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MAINSTREAMING STUDENTS WITH DISABILITIES VS. SPECIAL CLASSROOMS FOR THEIR SPECIAL NEEDS

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<u>Abstract</u>

Every child has the ability to learn, but the way children learn and how much knowledge they can absorb can vary considerably — especially for a child with special needs. Yet, as a society we owe all children a chance to reach their potential, so it is important to create the best possible learning environment for that to happen. That's why many people suggest mainstreaming special-needs children into regular classrooms rather than assigning them exclusively to special education classes. Children with disabilities might have mental and/or physical delays that affect how they function academically. Children who are deemed gifted or academically advanced can also be affected by classroom placement. In an effort to ensure that all children are afforded the best educational opportunities, modifications are sometimes made to the classroom experience. Some students might find regular classroom situations are overwhelming and inappropriate for their developmental needs. However, for others, being placed in a general education classroom will cause them to excel academically and/or socially because they feel that they're part of the learning process and aren't being overlooked or excluded.Mainstreaming is the placement of a child with a disability (or exceptionality) in a general education classroom, with the expectation that the student will be able to work and produce assignments at a similar rate as students who don't have disabilities. Students with disabilities who participate in mainstreaming are given the same assignments as other students with only slight differences if necessary. In a mainstreaming classroom, there's only the general education teacher. Therefore, if a student needs help, he/she will have to wait and receive assistance that's similar to what other students in the classroom receive. Students in a mainstreaming classroom are expected to perform and maintain at a comparable pace with students who don't have disabilities. This type of classroom would also apply to gifted students who might be able to perform well academically but who might struggle socially. Gifted students are students who are excelling above average based on testing results

Keywords:- Children with disabilities, Mainstreaming, classroom, Students

Introduction

Students with disabilities face substantially increased rates of abuse and restraint in schools. As an education and disability advocate seeking to change that, I frequently encounter well-meaning arguments for separating higher-needs students from the general population. When supported and given adequate training and tools, teachers in inclusive classrooms understand and instruct a

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variety of learners, individualizing instruction to meet the needs of all learners better. Students have varied needs and strengths, whether disabled or not. Teachers in inclusion settings learn to address this and teach better because of it.Empathy—which cannot be measured quantitatively matters, too. How children view peers who look and learn differently from themselves is also a consideration as they grow to adulthood and become members of their communities, and as they live and work alongside a diverse array of citizens. It's a critical factor in whether communities and workplaces are able to function and thrive. Inclusion works when educators collaborate, get the support they need, and believe in the value of all students. It's time for schools and teachers to reevaluate their long-held biases, and it's time to address the initial financial investment required for training and staffing. It's also the law. Inclusion is the least expensive, most effective method of teaching students. It starts from the top, with administrators making this a priority. When administrators model inclusivity and support teachers in its implementation, the entire school (and school system) culture changes. Test scores are rarely negatively impacted and often go up. More importantly, children become better citizens.

Benefits to Students with Disabilities

- *Higher academic achievement:* Mainstreaming has shown to be more academically effective than exclusion practices. For instance, The National Research Center on Learning Disabilities found that graduation rates of all students with disabilities in the U.S. increased by 14% from 1984 to 1997, although this report does not differentiate between students enrolled in mainstreaming, inclusive, or segregated programs.
- Access to a resource room for direct instruction has shown to be effective in increasing students academic skills and thus increasing the abilities applied by students in a general education setting.^[11] Compared to full-time placement in a special education class or special school, both part-time and full-time placement in the regular classroom have been shown to improve academic achievement in students with mild academic disabilities, as well as to improve their long-term behavior.
- *Higher self-esteem:* By being included in a regular-paced education setting, students with disabilities have shown to be more confident and display qualities of raised self-efficacy. All students in California who went to a different school prior to attending a mainstreaming program were asked to fill out an assessment of their old school as compared to inclusion program. The assessments showed that out of all students with disabilities 96% felt they were more confident, 3% thought they had the same experience as an excluded student, and 1% felt they had less self-esteem. Overall, students felt that they were equal to their peers and felt that they should not be treated any differently.
- *Better social skills:* Any kind of inclusion practice, including mainstreaming, allows students with disabilities to learn social skills through observation, gain a better understanding of the world around them, and become a part of the "regular" community. Mainstreaming is particularly beneficial for children with autism and ADHD. By interacting with same-aged non-disabled children, children with autism were observed to be six times more likely to engage in social

relations outside of the classroom.Because children with autism spectrum disorders have severely restricted interests and abnormalities in communication and social interaction,the increased interaction with typical children may be beneficial to them. The same 1999 study showed that students with Down syndrome were three times more likely to communicate with other people.

Mainstreaming also benefits other children. It opens the lines of communication between those students with disabilities and their peers. If they are included into classroom activities, all students become more sensitive to the fact that these students may need extra assistance.

Benefits to Non-disabled Students

There is research that suggests that educating non-disabled students and students with disabilities together creates an atmosphere of understanding and tolerance that better prepares students of all abilities to function in the world beyond school. The students also reported that the inclusion program was important because it prepared them to deal with disability in their own lives.Positive aspects that come from inclusion are often attributed to contact theory.Contact theory asserts that frequent, meaningful, and pleasant interactions between people with differences tend to produce <u>changes in attitude</u>.

Tradeoff with Non-disabled Students's Academic Education

One potentially serious disadvantage to mainstreaming is that a mainstreamed student may require much more attention from the teacher than non-disabled students in a general class. Time and attention may thus be taken away from the rest of the class to meet the needs of a single student with special needs. The effect that a mainstreamed student has on the whole class depends strongly on the particular disabilities in question and the resources available for support. In many cases, this problem can be mitigated by placing an aide in the classroom to assist the student with special needs, although this raises the costs associated with educating this child. The added cost of an aide in a classroom to meet needs of special education students can be offset by not funding a teacher in a wholly separate classroom when mainstreaming does not occur.

Teachers are encouraged to teach the entire class differently. This includes being less abstract and more concrete in content, changing lighting, simplifying the design of the classroom, and having a predictable structure and routine rather than novelty.

Harm to academic education of students with Disabilities

Some research has suggested teachers who are not aware of—and later may choose not to adopt—modifications needed for students with special needs are also more resistant to having

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these students in class. This can lead to regression of the students with disabilities as well as overall decreased classroom productivity.

Teacher-student Interactions

It has been seen that general educators provide 98.7% of their teaching time doing whole class interactions. Students with disabilities have been known to require a significant more amount of individual attention with the classroom teacher. Children with disabilities spend twice as much time in whole-class activities as in one-to-one activities due to the amount of whole-class teaching, yet these students are half as likely to engage in whole-class learning activities such as writing, reading and participating showing that whole group activities do not meet the needs of students with disabilities as much as individual work would. It is reported that mainstreamed students receive a larger proportion of the classroom teachers' total time than the regular education students, however this did not result in an increase in academic instructional time. Mainstream students in low-ability classes receive more nonacademic correction from the classroom teacher compared to mainstreamed students in average and above-average classes or regular education students. Resulting in students with special education needs (SEN) spending 25% of their time working outside of the classroom, and a reduction of teacher interaction in a whole class setting from 30% to 22%. Therefore, mainstreamed students will spend time in a resource room where they can receive more individualized attention from teachers. In contrast, there has been an increase of the number of teaching assistants(TAs) in mainstream primary settings to assist the learning and inclusion of students with SEN. Interactions with TAs has become an integral part of educational experience for students with SEN, resulting in TA interactions comprising up to a fifth of all observations students with SEN experience. Observations show that the high level of student SEN, the more likely it is that the student with interact more with a TA than their classroom teacher. A survey conducted in the UK (2000), composed of 300 teachers found that two-thirds of students with SEN were regularly working with TAs for an average of 3.7 hours per week. Therefore, the use of TAs to support students with SEN has become an established part of academics in a mainstream setting, and interactions with TAs comprise a key part of their day-to-day classroom experience. The survey concluded that TAs were used as alternative to teacher support, which has shown to result in unintended and troubling consequences for students with SEN. It is suggested that the inclusion of TAs in the mainstream classroom to support students with SEN has resulted in the educational experience of these students diverging from the non-SEN student. Which then raises concerns about how schools choose to provide support for students with SEN.

Social issues

Compared to fully included students with disabilities, those who are mainstreamed for only certain classes or certain times may feel conspicuous or socially rejected by their classmates. They may become targets for bullying. Mainstreamed students may feel embarrassed by the

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additional services they receive in a regular classroom, such as an aide to help with written work or to help the student manage behaviors. Some students with disabilities may feel more comfortable in an environment where most students are working at the same level or with the same supports. In the United States, students with autistic spectrum disorders are more frequently the target of bullying than non-autistic students, especially when their educational program brings them into regular contact with non-autistic students. Also, special-needs students can easily get lost in a regular education classroom. In some cases they may be disruptive and may compromise the learning environment of other students.

As seen above, there are many social issues; however, a buddy system has been shown to improve these issues. Through having a buddy system an upper school student will be paired with a younger child preferable with a disability by doing this the younger student is provided with a positive relationship with a fellow student even though they are older. Through the buddy system the younger student will learn the benefits of having and sustaining a positive and supportive friendship, learns to value opinion just by having the upper school student around. These social issues are improved due to the upper school student helping to alter the social experiences of the younger child through this formed friendship.

<u>Costs</u>

Schools are required to provide special education services but may not be given additional financial resources. A 2005 study conducted by the Special Education Expenditures Program (SEEP) showed that the cost of educating a special-needs student is between \$10,558 and \$20,000. In comparison, educating a student who does not need special education services costs \$6,556. Resulting in the average expenditure for educating students with special-needs is 1.6 times that of a general education student.

Special Consequences for Deaf Students

Deafness is a low-incidence disability, which means that a deaf child will often be the only student in the classroom with hearing loss. This leads to a special set of issues in the mainstream classroom. While students with other disabilities may experience isolation and bullying by their non-disabled peers, they often share a common language. This is not the case for deaf students. Very few people in the mainstream academic setting know sign language, which means the communication barrier is large and can have negative effects on both academic achievement and social development.

• *Social skills* are key to a child's healthy development and later success as an adult. Although many studies find good academic results for deaf children placed in a mainstream classroom, research also shows that mainstreamed deaf children experience higher degrees of isolation and psychological problems in comparison to deaf students who associate with other deaf peers. In

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order for friendships to form, communication is a necessity. For deaf children unable to use effective communication methods with the people around them, the difficulty in acquiring new friendships typically leads to isolation and a decrease in self-esteem. A study of preschool children showed that hearing preschoolers did not appear to adjust how they communicated with deaf children. Instead, they continued to use simple speech, which was effective with hearing, but not deaf, partners. This shows the isolation of the deaf child, and discredits the idea that the hearing and deaf child's communication skills will be enhanced by interaction with one another. In many cases, hearing children do not understand what it means when another child is deaf. This leads to frustration when a deaf child's speech is not clear or when the deaf child asks for continuous repetition. Communication strategies that are culturally acceptable to the deaf child to be rejected by his or her peers because such behaviors are not always considered acceptable in mainstreaming hearing culture. Research has suggested that the placement of a deaf child in special schools or classes may be more desirable for deaf students than for those with other disabilities. This is primarily because of the greater social benefits for the students.

- The *residual knowledge* that hearing children can access is often lost on deaf children. A hearing child can listen in on adult conversations, TV, radio and the news to learn things that are not specifically taught or told to them. This is not the case with the deaf child, who, in a hearing environment, can only learn what is directly communicated to them. This often leads to gaps in general knowledge, which can be both harmful to academic success and social interactions.
- The *effect of mainstreaming on Deaf culture* is also a key issue for Deaf culture advocates. The rate of children enrolled in residential schools for the deaf is declining, as many hearing parents send their child to a mainstream school in hopes of preparing their child for life in the hearing world. In the past, Deaf schools and clubs served as the center for Deaf culture. Traditions, stories, and values developed and were fostered in these settings, but because of the low incidence of deafness, this same environment cannot be duplicated in the mainstream setting. Aside from the decreased socialization of a deaf child in a hearing school, Deaf community advocates also worry that the disappearance of residential Deaf schools will lead to a weakening of Deaf culture and of the community.

Alternatives: what Mainstreaming is Not

The alternatives to mainstreaming for special needs students are separation, inclusion, and excluding the student from school. Normally, the student's individual needs are the driving force behind selecting mainstreaming or another style of education.

Mainstreaming does not involve putting a child full-time in a special school.

Mainstreaming does not involve placing a child full-time in a regular classroom. A student who spends the entire day in a regular classroom with non-disabled peers is considered fully included.

Most students with mild levels of disabilities such as dyslexia or attention deficit disorder, or with non-cognitive disabilities such as diabetes are fully included.

Mainstreaming does not involve teaching the child outside of school. A student who is taught in an institution (such as a hospital) or at home (such as while recovering from a serious illness) is excluded. Such a student may receive individual instruction or may attend small group instruction. A student who is excluded from school may or may not have been expelled from the school.

<u>The Choice of Educational Settings: The Pros and Cons of Mainstreaming Children With</u> <u>Intellectual Disabilities</u>

Many families and educators strongly advocate *mainstreaming* students with intellectual disabilities (ID, formerly mental retardation). Mainstreaming refers to placing children with disabilities into regular classrooms. They usually have additional supports as well. Mainstreaming allows children with ID to receive education alongside their non-disabled peers. However, the majority of students with IDs are not mainstreamed. Most attend schools for children with special needs. A minority are home schooled.

Mainstreaming is an appealing, inclusive approach. It has both advantages and disadvantages. The primary advantage of mainstreaming is that it provides a natural, real-world environment. In such an environment, important life skills are learned.

A regular classroom has several real-world learning advantages. First, mainstreaming offers many rewarding opportunities for socialization. Many children with ID have inadequate social skills. These social limitations ultimately hinder their success in life. Quite logically, social skills can only be learned and acquired in a social environment. A regular classroom provides the ideal social climate. For instance, students who have disorders such as Prader-Willie syndrome, Fragile X syndrome, and Down syndrome can develop excellent social skills through social imitation. These students truly benefit by observing and imitating their peers in a regular classroom.

Second, mainstreaming exposes all children to diversity. Such diversity is naturally encountered in the real world. Whether or not a child has an ID, children will eventually encounter many different people throughout their lives. Some people will be from similar cultures and backgrounds. Other people will not. A school setting is the ideal environment to notice and adjust to these differences. This real-world preparation is advantageous. It promotes the ability to embrace human diversity. These skills are critical for getting along with co-workers and neighbors. Third, mainstreaming in a regular classroom may inspire and challenge students with intellectual disabilities to excel. Without sufficient challenge, people do not develop and strengthen their abilities. A traditional classroom provides more opportunities for these challenging experiences.

However, mainstreaming is more a *philosophy* of inclusion. It is intended to promote the greater good. Whether or not this ideal is realized is another matter entirely. As school budget cuts deepen, teachers are asked to do more with less. Public schools struggle to provide adequate education to those *without* specialized needs. Budgetary restrictions make it unrealistic to expect students with ID will receive the attention they need and deserve within a regular classroom. Moreover, many teachers in regular classrooms have not received training in specialized educational techniques.

Some people also argue that mainstreaming is unfair to average students. This is because the teachers' time and attention is spent with the children who require more individualized instruction. This leaves the rest of the students to fend for themselves. Conversely, others argue that average students benefit from the inclusion of special needs children. It provides teaching and coaching opportunities to these more advanced students. This simulates a more natural environment for everyone.

Conculsion

The best educational setting is the one that best helps a child to achieve the goals of their IEP. Each child has different goals, abilities, and needs. There is no one best setting for all children. Parents and educators must realistically appraise the learning environments and resources available in their communities. Then, they can make a wise selection that best matches the child's needs and circumstances. Placement decisions should be reevaluated periodically. Children's needs and circumstances change over time. The decision about which classes to mainstream a student in should be based on the child's particular learning and behavioral characteristics. What may be appropriate for one student may not be for another, what may be restrictive for one student may not be for another. Some disabled students may be placed in a special-education program for the entire day. Others may be placed in a combination of regular- and special-education classes. And still others may be mainstreamed for the entire school day.

Research indicates that many children with disabilities, even those with severe disabilities, can have some success socially and academically in mainstream settings as long as they have support in the regular class. The kind of support needed will vary with the student. Some mainstreamed students may need an aide or even a special-education teacher with them in the regular class.

With other students, it may be sufficient for the regular teacher to make some accommodations in the classroom. For example, the teacher might seat him next to a responsible student who can

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assist him, allow the student extra time to take tests, give him oral tests, have him complete every other item or problem on the homework, or have another student take notes for him.

References

- "Special Education Inclusion". Archived from the original on 2007-10-14. Retrieved 2007-10-14. Mainstreaming: "Special needs students "belong" in the special classroom", he Effectiveness of Resource Programming Sindelar and Deno J Spec Educ.1978; 12: 17-28
- 2. "Talking To Kids: Mainstreaming Into Classrooms". www.bridges4kids.org. 2018-12-09.
- 3. IDEA Funding Coalition, "IDEA Funding: Time for a New Approach," Mandatory Funding Proposal, Feb. 20 2001, p. 2.
- 4. Carissa Lawrence. "Advantages & Disadvantages to Mainstreaming Special Education Children". The Classroom.com.
- 5. "Inclusion vs. Mainstreaming: What You Need to Know Before Putting Your Child in a Classroom Program". The Edvocate. 2016-11-04.
- 6. "Mainstreaming Special Education Students: The Parent Role". Dr. Kenneth Shore.
- 7. Special Education InclusionArchived 2007-10-14 at the Wayback Machine
- 8. (2006). Mainstreaming Deaf Students. Independent School, 66, 6. Retrieved November 29, 2007, from EBSCOhost database.
- 9. Meyer, B.J.F.; Poon, L.W. (2001). "Effects of structure strategy training and signalling on recall of text". Journal of Educational Psychology. **93** (1): 140–160. doi:10.1037/0022-0663.93.1.141.
- 10. NA Madden, RE Slavin (1983). Review of Educational Research, Vol. 53, No. 4, 519-569
- 11. (2007). Twenty-five years of progress in educating children with disabilities through IDEA. National Research Center on Learning Disabilities. Retrieved November 29, 2007, from http://www.nrcld.org/resources/osep/historyidea.htmlArchived 2012-03-11 at the Wayback Machine
- 12. Wolfberg, P.J.; Schuler, A.L. (1999). "Fostering peer interaction, imaginative play and spontaneous language in children with autism". Child Language Teaching & Therapy. 15: 41–52. doi:10.1191/026565999667036164.
- Tidmarsh, L.; Volkmar, F. (2003). "Diagnosis and epidemiology of autism spectrum disorders". Canadian Journal of Psychiatry. 48 (8): 517–25. doi:10.1177/070674370304800803. PMID 14574827.
- 14. Suomi, J.; Collier, D.; Brown, L. (2003). "Factors affecting the social experiences of students in elementary physical education classes". Journal of Teaching in Physical Education. 22 (2): 186. doi:10.1123/jtpe.22.2.186.
- 15. Block, M. E. (1999). "Are children with disabilities receiving appropriate physical education?". Teaching Exceptional Children. **31** (3): 18–23. doi:10.1177/004005999903100304.
- 16. Lieberman, L.; James, A.; Ludwa, N. (2004). "The impact of inclusion in general physical education for all students". Journal of Physical Education. **75** (5): 37–55. doi:10.1080/07303084.2004.10607238.

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- 17. Chu, D.; Griffey, D. (1985). "The contact theory of racial integration: The case of sport". Sociology of Sport Journal. 2 (4): 323–333. doi:10.1123/ssj.2.4.323.
- 18. Manzitti, Edward T.;
- 19. Watson, Sue. "A List of Typical Special Ed. Accommodations". About.com.
- 20. "Effective Accommodations for IEPs". teachervision.com. The Council for Exceptional Children.
- 21. Joyce, B.,& Weil, M. (1986). Models of Teaching (3rd ed.) Boston: Allyn & Bacon.
- 22. Cameron, David Lansing (2014-10-01). "An examination of teacher–student interactions in inclusive classrooms: teacher interviews and classroom observations". Journal of Research in Special Educational Needs. 14 (4): 264–273. doi:10.1111/1471-3802.12021. ISSN 1471-3802.
- 23. Brady, M. P., & And Others. (1988). Teacher-Student Interactions in Middle School Mainstreamed Classes: Differences With Special and Regular Education Students. Journal of Educational Research, 81(6), 332–40. Retrieved from http://ezproxy.uis.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=er ic&AN=EJ386510&site=ehost-live
- 24. The Room 241 Team (February 20, 2018). "Mainstreaming Special Education in the Classroom". Concordia University-Portland. Retrieved 2 December 2018.
- 25. Webster, R. (2015). The Classroom Experiences of Pupils with Special Educational Needs in Mainstream Primary Schools--1976 to 2012. What Do Data from Systematic Observation Studies Reveal about Pupils' Educational Experiences over Time? British Educational Research Journal, 41(6), 992–1009. Retrieved from http://ezproxy.uis.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=er ic&AN=EJ1087733&site=ehost-live
- Sterzing PR, Shattuck PT, Narendorf SC, Wagner M, Cooper BP (September 2012). "Bullying Involvement and Autism Spectrum Disorders: Prevalence and Correlates of Bullying Involvement Among Adolescents With an Autism Spectrum Disorder". Arch Pediatr Adolesc Med. 166 (11): 1058–64. doi:10.1001/archpediatrics.2012.790. PMC 3537883. PMID 22945284. Lay summary.