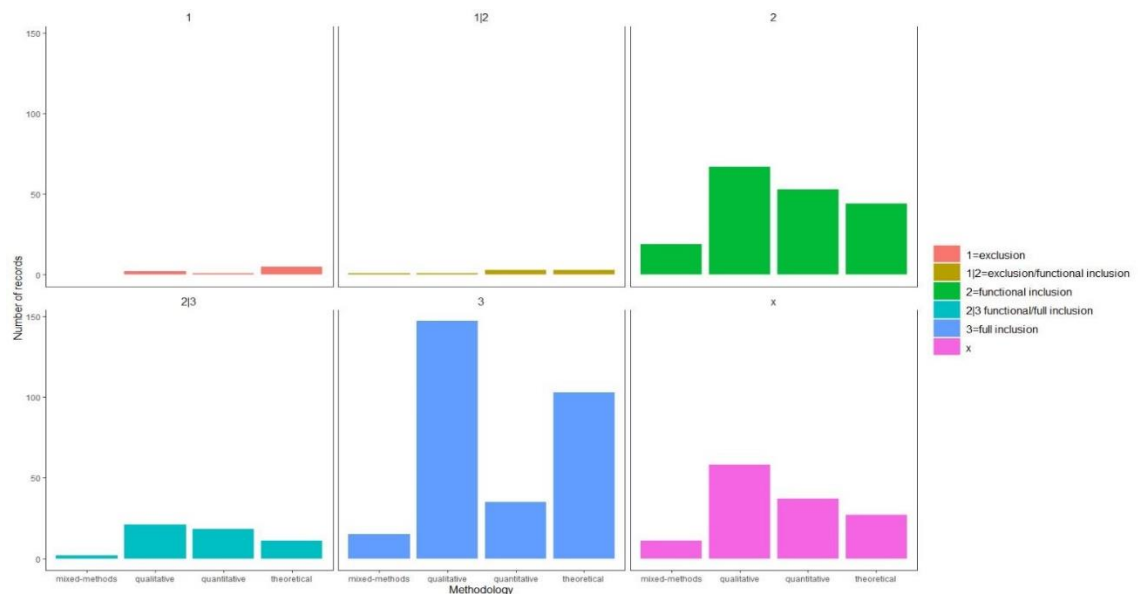
Quantitative approaches were used less frequently in reports featuring a full inclusion concept than in those with alternative concepts of inclusive education. Regardless of definition, qualitative approaches have dominated research on the subject of inclusive education, ignoring the limited number of reports with an exclusive viewpoint ($n = 16$).

Regarding research question 1: Can the theoretical categories of inclusive education be reproduced by analyzing the current literature on inclusive education?

The theoretical concepts of inclusive education could be replicated within the literature review. The trench between functional and full inclusion is especially apparent in the overall distribution. The theoretical framework was generally suited to allocate

reports on inclusive education to distinct concepts based on the model of disability, learning theory, and placement.

Regarding research question 2: Is the distribution of categories internationally stable?

The distribution of inclusive education concepts was stable across countries, at least based on the five countries with the highest number of reports on inclusive education. The number of reports from other countries did not allow a reliable statement regarding the distribution.

Regarding research question 3: Exploratory: How did the distribution of inclusive education concepts change since the UN-CRPD?

The distribution of inclusive education since the UN-CRPD has changed in favor of fully inclusive concepts. Contrary to functional inclusive and mixed reports, as well as those with conflicting concepts, the number of reports applying the concept of full inclusion concept increased steadily. Even though the UN-CRPD is based on a relational model of disability and lacks specifications addressing the implementation of inclusive education, the general rise in attention to the topic appears to have led to an increase in efforts toward full inclusion.

Regarding research question 4: Exploratory: Do implications of functional and full inclusion result in different applications of methodology? Quantitative methods, in particular, are assumed to be applied less frequently in reports with a full inclusion perspective due to their constructivist basis.

Implications of functional and full inclusion resulted in different methodologies. The results confirm the assumption that quantitative methods, in particular, are less frequently applied to reports with a perspective of full inclusion.

The number of reports with inadequate definitions (coded as "x") is noteworthy. Although these were mainly explained by the definition of inclusion as placement alone (Göransson & Nilholm, 2014), they nonetheless illustrate the ongoing ambiguity in the field.

4.1.4 Discussion

The purpose of the study was to establish a framework for inclusive education that explains the apparent gap between concepts of traditional (special) education and full inclusion. Existing definitions, like the conceptualization by Göransson and Nilholm (2014), have not been applicable to the apparent conflict in the field. The first part of the study established the framework of inclusive education by deductively establishing the conditions necessary to form a position on inclusive education. These conditions refer to the model of disability, learning theory, and placement. Together, these aspects form coherent concepts of inclusive education, as follows:

(1) Exclusion: the medical model of disability, transmissive beliefs, exclusion;

(2) Functional inclusion: the relational model of disability, cognitivist beliefs, functional inclusion; and

(3) Full inclusion: the social model of disability, constructivist beliefs, full inclusion.

The systematic literature review shows that the concepts of the framework can be applied to the current discourse on inclusive education. Although a small number of articles had to be categorized into intersecting categories, most fulfilled the standards of the framework. However, those articles coded as "x" (that did not feature an explicit concept or only a single aspect, like joint placement) reflect uncertainties within the discourse.

Since the UN-CRPD (2006), there has been an increase in articles applying the concept of full inclusion (see Figure 5). Although the UN-CRPD relies more heavily on a relational model of disability, the overall attention and effort on inclusion since the UN-CRPD appears to have led to more conceptualizations of full inclusion. Regarding methodology, articles featuring a concept of full inclusion tend to apply quantitative methods less frequently than functionally inclusive articles (see Figure 6).

The framework of inclusive education, therefore, enables the allocation of concepts and provides implications for application and respective limits, as well as indications for conflicts if aspects are not in conjunction. From an educational perspective the aspiration to full inclusion interferes with the increase of standardized testing, which is an objective outcome (Berhanu, 2019; Norwich, 2014). Although this problem has been adequately described by Skrtic (1991) as the "special education paradox" the framework

of inclusive education provides the necessary theoretical background and the observable divide in the discourse on inclusive education.

4.2 Study II: Network Analysis

Selisko, T. J., Klopp, E., Eckert, C., & Perels, F. (2024). Attitudes toward Inclusive Education from a Network Perspective. *Education Sciences*, *14*(3), 3. https://doi.org/10.3390/educsci14030319

In the second study, a network approach is applied to determine the assumed reciprocal effect of the framework of inclusive education aspects (see Figure 3): model of disability, learning theory, and placement. These were supported by further variables (empathy, contact hypothesis, authoritarianism, and social Darwinism). In contrast to the first study, the second study analyzes the quantitative relationships between these variables within a sample of prospective professionals. Therefore, study II contributes to the research aim by investigating the empirical relationship between the established aspects of the framework of inclusive education.

4.2.1 Theoretical Background

Study II aimed to empirically test the theoretical framework of inclusive education (see Figure 3). Based on the implications of the model of disability:

- A medical model of disability provides the rationale for the categorization and implications of needs and abilities. The type and severity of the underlying impairment determine the extent of possible participation.
- A relational model of disability adds consideration of an adaptable environment. The degree of participation depends (on one hand) on the impairment and (on the other) on socially or structurally constructed barriers. Inclusion means the dismantling of such barriers, although a lack of participation can also be attributed to the individual's impairment.
- A social model of disability disconnects impairment and disability. The lack of participation can be solely attributed to socially or structurally

constructed barriers. Inclusion signifies full and equal participation, regardless of impairment.

With consideration of beliefs regarding learning and teaching, the reciprocal relations between the aspects of the framework of inclusive education becomes clear. Whereas transmissive beliefs conceive the recipient of education as passive, and learning outcomes as objective (Ertmer & Newby, 1993), the medical model of disability states the disability as objective and the environment as unchangeable. Therefore, exclusive special education is necessary to provide adequate education. Likewise, a cognitivist perspective reconciles with a relational model of disabilities in considering individual factors, as well as environmental factors, which both determine the outcome for learning as well as participation (Riffert, 2018). Finally, a (radical) constructivist perspective accounts for the individual construction of knowledge, and therefore, challenges any form of objective inter-individual standard; this, makes segregation obsolete, as well as the categorization of distinct types of disabilities or special educational needs (Terhart, 2003). Furthermore, it highlights the joint construction of a shared reality in democratic societies (Nilholm, 2006; Portelli & Koneeny, 2018).

The framework of inclusive education essentially consists of the assessment of the three perspectives: the model of disability, learning theory, and placement (horizontally) related to the education of children with disabilities. Vertically, these aspects form three coherent attitudes toward inclusive education.

According to Eagly and Chaiken (2007), an attitude consists of conscious and/or nonconscious evaluations of an entity, together with a tendency to respond positively or negatively. More generally, an attitude refers to the evaluation of an attitude object (Allport, 1935; Bohner & Dickel, 2011; Dignath et al., 2022). The attitude in question is toward inclusive education not as a single entity but based on the framework of inclusive education and differentiated into the respective perspectives.

Attitudes toward inclusive education—especially those of professionals in the field—are vital because, based on a cognitive-affective model of conceptual change (Gregoire, 2003), they form the preconditions for a willingness to implement inclusive education practices (Dignath et al., 2022).

Studies have shown that prior experience with disabilities and special education needs shapes attitudes toward inclusion when taking into account the larger inclusion

context (Navarro-Mateu et al., 2019; Scior et al., 2013). Special education teachers often have more positive attitudes about inclusive education than regular education teachers (Guillemot et al., 2022); this finding which is consistent with research showing that general intimate interaction among pre-service teachers reduces intergroup anxiety (Crowson & Brandes, 2014). In spite of this positive effect, interactions with people who have disabilities have been demonstrated to have conflicting impacts in the past (Brown et al., 2007; Cameron & Rutland, 2006; Woll, 2017).

Additional variables are considered to emphasize the validity of the framework and enrich the analysis. These variables are contact, empathy, which has shown a positive correlation with attitudes toward inclusive education (Navarro-Mateu et al., 2019) and authoritarianism and social Darwinism, which share the common prerequisites of identification with the medical model, as well as a general devaluation of persons with disability (Altemeyer, 1988; Crowson & Brandes, 2014; Petak et al., 2021).

The following hypotheses were investigated:

1. The framework of inclusive education (Selisko, Eckert, et al., 2024) states positive relations within the triads consisting of placement, the model of disability, and the beliefs regarding learning and teaching, as well as negative relations between the aspects of exclusion and full inclusion. These aspects are assumed to have a reciprocal effect on each other, as well as on the additional factors of empathy, contact, authoritarianism, and social Darwinism.

2. In line with previous research (Navarro-Mateu et al., 2019; Scior et al., 2013), Empathy and Contact are associated with attitudes toward fully and functionally inclusive aspects. Authoritarianism and social Darwinism are associated with attitudes toward exclusion (Petak et al., 2021).

4.2.2 Materials and Methods

For this study a sample of $N = 215$ participants was recruited at a German university between December 2022 and February 2023. Due to missing values, some participants ($n =$) 24 were excluded. Participants were ($n =$) 132 student teachers and ($n =$) 59 psychology students who were offered study credits (that translate into points

needed to advance in their respective fields of study) in return for their participation. Of the entire sample of participants ($n =$) 191, ($n =$) 159 identified as female, ($n =$) 42 as male, and ($n =$) 2 identified as diverse. They were aged 21.7 ± 3.7 ($M ± SD$) years. The study is based on an online questionnaire that was created and organized using the online survey tool Unipark.

This study uses a network approach (e.g. Borsboom et al., 2021; Epskamp & Fried, 2018) to investigate the relationship between the inclusive education aspects and the other variables (contact, empathy, authoritarianism, and social Darwinism). This method makes it easier to evaluate intricate reciprocal phenomena as a system whose interactions are represented by a network (Newman, 2018). Nodes (or the variables of interest) and edges (or the connections between the nodes) are the two elements that comprise a network. In statistical terms, edges are represented by partial correlation, which means that they show pairwise interactions between two nodes while accounting for all other network variables. The accuracy matrix (Epskamp et al., 2017) describes a Gaussian graphical model to which networks correspond.

Additionally, node strength and closeness mark important characteristics of the network topology (Borsboom et al., 2021). Strength is defined as the sum of the absolute edge weights, and closeness is an indicator between a node and all other nodes. Because the distribution of edges is not homogenous, some nodes are closer to each other than to other nodes. Groups of nodes emerge, which are called communities, and reveal which nodes share a common ground (Fortunato, 2010). Likewise, the structure of the framework of inclusive education is hypothesized to emerge within this community structure.

To depict the aspects of the framework of inclusive education (Figure 3), a variety of instruments covering the different beliefs were applied (see Table 2). Models of disability were assessed based on an instrument by Gebhardt et al. (2022) and adapted to consist of five to seven items for the medical, social, and relational models of disability. Transmissive and constructivist beliefs were assessed with the instrument by Kunter et al. (2019) and supplemented by three newly developed items, resulting in 11 items for constructivist beliefs and eight items for transmissive beliefs. Two items from the Teachers' Attitudes Towards Inclusion Scale (Boyle, 2014), as well as newly developed items to cover the three subcategories, were applied to assess beliefs regarding placement.

Utilizing three questions from the questionnaire pertaining to right-wing attitudes, social Darwinism was evaluated as a sub-dimension of right-wing extremism toward disability (Heller, Brähler, et al., 2020). The Short Scale for Authoritarianism was applied to evaluate authoritarianism (Beierlein et al., 2015). In numerous extensive uses, this three-item test demonstrated dependable psychometric qualities (Beierlein et al., 2015; Heller, Decker, et al., 2020).

The 25-item E-Scale, developed by Leibetseder et al. (2001), was used to measure empathy. Finally, in order to evaluate the contact hypothesis, we used a tool developed by Woll (2017). A six-point rating system, ranging from "I don't agree at all" to "I fully agree" is consistently used to rate each item. An overview is depicted in Tables 2 and 3.

Table 2

Questionnaire

Dimension and Construct	Number of Items	Example Item[a]
Placement		
Full Inclusion	3	"Within an inclusive educational system, all children are taught together."
Functional Inclusion	3	"With the necessary support, children with disabilities can participate in regular education."
Exclusive	4	"I am against the joint education of children with and without special educational needs."
Learning Theory		
Constructivist Beliefs	10	"Students learn best when they find their own solutions for tasks."
Transmissive Beliefs	5	"Students learn best when they follow the instructions of their teacher."
Model of Disability		
Social Model	3	"Disability is a social construct."

Relational Model	4	"Disability is the outcome of the interaction between impairment and external barriers."
Medical Model	3	"Disability is the consequence of congenital or obtained impairment or disorder."

Additional Variables		
Social Darwinism	3	"Like in nature, the stronger person should prevail."
Authoritarianism	3	"We should leave important decisions to leaders in society."
Empathy	25	"I feel sad when I see a lonely person."
Contact	1	"How do you assess your chances of getting to know a person with a disability?"

[a]*Translated Items. Originals in German.*

After an initial assessment of the scales, 13 items that caused insufficient psychometric properties in the respective measures, were removed.

Table 3

Means and Standard Deviations of Network Variables

Measures	Abbreviation	M	SD	Cronbach's α[a]
Medical Model of Disability	MED	4.565	0.697	.65
Social Model of Disability	SOC	2.986	1.087	.78
Relational Model of Disability	REL	4.243	0.784	.65
Transmissive Beliefs	T	4.004	0.768	.81
Constructivist Beliefs	C	5.017	0.532	.84
Exclusion	EX	4.012	0.905	.80
Functional Inclusion	FU	4.570	0.790	.60
Full Inclusion	TO	4.469	0.803	.70
Social Darwinism	sd	1.330	0.546	.74

Authoritarianism	au	2.008	0.668	.63
Empathy	em	4.221	0.571	.92
Contact	ct	3.739	1.284	-

Note. N = 191, ª Cronbach's α for scale means after the exclusion of items.

Firstly, we applied the graphical LASSO with the extended Bayesian information criterion (EBIC) to find an accurate regularization parameter (Epskamp et al., 2017; Epskamp & Fried, 2018). The parameter was set to 0.25 alongside the usual fit indices for the network.

To determine communities within the network, we applied a Spinglass algorithm (Yang et al., 2016). The uniqueness of the Spinglass algorithm is that it creates unstable results, and therefore, the median of 500 runs was selected to represent the number of communities. The multidimensional scaling (MDS) plot that was applied to depict the network shows the nodes color-coded, representing the respective community and the strength of the connection in the thickness of the edge (see Figure 7; Jones, 2022). Closely related nodes are depicted close together, while distant nodes are further apart.

4.2.3 Results

First, the descriptive results indicate the relationships between the model variables (see Table 4).

Table 4

Correlation for Model Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Medical Model of Disability	—										
2. Social Model of Disability	-.18	—									
3. Relational Model of Disability	-.09	.49***	—								
4. Transmissive Beliefs	.09	-.08	-.14	—							
5. Constructivist Beliefs	.09	.16	.26**	-.27**	—						
6. Exclusion	.21	-.21	-.05	.32***	-.09	—					
7. Functional Inclusion	-.02	.21	.22*	-.11	.23***	-.48***	—				
8. Full Inclusion	.11	.06	.06	.00	.27**	-.17	0.26**	—			
9. Social Darwinism	.02	.09	-.07	.04	-.28**	.03	-.12	-.07	—		
10. Authoritarianism	.02	.02	.04	.11	-.23	.20	-.09	-.02	.41***	—	
11. Empathy	.08	.06	.19	.00	.19	.03	.08	.05	-.15	-.20	—
12. Contact	-.04	.01	-.02	.03	-.08	-.01	.00	.06	.02	.01	-.07

*Note. *p < .05. **p < .01. ***p < .001.*

For the assumed triads, the correlation matrix shows generally positive correlations within the triad and negative correlations between the triads. These results are in accordance with the assumed relationships. However, there appeared to be a positive relationship between aspects of the fully inclusive and functionally inclusive

triads (e.g., in agreement with the social and relational model of disability). The exclusion triad appears to be consistent within these descriptive results.

The network results (Figure 7) showed a good fit ($\chi 2 = 45.00$, $df = 40$, $p = .270$, CFI = 0.985, RMSEA = 0.025, SRMR = 0.044). Concerning the accuracy (see Figure 8), a bootstrap analysis was conducted. The figure shows sufficient accuracy and edge weights were not substantially different from the bootstrap means. The stability coefficients of the edge weights were CS($\tau = .50$) = 0.44, CS($\tau = .60$), and CS($\tau = .60$) both equal 0.36. These values were greater than the critical value of 0.25.

The network is depicted as an MDS plot (Figure 7) and shows two communities with a stress level of 0.07, indicating that the two-dimensional presentation is valid. The structure does not have the required third dimension, even if it mostly supports the assumed relations (H1 and H2). In detail:

- There were positive relations within the triads consisting of placement, model of disability, and beliefs regarding learning and teaching, with negative relations between aspects of full inclusion and exclusion (H1).
- There was an association between empathy and fully and functionally inclusive aspects, and an association between authoritarianism and social Darwinism with aspects of exclusion (H2).

In Figure 7, the network nodes are represented by the circles. Red nodes represent the inclusion community, while blue nodes represent the exclusion community. The lines show the edges; the broader the edge, the stronger the relationship; red edges denote negative partial correlations, and blue edges denote positive partial correlations.

Figure 7

Network of Attitudes Toward Inclusive Education

Inclusion Community
- SOC: Social Model of Disability
- REL: Relative Model of Disability
- C: Constructivist Beliefs
- FU: Functional Inclusion
- TO: Full Inclusion
- em: Empathy

Exclusion Comminity
- MED: Medical Model of Disability
- T: Transmissive Beliefs
- EX: Exclusion
- au: Authoritarism
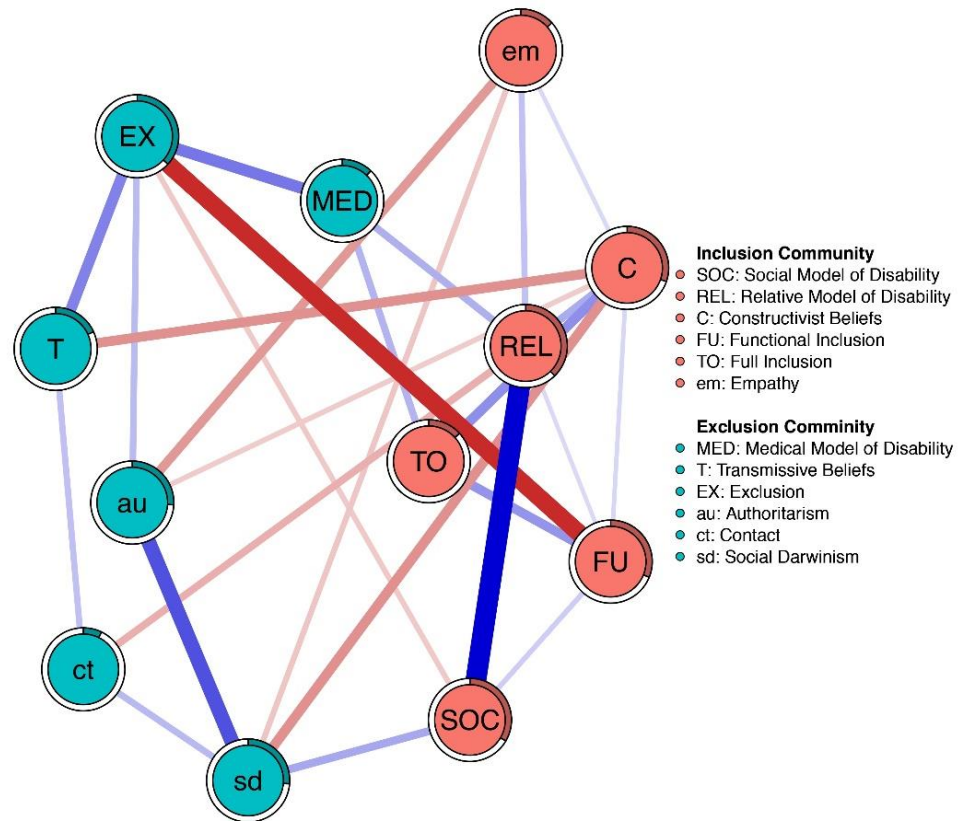- ct: Contact
- sd: Social Darwinism

Figure 8

Network Accuracy and Bootstrap
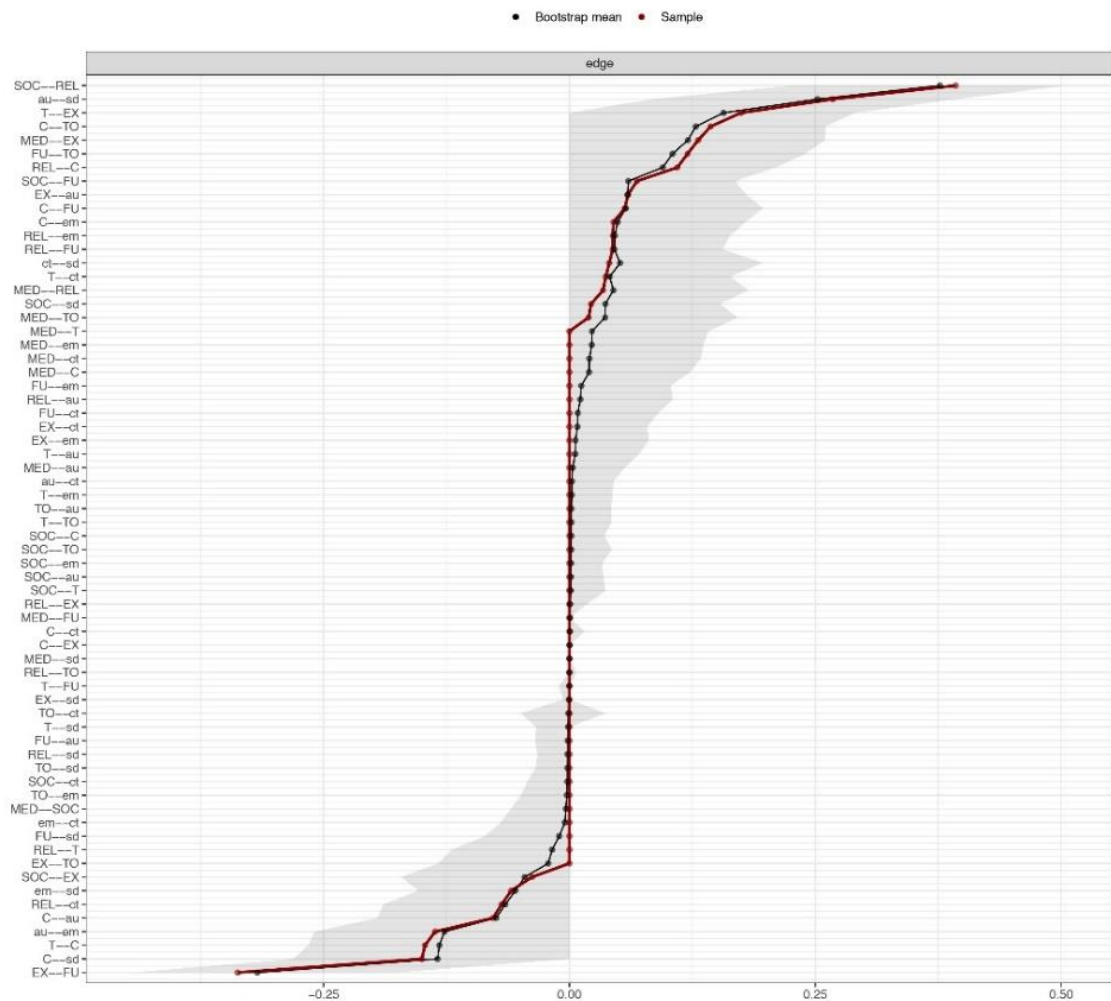
The inclusion community is made up of the social (SOC) and relational (REL) models of disability, functional (FU) and full (TO) inclusion, constructivism (C), and empathy (em), which are all positively related, exhibiting favorable views toward inclusion. According to the theoretical overlap (see Chapter 2.1), the social model of disability and the relational model have the strongest partial correlation. Furthermore, there is evidence of a positive partial correlation with functional placement and a negative partial correlation with the social model of disability and exclusive placement.

The medical model of disability (MED), exclusion (EX), transmissive beliefs (T), authoritarianism (au), contact (ct), and social Darwinism (sd) are the components of the exclusion community, which focuses on exclusion. Its positive internal relations and negative relations with the inclusion community are consistent with the exclusion triad

found in the framework of inclusive education. Contact demonstrates a positive relation with exclusive viewpoints. The relational model of disability, exclusion, and constructivist beliefs have the highest strength and proximity scores inside the network. The lowest proximity value is given by empathy, while the lowest strength value is given by contact (see Figure 9).

Figure 9

Strength and Closeness of Individual Variables
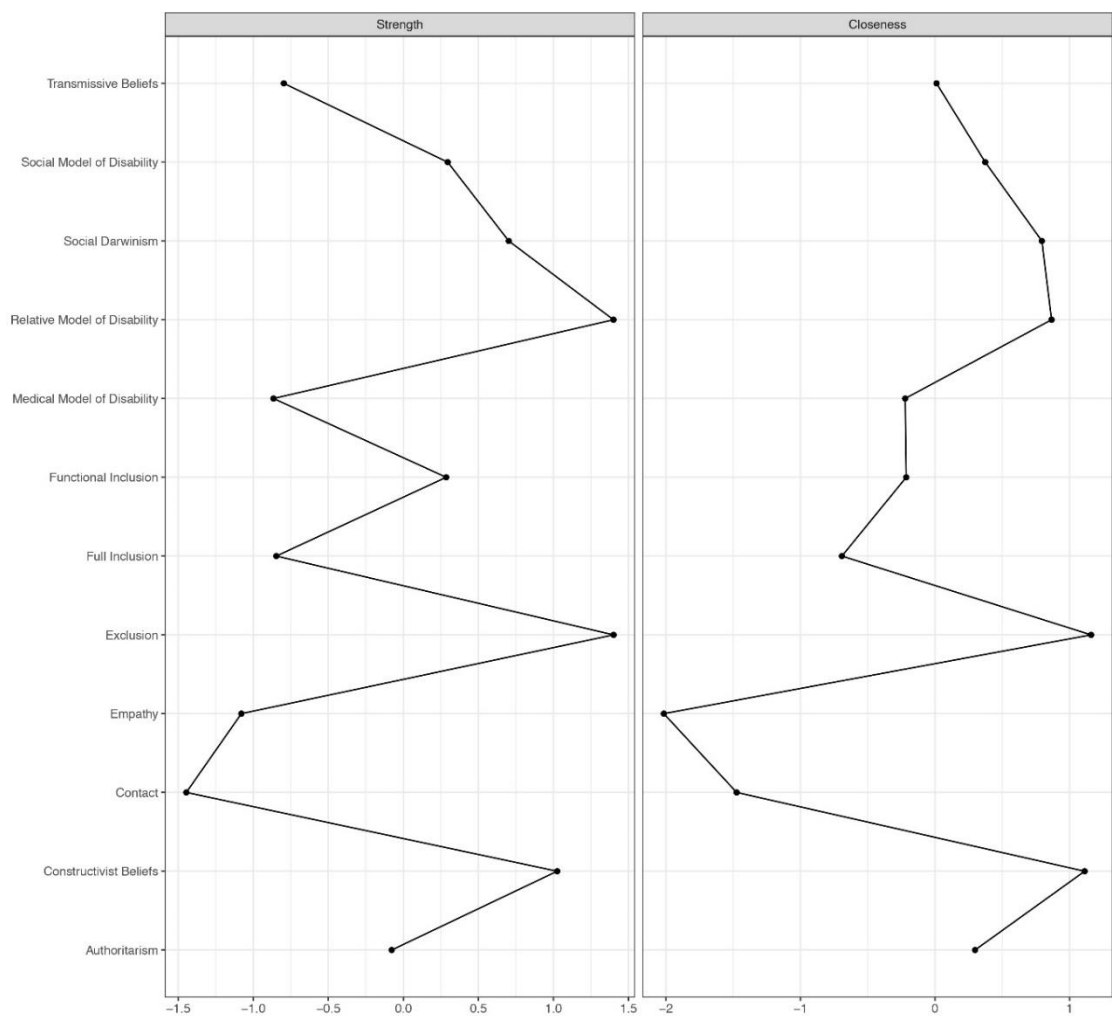
Regarding Hypothesis 1: The framework of inclusive education posits positive relations within the triads consisting of placement, the model of disability, and the beliefs regarding learning and teaching, as well as negative relations between the aspects of exclusion and full inclusion. These aspects are assumed to have reciprocal effects, as well as effects on the additional factors of empathy, contact, authoritarianism, and social Darwinism.

The reciprocal effect of the aspects that form coherent triads, or in this case attitudes, can be confirmed by the network approach. The complementary variables of empathy, authoritarianism, and social Darwinism underpin these relations. However, contrary to the three communities of aspects predicted, the network analysis only revealed two. First, there was an exclusion community combining exclusive placement, a medical model of disability, and transmissive beliefs of learning and teaching. Second, an inclusion community combined fully and functionally inclusive placement, a relational and social model of disability, and constructivist learning theory. Functional and full inclusion do not appear to be as distinct in terms of attitudes as they are in theory.

Regarding Hypothesis 2: In line with previous research (Navarro-Mateu et al., 2019; Scior et al., 2013), empathy and contact were associated with attitudes toward fully and functionally inclusive aspects. Authoritarianism and social Darwinism were associated with attitudes toward exclusion (Petak et al., 2021).

Even though empathy is linked to support for inclusive education, empathy itself demonstrated the weakest values in strength and closeness within the inclusion community. Hypothesis 2 is supported by the negative relation between social Darwinism and authoritarianism, as well as the general connection to the exclusion community (Navarro-Mateu et al., 2019).

4.2.4 Discussion

The purpose of the study was to apply the theoretical framework of inclusive education to investigate attitudes toward inclusive education. Due to the complex reciprocal relationships within and between the triads of the framework, a network approach was chosen to analyze attitudes from a sample of German ($N =$) 191 student teachers and psychology students.

The basic structure of the framework of inclusive education proved useful for the investigation of attitudes. The distinction between inclusive aspects (full and functional inclusion, social and relational model of disability, and constructivist learning beliefs) and exclusive aspects (exclusion, medical model, and transmissive beliefs) was replicated. Furthermore, the additional aspects of social Darwinism, authoritarianism, and empathy were depicted within their hypothesized communities.

Despite the strong theoretical link (see Chapter 4.1), this is the first time that the cognitive appraisal of inclusive education has been linked to the model of disability and beliefs of learning and teaching. In contrast to analysis using latent constructs, the network approach can depict the reciprocal relationship that is inherent to the framework of inclusive education , as well as many other real-life phenomena (Borsboom & Cramer, 2013).

The results are consistent with previous findings in the field. For example, Meschede et al. (2017) found that student teachers who hold less transmissive beliefs show greater professional vision and more pedagogical knowledge. The outcome of two communities, instead of the three predicted shows that attitudes are not as distinct as theoretically assumed. While there appears to be firm and consistent approval of exclusion, the interaction between all the aspects in favor of joint education is not as consistent.

The MDS plot confirmed the initial assumptions about the additional variables (empathy, authoritarianism, and social Darwinism). Although only weakly connected with the network as a whole and with the inclusion community, empathy was positively related to the relational model of disability and constructivism, as well as negatively related to authoritarianism and social Darwinism. Authoritarianism and social Darwinism were strongly related to each other, which confirms their theoretical overlap, and they occupied a central position in the exclusion community.

The empirical application of the framework of inclusive education (Selisko, Eckert, et al., 2024) contributes to the overall aim of the dissertation by investigating the relationship between the aspects of the framework. The variable-based network approach confirms the relationship of variables in favor and opposed to inclusive education.

4.3 Study III: Latent Profile Analysis

The third study takes the approach of the second study one step further, changing the perspective from the variables to the person. For this person-centered approach, a latent profile analysis (LPA) was chosen to investigate whether profiles emerge from the data that coincide with the theoretical framework of inclusive education (study I) and the network communities (study II). study III explores the attitudes of a subsample of ($N =$) 138 student teachers from the original sample of study II.

4.3.1 Theoretical Background

Chapter 2 established a conflict within the discourse on inclusive education that provides the starting point to study III (Buysse et al., 2001; Göransson & Nilholm, 2014; Piezunka, 2020). To investigate attitudes toward inclusive education, it is necessary to establish common ground between conflicting views, enabling the allocation of coherent definitions as well as the deduction of conflicts that arise from incoherent standpoints. The framework of inclusive education fulfills this function, providing the required theoretical basis for the investigation of latent profiles within the data. Similar to study II, study III investigates attitudes toward inclusive education. The analysis of attitudes is critical in the context of inclusive education because contradicting standpoints and negative attitudes toward inclusion can inhibit the willingness to implement inclusive education (Avramidis & Norwich, 2002; Börnert-Ringleb et al., 2020; Boyle et al., 2013; Saloviita, 2019).

In contrast to previous studies of attitudes toward inclusive education (e.g., Avramidis & Norwich, 2002), this study accounts for different conceptualizations of inclusive education. The framework of inclusive education already accounts for what Avramidis and Norwich (2002) described as variables that influence attitudes toward

inclusive education. For example, the differentiation between teacher- environment- and child-related is already accounted for by the model of disability. Whereas child-related variables necessarily depend on some form of medical model of disability to identify children with special educational needs, environmental and teacher related variables cover aspects of a social model of disability.

The connection between attitudes toward inclusive education and actual inclusion is most prominently documented by studies on the relationships between attitudes and the type and severity of impairment (e.g., Saloviita, 2019; Shin et al., 2023; van Steen & Wilson, 2020). While van Steen and Wilson (2020) did not find a significant effect of a specific type of disability on attitudes toward inclusive education, Shin et al. (2023) discovered four distinct types within an LPA, which appear to underscore the relationship between attitudes toward inclusive education and disability.

The study by Jordan et al. (2009) is conceptually close to study III. They connected beliefs of ability and disability with beliefs regarding the nature of learning and teaching. Those who viewed ability as a fixed construct tended to hold more transmissive/behaviorist beliefs. The same conclusion has been drawn in Study I and II (see Chapters 2, 4.1, and 4.2).

Instead of viewing exclusion merely as the opposite of inclusion, exclusion is conceptualized on the premise of a medical model and transmissive beliefs of learning and teaching (see Chapter 2). This approach enables us to comprehend the logic behind exclusive attitudes and highlights that those beliefs must change to bring about a change in attitudes toward inclusive education. Furthermore, an additional analysis of gender, educational stage, and self-efficacy is conducted to highlight the validity of the framework of inclusive education because they are already known to influence attitudes toward inclusive education (see Chapter 2.6).

The following hypotheses were investigated:

1. In accordance with the framework of inclusive education, there is a three-profile structure within the data showing exclusive, functional, and fully inclusive attitudes.
2. In accordance with the existing literature, there is no difference in the gender distribution between attitudinal profiles.

3. Primary school student teachers are more likely to be represented in a functional or fully inclusive profile than student teachers from other educational stages.

5. Student teachers' self-efficacy differs significantly based on their attitudinal profile.

4.3.2 Methods

Sample: the sample consisted of $N = 138$ student teachers from a German University recruited from December 2022 to February 2023, of whom $n = 105$ identified as female, $n = 32$ as male, and $n = 1$ as diverse. Participants had a mean age of $M = 22$ ($SD = 4.10$) and $n = 50$ were primary school student teachers, $n = 80$ were secondary school student teachers, $n = 7$ vocational education student teachers, and $n = 1$ was a special education needs student teacher. These participants formed a sub-sample of those recruited for study II.

Instruments: The survey instruments and scales used here were described in study II; the only additional instrument applied here was the Teachers' Self-Efficacy in Dealing with Heterogeneity scale (Lehmann-Grube et al., 2022). This scale consists of three subscales: instructional quality (11 items), classroom management (14 items), and student engagement (16 items).

The psychometric properties of the sample are shown in Table 5.

Table 5

Means, Standard Deviations, and Internal Consistency of Scales

Scales	M	SD	Cronbach's α[a]
Full Inclusion	4.440	0.783	.65
Functional Inclusion	4.550	0.765	.59
Exclusion	4.019	0.836	.77

Constructivist Beliefs	5.011	0.525	.82
Transmissive Beliefs	4.053	0.745	.82
Social Model of Disability	2.978	1.108	.83
Relational Model of Disability	4.132	0.784	.65
Medical Model of Disability	4.506	0.694	.66

Note. N = 138, [a] Cronbach's α for scale means after the exclusion of items.

Analyses: an LPA was applied to discover inter-individual differences in the attitudes of student teachers toward inclusive education (Spurk et al., 2020). We attempted to identify the unique responses to pertinent factors in the theoretical framework of inclusive education (Hickendorff et al., 2018) by evaluating and modeling patterns within the data. We believe that the LPA's findings align with the framework's theoretical foundations.

Using LPA, the analysis sought to identify patterns in the collected data (e.g., Oberski, 2016). Differential profiles within a specific dataset were modeled using LPA. The R (R Core Team, 2021) packages tidyLPA (Rosenberger et al., 2018) and mclust (Scrucca et al., 2023) were used to estimate profiles for the analysis.

4.3.3 Results

A decision was made in favor of a two-class solution after a comparison of different fit indices for two to five classes (see Table 6). Based on an analytical hierarchical process (Akogul & Erisoglu, 2017), the two-class solution was deemed the most suitable. The bootstrap likelihood-ratio test (BIC), as well as the consideration and plausibility of group sizes, further cemented this decision (Spurk et al., 2020; Tein et al., 2013).

Table 6

Latent Profile Analyses Results by Number of Classes

Model	Classes	AIC	BIC	Entropy	prob_max
1	**2**	**3107.82**	**3181.00**	**.62**	**.93**
1	3	3094.75	3194.27	.77	.93
1	4	3075.14	3201.01	.81	.92
1	5	3076.38	3228.60	.75	.97

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion

Figure 10 provides a spiderweb visualization of the two emergent profiles. The profiles can be identified as *inclusive* and *exclusive*. The inclusive profile combines high values of approval with a social and relational model of disability, full and functional inclusion, and constructivist learning theory. The exclusive profile combines high values of approval with the medical model of disability and transmissive learning theory. There appears to be no significant difference in agreement between the profiles regarding the assessment of the medical model of disability.

Figure 10

Spiderweb Diagram: Profiles of Student Teachers' Attitudes toward Inclusive Education
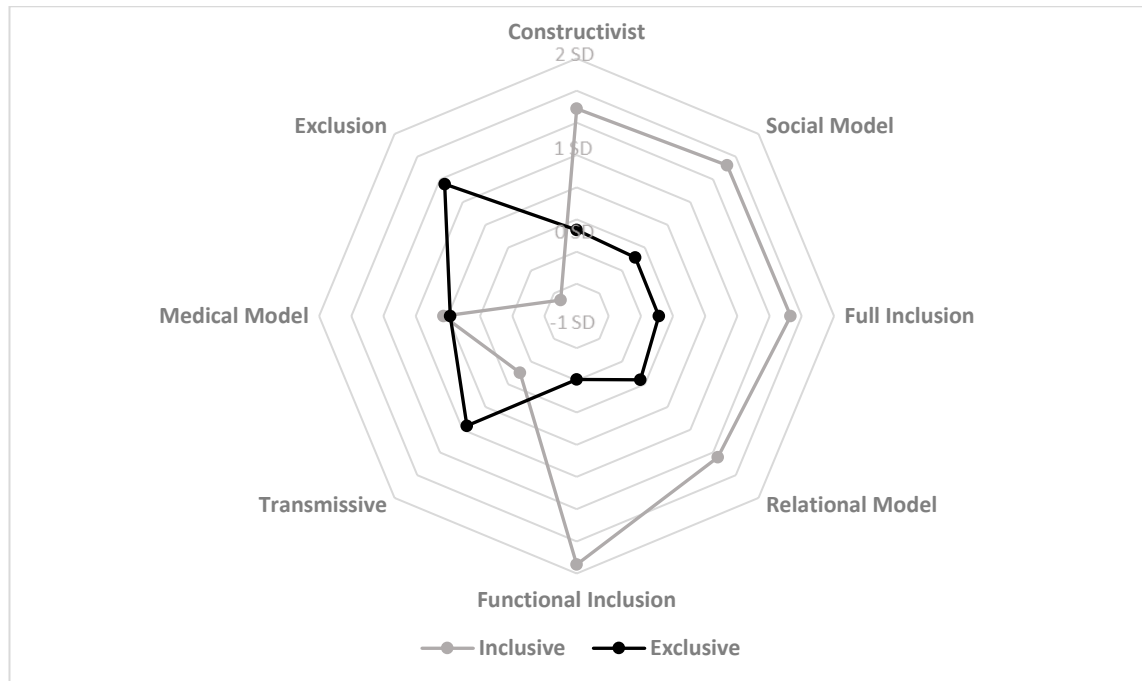
Regarding Hypothesis 1: In accordance with the framework of inclusive education (Selisko, Eckert, et al., 2024), there is a three-profile structure within the data showing exclusive, functional, and fully inclusive attitudes.

We assumed three distinct attitudinal profiles in the data that show exclusion, functional inclusion, and full inclusion. Therefore, Hypothesis 1 cannot be confirmed, although the distinction between inclusion and exclusion has been reproduced.

Regarding Hypothesis 2: In accordance with the existing literature, there is no difference in the gender distribution between attitudinal profiles.

The two-class solution of the LPA assorted the *n* = 48 student teachers to the inclusive profile and *n* = 90 student teachers to the exclusive profile. Table 7 shows the distribution across genders. The Pearson chi-square test was not statistically significant ($\chi^2 = 0.55$, *p* = .761). Previous results can, therefore, be confirmed.

Regarding Hypothesis 3: Primary school student teachers are more likely to be represented in a functional or fully inclusive profile than student teachers from other educational stages.

Among the $n = 50$ primary education students, $n = 31$ were classified as exclusive and $n = 19$ as inclusive, while among the $n = 80$ secondary education student teachers, $n = 54$ were classified as exclusive and $n = 26$ as inclusive. The Pearson chi-square test did not show a significant difference in these distributions ($\chi^2 = 1.16$, $p = .761$). Therefore, Hypothesis 3 cannot be confirmed.

Table 7

Distribution related to Hypotheses 2 and 3

	Exclusive Profile		Inclusive Profile	
	n	%	*n*	%
Total	90	65.22	48	34.78
Gender				
Female	68	64.76	37	35.24
Male	21	65.63	11	34.37
Diverse	1	100	0	0
Educational Stage				
Primary	31	62	19	38
Secondary	54	67.5	26	32.5
Vocational	4	57.14	3	42.86
Special Educational Needs	1	100	0	0

Regarding Hypothesis 4: Student teachers' self-efficacy differs significantly based on their attitudinal profile.

We used t-tests to discover mean differences in self-efficacy between the profiles. These revealed significant results: overall, student teachers with an inclusive profile

showed a significantly higher self-efficacy than those in the exclusive profile ($t = 1.84$, $df = 87.77$, $p = .035$). Therefore, Hypothesis 4 was confirmed.

4.3.4 Discussion

The purpose of the study was to expand the understanding of attitudes toward inclusive education based on the framework of inclusive education. The previously conducted network analysis successfully realized a variable-based approach to a sample of student teachers and psychology students. The present study analyzed a subset of that original sample, excluding psychology students. The person-centered approach of an LPA allows conclusions to be drawn regarding individual profiles, which are especially relevant to the development of prospective teachers.

The separate univariate ANOVAs revealed that the profiles differed significantly in all aspects of the framework of inclusive education, except for the medical model of disability. This finding is especially relevant because the assessment of the social model of disability differed significantly. The theoretical contradiction between the two concepts and the historical development in the assessment of disability have apparently not translated into individual models of disability (Gallagher, 2015; Gebhardt, Schurig, Suggate, Scheer, Diehl, et al., 2022; Shakespeare, 2017; Waldschmidt, 2020). Interestingly, the LPA reproduced the bilateral structure of attitudes toward inclusive education that was already reported in the network analysis (Chapter 4.2).

The results of the LPA suggest that a two-profile solution provided the best fit to the data. These consisted of an exclusive profile (with high values in exclusive placement, a medical model of disability and transmissive beliefs of learning and teaching) and an inclusive profile (combining high values in fully and functionally inclusive placement, a relational and social model of disability, and constructivist beliefs of learning and teaching). These profiles corresponded with the results of the network analysis.

To date, the investigation of gender differences in attitudes toward inclusive education has produced mixed results (Fernandez et al., 2023; Forlin et al., 2009; Navarro-Mateu et al., 2020). The present study did not find any significant differences in the distribution of gender across the profiles. Therefore, we contend that gender disparities in attitudes toward inclusive education are slight at best and possibly even

extraneous. Similarly, the investigation of the participants' educational stage revealed an equal representation across the profiles.

Consistent with the existing literature, differences in self-efficacy across the profiles of inclusive education generally support a relationship between self-efficacy and positive attitudes toward inclusive education (Avramidis et al., 2019; Dörrenbächer-Ulrich et al., 2020; Hosford & O'Sullivan, 2016; Savolainen et al., 2012; Weisel & Dror, 2006).

In summary, the results of Study III highlight the relationships between placement, beliefs of learning and teaching, and the models of disability.

5 Overall Discussion

In this final chapter, the achievements and limitations of the three studies are illustrated. These have implications for future research and practice and show potential next steps in the application and further development of the framework of inclusive education.

The dissertation aimed to establish a framework that outlines the integral aspects of inclusive education. Following the theoretical considerations—which determine a comprehensive understanding of inclusive education—a framework of inclusive education emerged that could be applied to the broader state of research. The aim for the dissertation to develop a framework that ensures comparability between conceptualizations of inclusive education has been achieved.

The framework of inclusive education could also be applied to a specific field of research; attitudes toward inclusive education. The application revealed similar relationships to the theoretical framework. The network analysis and LPA provided valuable insight into attitudes toward inclusive education by revealing the relationships between the core aspects that affect inclusion. Contrary to the assumed relationships, attitudes toward inclusive education appear to be either generally inclusive or firm exclusive. The approach to attitudes based on the framework of inclusive education reinforces the theoretical assessment that exclusion is not merely the opposition to inclusion but a coherent concept in itself.

5.1 Achievements

The systematic literature review showed that a substantial amount of research applies the suggested criteria. The interconnection between the models of disability, learning theory, and placement are regularly applied, but they are not explicitly matched or contrasted with conflicting standpoints.

Article I (Selisko, Eckert, et al., 2024) gave reason to assume not only that the aspects contained within the framework of inclusive education influence research on education but that the assessment of these aspects (understood as beliefs) also form coherent attitudes toward inclusive education.

To test this assumption, a sample of student teachers and psychology students was recruited to complete a questionnaire covering the framework's aspects (Article II:

Selisko, Klopp, et al., 2024). By application of a network approach to the results, communities of variables emerged that reveal a similar pattern to the framework. The main difference to Article I is that the results only distinguished between aspects in favor of inclusive education or exclusion rather than distinguishing between the three concepts of inclusive education. It appears that, within this sample, the attitude toward exclusion is formed based on the medical model of disability, transmissive beliefs of learning, and a conviction regarding segregation. Literally opposite (see Figure 8) to a coherent exclusive assessment of the education of children with disabilities are aspects of inclusive education. These aspects combine the relational and social models of disability, full and functional inclusion, and constructivist learning theory. Thus, Article II starkly illustrates the incoherent standpoint and confusion around inclusive education.

In contrast to the variable-based approach of the network analysis (Article II), Article III offers a different, person-centered perspective on the issue of attitudes toward inclusive education. Article III investigates a sub-sample of the originally recruited sample of student teachers and psychology students. The psychology students were not included in this analysis so that we could specifically investigate the attitudes of student teachers' toward inclusive education. An LPA revealed that an exclusive and an inclusive profile emerged from the data (see Figure 10). Interestingly, these two profiles corresponded with the communities of Article II in combining higher values in exclusive aspects (especially transmissive beliefs and exclusive placement) in the first profile and all the inclusive aspects in the second profile. This finding reinforces the impression that, in terms of attitudes toward inclusive education, a coherent exclusive position opposes a partly conflicted inclusive position.

5.2 Limitations

The work presented in the dissertation is subject to a number of limitations. These are described in the order they appear, regarding Articles I to III.

5.2.1 Theoretical Basis and Systematic Literature Review

At first glance, the framework of inclusive education could appear outdated due to its focus on disability. Evidently, research on inclusive education has surpassed the matter of disability or special educational needs. Indeed, the current discourse encompasses all aspects of difference in educational settings, including migration, gender, and sexual orientation (Cerna et al., 2021). However, the framework of inclusive education is not only a theoretical derivation but also a historical one. Disability was—and remains—the anchoring point to inclusive education (Ainscow, 2007).

The framework of inclusive education is a simplification of complex theoretical constructs. First and foremost, the models of disability that are applied to the framework represent a selection that provides an overview of a spectrum that ranges from attributing disability to the individual (medical model of disability) to attributing disability to the environment (social model of disability). Nonetheless, explanatory models differ substantially and permeate attitudes toward disability, especially those based on religious or spiritual convictions as an explanation for the cause or purpose of a disability (Ellger-Rüttgardt, 2008; Olkin, 2002; Retief & Letšosa, 2018; Waldschmidt, 2020). A qualitative approach to investigate models of disability in more detail could also further clarify the relationship with other aspects of inclusive education.

Secondly, the framework only scratches the surface of the intersection between learning theory, the purpose of education, and societal structures that are implied in the range between transmissive and constructivist learning theories, and between exclusion and full inclusion. Furthermore, it brushes aside the broader societal context that inhibits inclusive education. For a more thorough understanding of these issues, the analysis of Lambrecht (2019) is recommended, which also examines the conflict between economic demands and the individual's right to education.

Third, the systematic literature review applied exclusion criteria, which may limit the applicability of the findings. The specific type of special educational needs or disability investigated in the review led to the exclusion of a substantial amount of reports (e.g., Hughes et al., 2013). Their inclusion would have introduced a bias in the framework's applicability because the identification suggests an objective assessment of disability, whereas the exclusion causes a bias in the application of definitions regarding inclusive education. Because the literature review was concerned with the aspects of the

framework of inclusive education, it was necessary that all aspects must potentially be present. This criterion also led to the exclusion of case studies and the application of inclusive education to other limited contexts (e.g., Greenstein & Baglieri, 2018; Kuranishi & Oyler, 2017). In the future, a broader literature review on all aspects of inclusive education could further enrichen the state of research and allow an even more differentiated assessment.

Finally, the literature review only included peer-reviewed research from European and North American countries between the years 2006 and 2021. The reasoning behind this criterion was to define limits based on a common context and a comparable aspiration to inclusion. Therefore, the UN-CRPD from 2006 was chosen as a recent internationally supported agreement. Applying this reasoning also led to the exclusion of non-mandatory education (e.g., post-secondary education or early childhood education), although it is acknowledged that inclusive education does not start or end with mandatory education. A final limiting criterion in the literature review was the restriction to include only publications written in German or Englisch due to economic reasons. This restriction might have led to an overrepresentation of German and English publications and an underrepresentation of, for example, Spanish speaking countries. This limitation can be faced only by including all languages, which would have exceeded the available means. With technological advancements in artificial intelligence and translation software future research can address this issue more comprehensibly.

5.2.2. Network Analysis

The scales applied to assess the aspects of the framework of inclusive education were adapted to fit the purpose of the study. Due to a lack of an established scale that measures radical-constructivist beliefs, we applied the scale developed by Kunter et al. (2019), which is predominantly informed by a cognitive-constructivist standpoint. Unfortunately, the cognitivist part maintains the belief in external control over the learning process, which does not accurately depict the full inclusion background of the framework.

Furthermore, a total of 13 items were removed to increase internal consistency. Newly developed items and the instrument by Gebhardt et al. (2022) revealed particular

weaknesses in reliability. The variable *contact*, which showed a conflicted standpoint in the network, was only assessed with one item: participants were asked how likely it is to meet a person with disability in their day-to-day lives (Woll, 2017). Persons with a superficial understanding of the social dimension might overestimate the chance of meeting persons with disability. The results showed only a weak relation of contact to the network, and further investigation is needed to advance the understanding of this variable.

The convenience sample that was recruited consisted of students from one German university. Future research should emphasize the need for a broader sample, perhaps expanding this to include in-service teachers, which would improve the validity of the research results.

Furthermore. previous studies report different attitudes toward different types of disabilities (de Boer et al., 2011; Moberg et al., 2020), which suggests reason to assume different attitudes toward the inclusion of different disabilities. Evidently, this would undermine the aspect of full inclusion in the framework of inclusive education. However, differentiation regarding disabilities that carry direct implications for educational practice (e.g., cognitive disabilities) offers the potential for a more nuanced understanding of models of disabilities and attitudes toward inclusive education.

5.2.3 Latent Profile Analysis

Similar to Article II, the missing distinction between cognitivist and constructivist learning theories of the applied instrument by Kunter et al. (2019) could account for the lack of a distinction between a functionalist and fully inclusive profile. The reliable test history of the chosen instrument led to the decision to apply it.

The results might have been negatively affected by the limited sample size. The two-class solution was theoretically the most appropriate and exhibited the lowest BIC, but it demonstrated a low entropy level, as can be observed in the solution comparison (see Table 6). The applicability of the two-class solution should be further clarified in the future through a larger sample and by comparison to the three-class solution.

The relationship between the goal of inclusive education and its purpose of societal growth was referred to only implicitly. While we contend that students are seen

as creating a shared reality within the understanding of full inclusion (which provides a foundation for a shared community), other political, ethical, and social aspects have been overlooked (Nilholm, 2006). In particular, the debate over the compatibility of meritocracy and special/inclusive education brings to light the social issues and significant transformations encountered by the educational system if the aspiration is full inclusion (Stanczak et al., 2024).

5.3 Implications for Future Research

The framework of inclusive education has the potential to be applied to a wide range of research in the field of inclusive education. Most importantly, it provides a context to the discourse of inclusive education consisting of the three core elements that determine the feasibility and limitations of inclusive education: the model of disability, learning theory, and placement of children with disabilities. This context is necessary to break the cycle of arguments between traditional/special education and full inclusion (e.g., Ainscow, 2007; Anastasiou & Kauffman, 2013; Wocken, 2010). Arguments that ultimately fall into the sphere of educational philosophy can (and should) be detached and discussed separately from inclusive education.

The next step is a thorough validation of the instrument to assess attitudes toward inclusive education. From the limitations (see Chapter 5.2), it becomes clear that the translation from the theoretical framework to an empirical instrument signifies a crucial step. To realize a valid and more reliable instrument based on the framework of inclusive education, a larger, independent, and randomized sample is necessary. Ideally, this would consist of a broad range of professionals in the field of inclusive education, ranging from student teachers to more experienced teachers, which would help to account for the effects of teaching experience (Costello & Boyle, 2013; Meschede et al., 2017; Savolainen et al., 2012). By integrating the model of disability with learning theory, the framework covers the ideological basis of attitudes toward inclusive education.

Furthermore, qualitative measures are needed to realize a holistic view and to account for local or national contexts that influence attitudes toward inclusive education. These measures should have a focus on pragmatic reasoning, which goes beyond the ideological aspects of the framework (Burke & Sutherland, 2004). The combination of pragmatic and ideological reasoning promises to be especially valuable in cross-cultural

studies. The functionally oriented Anglo-American approach (e.g., a least restrictive environment) to inclusive education (Cramer, 2015), appears to be incompatible with the German system, which largely depends on external differentiation (Anken, 2010). The former regards joint education in terms of time spent in the same classroom (e.g., using an 80% benchmark in the USA's educational system Algozzine et al., 2017), while the latter is more concerned with the general integration of certain types of disabilities (e.g., Anken, 2010). In both cases, attitudes toward full inclusion are not relevant to the implementation of functional inclusion.

Previous studies have shown that attitudes toward inclusive education also depend on the severity and type of disability (Moberg et al., 2020). Although this aspect is already incorporated in the framework in terms of functionality, it provides reason to explore changing models of disabilities in specific contexts. For example, exclusion from regular education for children with physical or sensory impairments could be attributed to a lack of accessibility, whereas the exclusion of children with cognitive or behavioral impairments is attributed to the individual. Future research, especially on models of disability, should incorporate arguments of accessibility and barriers to participation also in terms of type of disability or special educational need.

Last but not least is the persistence of the medical model of disability. The dissertation has shown a clear distinction between how the model of disability is presented in theory (Article 1) and how it is evidenced in empirical studies (Article II and III). The contradiction between the medical and social model of disability is especially evident (e.g., Gallagher, 2015; Gebhardt, Schurig, Suggate, Scheer, & Capovilla, 2022). However, this contradiction was not replicated within the empirical approaches of Articles II and III. The results of Article III show no significant difference in the assessment of the medical model between the exclusive and inclusive profiles (see Figure 10). On the contrary, the variable-based network approach of Article II allows the assessment of a genuine connection to exclusive aspects but without a distinct (negative) edge to the social model of disability (see Figure 8). The implication of this for future research is the need to examine the actual conceptualization of disability in order to understand the effect on attitudes toward inclusive education.

5.4 Practical Implications

As indicated previously, inclusive education has practical implications, as well as theoretical ones. Due to the Salamanca Statement (Salamanca Statement, 1994), the UN-Convention on the Rights of Persons with Disabilities (UN-CRPD, 2006), and most recently the disability-inclusive 2030 Global Agenda (Disability and Development Report, 2018), there is growing pressure for legislation to provide inclusive learning opportunities for all children. This year marks the 40th anniversary of the Salamanca Statement and the implementation of inclusive education remains an aspiration. The framework of inclusive education explains the core conflict in this process.

A potential way to implement inclusive education is through the application of the concerns-based adoption model (Hall & Hord, 2011), which describes a systematic approach to conceptual change in organizations and has a direct connection to school development (Leidinger & Perels, 2015). Although teachers are often referred to as *lone fighters*, especially in a German-speaking context (e.g., Galle et al., 2019; Stegmann, 2008), the teaching profession has to deal with constant challenges, starting from evolving demands of the curriculum and teacher shortages to the simultaneous demand for individualization and standardization (for an overview: Normand et al., 2018). Change, in terms of a collective effort can only be conducted if the goal is clear. Ensuring effective change toward a more inclusive educational system requires a systematic and organized approach.

The framework of inclusive education (Selisko, Eckert, et al., 2024) provides points of reference to the concerns-based adoption model (see. Figure 11) on various levels, most importantly on innovation configurations and stages of concern (Hall & Hord, 2011).

Figure 11

Concerns-Based Adoption Model (Hall & Hord, 2011, p. 108)
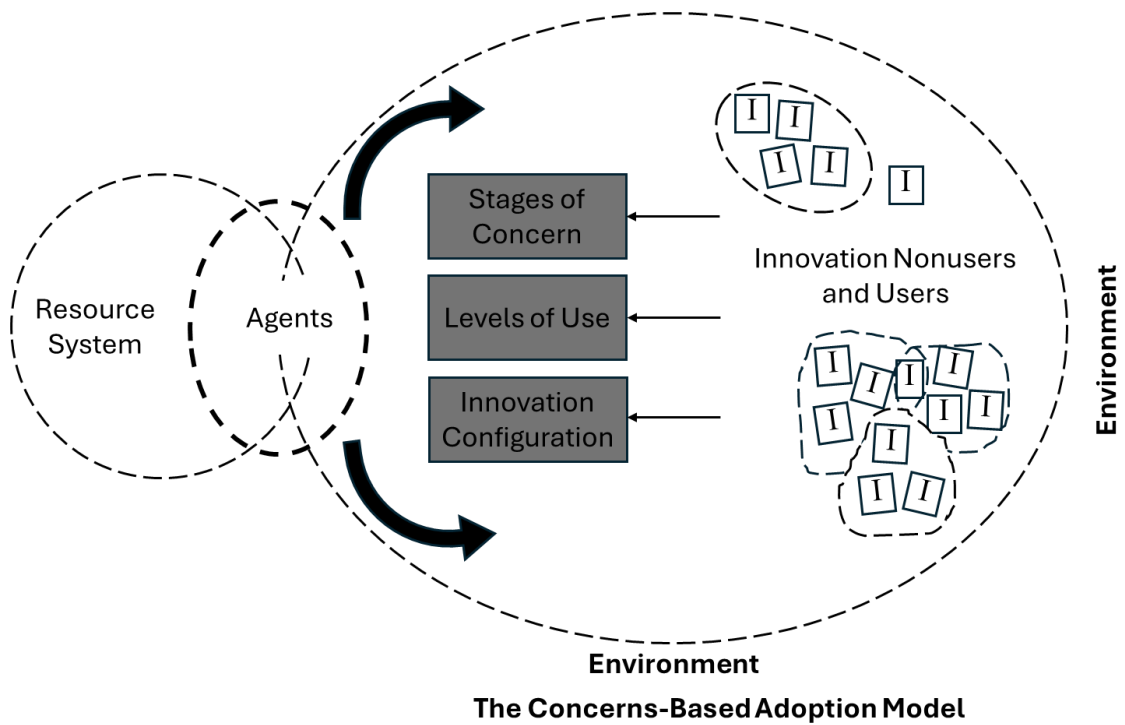
Within their concerns-based adoption model Hall and Hord (2011) assembled the necessary constructs that should be considered, when implementing change processes. The consideration of stages of concern, levels of use, and innovation configuration are central to this model. Innovation configuration refers to the establishment of a consensus on the outcomes of the change process.

As established in the theoretical background, inclusive education is a highly contested field, and existing definitions show conflicting standpoints. Each of the triads within the framework of inclusive education signifies an internally coherent standpoint (Selisko, Eckert, et al., 2024). Therefore, it is necessary to describe the triads, as well as what these imply for classroom practices and the conflict that may arise regarding contradictory aspects. Consider, for example, full inclusion and transmissive learning beliefs. The initial implementation of inclusive education can use the framework to explain and showcase variables that contradict each other. Of particular interest are the contradictions between transmissive/constructivist beliefs and the medical/social models of disability. Here, the consideration of the innovation configuration are complementary to the stages of concern investigated by Dörrenbächer-Ulrich et al. (2020).

The stages of concern range from Stage 0 (Awareness) to Stage 6 (Refocusing) and describe a process ranging from self-oriented to student-oriented concerns (George et al., 2006). The impact of the framework to this process can be twofold. Firstly, it provides the theoretical background to relevant concerns. Depending on the aspired concept (functional or full inclusion), information can be provided (Stage 1) and possible personal and management concerns (Stages 2 and 3) can be addressed, which is especially important if misconceptions about inclusion exist. Secondly, higher order, student-oriented, stages of concern (Stages 4 to 6) indicate the awareness of models of disability and learning theory. Leaders in education can use the levels of concern to reveal the Stage (or Stages) teachers are in and provide the necessary support and background information by referring to the framework of inclusive education.

The relevance of theoretical concepts in the preparation of teachers for their professional practice has been under scrutiny, and a more practical approach is often demanded (e.g., Dicke et al., 2016). The *reality shock* that many experience is associated with an apparent rift between their academic education and professional practice as a teacher. It is a continuous struggle in teacher education (Dicke et al., 2015; Huberman, 1989; Voss & Kunter, 2020) and is especially relevant in beliefs regarding learning and teaching. Voss and Kunter (2020) investigated the constructivist beliefs of beginning teachers and found a decrease in these beliefs over the course of the induction year in Germany. In light of the framework of inclusive education (Selisko, Eckert, et al., 2024) and Articles II and III, it is clear that the effects of the *reality shock* on learning beliefs pose a barrier to the inclusion of children with disabilities.

For the practical implementation of inclusive education, it is necessary to avoid promises of diversity as an asset to education if inter-individual standards are simultaneously upheld. The promise of diversity as an asset is derived from a constructivist understanding of learning and teaching and, therefore, builds upon the conviction of individual and social construction of knowledge (Terhart, 2003). Therefore, the inclusion of persons from diverse backgrounds enhances the learning experience based on constructivist ideas. This argument does not apply to learning environments with a functional understanding of learning and teaching (i.e., predominantly transmissive beliefs). Therefore, based on the framework of inclusive education (Selisko, Eckert, et al., 2024), measures to enhance inclusive education can be attributed to functionalist

concepts and concepts of full inclusion, depending on the model of disability and learning theory to which they can be attributed.

Typically, functionalist measures incorporate the identification of children with special needs that are distinct from regular children. For example:

- Distinction between special education and ordinary teaching environments (e.g., Haug, 2020).
- Least restrictive environment (e.g., Hyatt & Filler, 2011).
- Differentiation of instruction for special education students (e.g., Kilanowski-Press et al., 2010).
- Assignment of special needs assistants (e.g., Keating & O'Connor, 2012).

Practical implications of full inclusion include measures that refer to constructivist convictions regarding the learning process without involving making a distinction between children with and without disability. For example:

- Universal design for learning (e.g., Katz, 2015; Katz & Sokal, 2016)
- Scaffolding (e.g., Bowles et al., 2018)
- Collaborative learning (e.g., Frey et al., 2011)
- Formative assessments (e.g., Kalinec-Craig, 2017)
- Differentiation and individualization (e.g., Lindner & Schwab, 2020)

The practical implications of the framework of inclusive education (Selisko, Eckert, et al., 2024) highlight the importance of a robust theoretical background to the discourse. The conceptualization of inclusive education affects aspirations regarding the implementation of inclusion, and the measures that can be used to support this process. It is important to note that measures are not limited to a specific concept of inclusive education. However, functionalist measures, in particular, can obstruct fully inclusive aspirations by relying on categorization.

5.5 Conclusion

This dissertation suggests a coherent framework for inclusive education (Selisko, Eckert, et al., 2024). Over the course of three studies, it identifies the most central aspects of inclusive education and establishes the relationship between them.

Article I is concerned with the theoretical derivation of the model of disability, learning theory, and placement to form coherent perspectives on the education of children with disabilities. In the second step, these aspects are applied to a systematic literature review which uses a categorical system based on the framework to identify whether and how these aspects are currently utilized in research. Although a substantial amount of research did not fulfill the inclusion criteria to enable a coherent perspective on inclusive education as suggested by the framework, most studies could be assigned within the established categories. The first main finding of the study is that most research follows a strict "full inclusion" definition, consisting of a social model of disability, constructivist learning theory, and full inclusion. The second main finding is that the increasing number of studies on inclusive education since the UN-CRPD (2006) is due to a rise in research applying the concept of full inclusion. These findings highlight the state and focus of research in inclusive education.

Article II applies a comparatively new method of quantitative research to a sample of student teachers and psychology students. In order to study attitudes toward inclusive education, a questionnaire was developed that covers the relevant aspects established within the framework of inclusive education. Similar to the categories that were applied to the systematic literature review, scales on the model of disability, learning theory, and the assessment of placement of children with disabilities were developed. To fit the reciprocal relationships between these aspects, a network approach was utilized, which created communities that signify the grouping among different aspects. However, the distribution of attitudes within the sample did not reproduce the predicted three communities. Instead, only two communities were revealed: a coherent exclusive community and a mixed inclusive community. The conclusion is that while exclusive standpoints draw from a coherent assessment of the model of disability and learning theory to support segregated education, inclusive standpoints maintain the conflict that arises between functional and full inclusion.

Article III applies an LPA, thus changing the perspective from the variable-based approach of the network to a person-centered approach. Based on the results of Article I, it was assumed that profiles would show the same coherent attitude toward inclusive education as suggested by the triads of the framework of inclusive education. Surprisingly, however, the LPA showed two profiles, and these were very similar to the communities reported in the network approach (Article II). Instead of an intermediate

profile that combines individualizing and functionalist aspects of inclusion and disability, the LPA showed a coherent exclusive profile and an inclusive profile that combines all the aspects in favoring inclusion. These results reinforce the impression of conflicting ideas—especially in terms of functionalist and individualizing aspects—within a generally pro-inclusion standpoint.

On one hand, the independence of the framework of inclusive education from a human rights rhetoric is not only an advantage but a necessary step to clear the debate of arguments that inhibit the discourse and do not indicate necessary adjustments in the assessment of disability and academic achievement. On the other hand, arguments for inclusive education as a human right are a central part of the UN-CRPD, which often helps to orient in the public and scientific discourse (Lawson & Beckett, 2021). In terms of disability, the UN-CRPD has softened the previously strictly social model of disability from the Salamanca Statement to a relational model (UN-CRPD, 2006; Winzer & Mazurek, 2020). The reintroduction of a medical aspect to disability created a conflict with the aspiration for full inclusion because it signifies an unchangeable (individual) characteristic that can be ascribed as the cause of segregation (i.e. body functions and structure; see Figure 1).

This conflict to full inclusion is apparent in light of the framework of inclusive education and could also be attributed to the results of Articles II and III and the inconsistent pro inclusion attitudes (see. Figure 12).
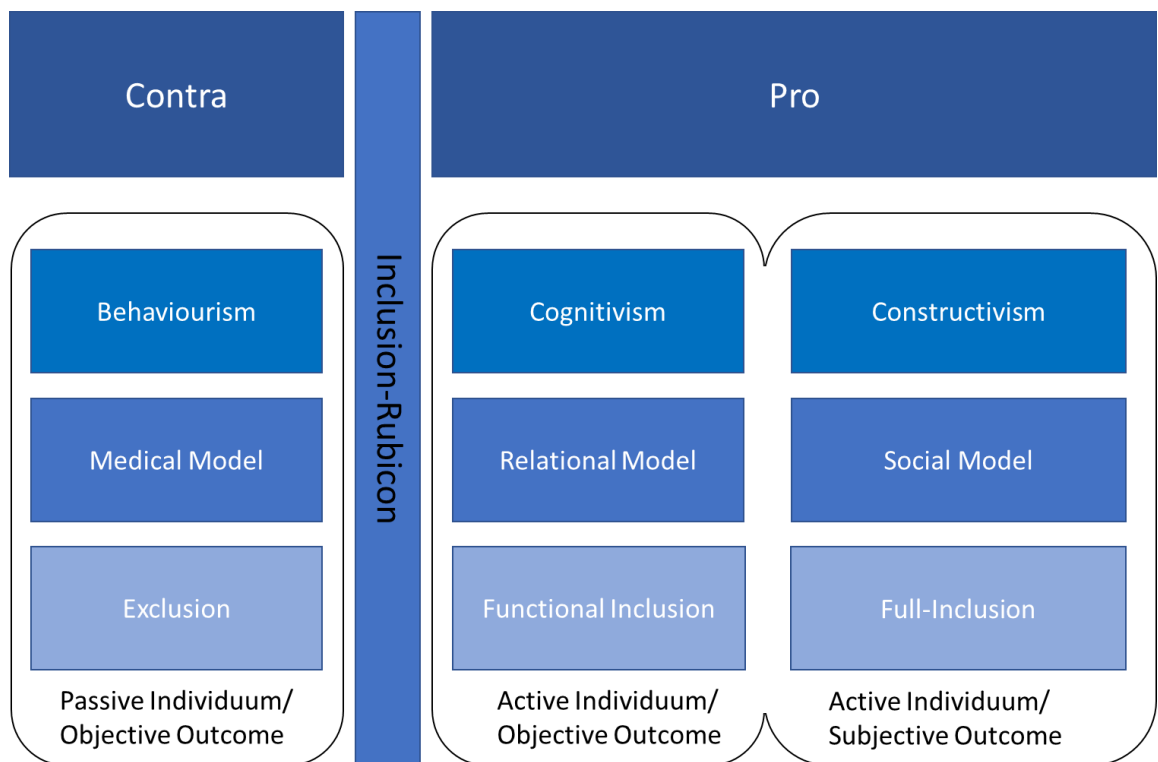
Figure 12

Framework of Inclusive Education from an Empirical Perspective

Figure 12 shows an adaptation of the framework of inclusive education based on the empirical findings of Article II and Article III. It highlights the conflicting picture of attitudes toward inclusive education, as implied by the network analysis and the LPA. The so-far conflicting findings regarding attitudes toward inclusive education might stem from an oversimplification of inclusive education, which is often narrowed down to a one-dimensional construct, whereas multiple aspects determine the assessment of inclusive education, especially by professionals in the field (de Boer et al., 2011; Lüke & Grosche, 2018b).

The conclusion of conflicting standpoints highlights the need for the multidimensional assessment of attitudes toward inclusive education, a field that is debated in an educational context, has direct implications for society, and demands an assessment that allows a differentiated evaluation. The conflicting results, in particular, indicate potentially fruitful areas for future research. Ideally, the empirical findings summarized in Figure 12 would gradually advance to the theoretical framework of inclusive education, as shown in Figure 3.

The dissertation highlights the rift between the current focus in the academic field and the attitudinal aspects of actual inclusive practice. The literature review focuses on inclusive education, which is based mainly on a social model of disability and constructivist learning ideals. The individualization of learning becomes an almost implicit prerequisite to all learning environments. The actual attitudes in the field might be far from the general consensus in favor of inclusive education. Furthermore, the empirical results from Article II and Article III at least suggest that the opponents of inclusion in education have a much firmer standpoint than its proponents.

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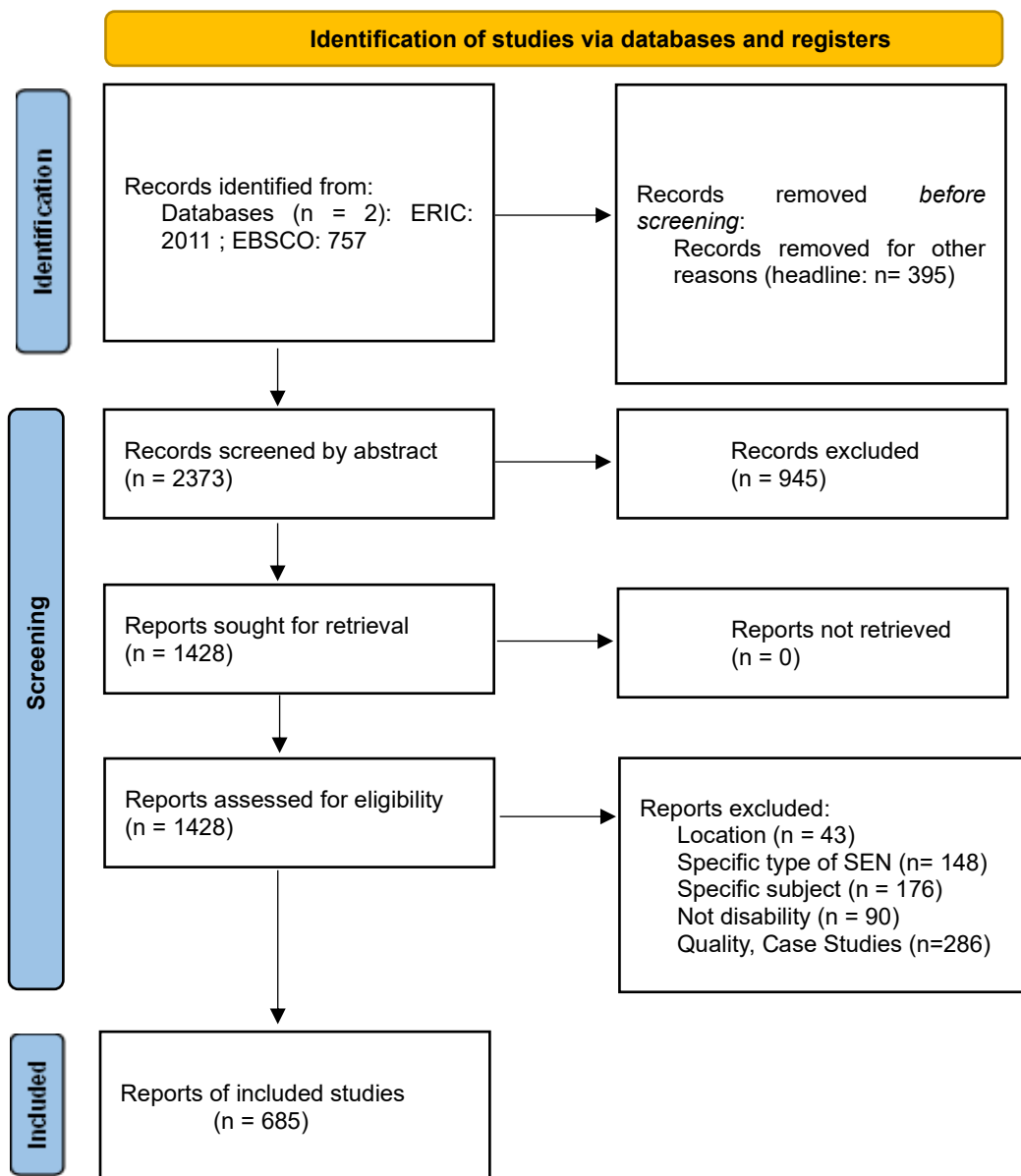
7 Appendix

7.1 Appendix 1: List of Publication

Selisko, T. J., Eckert, C., & Perels, F. (2024). Models of disability as distinguishing factor: A theoretical framework of inclusive education and the application to a literature review. *Cogent Education*, *11*(1), 2379681. https://doi.org/10.1080/2331186X.2024.2379681

Selisko, T. J., Klopp, E., Eckert, C., & Perels, F. (2024). Attitudes toward Inclusive Education from a Network Perspective. *Education Sciences*, *14*(3), 3. https://doi.org/10.3390/educsci14030319

Selisko, T. J., Eckert, C., & Perels, F. (accepted). The Who and What of Inclusive Education – Profiles of Student Teachers' Attitudes Toward Inclusive Education. *Frontiers in Education.*

7.2 Appendix 2: PRISMA 2020 Flow-Chart

Identification of studies via databases and registers

Identification

Records identified from: Databases (n = 2): ERIC: 2011 ; EBSCO: 757	Records removed *before screening*: Records removed for other reasons (headline: n= 395)

Screening

Records screened by abstract
(n = 2373)
→ Records excluded
(n = 945)

Reports sought for retrieval
(n = 1428)
→ Reports not retrieved
(n = 0)

Reports assessed for eligibility
(n = 1428)
→ Reports excluded:
Location (n = 43)
Specific type of SEN (n= 148)
Specific subject (n = 176)
Not disability (n = 90)
Quality, Case Studies (n=286)

Included

Reports of included studies
(n = 685)

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

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