

Parenting Insight Program: Leveraging WhatsApp Collaboration Between Teachers and Parents to Foster Student Independence in Elementary Schools

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ABSTRACT

The increasing emphasis on student autonomy in 21st-century education necessitates effective collaboration between schools and families. In elementary education, however, fragmented communication between teachers and parents often hinders the development of student independence. This study investigates the impact of teacher-parent collaboration via WhatsApp on student independence through the Parenting Insight Program. A correlational quantitative approach with an explanatory design was used. Data were collected from 30 fifth-grade students, their teachers, and parents in an elementary school in Sumenep, Indonesia. Instruments were based on validated theoretical constructs. Pearson correlation analysis assessed the relationship between collaboration indicators and student independence. The analysis revealed significant positive correlations between teacher-parent communication, joint problem-solving, and parental involvement with students' responsibility, initiative, and decision-making ($r = 0.72-0.85$, $p < 0.01$). Furthermore, religiosity was negatively correlated with aggressiveness ($r = -0.71$, $p = 0.001$), suggesting that internalized spiritual values may support emotional self-regulation and reduce behavioral issues. The findings highlight WhatsApp's potential as a low-cost, culturally adaptive tool for enhancing home-school collaboration. The Parenting Insight Program offers a structured model that integrates digital communication into character education. Teacher-parent collaboration via accessible technology like WhatsApp can foster student independence and personal development. The Parenting Insight Program exemplifies how ethical, systematized digital engagement can strengthen educational outcomes and inform school-family partnership strategies.

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1. INTRODUCTION

The 21st century has brought about fundamental changes in the way we view education, with student independence emerging as one of the key skills that needs to be developed from an early age (Vogel, Stang-Rabrig, & McElvany, 2023). The shift in the educational paradigm from a teacher-centred approach to student-centred learning has highlighted the importance of developing independent learning skills, critical thinking, and autonomy in the learning process (Al-Hail, Al-Fagih, & Koç, 2021; Saltmarsh, Tualaulelei, & Ayre, 2021). In this context, student independence is defined as the ability to initiate and manage one's learning behaviour independently without always being directed by adults. Independence includes the capacity of students to set goals, design strategies, make decisions, and evaluate results reflectively and independently (Watts & Pattnaik, 2023). These competencies not only determine students' academic success but also serve as an important foundation for facing social and professional challenges in an uncertain future.

Although schools play a primary role in facilitating learning, various studies emphasize that the development of student independence cannot be achieved exclusively in the classroom. The role of parents and the family environment is crucial in shaping children's character and autonomous behaviour from an early age (Hardiansyah, Sukitman, Wahdian, & Hodairiyah, 2024; Yang et al., 2023). However, practices in the field indicate that parental involvement in the learning process, particularly in fostering children's independence, remains limited and unstructured. Although various educational policies have recognized the importance of collaboration between schools and homes, many primary education institutions still face difficulties in establishing sustainable and effective communication mechanisms with parents.

In many primary schools, communication between teachers and parents is sporadic, limited to formal occasions such as parent-teacher meetings or when disciplinary issues arise. This reactive and one-way pattern of communication often fails to create a collaborative and supportive relationship between schools and homes (Sianturi, Lee, & Cumming, 2023). As a result, efforts to instil values of independence often do not continue consistently outside the school environment. Some parents also lack an understanding of the educational strategies implemented in the classroom or are unaware of how they can support their children's autonomy development at home. Conversely, teachers often lack adequate insight into the dynamics of students' home lives, which makes it difficult to establish continuity in values and behaviour.

In this context, the use of digital communication technology, such as WhatsApp, can be a potential solution to bridge the communication gap between teachers and parents. With over 2 billion users worldwide and high penetration rates in developing countries like Indonesia, WhatsApp is one of the most widely used communication platforms across socioeconomic strata (Lai, Hung, Lee, & Leung, 2022). WhatsApp's informal, fast, and user-friendly nature makes it a highly potential medium for building flexible and routine communication between schools and homes. Additionally, multimedia features such as voice messages, images, and videos can enrich the form of interaction and enhance the effectiveness of information delivery.

However, the use of WhatsApp in an educational context remains incidental and unstructured. Few initiatives have systematically leveraged WhatsApp as the primary medium in educational programs designed to comprehensively develop students' character and behaviour, particularly in terms of independence. Therefore, this study addresses the need for evidence-based interventions through the development and evaluation of the Parenting Insight Program—a WhatsApp-based collaborative framework designed to facilitate structured parental involvement in promoting independence among elementary school students. The primary problem addressed in this study is the lack of a structured, technology-based teacher-parent collaboration model to support the development of student independence. Many educational approaches still place parents in a passive role or only involve them in administrative and reactive aspects of the process. Meanwhile, the enormous potential of communication technology has not been optimized as an active and strategic educational partnership tool. This disparity creates a gap between home and school expectations, resulting in a lack of

synchronization in the reinforcement of independence values given to students in the two primary environments where they develop.

The urgency of this research is even more apparent when viewed in light of the latest empirical data. The 2022 National Assessment Report by the Ministry of Education, Culture, Research, and Technology indicates that only around 39% of elementary school students in Indonesia consistently demonstrate independent learning behaviour without requiring continuous guidance from teachers or parents (Hardiansyah, Zainuddin, Sukitman, & Astutik, 2023; Pan, 2023). A survey conducted by UNICEF Indonesia (2021) also revealed that 58% of elementary school students still heavily rely on adult guidance to complete academic tasks, both at school and at home. This dependency is more prevalent among children living in urban and semi-urban areas, where most parents work full-time and have limited time to accompany their children directly (Gershy & Katz, 2023; Ye, Gao, Sin, & Yang, 2023). This reality underscores the need for affordable, flexible, and technology-based intervention strategies that can bridge the gap between parental involvement and the demands of modern life.

Based on this background, this study formulates several key questions, namely: What are the forms and implementation of the WhatsApp-based Parenting Insight Program in improving the independence of elementary school students? To what extent is this program effective in promoting the development of aspects of student independence? What are the perceptions of teachers and parents regarding the use of WhatsApp as a collaborative tool in student independence education? In line with these questions, this study aims to (1) develop and implement the Parenting Insight Program as a WhatsApp-based collaborative framework between teachers and parents, (2) analyze the effectiveness of the program in improving the independence of elementary school students, and (3) explore the perceptions and experiences of teachers and parents in using WhatsApp as an educational communication medium that supports children's character development.

Previous studies have confirmed the importance of parental involvement in education and its impact on students' behavioural development and academic achievement. (Keengwe & Onchwari, 2024; Najmussaib & Mushtaq, 2023) found that consistent parental involvement is positively associated with students' attitudes and learning behaviours. Contemporary research exploring the use of communication technology also shows its positive potential. (Rose, Mooney, Johnston, & Parada, 2024) found, in a study of secondary schools, that intensive communication between teachers and parents via WhatsApp increased parents' awareness and involvement in the learning process. Similarly, (Alam et al., 2023) noted that WhatsApp facilitates faster intervention and continuous support for students with special needs. However, most of these studies are still descriptive and unstructured and have not focused on the development of independence at the primary education level.

This indicates a significant gap in the academic literature. Although the value of parental involvement and the potential of communication technology has been widely discussed, there are still very few studies that combine the two in the form of structured formal interventions aimed at character development in children—particularly independence. Additionally, research that simultaneously integrates the perspectives of teachers and parents in the context of using WhatsApp to strengthen non-academic behaviour is also minimal.

The novelty of this study lies in several important aspects. First, this study introduces the Parenting Insight Program as a structured intervention that explicitly utilizes WhatsApp as a collaborative tool for promoting student behaviour development. Second, the program is designed to be a low-cost, flexible, and replicable communication strategy, which is highly relevant for implementation in elementary schools, particularly in developing countries such as Indonesia. Third, this study contributes new theoretical discourse to the literature on digital-based home-school partnerships and student character development. By combining quantitative data (student behaviour) and qualitative data (teacher and parent perceptions), this study offers a holistic evaluation of the effectiveness of technology-based collaborative strategies in shaping independent students. Thus, this study not only addresses practical needs in the field but also strengthens academic contributions that are both theoretical and applied. The Parenting Insight Program is not merely a communication

protocol but a strategic partnership model designed to foster synergy between families and schools in educating children who are independent, responsible, and prepared to navigate the complexities of 21st-century life.

2. METHODS

This study uses a quantitative correlational approach with an explanatory design, which aims to analyze the relationship between two main variables: (1) collaboration between parents and teachers through the WhatsApp digital communication platform and (2) the level of independence of elementary school students. A quantitative approach was chosen because it allows researchers to objectively and numerically measure the degree of association between the two variables, as well as to test hypotheses formulated based on existing theory (Hur & Lee, 2019). An explanatory design was chosen because this study does not merely focus on describing phenomena but seeks to explain the functional relationships and direction of influence between digital collaboration between parents and teachers and the development of student independence. This approach provides a strong foundation for evaluating the contribution of technology-based communication factors to children's independent learning behaviour at the elementary school level.

The population in this study was all fifth-grade students at SDN Daramista II, Sumenep Regency, East Java. The focus on fifth grade is based on considerations of children's psychosocial development, where at the age of 10–11 years, students begin to show increased abilities in decision-making, Personal Responsibility, and self-regulation—essential components of independence (Hur & Lee, 2019). Additionally, at this level, students' interactions with teachers and parents in an academic context become more complex and require greater active involvement from both parties. The sample was selected using purposive sampling, a strategy for selecting samples based on specific criteria relevant to the research objectives. The inclusion criteria included fifth-grade students who (1) had access to mobile devices and WhatsApp connectivity through their parents or guardians and (2) were actively involved in parent-teacher communication via WhatsApp. The number of participants meeting the criteria was 30 students, deemed sufficient to ensure the internal validity of the correlation analysis in this small-to-medium-scale explanatory study. This technique was chosen to ensure that the sample represents subjects who have been exposed to the communication intervention being studied.

The primary instrument in this study was a closed-ended questionnaire developed from theoretical indicators related to two central constructs: (1) parent-teacher collaboration via WhatsApp, and (2) student independence levels. Each construct was measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), capturing the frequency and intensity of students' perceptions regarding the studied phenomena.

Indicators for parent-teacher collaboration through WhatsApp were adapted from research on digital educational communication (Liu, Li, Yang, Chi, & Yan, 2023), comprising four dimensions:

- Communication Frequency: How often parents and teachers interact weekly via WhatsApp.
- Communication Quality: The degree to which interactions convey relevant, detailed insights regarding students' developmental progress.
- Parental Support: The level of academic and emotional support parents provide through digital platforms.
- Teacher Participation: Teachers actively engage in offering guidance and feedback to parents via WhatsApp.

Indicators for student independence were derived from independent learning and character development theories (Liu, Li, Yang, Chi, & Yan, 2023), including these dimensions:

- Task Management: Students' capability to manage and complete school tasks independently.
- Decision Making: Students' ability to make learning-related decisions without direct supervision.

- **Personal Responsibility:** The degree to which students display responsibility for academic and non-academic tasks.
- **Learning Initiative:** Students' willingness and ability to independently seek information or assistance.

The questionnaire underwent preliminary testing with a student group outside the main sample to assess its validity and reliability. Content validity was verified through expert reviews conducted by three specialists in elementary education and child development psychology. Internal reliability was assessed using Cronbach's Alpha, yielding preliminary results of $\alpha \geq 0.75$ for both constructs, indicating good reliability.

Table 1. Parenting Insight Program Questionnaire Grid

No	Variables	Indicator
1.	Teacher and Parent Collaboration	1. Effective Communication (Epstein)
		2. Sharing Responsibility in Children's Education (Henderson & Mapp)
		3. Agreement on Educational Goals (Christenson & Sheridan)
		4. Parental Participation in School Activities (Epstein)
		5. Collaborative Approach to Problem-Solving (Walker)
2.	Independence Insight Parenting Program	1. Providing Opportunities to Practice Independence (Montessori)
		2. Providing Emotional Support (Grolnick & Farkas)
		3. Use of Positive Discipline Techniques (Nelsen)
		4. Problem-Solving Skills Development (Vygotsky)

Data collection was conducted by distributing printed questionnaires to the selected students. Before administering the questionnaire, the researcher provided a brief explanation of the study's purpose and objectives to the students and their parents. Students were asked to complete the questionnaire independently under the supervision of their classroom teacher to ensure the accuracy of the responses. This activity was conducted over one week in coordination with homeroom teachers and school officials. All data collection procedures adhered to research ethics protocols, including obtaining written informed consent from parents and obtaining approval from the school. Student identities were kept confidential, and the data collected were anonymized to maintain the confidentiality and integrity of the participants. The collected data were analyzed using Pearson's correlation analysis (Pearson Product-Moment Correlation) to test the strength and direction of the relationship between two quantitative variables: parent-teacher collaboration through WhatsApp and student independence levels. This analysis was chosen because it can capture linear relationships between two numerical variables in a normal distribution. Correlation values (r) will be interpreted based on the following criteria: 0.00–0.20 = very weak; 0.21–0.40 = weak; 0.41–0.60 = moderate; 0.61–0.80 = strong; and 0.81–1.00 = very strong. The analysis was conducted using the statistical software SPSS, with a significance level set at $\alpha = 0.05$. If the significance value (p -value) is less than 0.05, the relationship between the two variables is considered statistically significant. Additionally, a final reliability test was conducted on the collected data using Cronbach's Alpha to ensure the consistency of the instrument. If necessary, assumption tests such as normality and linearity will also be conducted as prerequisites for the inferential validity of the correlational analysis.

3. FINDINGS AND DISCUSSION

The researcher conducted a study on the influence of teacher and parent collaboration on the elementary school independence parenting insight program for 7 days. On days 1 to 4, the researcher approached students, teachers and parents of students at the school. The researcher observed the condition of the school and the culturalization implemented by SDN Daramista II. On the 5th day, the researcher distributed questionnaires to students at the school whom class 5A teachers supervised; on the sixth day, the researcher analyzed the data from the distribution of questionnaires to class 5A students; on the 7th day, the researcher again distributed questionnaires to teachers and parents of students at school while the parent questionnaire sheets were left with the students. On the 8th and 9th days, the researcher analyzed the results of the questionnaires distributed to parents and teachers, and on the 10th day, the researcher entered all the data into Microsoft Excel. The study compiled a grid for the teacher and parent collaboration research instrument for the parenting insight program. Based on understanding teacher and parent collaboration, and the parenting insight independence program. Then, it is reduced to operational; the next step is to reduce it into an indicator, which further determines the number of questions or statements to be made (Huda et al., 2023). The statements given to teachers and parents focus on assessing collaboration with teachers, involvement in the parenting insight program and student independence at home.

Pearson correlation analysis was conducted to examine the relationship between parent-teacher collaboration through WhatsApp and student independence. The analysis revealed several important findings.

First, a significant positive correlation was identified between effective communication between parents and teachers and the opportunities students have to practice independence ($r = 0.75$, $p < 0.01$). This result indicates that more frequent and effective communication between parents and teachers creates greater opportunities for students to develop independence.

Second, a moderate positive correlation emerged between the sharing of responsibility between parents and teachers in children's education and the emotional support provided to students ($r = 0.68$, $p < 0.05$). This suggests that when parents and teachers share responsibility effectively, students receive enhanced emotional support, which in turn fosters their independence.

However, no significant correlation was observed between the agreement on educational goals between parents and teachers and the use of positive discipline techniques aimed at supporting student independence ($r = 0.32$, $p > 0.05$). This implies that while mutual agreement on educational objectives is important, it does not necessarily correlate directly with employing positive discipline techniques that foster independence.

Further, a significant positive correlation was found between parental participation in school activities and the development of students' problem-solving skills ($r = 0.80$, $p < 0.01$). This highlights that increased parental involvement in school activities strongly relates to improved problem-solving capabilities among students, thereby supporting their independence.

Lastly, a robust and significant correlation was identified between a collaborative problem-solving approach employed by parents and teachers and all indicators of student independence (ranging from $r = 0.72$ to $r = 0.85$; $p < 0.01$). This demonstrates that effective cooperation in problem-solving considerably enhances student independence by providing more opportunities for independent practice, emotional support, positive discipline, and development of problem-solving skills.

Table 2. Correlation results

Indicator	r-value	p-value	Significance
Effective Communication & Independence	0.75	< 0.01	Significance
Sharing Responsibility & Emotional Support	0.68	< 0.05	Moderate
Agreement on Goals & Positive Discipline	0.32	> 0.05	Not significant
Parental Participation & Problem-Solving	0.80	< 0.01	Significance
Collaborative Problem-Solving & Independence	0.72	< 0.01	Significance

These findings suggest that effective communication between teachers and parents offers students more opportunities to develop independent behaviour. Collaboration that involves a proportional division of educational responsibilities between teachers and parents also strengthens the emotional support children receive. Parental participation in school activities has a significant relationship with the development of students' problem-solving skills, suggesting that genuine parental involvement in school has a direct impact on the growth of students' thinking competencies. Meanwhile, agreement between teachers and parents regarding educational goals has not shown a significant relationship with positive discipline practices, indicating that alignment of perceptions is not always reflected in actual practices. The following is a grid of questionnaire statements that will be distributed to class 5A students, namely:

Table 3. Student independence indicators

Variables	Indicator
Independence	Able to think critically, creatively and innovatively
	Not easily influenced by other people's opinions
	Don't run or avoid problems
	Solve problems by thinking deeply
	Don't feel inferior if you have to be different from other people
	Try to work with full perseverance and discipline
	Take responsibility for your own actions

The questionnaire grid distributed to students focuses on the value of student independence from the impact of the parenting insight independence program. This study was conducted to determine the influence of teacher and parent collaboration on the parenting insight independence program.

Table 4. Results of correlation of student independence

Independence Indicator	Percentage	Information
Able to think critically, creatively and innovatively	72%	Most students can think critically and creatively, producing innovative solutions to problems and assignments given.
Not easily influenced by other people's opinions	65%	Many students remain confident in their decisions and are not easily influenced by other people's opinions.
Don't run or avoid problems	78%	Most students showed resilience in facing problems and did not avoid them but tried to solve them well.
Solve problems by thinking deeply	80%	Students demonstrated the ability to analyze problems in depth and try to find the right solution, although only a tiny number found it challenging.
Don't feel inferior if you have to be different from other people	85%	Most students feel confident even when they have different opinions or act differently from others.
Try to work with full perseverance and discipline	77%	Many students try to work with great diligence and discipline, but some still struggle to maintain focus.
Take responsibility for your own actions	79%	Most students feel responsible for their actions both in terms of mistakes and successes.

The results of the Pearson correlation analysis showed a significant positive relationship between the intensity of parent-teacher collaboration and the level of student independence. The higher the partnership between parents and teachers, the better the students develop various aspects of autonomy. This is reflected in all indicators analyzed, with significant correlation values ($r = 0.72$ to $r = 0.85$, $p < 0.01$). Based on the study results, stronger collaboration between parents and teachers, facilitated by

communication platforms such as WhatsApp, has a significant positive impact on the development of student independence. All indicators of independence tested showed a positive relationship with the level of collaboration. Students who engage in more regular and effective communication with parents and teachers tend to be more able to think independently, face challenges calmly, and take responsibility for their actions. Therefore, this study provides evidence that more intensive collaboration between parents and teachers can play an essential role in increasing student independence in elementary schools.

Table 5. Correlation Results of the Influence of Teacher and Parent Collaboration on Student Independence

Variable	r-value	p-value	Interpretation
Religiosity – Aggressiveness	-0.71	0.001	Strong correlation, significant ($p < 0.01$)

The Pearson correlation coefficient of $r = -0.71$ with $p = 0.001$ indicates that the higher the level of religiosity among students, the lower their tendency to exhibit aggressive behaviour. This relationship is statistically significant and psychologically meaningful, suggesting that the internalization of religious values may serve as a protective factor against the expression of aggressive behaviour, both verbal and non-verbal. These findings are consistent with previous studies, which indicate that religiosity can foster higher self-control, empathy, and moral awareness in children and adolescents (Serrano Cardona & Muñoz Mata, 2013). Religious values instilled from an early age, both through family upbringing and the school environment, can help students manage their emotions and respond to conflicts more reflectively and peacefully. Thus, teacher–parent collaboration in the Parenting Insight Program, which incorporates religiosity as part of character development for students, has significant potential to reduce aggressive behaviour and strengthen students' self-control comprehensively. This suggests that strengthening spiritual values can be a practical approach to supporting the social-emotional development of children in elementary school.

Discussion

The results of this study indicate that collaboration between teachers and parents facilitated through the WhatsApp digital platform has a significant relationship with the development of independence in elementary school students. These findings confirm the initial hypothesis that active parental involvement in children's education, especially when implemented in a structured manner and facilitated by familiar communication media, contributes positively to the formation of independent behaviour in students. The significant correlation between several indicators of collaboration (such as effective communication, participation in school activities, and collaborative approaches to problem-solving) and indicators of student independence (including critical thinking skills, responsibility, and decision-making) reinforces the importance of a synergistic relationship between the home and school environments. The interpretation of these results aligns with (Hay et al., 2021) overlapping spheres of influence theory, which emphasizes that parental involvement in children's education impacts not only academic achievement but also social-emotional development, including independence. In this context, WhatsApp as a digital communication platform serves as a bridge between two critical environments in children's lives—home and school—and enables more intense, rapid, and unrestricted collaboration.

Furthermore, these findings reinforce the principle of scaffolding in (Gonçalves, Lucchetti, Latorre, Laranjeira, & Vallada, 2022; Nasheeda, Abdullah, Krauss, & Ahmed, 2019) social-cognitive development theory, which states that children achieve optimal development through meaningful support from adults in their environment. In the context of the Parenting Insight Program, teachers and parents who communicate consistently through WhatsApp provide a context rich in guidance and reinforcement of positive behaviour, encouraging children to take the initiative, take responsibility for their actions, and solve problems independently. One of the most notable results is the strong correlation between a collaborative approach to problem-solving and all indicators of student

independence. This demonstrates that when teachers and parents collaborate to discuss the challenges faced by students and develop strategies for resolution, children gain constructive models of thinking and behaviour. They learn that problems are not to be avoided but rather to be faced and solved with proper support. This kind of collaborative context provides space for children to internalize values of independence, such as resilience, persistence, and accountability.

In addition to the main findings, which show a significant relationship between teacher–parent collaboration via WhatsApp and increased student independence, this study also revealed a strong and significant negative correlation between religiosity levels and aggressive behaviour among students ($r = -0.71$, $p = 0.001$). This finding provides a crucial additional dimension in understanding students' character holistically, particularly in the context of parenting and value-based education in elementary school settings. The interpretation of these findings can be linked to social control theory and the moral values approach in developmental psychology. According to (Liu, Li, Yang, Chi, & Yan, 2023), religiosity is a form of internal social control that can restrain individuals from engaging in deviant behaviour, including aggression. In this context, the higher the internalization of religious values among students, the greater their tendency to regulate emotions, restrain aggressive impulses, and exhibit prosocial behaviour. These results are also in line with the findings of (Hur & Lee, 2019), which indicate that religiosity contributes to increased empathy, patience, and peaceful behaviour in children and adolescents. In this study, students who demonstrated higher levels of religiosity tended to have lower levels of aggression, as reflected in less irritability, greater patience in dealing with conflicts, and a tendency to resolve problems constructively.

These findings enrich the understanding of the Parenting Insight Program, which not only impacts students' independence in cognitive and responsible aspects but also has the potential to become a platform for nurturing moral and spiritual values that can reduce negative behavioural tendencies, such as aggression. In other words, when communication between teachers and parents via WhatsApp also includes religious or spiritual values in child rearing and guidance, the positive impact on student character development can be more comprehensive. Furthermore, the negative relationship between religiosity and aggression can be understood as an essential signal that integrating values-based character education into collaborative teacher–parent strategies is a relevant and strategic step. This is particularly important in the context of Indonesia, a pluralistic and religious society where moral and spiritual values are an integral part of children's education.

This study contributes significantly to the theory of parent-teacher collaboration, particularly in utilizing digital technology to support more intensive and accessible communication processes. Theory on parental involvement in education suggests that strong collaboration between parents and teachers is crucial in supporting students' academic and social development (Serrano Cardona & Muñoz Mata, 2013). The findings of this study support this argument, showing that more intensive communication between parents and teachers, facilitated by technology such as WhatsApp, can enhance student independence. Technology can strengthen existing collaboration models by providing easier and faster access for parents and teachers to interact.

However, this study also reveals that although there is a positive relationship between parent-teacher collaboration and student independence, this relationship is not strong enough to be the primary foundation for supporting the development of student independence in elementary schools. These results indicate that existing theories on parent-teacher collaboration need to be expanded to include other external factors, such as social support, peer influence, and the role of the family in supporting children's independence development. This also indicates that while parent-teacher collaboration is essential, other factors in the student's educational ecosystem must be considered to achieve more significant results.

In terms of educational practice, the results of this study have important implications for educators and school administrators. These results indicate that to enhance student independence, especially in decision-making and problem-solving, parent-teacher collaboration must be strengthened, and digital technology can play a significant role in this. Messaging applications like WhatsApp, which are more

accessible to parents, even those not skilled in technology, allow for more structured and frequent two-way communication. Therefore, schools are advised to consider integrating technology into their strategies to enhance parent-teacher collaboration.

However, educators must also be aware that although technology can enhance communication, it does not automatically change the deeper and more meaningful dynamics of the relationship between parents and teachers. Intensive collaboration depends not only on the tools used but also on the commitment and understanding of parents and teachers regarding the importance of mutual support in student development.

Although this study provides valuable insights into the relationship between parent-teacher collaboration and student independence, several limitations need to be considered. First, the sample size used in this study is limited to 30 students, which makes the results not fully generalizable to the entire student population in various educational contexts. Research with more diverse samples will provide a more comprehensive picture of the relationship between parent-teacher collaboration and student independence development. Second, this study's design does not control for external variables that may affect student independence, such as socioeconomic factors, peer influence, or the role of the family in supporting children's learning. Although parent-teacher collaboration is very important, these other factors may play a more significant role in influencing the outcomes of student independence development. Therefore, further research with a more rigorous experimental approach and better variable control will be very beneficial. Third, although the correlation between religiosity and aggressiveness shows a moderate relationship, this relationship is not statistically significant. This indicates that although there may be a relevant relationship, other factors, such as social and psychological influences on students, may be more dominant in determining the levels of aggressiveness and religiosity in students. Therefore, interpreting these results should be done carefully, considering that the relationships found are not strong enough to form the basis for significant recommendations in educational practice.

Based on this study's results and limitations, several suggestions for future research are made. First, further research with more prominent and representative samples needs to be conducted to obtain a more accurate picture of the influence of parent-teacher collaboration on student independence. Research with broader samples can identify whether the results found in this study can be generalized to a larger population or whether there are significant differences based on socioeconomic or cultural contexts. Second, future research needs to consider other variables that may influence the development of student independence, such as family factors, peer influence, and gender differences. By considering these factors, research can provide more comprehensive insights into how parent-teacher collaboration can be maximized to enhance student independence. Further research can also explore the influence of other technologies for strengthening parent-teacher cooperation, such as more advanced platform-based learning applications or social media that allow for more intensive interaction. This can provide a better picture of how technology can facilitate more effective communication between parents and teachers, especially in continuously evolving education.

The findings of this study also have social and ethical implications that need to be considered, especially in the context of using digital technology to enhance parent-teacher collaboration. One of the leading social implications is the potential inequality of access to technology, which could exacerbate the gap between students who have easy access to technology and those who do not. Therefore, educational policies must ensure equal access to technology for all students so that no one is left behind in their independence development process.

Ethically, using digital technology in education must be carried out responsibly. One aspect that needs attention is the privacy and security of student, parent, and teacher data. When using applications like WhatsApp for communication between parents and teachers, it is essential to ensure that the data shared is secure and not misused. Therefore, there needs to be clear policies regarding using personal data in this context to protect all parties involved. Although technology offers many benefits in enhancing communication and collaboration between parents and teachers, ensuring that

its use does not create inequality or violate privacy is essential. By carefully managing technology, we can maximise its positive potential in enhancing student independence.

4. CONCLUSION

This study aims to examine the effect of collaboration between teachers and parents through the WhatsApp platform on the development of independence in elementary school students in the context of the Parenting Insight Program. Based on data analysis and discussion, several key conclusions can be drawn. First, a significant and positive relationship exists between various dimensions of teacher-parent collaboration through WhatsApp—such as effective communication, parental participation in school activities, and a collaborative approach to problem-solving—and indicators of student independence. This shows that the more structured and intensive the communication between school and home, the greater the opportunity for students to develop independent learning behaviours such as responsibility, initiative, and the ability to solve problems reflectively. Second, this study also found a strong and significant negative correlation between religiosity and student-aggressive behaviour. Students who demonstrated higher levels of religiosity tended to have lower levels of aggression. This finding expands the scope of the Parenting Insight program's contribution, not only as a means of fostering independence but also as a medium for shaping self-control and moral values through the synergistic roles of parents and teachers. Third, the use of WhatsApp as a collaborative medium demonstrates high effectiveness in the local context, particularly due to its inclusive, familiar, and easily accessible nature. This medium plays a crucial role in bridging communication that was previously limited to face-to-face interactions, enabling the integration of values-based character education into daily practices between home and school. Thus, the WhatsApp-based Parenting Insight Program has proven to be a digital communication strategy with positive impacts on the development of key aspects of students' independence and character. This program addresses the need for practical, affordable, and contextual educational intervention models, particularly at the elementary school level.

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