



Cognitive Benefits of Family Involvement: Quantitative Strategies for Enhancing Learning in Special Education

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Abstract

This study investigates the cognitive benefits of family involvement in special education settings through the use of a quantitative approach. Research was undertaken, encompassing a cohort of 300 pupils who have impairments, as well as their respective families. The data was gathered utilizing established metrics to evaluate both family engagement and the cognitive achievements of the pupils. The data was analysed using a range of statistical approaches, such as descriptive statistics, t-tests, regression analysis, correlation analysis, ANOVA, and ANCOVA. The results demonstrate significant associations between family involvement and students' cognitive performance, including their ability to understand and use language, solve problems, remember information, absorb information quickly, and adjust to new situations. Furthermore, the correlation between family engagement and cognitive results was largely impacted by socio-emotional performance. The findings underscore the importance of fostering collaborative partnerships between families and educators to enhance the academic performance of kids in special education settings.

Keywords: family involvement, special education, cognitive outcomes, socio-emotional functioning.

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Introduction

The significance of parental participation has gained growing recognition owing to its substantial influence on adolescents' cognitive development and academic achievement. Family involvement involves a range of actions, such as communicating with teachers, attending school events, and engaging in educational activities at home. The importance of family engagement in special education arises from its capacity to establish a nurturing atmosphere that amplifies students' educational encounters, cultivates favorable dispositions towards learning, and advances overall welfare (Gershwin, 2020). Although qualitative research has provided insights into the subjective features of family participation, there is a strong requirement for quantitative studies to offer factual proof of its cognitive advantages. The objective of this study is to address this deficiency by utilizing quantitative methodologies to examine the cognitive advantages of family participation in special education environments.

The importance of family engagement in education has been acknowledged as a crucial factor in kids' academic success and socio-emotional growth (Khan et al., 2023; Van der Meer et al., 2018). Research repeatedly indicates that when families actively participate in their children's education, pupils exhibit elevated levels of academic achievement, motivation, and self-confidence (Unamba et al., 2020; Khan et al., 2023). Moreover, family participation has been related with lower dropout rates and higher school attendance among adolescents with impairments (Fakhrou, 2023; Arslan & Julies, 2015). These findings emphasize the need of cultivating collaborations between families and educators to establish inclusive learning environments that accommodate the varied requirements of kids in special education.

Theoretical frameworks, such as Social Cognitive Theory (Bandura, 1989) and Ecological Systems Theory (Bronfenbrenner, 1979), offer valuable insights into how family engagement impacts kids' cognitive

development. As per the Social Cognitive Theory, individuals develop cognitive skills by seeing, imitating, and being rewarded, which means that children learn not just from formal instruction but also via interactions with their family members (Bandura, 1989). According to Ecological Systems Theory, individuals are impacted by several systems, such as the microsystem (family), mesosystem (school), and macrosystem (socio-cultural milieu). This theory highlights the interdependence between family engagement and educational (Bronfenbrenner, 1979).

Although there is theoretical support for the cognitive advantages of family participation, there is a lack of actual data from quantitative investigations. Prior studies frequently utilize qualitative procedures, which offer significant insights into the qualitative features of family engagement but lack the rigor and generalizability of quantitative approaches (Schwab et al., 2018; Avramidis et al., 2018). Hence, it is imperative to do quantitative research in order to experimentally investigate the correlation between family engagement and cognitive achievements in the field of special education.

This study enhances the current literature by deepening our comprehension of the mechanisms that explain the connection between family engagement and cognitive results in special education. This study establishes the foundation for future research and intervention endeavors by clarifying the routes by which family engagement impacts the cognitive development of kids. The ultimate goal is to enhance family-school collaborations in order to effectively cater to the unique requirements of students in special education.

Problem of the Study

Within the domain of special education, the matter of family engagement continues to be a crucial and pressing subject. Qualitative research has emphasized the significance of family interaction in assisting students with disabilities. However, there is a clear absence of quantitative studies that investigate the precise cognitive advantages of this involvement. This gap hinders our comprehension of the mechanisms by which family participation impacts cognitive development in special education environments. Therefore, it is crucial to conduct empirical research using quantitative approaches to examine the correlation between family engagement and cognitive results in kids with impairments.

Research Questions

1. How does the level of family involvement in special education settings correlate with students' cognitive development?
2. What are the mediating factors that explain the relationship between family involvement and cognitive outcomes in special education?
3. To what extent do demographic variables, such as socio-economic status and parental education level, moderate the relationship between family involvement and cognitive outcomes in special education?

Significance of the Study

The findings of this study have important significance for both the theoretical understanding and practical application of special education. This research use quantitative approaches to address the gap between theoretical concepts and actual data about the cognitive advantages of family participation. The results of this study will offer concrete evidence to support established theoretical frameworks, such as Social Cognitive Theory and Ecological Systems Theory. It will clarify the ways in which family engagement affects the cognitive outcomes of students with impairments.

Furthermore, the results of this study hold significant practical ramifications for individuals in the field of special education, including educators, policymakers, and practitioners. This research aims to identify the precise cognitive advantages of family involvement and the factors that explain this connection. By doing so, it can provide valuable insights for creating evidence-based interventions and strategies that promote family-school partnerships and improve outcomes for students with disabilities. Furthermore, comprehending the moderating impacts of demographic characteristics might assist in customizing treatments to address the distinct requirements of varied student groups.

Term of the Study

The primary objective of this study was to examine adolescents with disabilities who were enrolled in special education programs throughout a wide variety of educational environments. The research duration encompasses a single academic year, allowing the gathering of longitudinal data to capture the evolution of students' cognitive results across time. The data was gathered via questionnaires, standardized examinations, and academic records. Statistical analyses were performed to investigate the correlation between family engagement and cognitive results, while taking into account relevant demographic characteristics.

Limitations of the Study

Although this study seeks to offer vital insights into the cognitive advantages of family participation in special education, it is important to recognize numerous limitations. The study's findings may be susceptible to selection bias due to the recruitment of participants only from certain educational settings, thus rendering them unrepresentative of the wider community of students with impairments. Moreover, the use of self-report measures to evaluate family engagement and demographic characteristics may lead to response bias and social desirability bias, so impacting the accuracy of the findings. Moreover, the applicability of the results may be restricted by the study's geographical range and the size of the sample. Although this study has certain limitations, it contributes to the progress of our comprehension about the significance of family engagement in assisting kids with disabilities. Additionally, it provides valuable insights that can guide future research and practice in the field of special education.

Literature review and Previous studies

Family involvement in education refers to the active engagement of parents and family members in their children's educational activities, both inside and outside of school (Toran & Özgen, 2018). This engagement includes a diverse array of activities, such as participating in parent-teacher conferences, offering assistance in the classroom, aiding with homework, and participating in educational activities at home. Theoretical frameworks, such as Social Cognitive Theory and Ecological Systems Theory, offer valuable insights into how family engagement impacts kids' cognitive development and academic accomplishment.

Bandura (1989) established the Social Cognitive Theory, which highlights the significance of observational learning, social reinforcement, and self-efficacy in influencing individuals' behavior and cognition. According to this view, children develop cognitive abilities not just via formal education but also through interactions with family members, peers, and the wider social environment. Family participation allows children to witness and replicate cognitive techniques demonstrated by parents, therefore enhancing their cognitive development and academic achievement.

Bronfenbrenner (1979) established the Ecological Systems Theory, which states that individuals are impacted by several systems, such as the microsystem (family), mesosystem (school), and macrosystem (socio-cultural setting). Family participation functions inside the microsystem, engaging with other ecological systems to influence pupils' educational experiences and results. The effectiveness of family-school collaborations, together with the socio-cultural environment in which they take place, is vital in determining the influence of family engagement on kids' cognitive growth and academic success.

Multiple research papers have investigated the correlation between family engagement and academic achievements among students with impairments. An illustration of this may be seen in the study conducted by Năstăsă et al. (2022), where they performed a meta-analysis of 51 research and discovered a direct correlation between family participation and both students' academic success and socio-emotional well-being. In a longitudinal study, Ragab Saber (2016) observed children with learning difficulties and discovered that increased levels of family participation were associated with improved academic achievement and school engagement as time progressed.

Studies have also emphasized the distinct cognitive advantages of family participation in special education environments. Alexandropoulou (2021) examined how family involvement contributes to enhancing

executive functioning skills in students with autism spectrum disorder (ASD). Their study revealed that when parents provided guidance and support during homework, students experienced enhancements in their cognitive flexibility and self-regulation. In a research done by Bandel Castro (2017), it was shown that when families actively participated in applying behavior management practices at home, there were notable enhancements in the attention and impulsive control of kids with attention deficit hyperactivity disorder (ADHD).

Although there is evidence supporting the advantages of family engagement, there are several obstacles that impede successful cooperation between families and educators in special education environments. The issues encompassed in this context consist of constrained parental-teacher communication, disparities arising from cultural and language factors, and inadequate assistance provided to families by school officials (Kyzar et al., 2019). It is essential to overcome these obstacles in order to promote meaningful collaborations between families and educators and to optimize the cognitive advantages of family engagement for kids with disabilities.

Methods

The study adopted a quantitative technique to examine the cognitive advantages of family participation in special education settings. A quasi-experimental method was utilized to gather data from a sample of kids with disabilities who were enrolled in special education programs in various educational settings.

The individuals included in this study were chosen using a purposive sample method. A cohort of 300 kids with disabilities, ranging in age from 6 to 12 years, together with their families, were enlisted from special education schools and inclusive classes. The criterion for inclusion encompassed a diagnosis of a distinct cognitive disability, intellectual disability, autism spectrum disorder (ASD), or attention deficit hyperactivity disorder (ADHD).

The Family-School Partnership Survey (FSPS) was used to assess family engagement, with some modifications made. The FSPS evaluated many aspects of family engagement, including as communication between parents and teachers, involvement in school events, and assistance with learning at home. The survey items were modified to especially cater to the requirements of families with children who have impairments and were verified by expert evaluation and preliminary testing.

In addition, the cognitive results of the kids were evaluated using established assessments, such as the Wechsler Intelligence Scale for Children (WISC-V) and the Behavior Assessment System for Children (BASC-3). The WISC-V was employed to examine the cognitive capacities of kids, encompassing verbal comprehension, perceptual reasoning, working memory, and processing speed. On the other hand, the BASC-3 evaluated the socio-emotional functioning of students, encompassing adaptive skills, behavioral issues, and emotional functioning.

The revised iteration of the FSPS underwent a rigorous validation process to ascertain its dependability and accuracy. The survey items were assessed by expert reviewers, such as special education teachers, psychologists, and researchers, to determine their clarity, relevance, and comprehensiveness. A pilot study was carried out with a limited number of families to evaluate the readability and comprehensibility of the survey questions. In addition, the survey items were evaluated for internal consistency using Cronbach's alpha. A value of 0.80 was found, suggesting a good level of reliability.

Likewise, the standardized assessments employed to evaluate students' cognitive achievements, such as the WISC-V and BASC-3, have demonstrated reliability and validity. These measures have been extensively utilized in both research and therapeutic settings to evaluate the cognitive ability and socio-emotional functioning of children and adolescents with impairments. Descriptive statistics, such as means, standard deviations, and frequencies, were calculated to provide an overview of the demographic characteristics of the participants and the extent of family engagement. The study utilized inferential statistics, namely t-tests, regression analysis, and analysis of variance (ANOVA), to investigate the connections between family engagement and kids' cognitive results. The analysis also took into account important demographic characteristics to adjust for their potential influence.

Regression analysis was employed to evaluate the predicted association between family engagement and kids' cognitive ability, while accounting for demographic characteristics such as socio-economic status and parental education level as covariates. A correlation study was performed to assess the magnitude and direction of the association between various aspects of family participation and students' cognitive results. The cognitive results of kids across different degrees of family participation were compared using ANOVA, with post-hoc testing undertaken to uncover particular group differences.

In addition, multilevel regression analysis was used to investigate the role of socio-emotional functioning in moderating the connection between family participation and students' cognitive results. The study employed moderation analysis, specifically utilizing techniques such as Analysis of Covariance (ANCOVA), to evaluate the influence of demographic factors on the association between family engagement and students' cognitive results.

Results

Table 1: Demographic Characteristics of Participants

Demographic Variables	Mean (SD) / Frequency (%)
Age (years)	9.4 (1.2)
Gender	
- Male	60 (40%)
- Female	90 (60%)
Disability Diagnosis	
- Specific LD	45 (30%)
- Intellectual Disability	60 (40%)
- ASD	30 (20%)
- ADHD	15 (10%)
Parental Education Level	
- High School	30 (20%)
- Bachelor's Degree	90 (60%)
- Master's Degree	30 (20%)
Socio-Economic Status	
- Low	50 (33.3%)
- Middle	80 (53.3%)
- High	20 (13.3%)

The table displays the demographic attributes of the participants, encompassing their age, gender distribution, disability diagnosis, parental education level, and socio-economic situation. The average age of the participants was 9.4 years, with a measure of the spread of 1.2 years. 60% of the participants were female, whereas 40% had a diagnosis of intellectual impairment. The majority of parents had achieved a Bachelor's degree (60%), and most households were classified as middle socio-economic position (53.3%).

Table 2: Levels of Family Involvement

Family Involvement Dimension	Mean (SD)
Parent-Teacher Communication	3.8 (0.6)

Participation in School Activities	4.2 (0.5)
Support for Learning at Home	4.0 (0.7)

The chart displays the various degrees of family engagement across many aspects, such as communication between parents and teachers, participation in school events, and assistance with learning at home. The participants, on average, expressed significant engagement in all aspects, with mean ratings ranging from 3.8 to 4.2 on a scale of 1 to 5. The standard deviations imply that there is minimal fluctuation in the replies, which suggests a consistent degree of family participation among the participants.

Table 3: T-Test Results for Cognitive Outcomes by Family Involvement

Cognitive Outcome	Low Family Involvement	High Family Involvement	t-value	p-value
Verbal Comprehension (WISC-V)	85.2 (10.5)	90.6 (8.9)	-2.34	0.021
Perceptual Reasoning (WISC-V)	82.6 (9.8)	88.3 (7.2)	-3.12	0.003
Working Memory (WISC-V)	78.4 (11.2)	82.9 (9.1)	-1.89	0.066
Processing Speed (WISC-V)	76.9 (8.5)	81.2 (7.6)	-2.67	0.011
Adaptive Skills (BASC-3)	70.5 (6.2)	75.8 (5.8)	-4.18	<0.001

The table displays the findings of t-tests that compare the cognitive outcomes of kids with low and high levels of family participation. Those who had strong family participation had substantially higher results in verbal comprehension, perceptual reasoning, processing speed, and adaptive abilities compared to those with low family involvement ($p < 0.05$). Nevertheless, there were no substantial disparities in working memory performance seen between the two groups ($p > 0.05$). The results indicate that increased levels of family engagement are linked to improved cognitive performance, specifically in areas such as language comprehension, visual problem-solving, mental processing speed, and adaptable abilities.

Table 4: Regression Analysis Results for Predicting Cognitive Outcomes

Cognitive Outcome	β Coefficient	Standard Error	t-value	p-value
Verbal Comprehension	0.42	0.08	5.25	<0.001
Perceptual Reasoning	0.38	0.06	6.12	<0.001
Working Memory	0.21	0.10	2.11	0.035
Processing Speed	0.29	0.07	4.03	<0.001
Adaptive Skills	0.56	0.09	6.45	<0.001

The table displays the conclusions of a regression analysis that predicts children's cognitive performance by considering family engagement, while also accounting for demographic factors such as age, gender, disability diagnosis, parental education level, and socio-economic position. β coefficients that are positive suggest a correlation between increased levels of family participation and improved cognitive outcomes in several areas, such as verbal comprehension, perceptual reasoning, working memory, processing speed, and adaptive abilities ($p < 0.05$). These findings indicate that the participation of families has a crucial role in predicting the cognitive development of kids in special education environments, especially when considering the impact of demographic factors.

Table 5: Correlation Analysis Results for Family Involvement and Cognitive Outcomes

	Parent-Teacher	Participation in	Support for Learning	Verbal Comprehension	Perceptual	Working	Processing Speed	Adaptive Skills

	Communication	School Activities	ing at Home		Reasoning	Memory		
Parent-Teacher Communication	1.00	0.47	0.58	0.39	0.41	0.31	0.36	0.52
Participation in School Activities	0.47	1.00	0.63	0.52	0.56	0.45	0.49	0.60
Support for Learning at Home	0.58	0.63	1.00	0.59	0.62	0.54	0.57	0.67
Verbal Comprehension	0.39	0.52	0.59	1.00	0.78	0.66	0.72	0.83
Perceptual Reasoning	0.41	0.56	0.62	0.78	1.00	0.68	0.76	0.80
Working Memory	0.31	0.45	0.54	0.66	0.68	1.00	0.63	0.70
Processing Speed	0.36	0.49	0.57	0.72	0.76	0.63	1.00	0.75
Adaptive Skills	0.52	0.60	0.67	0.83	0.80	0.70	0.75	1.00

The table displays the correlation coefficients that measure the relationship between various aspects of parental participation and the cognitive results of pupils. Positive correlation values signify a direct association, whereas negative correlation coefficients signify an inverse relationship. Correlations with a magnitude of 0.50 or more are emphasized in bold. The findings demonstrate notable beneficial associations between all aspects of family engagement and students' cognitive achievements ($p < 0.01$). More precisely, there was a favorable correlation between parent-teacher contact, engagement in school activities, and support for learning at home, and the abilities of verbal comprehension, perceptual reasoning, working memory, processing speed, and adaptive skills. The findings indicate a positive correlation between increased family participation and improved cognitive outcomes for kids with disabilities in special education environments.

Table 6: ANOVA Results for Cognitive Outcomes by Levels of Family Involvement

Cognitive Outcome	Low Family Involvement	Moderate Family Involvement	High Family Involvement	F-value	p-value
Verbal Comprehension	84.2 (9.8)	87.6 (8.5)	91.3 (7.2)	7.83	<0.001
Perceptual Reasoning	81.5 (8.6)	85.2 (7.4)	89.6 (6.8)	9.21	<0.001
Working Memory	77.8 (10.2)	81.3 (9.1)	84.9 (8.3)	5.46	0.004
Processing Speed	75.9 (7.4)	79.2 (6.8)	82.6 (6.3)	6.92	<0.001

Adaptive Skills	69.3 (5.8)	73.1 (5.2)	76.8 (4.8)	12.57	<0.001
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The table displays the conclusions of an ANOVA analysis that compares the cognitive performance of kids at various degrees of family participation. Statistically significant disparities were seen in verbal comprehension, perceptual reasoning, working memory, processing speed, and adaptive abilities among the three tiers of family engagement ($p < 0.05$).

Subsequent studies showed that pupils who had extensive family participation exhibited notably superior results in verbal comprehension, perceptual reasoning, working memory, processing speed, and adaptive abilities in comparison to those with little and moderate family involvement. Furthermore, pupils who had a moderate level of family participation had notably higher results in these cognitive areas in comparison to those with little family involvement.

Table 7: Hierarchical Regression Analysis Results for Mediating Effects of Socio-Emotional Functioning

Cognitive Outcome	β Coefficient (Step 1)	β Coefficient (Step 2)	β Coefficient (Step 3)	R ² Change (Step 2)	R ² Change (Step 3)	p-value (Step 3)
Verbal Comprehension	0.42	0.36	0.31	0.09	0.08	<0.001
Perceptual Reasoning	0.38	0.34	0.29	0.08	0.07	<0.001
Working Memory	0.21	0.18	0.16	0.06	0.05	0.003
Processing Speed	0.29	0.26	0.22	0.07	0.06	<0.001
Adaptive Skills	0.56	0.49	0.44	0.10	0.09	<0.001

The table displays the findings of a hierarchical regression analysis that investigates the role of socio-emotional functioning as a mediator in the connection between family participation and students' cognitive outcomes. In Step 1, family participation is introduced as the independent variable. In Step 2, socio-emotional functioning is included as the mediator. In Step 3, relevant demographic factors are included as covariates.

The findings suggest that family participation is a strong predictor of students' cognitive outcomes in Step 1. The positive β coefficients show that higher levels of family involvement are linked to improved cognitive outcomes in all areas ($p < 0.05$). In Step 2, the introduction of socio-emotional functioning as a mediator leads in a modest drop in the β coefficients for family participation, indicating partial mediation. Nevertheless, the participation of family members continues to be a noteworthy indicator of cognitive results, especially when considering socio-emotional performance.

In Step 3, the addition of demographic factors as covariates leads in further revisions to the β coefficients for family engagement, while family involvement remains a significant predictor of cognitive outcomes in all areas ($p < 0.05$). The R² change values reflect the degree of variance in cognitive outcomes explained by the inclusion of socio-emotional functioning and demographic factors to the model.

Table 8: ANCOVA Results for Cognitive Outcomes by Levels of Family Involvement

Cognitive Outcome	Low Family Involvement	Moderate Family Involvement	High Family Involvement	F-value	p-value
Verbal Comprehension	85.2 (10.5)	87.6 (8.9)	91.3 (7.2)	6.42	0.002

Perceptual Reasoning	82.6 (9.8)	85.2 (7.9)	89.6 (6.8)	8.31	<0.001
Working Memory	78.4 (11.2)	81.3 (9.6)	84.9 (8.3)	5.89	0.003
Processing Speed	76.9 (8.5)	79.2 (7.1)	82.6 (6.3)	7.21	0.001
Adaptive Skills	70.5 (6.2)	73.1 (5.6)	76.8 (4.8)	10.57	<0.001

The table displays the conclusions of an ANCOVA analysis that compares the cognitive performance of pupils at various degrees of family participation. This analysis takes into account demographic factors such as age, gender, disability diagnosis, parental education level, and socio-economic position. Statistically significant variations were seen in verbal comprehension, perceptual reasoning, working memory, processing speed, and adaptive abilities across the three degrees of family participation ($p < 0.05$).

By included demographic characteristics as covariates in the analysis, the study was able to account for group disparities, resulting in a more precise evaluation of the association between family participation and kids' cognitive results. Even after accounting for demographic variables, notable disparities in cognitive results persisted, wherein kids with high family participation exhibited superior performance in comparison to those with low and moderate family involvement.

This study makes a substantial contribution to the current knowledge by filling the vacuum in quantitative research on the cognitive advantages of family participation in special education environments. Although qualitative research has highlighted the significance of family participation (choi min suk & Lee Sang-Hee, 2013), there has been a scarcity of quantitative studies on this topic. This study utilizes rigorous quantitative approaches, such as hierarchical regression analysis and ANCOVA, to offer empirical data that supports the favorable correlation between family participation and kids' cognitive results.

The findings of this study contrast with the current literature by presenting quantifiable evidence of the unique cognitive advantages of family participation in special education. Previous research has mostly focused on qualitative assessments of family involvement's influence (Kim & Vail, 2011), leaving a vacuum in understanding the quantitative consequences on cognitive outcomes. This study aims to fill this void by employing rigorous statistical analyses to establish a positive correlation between increased levels of family engagement and enhanced cognitive performance in adolescents with impairments.

The results of this study are consistent with previous qualitative research and expand upon it by presenting quantitative evidence of the favorable correlation between family engagement and students' cognitive achievements. More precisely, kids who had greater degrees of family interaction had superior performance in several cognitive areas, such as verbal comprehension, perceptual reasoning, working memory, processing speed, and adaptive abilities. These results support the conclusions of earlier research that emphasize the beneficial influence of family participation on academic performance (Fareo, 2011; Schwab et al., 2018).

In addition, this study examined how socio-emotional functioning influences the connection between family participation and children' cognitive results. The results indicate that socio-emotional functioning partially mediates the association between family participation and cognitive outcomes, meaning that it explains some, but not all, of this relationship. It is crucial to take into account cognitive and socio-emotional aspects when examining the overall influence of family participation on kids' academic achievement (Correia et al., 2023).

The findings of this study have important ramifications for educators, policymakers, and practitioners who are engaged in the field of special education. By highlighting the cognitive advantages of family participation, this research underlines the necessity of building meaningful ties between families and educators. Efforts to encourage collaboration between families and schools, as well as increase family participation in special education environments, can lead to better cognitive results and overall academic success for kids with disabilities.

Recommendations

It is important for educators and school administrators to prioritize the establishment of strong connections with families. This may be achieved by ensuring that families are kept well-informed, conducting regular meetings, and including them in the decision-making process about their child's education. To facilitate the development of strong connections between families and educators, it is crucial to provide them with resources and instruction on the significance of family involvement and proficient communication methods.

When creating interventions to promote family participation, it is crucial to take into account the distinct preferences and needs of families and students with disabilities. When formulating culturally sensitive approaches for family involvement, it is crucial to acknowledge that families originate from diverse backgrounds. In order to accommodate families' preferences, schools should offer a variety of choices like as workshops, support groups, and online resources.

Moreover, policymakers should prioritize funding and support for initiatives that promote family involvement in special education. To attain this objective, potential strategies include allocating monies for teacher professional development, enhancing family access to community resources and support services, and implementing policies that recognize and value the contributions of families in education. Policymakers may promote the development of supportive and inclusive settings for students with disabilities and their families by allocating resources to initiatives that encourage family engagement.

Further research is needed to explore the impact of family interaction on the cognitive outcomes of children in special education. Longitudinal studies are necessary to comprehensively comprehend the intricate relationship between family engagement and student outcomes. These studies entail tracking kids over an extended period to determine the impact of parental involvement on their academic achievement, as well as their social and emotional well-being.

Further research is needed to examine the effectiveness of specific treatments and strategies for enhancing parental involvement and improving academic outcomes in special education. By building upon the findings of this study and exploring novel approaches to involving families, educators, policymakers, and practitioners may collaboratively enhance the well-being and scholastic achievements of children with disabilities.

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