



Review

Academic and Social Effects of Inclusion on Students without Disabilities: A Review of the Literature

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Abstract: In many countries, educational practices are changing to inclusive education. Inclusive education is educating students with disabilities in general education classrooms with their peers without disabilities. If inclusive education is spreading, research needs to investigate the effects of inclusion not only for students with special needs but also for typically developing students. However, there is more research on the outcomes of inclusion for students with disabilities and less for students without disabilities in inclusive settings. Research shows academic and social gains for students with disabilities, but there is less clarity regarding the influence of inclusion on general education students. Therefore, the purpose of this review is to summarize and organize the literature on the academic and social outcomes of inclusion on students without disabilities. Academic effects of inclusion on students without disabilities are mixed, and the levels of schooling may have a differential impact on the achievement of students without disabilities. The literature indicates mostly positive or neutral effects of inclusion on the academic achievement of typically developing students in the lower grades, whereas neutral or negative influence is indicated for later grades. Additionally, students without disabilities have socially benefited from being in inclusive classrooms with students with disabilities. Mainly, the social effects of inclusion are reduction of fear, hostility, prejudice, and discrimination as well as increase of tolerance, acceptance, and understanding.



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1. Introduction

Educational practices are shifting towards inclusive education in the United States and many countries around the globe. Inclusive education involves the placement of students with special educational needs in general education classrooms with their typically developing peers [1]. Public school programs in the United States served only 20% of students with disabilities in 1970, and services were minimal and provided in segregated settings [2]. Some children with disabilities were even excluded from the educational system [2]. However, with changes in policy and laws, 95% of students with disabilities received an education in general education schools in autumn 2017 [3]. Approximately 65% of students with disabilities who were in general education spent 80% or more time in general education classrooms. On the other hand, only a small percentage, 2.8%, of the students with disabilities were placed in a separate school, and another 2.2% received education in regular private schools, in separate residential facilities, at home, in a hospital, or in correctional facilities [3].

Furthermore, statistics for the inclusion of students with disabilities vary regarding the type of disability, with students with mild or moderate disabilities more likely to receive education in inclusive settings [1]. The United States Department of Education [3] reported that more than 85% of students with speech and language impairment spent 80% or more of their learning time in general education classrooms, and students with specific learning disabilities and visual impairments followed them with 71.4% and 67.9%,

respectively. For example, the American Printing House for the Blind [4] reported that approximately 85% of students with visual impairments enrolled in public schools and that around 8% of students with visual impairments enrolled in schools for the blind. On the other hand, only 13.7% of students with multiple disabilities, 16.9% of students with intellectual disabilities, and 23.6% of students with deafblindness spent 80% or more time in general education classrooms.

A series of legislative acts initiated a revolution for the education of students with special needs, starting approximately half a century ago. For instance, the Education for All Handicapped Children Act (EAHCA) was enacted in 1975, and the Individuals with Disabilities Education Act (IDEA) was enacted in 1990 and reauthorized in 1997. Then, the Individuals with Disabilities Education Improvement Act (IDEIA) was enacted in 2004. The IDEA was an extended version of the EAHCA, and the IDEIA was an extended version of the IDEA. With these acts, schools were required to ensure that all children with disabilities received a free and appropriate public education in the least restrictive environment to the maximum extent possible. There are six continua of placement options, from most inclusive to least inclusive: general education classroom with consultation from specialists; general education classroom with cooperative teaching or co-teaching; part-time placement in a special education classroom; full-time special education classroom in a general education school, special school, or residential school; treatment center; and homebound instruction [5].

It was not only legislation in the United States that promoted inclusion; other statements such as the Salamanca Statement encouraged inclusive education for students with disabilities around the world. The Salamanca Conference was held in Spain in 1994, and it is a significant international declaration that focuses on inclusive education for students with disabilities. According to the Salamanca Statement [6], “regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all; moreover, they provide effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire education system.” (p. ix).

Inclusive education requires learning environments to ensure the growth and development of all learners; therefore, research needs to determine the impact of inclusion not only on students with disabilities but also on typically developing students [7]. However, there is much research about the effects of inclusion for students with disabilities and less for students without disabilities in inclusive settings [8]. For students with disabilities, the academic and social effects of inclusive practices are mainly positive [9]. For example, Oh-Young and Filler [10] conducted a meta-analysis to investigate the effects of placement on the academic and social skills of students with disabilities. Twenty-four studies conducted from 1980 through 2013 were reviewed, and findings were combined with two prior meta-analytic studies to provide evidence for over 80 years. Results suggested that most students with disabilities in more inclusive settings outperformed those in less inclusive environments in both academic and social outcomes.

The Purpose of the Study and Research Questions

Although much research investigates the academic and social effects of inclusion on students with special needs, there is little existing research in the literature about the academic and social influence of inclusion on students without special needs. Therefore, the purpose of this review is to organize and synthesize the literature on the academic and social outcomes of inclusion on students without disabilities to provide a better understanding of the academic and social impacts and to improve the educational experiences of students without special needs in inclusive classrooms. The research questions that guide this study are as follows:

1. What are the academic effects of inclusive education for students without disabilities?
2. What are the social effects of inclusive education for students without disabilities?

2. Method

We conducted a literature search to locate relevant studies on the academic and social effects of inclusion on students without disabilities following similar procedures used by Luckner and Urbach [11]. We utilized two steps in our literature search strategy. First, we conducted electronic searches in multiple search engines (e.g., EBSCOhost, Eric, PsycINFO, and Google Scholar). We used the following search terms: inclusion, inclusive education, students without disabilities, typically developing students, students without special needs, academic achievement, and social effects. Second, the reference list of each included study was reviewed. To be included, studies need to be published in the English language in a peer-reviewed journal from 2000 onwards; however, for previous review studies, we did not set any restrictions on publication years. Additionally, the sample needed to include students without disabilities from inclusive schools in PreK-12 general education classrooms.

The results were organized into two sections. First, the academic effects of inclusion on students without disabilities were discussed. Then, the social impacts of inclusion on typically developing students were synthesized.

3. Academic Effects of Inclusion on Students without Disabilities

The academic effects of inclusion on students without disabilities have been mixed [12], and more research is needed for typically developing students. In this section, we review the literature and discuss the academic achievement of typically developing students in inclusive settings. Studies are divided into two main parts. First, previous reviews on the academic outcomes of students without disabilities are described. Then, the remaining studies are categorized based on educational stages because the literature indicates potential differential impacts of inclusion on the academic achievement of typically developing students within different educational levels [13].

3.1. Previous Reviews on the Academic Achievement of Typically Developing Students

Peltier [14] reviewed seven studies pertaining to the academic growth of students without disabilities in inclusive settings and found that there were not any negative impacts on academic achievement and no significant differences in developmental outcomes. Similarly, Salend and Garrick Duhaney [15] reviewed the literature and, based on four studies with academic outcomes of typically developing students, reported that being in an inclusive classroom did not impede the academic achievement of typically developing students.

In a systematic literature review, Kalambouka et al. [16] identified 26 studies related to the academic and social results of students without special needs in inclusive classrooms, and 21 of them focused on academic achievement with mostly primary school-aged students. Academic outcomes in primary schools were either positive or neutral (four studies found positive outcomes and 12 of them reported neutral outcomes). At the secondary school level, two studies found neutral outcomes and one study reported negative findings. Overall, the findings suggested that the academic achievement of typically developing students was not adversely affected and that 81% of the outcomes were mainly positive or neutral [16].

Ruijs and Peetsma [12] investigated the academic and socio-emotional effects of inclusion for both students with and without disabilities and only included studies that had been published since 1999. The authors identified six studies that examine academic effects on typically developing students. Even though it was difficult to draw clear conclusions, the majority of studies indicated positive or neutral effects, and only one study reported negative findings. However, results also suggested a differential impact on high- and low-achieving students. Low-achieving students seemed to benefit from the curricula and additional support in inclusive classes, whereas high-achieving students might experience adverse effects. The neutral results would then be caused by this differential effect [12].

Hehir et al. [9] conducted a comprehensive review of 280 studies from 25 countries to summarize the evidence on inclusive education for students with and without disabilities.

Identified studies yielded neutral or positive effects on the academic achievement of students without disabilities. Only a few studies reported a small negative impact. The authors concluded that including students with disabilities in general education classes did not negatively affect students without disabilities and may provide academic benefits. Positive effects were more common in classes where general education teachers had positive attitudes toward inclusive practices and used adaptive instruction and cooperative teaching with special education teachers. [9].

More recently, Szumski et al. [13] conducted a meta-analysis of the academic achievement of students without disabilities in inclusive classrooms. Forty-seven studies that have been published since 1980 met the inclusion criteria, with approximately four million eight hundred thousand K-12 students in Europe and North America (36 studies were from the United States). Thirty studies focused on primary school students, whereas the remaining studies were conducted in secondary education schools. Overall, the effect size for the academic achievement of students without disabilities was a positive and statistically significant but weak ($d = 0.12$, $SE = 0.053$, 95% CI: 0.02, 0.23, $p = 0.02$). This means two points difference in a standard normal distribution (mean = 100 and standard deviation = 15). The authors also tested six moderator factors. For example, studies conducted in the US and Canada yielded stronger effects. Manner of implementation was the next moderator (evaluation of interventions versus studies of regular school practices), and only effects of intervention studies were significant. Effects of educational team composition (full-time or part-time special education teacher) were not significant. Additionally, in classrooms with students with mild disabilities, positive effects were found but there were no such effects in classrooms with students with severe disabilities. The last moderator was the educational stage. There were statistically significant but weak observed effects at the elementary education level and non-significant effects at the secondary education level [13]. In summary, previous reviews mainly found neutral or slightly positive effects of inclusion on the academic achievement of typically developing students.

3.2. Academic Achievement of Students without Disabilities from Different Educational Stages

Since there is a potential differential effect of educational stages, studies are categorized into preschool, primary school, and secondary school levels.

3.2.1. Academic Achievement of Preschool Students without Disabilities

In a one-year study using mixed methods, Warren et al. [17] investigated a successful inclusive preschool program and academic and social growth for preschool children with or without disabilities. Participants were 46 children aged 3 or 4 and their parents. The curriculum had a strong emphasis on language and literacy acquisition with modifications and differentiated instruction to meet individual needs. The full-inclusion program had the quality indicators of goal-oriented focus, learning through play, the integration of thinking skills, ongoing monitoring of students' progress, and high expectations for all. The overall impact of the program was positive for all students, families, and school community. Students without disabilities showed increases in all of the eight areas measured in statewide standardized assessment including language, learning, cognitive competence, math, and literacy. These students significantly ($p < 0.05$) exceeded the expected growth for typically developing students.

Rhoad-Drogalis and Justice [1] examined the preschool children's language and literacy achievement for a year and the relationship between the percentage of preschoolers with mild and moderate special needs in classrooms. Participants were 516 preschool children, 42% of whom had disabilities. The percentage of children with disabilities was between 7 to 92% in classrooms. According to fall measures, students with special needs had significantly lower scores than students without disabilities, but both groups of students made similar gains in language and print concepts, except for alphabet knowledge (higher for children without disabilities), during the academic year. It was reported that the proportion of students with disabilities or peer scores was not related to students'

spring achievement in all three areas—language, print-concept knowledge, and alphabet knowledge. Therefore, preschoolers with disabilities did not have any negative effects on the achievement of children without disabilities. In summary, inclusion does not adversely affect the academic growth of preschoolers without disabilities and may even be beneficial for them.

3.2.2. Academic Achievement of Primary School Students without Disabilities

Huber et al. [18] investigated the differential effect of inclusion on general education students. 477 students from first to fifth grades participated in this study for over two years, and the school district had no previous experiences with inclusive practices. Students received instruction in classrooms with or without students with disabilities. The researchers looked at scores of high, middle, and low achievers and if the scores depended on the number of students with disabilities in classrooms. It was found that students' skills had statistically significant effects on reading and math scores. While the low achieving group benefited the most, middle and high achievers had a slight and severe loss, respectively. The presence of students with disabilities did not significantly affect the reading scores of typically developing peers, but the effect was mixed for math scores.

In a study by Cole et al. [19], 429 students with mild disabilities and 606 students without disabilities in grades 2 to 5 from inclusive and non-inclusive settings participated. The reading and math achievement of students was evaluated using curriculum-based measures in the fall and spring. The results showed that reading and math scores of students without disabilities in inclusive settings outperformed their typically developing peers in traditional (non-inclusive) settings.

Demeris et al. [20] investigated the achievement scores of all typically developing third-grade students in Ontario and looked for the relationship with the number of students with special needs in classrooms. The authors used large-scale assessments in reading, writing, and math while controlling socioeconomic status and class size. Students with disabilities in classes ranged from 0 to 10, and the class size was between 16 to 37. It was found that class size was negatively correlated with all three scores and higher socioeconomic status associated with higher scores; however, the number of students with disabilities did not have statistically significant effects on the scores of typically developing peers. Therefore, the findings suggested that the presence of students with disabilities did not adversely affect the achievement scores of students without disabilities.

Gruner Gandhi [21] investigated the relationship between inclusion and the reading achievement of third-grade students without disabilities using representative data in the US. It was found that with a few exceptions, the reading achievement of students without disabilities in inclusive classrooms was not negatively affected when controlled for background variables. In some incidences, their scores appeared to be benefitted, when compared to peers who were in non-inclusive classrooms, by measures such as having a paid aide in the classroom with students with autism or frequent meetings between the general education teacher and a special education teacher. However, without a paid aide in the classroom with students with autism, typically developing students' reading scores were adversely affected.

Fletcher [22] examined the spillover effects of inclusion on the reading and math scores of typically developing children in early elementary schools with a longitudinal survey of kindergartners in the US. The researcher found that reading and math scores of students who had a classmate with an emotional disorder dropped by more than ten percent of a standard deviation at the end of kindergarten and first grade. However, a decrease of 3 to 10 percent was not large in magnitude, and one might conclude the effects were unimportant.

From a representative sample of a large cohort study in the Netherlands, Ruijs et al. [23] explored 27,745 primary school students' achievements in inclusive education and whether there was a differential effect for more or less intelligent typical students and disability types of the included students. The results demonstrated that there were no differences in

the academic achievement of students without disabilities in inclusive and non-inclusive classes. Moreover, there was no differential effect of inclusion on more or less intelligent typically developing students. Additionally, the achievement of students without disabilities did not meaningfully differ from the disability type of students.

Dessemontet and Bless [24] investigated the effects of inclusion on the academic achievement of low, average, and high achieving typically developing students in classrooms with students with mild or moderate intellectual disability in Switzerland. A total of 280 students with intellectual disability and 500 students without disabilities participated in the pretest. Among those participants, based on gender, socioeconomic status, mother tongue, age, and pretest scores, 202 pairs were formed as a final research sample. The results showed no statistically significant difference between the achievement scores (literacy and math) of students without disabilities in inclusive or non-inclusive classes. Additionally, no significant impacts of inclusion on the progress of the low, average, and high achieving students without disabilities were found.

Krammer et al. [25] used multi-level regression modeling to investigate the national math achievement of fourth-grade students without disabilities in inclusive settings in Austria. Approximately 75,000 standard scores were used as a dependent variable and independent variables were socioeconomic status, ethnic background, age, gender, and the number of students with disabilities. The findings revealed very small effects of the presence of students with disabilities on the standard math achievement of their peers without disabilities even when controlled for background variables. However, it had no practical implications for the math performance of typically developing students, so it did not matter in which direction. For example, the negative effect led to a decrease of 0.73 points in math scores with a mean of 533 and a standard deviation of 100. Therefore, the presence of students with disabilities had no adverse effect on the math achievement of other students.

Rangvid [26] examined the effects of returning students from segregated settings into inclusive classrooms on the reading scores of typically developing students and whether or not a large number of returns had negative externalities on other students. The author used six years of population data from Denmark (grades 2 to 8) with multiple observations of overtime test score gains for each student. The results showed a small negative effect (-0.04 SD) on the reading achievement of students without disabilities, and the effect size corresponded to 5% of the initial test score gap. There were no significant effects on peer scores because of the large flow of returns. However, stronger effects were observed in schools with a lack of experience in including students with disabilities. Therefore, the results suggested that inclusive school systems need to be designed to accommodate students with disabilities to mitigate the negative effects on peers' achievement.

In summary, with a few exceptions, previous studies indicated that including students with disabilities in primary school classrooms did not have any negative effects on the academic achievement of students without disabilities and that neutral effects were not likely to be caused by the differential effects of inclusion on low- or high-achieving students.

3.2.3. Academic Achievement of Secondary School Students without Disabilities

Rouse and Florian [27] investigated the effects of including higher or lower proportions of students with disabilities on the achievement of secondary school students without disabilities in England. A national data set that examined the performance of students across the five years of secondary schooling starting with age 11 at key stage 2 was used. No evidence was found to confirm that the presence of higher proportions of students with disabilities in a school lower the academic performance of typically developing peers. Indeed, there was some evidence that inclusion could support the achievement of other students.

Farrell et al. [28] investigated the relationship between academic achievement and inclusive education by using nationally representative data on all students in England from each of the four key stages (ages 7, 11, 14, and 16). For each key stage, there was no signifi-

cant relationship between the inclusiveness of the local authority and the achievement of its students. However, a significant relationship between school inclusivity and academic achievement was found. The academic achievement of students was lower in schools with higher levels of students with disabilities; however, this effect was small (0.25 points or one percent). The relationship probably was not causal; there might be other plausible explanations related to schools with high numbers of students with disabilities that would depress the academic achievement.

St. John and Babo [29] evaluated the academic achievement of middle school students who were in co-taught inclusive classrooms and used scores from the New York State Assessment for English Language Arts (ELA) and Mathematics. Additionally, the study investigated the influence of other variables such as gender, socio-economic status, attendance, past academic performance, and ethnicity. The suburban school district had one middle school with approximately 2100 students, and students were either in traditional general education or co-taught inclusive classrooms. One hundred and sixty-six matching pairs were created based on similar characteristics. The results showed that the placement in a co-taught inclusive classroom had a significantly negative impact on the academic achievement of middle school students. Grade 6–8 students without disabilities in traditional general education had a greater probability of being proficient on both assessment of ELA (5.5 to 1 greater chance or 454% increased in the probability) and mathematics (2 to 1 greater chance or a 92% increase in probability).

In a group comparison study, Fruth and Woods [30] examined the influence of inclusion on the academic performance of 10th-grade students without disabilities and compared their performance with peers in a non-inclusive environment. Two hundred and three students in a suburban high school participated, and Ohio Graduation Test (OGT) data was used. OGT is a criterion-referenced assessment in content areas of reading, science, mathematics, and social studies. Results revealed non-significant differences in the reading, science, and social studies achievements of students without disabilities in inclusive versus non-inclusive settings. However, students in non-inclusive environments scored significantly higher in math, with a mean score of 10.14 points higher.

Brown and Babo [31] investigated the academic achievement of 11th-grade typically developing students in inclusive settings. The language arts literacy section of the 2013 New Jersey High School Proficiency Assessment (NJ HSPA) was used, and 214 students were matched based on controlling variables. After controlling for background variables, attendance, and past performance, the placement of an inclusive setting had a statistically significant negative impact on the language arts performance of 11th-grade students without disabilities. However, the effect was very small and only 1.37% of the variance in language arts performance can be explained by inclusion, so school-based factors had more influence on the academic performance.

Ruijs [32] examined the influence of students with disabilities on the academic achievement of students without disabilities in the context of primary and secondary school education in the Netherlands. For both levels of education, administrative data on all Dutch students were used. Overall, the results indicated that the presence of students with special needs did not have a statistically significant effect on the academic achievement of general education students in both primary and secondary schools. There was also no differential effect of inclusion on high and low achieving students.

Hienonen et al. [33] examined the effects of the proportion of students with disabilities in lower secondary regular education classes on the academic performance of students at the student-level and class-level. The researchers used longitudinal data in Finland and controlled for other variables. At the student-level, students without disabilities in inclusive classes performed slightly lower than their peers in non-inclusive settings, and at the class level, a weak negative effect of the 9th-grade test scores was related to high proportions of students with disabilities. However, the difference between classes resulted in more effects, and class-level effects could be alleviated by providing sufficient support and differential instruction. In summary, neutral or slightly negative effects of inclusion

on the academic achievement of students without disabilities in the secondary level of schooling are revealed.

3.3. Discussion

The first research question asks about the academic effects of inclusion on students without disabilities. It is important to consider that effective inclusive practices may differ from each other at different levels of schooling and in different settings. The literature suggests mostly positive or neutral effects of inclusion on the academic achievement of typically developing students at the preschool or primary school stages, whereas neutral or negative effects are suggested for the secondary schooling level. A higher proportion of negative outcomes at the secondary level of schooling suggests that there may be more problems with successful inclusion in secondary schools [16].

One of the main barriers to inclusion in secondary schools would be teacher competence in regard to planning and differentiated instructional techniques. Since high school teacher preparation programs have a stronger emphasis on content knowledge than on instructional skills, teachers predominantly use whole class teaching [34]. Moreover, in highly structured classes, teachers see students for a limited time each week. Therefore, it is difficult to spend extra time with students to get to know them well [13]. Additionally, the collaboration between general education and special education teachers is rarely intensive, and many special education teachers are prepared to work with younger children and do not have adequate knowledge about the high school curriculum [13]. However, in primary schools, the structure is more flexible so teachers spend more time with students. Moreover, they have a greater range of instructional strategies and higher levels of collaboration with special education teachers [34].

Additionally, preschool inclusion differs from other educational stages, and research findings from other educational stages may not be generalizable to preschool children [1]. Preschool inclusion is different from inclusion in later grades in several ways. First, a variety of settings (school systems, childcare, Head Start) and policies across preschools are present. Second, the curriculum is significantly different from that of later grades because there is more emphasis on motor, cognitive, and social domains. Third, the skill gap between students with and without disabilities is smaller at the preschool level and widens with age [1].

4. Social Effects of Inclusion on Students without Disabilities

In this section of the paper, we discussed the social outcomes of typically developing students in inclusive settings. There is limited research in the literature about the social effects of inclusion on students with disabilities. Previous reviews and other studies mostly found positive social effects of inclusion on students with special needs even though there were some negative and mixed findings.

Staub and Peck [35] investigated studies pertaining to the effects of inclusion on students without disabilities, and the findings were positive. Improvement in social condition, growth in self-concept, development of personal principles, warm and caring friendships, and reduced fear of human differences were the five main findings for students without disabilities. Peltier [14] reviewed five studies in terms of the social influences of inclusion on students without disabilities, and results supported the findings of Staub and Peck [35]. According to Peltier [14], students without special needs benefit from receiving education in classrooms with students with special needs. Understanding other people, increased sense of personal development, increasing their preparedness to deal with disability in their own lives, and reducing fear and increasing tolerance of the behavior and appearance of other people were the main findings for students without disabilities in inclusive classrooms. The studies that were reviewed by Peltier [14] were from a variety of age groups and used different research methodologies.

Hehir et al. [9] reviewed six studies in terms of the social impacts of inclusion on typically developing students. The findings revealed that when students without disabilities

were placed in inclusive classrooms, their hostility, prejudice, and discrimination towards students with special needs were diminished. Salend and Garrick Duhaney [15] reviewed studies regarding social outcomes of inclusion on students without special needs and had mostly positive findings. The main positive outcomes were increased acceptance, understanding, and tolerance of personal differences and more opportunities to have friendships with students with disabilities. However, students without special needs reported that they experienced discomfort and communication difficulties with students with moderate or severe disabilities [15].

Kalambouka et al. [16] also reviewed studies in terms of social outcomes of inclusion on students without disabilities and found mixed results. At the primary school level, four studies had positive; three studies had neutral; and two studies found negative outcomes for students without special needs in inclusive classrooms with students with cognitive and learning disabilities. Two studies found positive; two studies neutral; and one study negative social outcomes for typically developing students in inclusive classrooms with students with behavioral, emotional, and social difficulties. Two studies found positive outcomes for students without disabilities in inclusive classrooms with students with sensory and physical disabilities. One study found positive and another study neutral influences on students without special needs in inclusive classrooms with students with communication difficulties. At the secondary school level, they found no studies about the social effects of inclusion of students with behavioral, emotional, social, or communication difficulties or sensory and physical disabilities on students without disabilities. The authors only found three neutral and one negative outcome on students without disabilities in inclusive classrooms that contained students with cognition and learning disabilities. Overall, there were slightly positive social effects on children without special needs in inclusive classrooms [16].

Schwab [36] conducted a survey study with 1115 Austrian students between the ages of 10 and 14 years old. Only 129 of these students have disabilities and others did not have any disabilities. Around 37% of total students were fourth graders, and around 63% of them were seventh graders. Approximately 55% of the participants were in regular classes without students with disabilities, and approximately 45% of the students were in inclusive classes that included at least one student with disabilities. The authors found that in inclusive classrooms, students without special needs had more friends than those in non-inclusive classrooms. Moreover, for students without disabilities, friendship and peer acceptance rates were significantly lower for those who were in non-inclusive classrooms than for those in inclusive classrooms.

Noggle and Stites [37] investigated the experiences of three preschool students without special needs in inclusive classrooms with students with special needs. The authors made observations, interviewed parents and teachers, and used artifacts for data collection. According to the authors, students without special needs benefited from inclusive preschool programs with students with special needs. They found that all three preschool students showed growth in social skills and peer acceptance.

Nakken and Pijl [38] reviewed five studies related to the social impacts of inclusion on typically developing students and found positive effects. Students without special needs had positive attitudes toward students with disabilities. For instance, they had more tolerance and awareness of differences. The authors also stressed the importance of contact with children with special needs because when typical students had more contact with students with special needs, they had a more positive attitude toward them. Similarly, Consiglio et al. [39] investigated how contact and non-contact experiences of students without disabilities affected their attitudes toward students with disabilities in Italy. Eighty students participated in the study, and their ages were between nine and twelve years old. The authors found that the students who had contact with students with special needs had a positive attitude towards students with special needs.

Georgiadi et al. [40] investigated the students' attitudes towards students with intellectual disability based on the type of school that they attended in Greece. Two hundred

and fifty-six students participated in the study, and one hundred and thirty-five of them were in inclusive settings. The ages of the participants varied between 9 and 10. According to the research, students in inclusive settings had more positive attitudes towards students with intellectual disabilities than students in non-inclusive settings. Additionally, Soulis et al. [41] reported that most students without disabilities had positive attitudes towards students with disabilities in Greece, although they were not in favor of inclusion. Sirlopu et al. [42] also examined how attitudes of students without special needs towards people with Down syndrome changed as a result of school placement in Chile. One hundred and twenty students from grades 6 through to 8 participated in the study. Students who were in inclusive settings demonstrated more favorable attitudes toward students with Down syndrome than students who were in non-inclusive settings.

Furthermore, Ruijs and Peetsma [12] investigated studies on the social effects of inclusion on students without special needs, and the outcomes were mostly positive. It was found that students without disabilities developed fewer prejudices against students with disabilities. However, opponents argued that students without disabilities could copy unsatisfactory behavior from students with disabilities. Moreover, in two studies, some students without disabilities reported that communication difficulties were barriers that negatively affected their relationships with students with disabilities [12].

Some other studies also found teacher assistants and paraprofessionals created social barriers between students with and without special needs. For instance, Woodgate et al. [43] found that students without special needs lack opportunities to speak to students with disabilities due to the presence of teacher assistants. Paraprofessionals assist students with special needs in general education classrooms and remain with students with special needs during school time [44]. Although using paraprofessionals had academically positive effects on students with visual impairments, it had negative effects on the social independence of students with visual impairments [45,46].

Lastly, Edwards et al. [47] found negative findings on the social effects of inclusion. The authors reviewed ten studies about how students without disabilities perceive the social inclusion of students with physical impairments. The results indicated that students with physical impairments were less accepted by their peers without special needs in mainstream schools and that students without special needs avoided interacting with them.

Discussion

The second research question asks about the social effects of inclusive education for students without disabilities. Students without disabilities mostly benefited from being in inclusion classrooms with students with disabilities. Reduction of fear, hostility, prejudice, discrimination, increasing acceptance, understanding, and tolerance of individual differences are the major findings of the social effects of inclusion on students without special needs [9,14,15,36]. Peer acceptance and friendship rates are higher in inclusion classes than traditional general education classes, and students without disabilities have more favorable attitudes toward students with disabilities in most of the previous studies and reviews. Only Edwards et al. [47] found negative findings of peer acceptance and attitudes toward students with special needs. Moreover, teacher assistants and paraprofessionals are found as social barriers between students with and without disabilities in inclusive classrooms [43–46]. Finally, a better understanding of the social effects and barriers may help educators and policymakers to improve the educational experiences of students without special needs in inclusive classrooms.

5. Limitations

There are potential limitations to this literature review. First, there is a possibility that some relevant studies were not included because the search terms were not sufficient. Second, we focused on peer-reviewed studies and excluded dissertations or master theses, unpublished studies and reports, book chapters, or conference proceedings. Third, since re-

viewing and summarizing are interpretive processes, other scholars may have synthesized included studies differently.

6. Conclusions

The findings of the previous studies that were cited in this review demonstrate that the effects of inclusion on the academic and social outcomes of typically developing students are varied [12,16,22]. However, more studies indicate that inclusion is more often associated with positive or neutral impacts on them [9,13]. Even though it is difficult to draw clear conclusions, and several factors may contribute to these inconclusive findings, negative effects are mostly very small in magnitude and can be concluded as not practical [28]. School-based factors seem to have more influence on student outcomes [31]. These are factors such as inadequate teacher training; lack of administrative leadership and support for planning, monitoring, and modifying instruction; lack of cooperation with others; and low expectations from students [13,15].

Even though limited research was available on the social effects on students without special needs, research indicates that they can benefit from inclusive programs [11]. Typically developing students in inclusive settings have fewer prejudices about students with disabilities and are more willing to play with them [12]. Moreover, increased acceptance, tolerance, and respect for individual differences are principal social benefits that result from inclusive classes [15].

Academic benefits of inclusive education on students without disabilities are plausible, but, clearly, more research is needed in this area. Throughout the literature, there is insufficient evidence related to the impact of inclusion on high and low achievers and students from different educational stages [18,20,24,26]. Additionally, the proportion of students with disabilities as well as disability type and severity of included students are other areas that require further investigation [21,22,28].

Inclusive education has the potential to be effective for both students with and without disabilities, and negative impacts may be alleviated with policies and active collaboration between researchers and school districts.

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