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School and Family Collaboration on Twice-exceptional Academic Program Services

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Abstract. Collaboration in twice-exceptional academic program services is an important thing to pay attention to when optimising student potential. This research focuses on both school and family involvement using a qualitative approach and a case study design to describe the forms of school and family collaboration. The respondents in this research consisted of 15 teachers and 15 parents with twice-exceptional children. The data collection in this research was carried out using participatory observation techniques and semi-structured interviews. The data was analysed through data collection, data compression, data presentation, and conclusion drawing. The findings in this study reveal that there are diverse roles held by both schools and families in relation to the testing, planning, implementing, and evaluating of twice-exceptional programs. Additionally, it highlights the significance of self-development and extra-curricular activities in maximising student potentials, alongside the importance of training both schools and families in supporting the twice-exceptional students' development. The establishment of collaboration is influenced by several supporting factors such as open communication, administrative support, and parental involvement. Meanwhile, factors that can hinder the creation of collaboration include a lack of awareness, busy parental schedules, and misunderstandings regarding the roles involved. By understanding the results of this research, schools and families can work together to support the development of twice-exceptional students more effectively by developing educational service programs that better support the potential of twice-exceptional students. It is hoped that future research will be able to better describe collaboration in academic services for twice-exceptional students for each different type of special need.

Keywords: school and family collaboration; academic program services; twice-exceptional students

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1. Background of the study

One category within the spectrum of children with special needs includes those identified as twice-exceptional, a term denoting individuals who exhibit both outstanding abilities and disabilities. This dual exceptionalism often leads to unique challenges. Recognising and comprehending these exceptional gifts is crucial for fostering confidence and establishing a positive self-identity in these students. The efforts to identify twice-exceptional students are key factors in educational success (Gierczyk & Hornby, 2021). Educational programs designed for twice-exceptional learners should consider the impact of various ecological factors, such as environmental events and transitions (chronosystem), cultural contexts (macrosystems), and immediate settings like family, school, and surroundings (microsystems). Understanding the intricate connections among these systems is essential for effective support (Kail & Cavanaugh, 2015). Despite the importance of addressing the needs of twice-exceptional individuals, this condition has received limited attention in Indonesia compared to other special needs conditions and their secondary effects. In these cases, exceptional abilities may overshadow disabilities or vice versa, leading to a situation where neither aspect of the condition is adequately acknowledged or treated. Twice-exceptional students may demonstrate an academic performance either below or above their expected grade level (Trail, 2010).

Without appropriate twice-exceptional academic program services, identifying these children becomes challenging as they often do not clearly manifest remarkable abilities or deficiencies within the traditional school framework. Their outstanding talents may overshadow their disabilities or, conversely, their disabilities may eclipse their exceptional abilities. This mutual influence can result in a scenario where neither aspect of their condition is adequately acknowledged or addressed, leading to the under-recognition of the prevalence of twice-exceptionality (Park et al., 2018; Grigorenko, 2020). It is emphasised that while twice-exceptional academic programs are crafted to offer tailored education, their success is not confined to the classroom; it extends beyond the school walls. The true unlocking of the potential of twice-exceptional academic program services lies in the collaboration between schools and families, underscoring the importance of this partnership in providing comprehensive support.

Communication between teachers and parents is a factor that needs more attention in the implementation of academic services for children with special needs, including twice-exceptional students (Hermanto & Pamungkas, 2023). However, in its implementation, schools and parents have not been involved much in collaboration to optimise these services, and schools and parents still run their services separately and sometimes lack synergy. In connection with these conditions, something that can be developed in this unstable situation is to implement collaboration between families and schools in twice-exceptional academic program services for twice-exceptional children. Learning for children with special needs, including twice-exceptional children, requires the participation of teachers, parents and students in order to collaborate (Khadijah & Gusman, 2020). Regarding collaboration, Vangrieken et al. (2015) stated that collaboration is a mutually beneficial interaction in groups in all activities to carry

out joint tasks. Teacher and parent collaboration is a cooperative action carried out based on the learning objectives. Collaboration between teachers and parents is very important regarding the teachers' professional competence to accommodate increasing their competence in teaching practice. By working in tandem, schools and families can provide twice-exceptional students with an education that not only challenges and enriches them academically but also nurtures their social and emotional growth. This research will comprehensively examine the collaborative implementation of schools and families in twice-exceptional academic program services to answer research questions focused on collaboration practices, inhibiting factors, supporting factors, and the school and family expectations regarding academic program services for twice-exceptional students which can be taken into consideration when developing educational services for twice-exceptional children.

2. Literature Review

2.1. Giftedness of Twice-Exceptional

The US Department of Education (The Maryland Definition in Smith, 2017) and Vantassel-Basca (2021) explained that giftedness and talented children are those identified by professionally qualified people as being capable of high performance based on possessing extraordinary abilities. These are children who need different educational programs and services beyond those typically provided by regular school programs to realise their contributions to themselves and society. Children capable of high achievement include those who demonstrate achievement and/or potential in one of the following areas: general intellectual abilities, special academic talents, creative or productive thinking, leadership abilities, visual or performing arts, and psychomotor abilities. The definition of Davis and Rimm (2014) is based on Renzulli's three-ring conception of giftedness which considers three characteristics: above-average ability, creativity, and task commitment.

Syafatania (2016) explains Renzulli's three-ring conception in the manner of several clusters such as general and specific abilities, creativity, and commitment. The capacity to digest information, integrate experience, and think abstractly are all examples of general abilities. Word fluency, memory, spatial calculation, and verbal and logical calculation skills are also examples. Tests for intellect, accomplishment, talent, ability, basic mental skills, and creativity can be used to measure this general capacity. The capacity to accomplish one or more specialised tasks falls under the category of specific abilities. For instance, proficiency in the arts of dance, music, photography, chemistry, and language. Additional details on these skills can be found in specialised sectors. For instance, having a musical aptitude means being able to sing, play an instrument, or make music. Achievement tests, aptitude tests, or evaluations specific to that field can reveal this exceptional talent. The ability to innovate, come up with fresh approaches to issues, and recognise patterns in already existent elements are all examples of creativity. In the world of art, creativity can be employed to generate fresh concepts, compose music, and locate creative inspiration. A subtle kind of motivation is commitment to the work at hand. Motivation is a general energy

mechanism that triggers traits like responsibility, perseverance, hard work, continual practice, confidence, and the confidence to finish a task.

Therefore, in general, gifted individuals can be defined as individuals who demonstrate extraordinary abilities or talents in one or more areas, such as intellectual, creative, artistic, athletic, or leadership. This ability is often recognised early and can be identified through standard tests, observation, or evaluation by experts in the field. Gifted individuals may have an extraordinary ability to think abstractly, reason logically, solve complex problems, and learn new information quickly. They can also demonstrate extraordinary creativity, originality, and deep commitment to their areas of interest.

A twice-exceptional child is defined as a child who is gifted but exhibits the presence of one or more handicapping conditions. This is what makes their giftedness seem like a condition covered by their disability (Klingner, 2022; Conejeros-Solar et al., 2021). The lack of understanding of the condition of twice-exceptional students hinders teachers and parents from recognising and helping them to overcome their problems (Amran & Majid, 2019). Without adequate program services, twice-exceptional student talents become overlooked (Foley & Teriba, 2022). Under these conditions, there is a need for educational services that can guarantee the availability of educational programs that can facilitate their talents and suit their special needs (Pavia, et al., 2019). Not only teachers, but the parents of extraordinary children also have an important role in providing care and finding educational opportunities that can optimise their children's talents and at the same time, help to overcome their shortcomings (Reis & Renzulli, 2020).

2.2. Twice-Exceptional Academic Program Services

Educational programs for twice-exceptional students need to be tailored to the needs and interests of each student. Additionally, programs for twice-exceptional students must provide opportunities for social and emotional development, as well as academic growth. Academic program services that can be accessed by twice-exceptional students refer to Davis and Rimm (2014), Clark (2012), and Semiawan (1997), showing where such programs may differ as in the case of the categories of students served, program objectives, general program models followed, accelerated programs, enrichment programs, grouping and organisational settings, instructional or delivery strategies used, professional communities and resources involved, and program level (classroom, school, district, state, or national). Several twice-exceptional academic service programs have been established with the aim of unlocking the academic potential of exceptional students. These programs encompass various approaches, and some examples are given as follows. Enrichment programs that extend beyond standard coursework, allowing talented students to delve deeper into subjects through specialised classes, independent projects, and collaborations with experts. Acceleration strategies propel these students through the curriculum at an advanced pace, potentially involving grade skipping or accessing higher-level coursework sooner than usual. Mentorship initiatives pair twice-exceptional students with field experts, providing guidance and support to nurture their

interests effectively. Furthermore, specialised summer programs, often held at universities, facilitate intensive studies across diverse subjects, typically conducted on a college campus. Online learning platforms cater to the flexible academic needs of twice-exceptional students, offering personalised challenges and opportunities for self-improvement. Additionally, some school districts have established specialised Gifted Schools, providing an environment tailored specifically to challenge and stimulate the academic growth of these exceptional students. These multifaceted programs collectively aim to create a stimulating and enriching educational landscape for twice-exceptional students, aligning with the objectives of this study.

2.3. School and Family Collaboration

School collaboration is one of the most important things in implementing programs in schools, especially for twice-exceptional students. Hermanto and Pamungkas (2023) define collaboration as a form of social interaction process in which there are certain activities aimed at achieving common goals by helping each other and understanding each other's activities. The forms of collaboration according to Apriani (2021) consist of primary, secondary, and tertiary collaboration. Primary collaboration is defined as the fusion of parties involved to achieve a common goal, for example, daily routine life in speaking. Secondary collaboration is more defined as the role of individuals who are involved and prove their contribution toward a common goal, for example, the collaboration that occurs in offices and the government. Tertiary collaboration is the collaboration that occurs based on the conflict or problem being faced and planning a common goal to overcome it, for example, two parties who have a similar problem and work together to solve it.

According to Epstein et al. (2009), as cited in Grant (2019), the collaboration between schools and families assumes several forms that are crucial for fostering a supportive educational environment. Parenting collaboration involves assisting families in honing their parenting skills, understanding child and adolescent development, and supporting familial growth while also seeking to comprehend the background, culture, and aspirations of each child's family. Effective communication strategies ensure a two-way flow of information, providing updates on school programs and the students' academic progress. Volunteering initiatives recruit, train, and schedule family volunteers to engage with students, offering necessary support for their involvement in school activities. Encouraging learning at home entails promoting the family engagement in academic endeavours through homework assistance, discussions about the school day, and setting academic goals. Moreover, facilitating interactive home extension activities strengthens this involvement. Involving families in the decision-making processes regarding their children's education, curriculum, governance, financial support, and advocacy occurs through various collaborative organisational teams. Lastly, collaborating with the community coordinates resources and services from diverse groups, including businesses, cultural entities, civic organisations, and higher education, for the benefit of families, students, and schools. These multifaceted collaborative approaches aim to create a cohesive and supportive network between schools, families, and the community, enhancing the overall educational experience for students.

3. Methods

3.1. Research Design

Case studies are a qualitative design where researchers deeply explore programs, events, activities, processes, or individuals, binding the case by time and activity. They gather detailed information utilising various data collection methods over an extended period (Cresswell, 2014). In this research, a qualitative approach using a case study design was employed to delineate the collaboration between schools and families in twice-exceptional academic program services. This approach was chosen to thoroughly explain the provision of learning access for twice-exceptional children, emphasising academic program services as the research focus.

3.2. Participants

The informants in this research consisted of 15 teachers and 15 parents who had twice-exceptional children. This research aimed to comprehensively describe the implementation of collaboration between teachers and parents in twice-exceptional academic service programs. The data collection was carried out by distributing questionnaires via Google classroom which explored information related to the implementation of teacher and parent collaboration in twice-exceptional academic service programs starting from program planning, and program implementation through to evaluation of twice-exceptional academic service programs.

The respondents in this study consisted of 30 teachers and parents of students with twice-exceptional children with the following details:

Table 1: Respondents from School

Respondents	Frequency
Teacher of gifted students at Special School of Yogyakarta, Indonesia	5
Teacher of talented students at Darul Ashom Deaf Islamic Boarding School, Indonesia	5
Teacher of talented students from the Yogyakarta National Paralympic Committee	5

Table 2: Respondents from Family

Respondents	Frequency
Parents of gifted students at Special School of Yogyakarta, Indonesia	5
Parents of talented students at Darul Ashom Deaf Islamic Boarding School, Indonesia	5
Parents of talented students from the Yogyakarta National Paralympic Committee, Indonesia	5

Tables 1 and 2 show the diversity of respondents in this study. These respondents were selected with the assumption that each school represents various educational pathways, namely formal education (Special School of Yogyakarta,

Indonesia), as well as semi-formal (Darul Ashom Deaf Islamic Boarding School) and non-formal education (National Paralympic Committee, Indonesia) so then more comprehensive data could be obtained regarding the forms of collaboration with parents in relation to twice-exceptional academic program services with a variety of educational pathway characteristics.

3.3. Research instruments

The data collection in this research was carried out using participatory observation techniques and semi-structured interviews, as well as documentation studies related to the academic program services for twice-exceptional children. In the interview technique, we used a guided interview questions and in the observation technique, we used checklist observations. The data collected was then tested for credibility using a member check.

3.4. Data collection analysis

The data analysis technique used in this research was patterned from the technique developed by Miles and Huberman (2014), which consists of 4 (four) activity flows when analysing data, namely data collection, data compression, data presentation, and conclusion drawing.

3.5. Procedures

In this research, the data was collected through observations, interviews with both teachers and parents, as well as documentation studies related to their collaboration in academic service programs for twice-exceptional students. The data was selected and adjusted to the research focus through the data condensation step. The analysed data was then presented using the descriptive narrative method after previously being grouped into categories according to the focus. In the final step of the data analysis, the conclusions were drawn and verification was carried out by describing the form of collaboration carried out in twice-exceptional student academic services.

4. Analysis and Discussion

4.1. Findings

Based on the data collected, the forms of collaboration that have been carried out between schools and families in twice-exceptional academic program services are shown in Table 3.

Table 3: Collaboration Practices

No	Aspects	School Role	Family Role
1	Talent Identification	Conduct aptitude and academic potential tests. Observe behaviour and interests in the classroom. Discuss with teachers and counsellors.	Provide information about children's interests and talents. Share information about achievements outside of school. Observe children's potential and interests at home.
2	Program Preparation	Develop a special learning plan. Adapting the curriculum to needs. Hold meetings with parents.	Participate in planning additional activities. Provide resources to explore talents.

No	Aspects	School Role	Family Role
			Provide input in program preparation.
3	Program Implementation	Provide additional teaching. Organise special extracurricular activities. Involve external experts and mentors. Monitoring children's academic development.	Supporting children in undergoing additional programs. Encourage children to participate actively. Arrange time for activities outside of school. Communicate with teachers and counsellors.
4	Evaluation and Monitoring	Conduct regular evaluations of the program. Hold meetings to provide feedback to parents. Record children's achievements and development.	Observe academic and emotional development. Discuss with children about development and overcoming challenges. Participate in meetings and evaluations.
5	Self-development	Provide support to parents in dealing with twice-exceptional needs. Conduct workshops and seminars for parents. Connecting children with programs outside of school.	Encourage participation in self-development activities. Encourage children to develop their interests and achieve personal goals. Explore in various fields.

Table 3 shows that school and family collaboration practices in twice-exceptional academic service programs can be carried out according to 5 aspects, specifically talent identification, program preparation, program implementation, evaluating and monitoring, and self development.

Here is one of the interview excerpts regarding the collaborative practices between schools and families in academic service programs for twice-exceptional students in this research.

Q: How does your institution currently approach collaboration between schools and families for the academic program services of twice-exceptional students?

A: Our institution emphasises regular communication through meetings and digital platforms to foster collaboration between school staff and families. We encourage joint goal-setting and shared decision-making processes to address the academic needs of twice-exceptional students effectively.

Table 4 shows the inhibiting factors between schools and families in collaboration regarding twice-exceptional academic program services.

Table 4: Inhibiting Factors

No	Factors	Notes
1	Lack of communication	The lack of clarity in communication channels between schools and families results in difficulties when sharing information about programs and the development of twice-exceptional students.
2	Differences in priorities	Differences in views between schools and families regarding the goals of education can hinder the suitability of the twice-exceptional programs provided.
3	Time availability	Time constraints on both sides make it difficult to hold effective meetings and discussions regarding the development of twice-exceptional students.
4	Misunderstanding of twice-exceptional	A lack of understanding of the concept of twice-exceptional on the part of the family can result in unrealistic expectations or inadequate support.
5	Lack of resources	Limited resources, both in terms of finances and facilities, can be an obstacle in providing quality twice-exceptional programs.
6	Lack of training	Lack of training for teachers and parents in identifying and developing student talents can reduce the effectiveness of the program.
7	Resistance to change	Discomfort or disagreement with changes in programs or learning approaches for twice-exceptional students may hinder implementation.
8	Lack of transparency	A lack of open information about twice-exceptional programs can lead to parents feeling disengaged or lacking understanding about the program.

Table 4 shows that inhibiting factors of school and family collaboration in twice-exceptional academic service programs consist of a lack of communication, differences in priorities, time availability, misunderstanding of twice-exceptional, a lack of resources, a lack of training, resistance to change, and a lack of transparency.

Here is one of the interview excerpts concerning the inhibiting factors between schools and families in the academic service programs for twice-exceptional students in this research.

Q: What are some key challenges or barriers hindering effective collaboration between schools and families in providing services for twice-exceptional students?

A: Several challenges include differing expectations between schools and families, limited awareness about the specific needs of twice-exceptional students, and difficulties in establishing consistent communication channels between home and school.

Table 5 shows the results regarding supporting factors for family and school collaboration in twice-exceptional academic service programs.

Table 5: Supporting Factors

No	Factors	Notes
1	Open communication	Having open and clear communication between schools and families allows for a more effective exchange of information regarding programs and the development of twice-exceptional students.
2	Same vision and goals	When schools and families have similar educational visions and goals, collaboration in twice-exceptional programs becomes easier because there is congruence in expectations.
3	Use of technology	The use of technology such as online platforms or communication applications facilitates access and interaction between schools and families without being limited by distance or time.
4	Training and education	Providing training to teachers and parents regarding the identification and development of student talents increases understanding and support for the program.
5	Active participation	Involving teachers, students, and parents in planning, implementing, and evaluating twice-exceptional programs encourages a sense of shared ownership and responsibility.
6	Resource availability	Providing sufficient resources, both in terms of finance and facilities, enables better implementation of twice-exceptional programs.
7	Administrative support	Support from the school administrative level in the form of policies and time allocation helps create an environment that supports collaboration.
8	Periodic evaluation	Conducting regular evaluations of programs and collaborations allows identification of continuous improvements and development.

Table 5 shows that supporting factors of school and family collaboration in twice-exceptional academic service programs consist of open communication, same vision and goals, use of technology, training and education, active participation, resource availability, administrative support, and periodic evaluations.

Here is one of the interview excerpts concerning the supporting factors between schools and families in the academic service programs for twice-exceptional students.

Q: Could you highlight any successful strategies or factors that have significantly supported collaborative efforts between schools and families for twice-exceptional students?

A: We've found that clear communication protocols, mutual respect, and an inclusive approach to decision-making have greatly supported successful collaborations. Additionally, providing resources, workshops, and continuous training for both parents and educators has proven beneficial.

The expectations regarding school and family collaboration in twice-exceptional academic service programs obtained in this research are shown in Table 6.

Table 6: School Expectations

No	Expectations	Notes
1	Shared understanding	The hope is to form a common understanding between schools and families regarding the goals, benefits, and strategies of twice-exceptional programs.
2	Holistic support	Expect holistic support from families in developing the academic, emotional, and social aspects of twice-exceptional students.
3	Parental involvement	The hope is that parents are actively involved in planning, implementing, and following the development of twice-exceptional programs.
4	Appreciation of talent	Expect recognition and appreciation for students' diverse talents and interests, creating an inclusive environment.
5	Openness in communication	The hope is to establish open communication that allows for the honest and transparent exchange of information.
6	Flexibility in approach	Expect program flexibility to adapt to individual student needs, abilities, and interests.

Table 6 shows that school expectations of school and family collaboration in twice-exceptional academic service programs consist of shared understanding, holistic support, parental involvement, appreciation of talent, openness in community, and flexibility in approach.

Here is one of the interview excerpts concerning school and family expectations in the academic service programs for twice-exceptional students.

Q: What are the primary expectations that schools have from families, and vice versa, regarding academic program services for twice-exceptional students?

A: Schools expect families to actively engage in their child's educational journey, participate in Individualised Education Program (IEP) meetings, and provide insights into their child's strengths and challenges. Conversely, families expect schools to recognise their child's unique abilities, offer tailored support, and maintain open lines of communication.

Likewise, family expectations in the family and school collaboration in the twice-exceptional academic service program are shown in Table 7.

Table 7: Family Expectations

No	Expectations	Notes
1	Strong academic support	The hope is strong support from schools in developing the academic potential of twice-exceptional children.
2	Understanding and engagement	Expect understanding and active involvement in planning and following developments in twice-exceptional programs.
3	Appreciation of talent	Expect recognition of the children's talents and support in their development, both inside and outside school.

No	Expectations	Notes
4	Effective communication	The hope is to establish effective communication with schools to understand the children's academic development.
5	Support in self-development	Expect a twice-exceptional program that not only focuses on academics, but also supports the children's personal development.
6	Continuous collaboration	We hope that there will be continued collaboration with schools to ensure that the program runs well and is of high quality.

Table 7 shows that the family expectations of school and family collaboration in twice-exceptional academic service programs consist of strong academic support, understanding and engagement, appreciation of talent, effective communication, support in self-development, and continuous collaboration.

4.2. Discussion

The results of this research show that the first collaboration that can be carried out by schools and families on twice-exceptional academic services is to conduct talent and academic potential tests and discuss the results with counsellors or psychologists. This has significant urgency in the context of education and individual development. Hermanto and Pamungkas (2023) have explained that efforts need to be made to provide services according to the conditions of students with special needs, including twice-exceptional students, through the initial step of carrying out assessments. Assessment is the main key to providing appropriate educational service programs for students. Information obtained from the assessment results can be used to determine the educational services needed by students with special needs. Based on this, the carrying out of assessments by both teachers and parents will really help to get a more in-depth profile picture of the students and support better educational decision-making.

The collaboration between schools and families plays a pivotal role in optimising the students' potential and nurturing their talents. This partnership extends beyond conventional education boundaries, encompassing the joint preparation of tailored learning plans, curriculum adjustments, and participatory discussions in meetings. This dynamic collaboration significantly enhances the quality of education while fostering a more comprehensive development approach for students. By recognising, nurturing, and leveraging the students' unique abilities, this approach establishes a robust foundation for their academic and personal success. This synergy assumes paramount importance in the context of implementing specialised academic service programs for children with special needs, including twice-exceptional students. Effective coordination between teachers and parents throughout the entire process, from initial planning to ongoing evaluation, becomes essential to maximise the benefits of these service programs. Research by Flower et al. (2018) and Hermanto and Pamungkas (2023) underscores the critical nature of this collaborative framework in optimising the learning environments and opportunities for students with special needs, empowering them to flourish academically and personally.

The research results also show that apart from learning at school, additional programs outside school hours and time management support by families have an important role in developing the children's potential to the maximum. Additional programs outside of school learning and time management support by families help to create an environment that supports the overall development of the children's talents. This ensures that the children can develop in various aspects, preparing them for a successful future and fulfilling their potential. The study by Wafroturrohmah and Sulistiyawati (2019) shows that activities outside of school such as extracurricular activities can provide benefits for students in terms of social development where the students are able to develop their potential through the social activities they participate in.

Based on the data obtained in this research, regular evaluation and monitoring through collaboration between schools and parents has a crucial role in optimising the students' talents. This allows for the identification of student change and development, as well as the development of more effective strategies to support their success. Collaboration between schools and parents in terms of the conducting of regular evaluations and monitoring is a comprehensive approach to optimising the students' talents. This creates a responsive and adaptable educational environment with the aim of providing the best possible support to enable children to reach their full potential. Periodic evaluations can provide teachers with areas that need to be improved in learning so then the subsequent learning can be more effective. Here, teachers can use various methods in the improvement process such as adopting new learning practices (Magdalena et al., 2023).

The research data shows that the training available for schools and especially parents in twice-exceptional academic service programs creates a strong foundation to support the development and growth of twice-exceptional students. Collaborative training models for teachers and parents need to be studied and developed to minimise the potential learning losses that can occur in children with special needs, including twice-exceptional children (Hermanto & Pamungkas, 2023). This training will form a solid foundation in the creation of an educational environment that is supportive and committed to developing their maximum potential. Armed with the right knowledge and strategies, both schools and parents can collaborate effectively to ensure that twice-exceptional students receive the support they need on their educational journey. In conditions like these, the students feel recognised, supported, and directed towards the highest achievements in their talents and interests. This creates an environment that is empowering, inspiring and encourages them to reach the peak of their achievements.

Successful collaboration between schools and parents in providing academic services for twice-exceptional students depends on several supporting factors that ensure the collaboration is effective. Open and clear communication between schools and parents is an important basis, with a shared understanding of goals, hopes and expectations helping to prevent costly misunderstandings. Strong administrative support from school management and staff also facilitates the

implementation of twice-exceptional services programs. Strong administrative support from school management and staff is pivotal in facilitating the implementation of twice-exceptional services programs. Little and Housand (2011) highlight that the administrators' backing not only ensures the adequate allocation of resources and time but also conveys the value placed on these initiatives, providing positive reinforcement for educators.

The active involvement of parents in their children's education also plays an important role as a supporting factor. Parents who are actively involved tend to be more open to collaboration, and this has a positive impact on student development. The training and education provided to teachers and parents on how best to support twice-exceptional students also plays a role in enhancing the necessary collaborative skills. A structured collaborative work plan is also an essential supporting factor. This plan includes responsibilities and a meeting schedule that helps maintain focus and direction for collaboration. The study by Triwardhani et al. (2020) explains that effective communication can ensure an optimal interaction between teachers, students, and parents in developing the learning and teaching activities, and how schools can develop communication methods, communication patterns, and parental involvement.

Based on the research results, there are a few inhibiting factors that need to be overcome in this collaboration. A lack of awareness about the importance of twice-exceptional services or a lack of information about a child's potential can hinder parental participation. Differences in the expectations between schools and parents can also hinder effective collaboration. These findings align with the previous studies that underscore the importance of informed parental engagement and aligned expectations between educational institutions and parents for successful collaboration in supporting gifted children's education (Pasha et al., 2021). Parents want to be informed about the school's vision and parent involvement policies to understand their specific roles better (Myende & Nhlumayo, 2020). Parents depend on the school to explain the school's identity and the roles expected of them.

The parents' busy lives and limited time often become barriers to participating in meetings or activities involving the school. Unequal access to information or resources can also be an obstacle to active collaboration. Additionally, concerns regarding the privacy and security of children's personal information may limit the parents from sharing information with the school. Lack of understanding of the role played in twice-exceptional services or feeling that their role is insignificant are also barriers. Ineffective communication between schools and parents, as well as a lack of institutional support from schools, can create uncertainty and reduce the parents' motivation to collaborate. With regard to the possible inhibiting factors that may arise, UNESCO (United Nations Educational Scientific and Cultural Organisation), in the work of Juliani and Widodo (2019), initiated the Four Pillars of Education to improve the quality of a nation's education which includes learn to know, learn to do, learn to be, and learn to live together. The foundation of these four pillars can be the answer to problems that

arise regarding education by involving the roles of schools, families and communities.

The novelty of collaborative research between schools and families in academic program services for twice-exceptional children lies in the emphasis on a holistic approach that includes aspects outside the classroom. In this research, the approach is not only focused on the scope of learning at school but also considers the influence and support provided by the family. This broadens the scope of academic programs for twice-exceptional children, recognising that the key to success involves close collaboration between schools and families.

In a society that intends to better understand the needs of children with extraordinary intelligence but who also face special challenges, this research presents a more holistic and integrated solution. By involving families in the educational process, this research shows how support outside of school can make a positive contribution to the twice-exceptional children's academic development and overall wellbeing. The uniqueness of this research lies in the approach that includes both environments, school and family, to create a more effective and up-to-date academic program for twice-exceptional children.

5. Conclusion

Based on the research results and discussions, collaboration between schools and families is very important in optimising academic services for twice-exceptional students. The initial steps that include aptitude tests, academic potential, and counselling can help better identify student needs. Collaboration in designing the curriculum and learning tailored to the needs of twice-exceptional students can improve the quality of education and help support holistic student development. The existence of additional programs outside school hours and family support in managing playing time have an important role in developing the students' potential to the maximum, accompanied by regular evaluations and monitoring by both schools and families, helping to optimise student talents. Additionally, training for schools and families in twice-exceptional academic services programs creates a strong foundation for supporting the development of twice-exceptional students.

Collaboration cannot be separated from its supporting and inhibiting factors. Open communication, administrative support, parent involvement, and a structured collaborative work plan are important. On the other hand, several inhibiting factors, such as a lack of awareness, differences in expectations, busy parents, unequal access, and a lack of understanding of the roles involved, must be addressed to improve collaboration. Schools and families can work together to support the development of twice-exceptional students more effectively by developing educational service programs that better support the potential of twice-exceptional students. This research is limited to academic service programs involving teachers and parents with various twice-exceptional children. There is a need for research that discusses academic service programs more specifically for each type of twice-exceptional child, for example, twice-exceptional children who

have hearing impairments because there is still very little research on this subject.

6. References

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