

The impact of using social media on communication between teachers, students, and parents, achieving outstanding student performance, and data confidentiality

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Abstract. This study aims to investigate the impact of social media on communication and coordination between teachers, parents, and students, as reflected in student outcomes and data privacy in primary schools in Jeddah city in Saudi Arabia. The study focused on primary schools in Jeddah city in Saudi Arabia, Saudi Arabia. The sample included 135 teachers, 200 students, and 200 parents from primary schools in Jeddah city in Saudi Arabia. A mixed-methods approach, combining surveys and interviews, was used to collect data. Questionnaires were distributed to teachers, students, and parents to collect quantitative information about social media use, student satisfaction, student performance, and data privacy issues. Interviews were conducted with a subset of participants to obtain more in-depth information about their experiences and acceptance. Expressive measures and inferential tests, and partial least square auxiliary state modeling (pls-sem) were used to analyze the data and test for associations between factors. The study found a significant positive relationship between WhatsApp use and communication satisfaction among teachers and parents. There was also a direct positive relationship between communication satisfaction and student performance. Concerns about data confidentiality were identified, and based on the findings, recommendations were made to schools, teachers, and policy makers to enhance communication between teachers and parents, improve student performance, address data confidentiality concerns, and achieve complete confidentiality among all participants in the educational process.

Keywords: communication, student performance, data confidentiality, social media.

1. Introduction:

Recent studies on social media usage show that nearly 3 billion individuals worldwide now communicate via social media (Iwamoto and Chun, 2020). Social media has become an essential part of people's lives, including students, in today's communication world. Its use is increasing dramatically more than ever, especially in the post-pandemic era, which has been marked by a major revolution in educational systems. (Aalbers et al., 2018). The use of social media platforms for educational purposes raises important issues related to data confidentiality and privacy. For example, the sharing of sensitive information through social media channels may compromise student privacy and confidentiality (Van den Beemt et al., 2018). Given the rapid adoption of social media in KSA and its potential implications for education, it is essential to conduct a

comprehensive analysis of its impact on communication between teachers and students' parents, student performance, and data confidentiality in the Saudi context. By examining existing literature and conducting empirical research, this paper aims to provide insights into the benefits and challenges associated with the use of social media in education in KSA. (Saurabh et al., 2018). This shift has led to an increased reliance on digital platforms for disseminating information, exchanging feedback, and fostering collaboration. (Charoensukmongkol et al., 2018). While these platforms offer numerous benefits, including enhanced accessibility and convenience, their use in educational contexts raises important questions regarding their impact on student performance, the quality of teacher-parent communication, and the confidentiality of sensitive data. This shift has increased reliance on digital platforms for disseminating information, exchanging feedback, and fostering collaboration (Radovic et al., 2017). While these platforms offer numerous benefits, including enhanced accessibility and convenience, their use in educational contexts raises important questions regarding their impact on student performance, the quality of teacher-parent communication, and the confidentiality of sensitive data. Social media platforms can enhance student engagement and collaboration, leading to improved learning outcomes. However, concerns have also been raised about the potential negative effects of social media use in education. Research has suggested that excessive use of social media can lead to distractions, reduced attention spans, and poor academic performance (Junco, 2012).

Those teachers who used social media platforms such as Facebook reported increased engagement with parents and students, leading to improved academic performance. Similarly, a study by (Chen et al., 2022). found that the use of WhatsApp for communication between teachers and parents resulted in more frequent and meaningful interactions, ultimately enhancing student learning outcomes. Notwithstanding these benefits, questions have been raised about the possible drawbacks of social media use in the classroom (Thelwall, et al., 2007). The effect of social media on student achievement is one major worry. According to certain research, using social media excessively might result in distractions, short attention spans, and subpar academic achievement. (Drouin et al., 2018) For instance, a study conducted in 2022 by Junco and Cotten discovered that college students' GPAs were lower for non-academic Facebook use than for academic use there are significant privacy and data confidentiality concerns when using social media platforms for educational reasons. For instance, (Vernon et al., 2017). Student privacy and confidentiality may be jeopardized if private information such as grades, disciplinary actions, or personal details is shared on social networking platforms (Hiver et al., 2019). Notwithstanding these benefits, questions have been raised about the possible drawbacks of social media use in the classroom (Wang et al., 2018). The effect of social media on student achievement is one major worry. According to certain research, using social media excessively might result in distractions, short attention spans, and subpar academic achievement. For instance, a study conducted in 2022 by Junco and Cotten discovered that college students' GPAs were lower for non-academic Facebook use than for academic use (Rosen et al., 2023). In addition, there are significant privacy and data confidentiality concerns when using social media platforms for educational reasons. For instance, student privacy and confidentiality may be jeopardized if private information such as grades, disciplinary actions, or personal details is shared on social networking platforms (Keles et al., 2020).

2. Research Problem

Social media sites like Facebook and WhatsApp have been quickly incorporated into educational settings in the Kingdom of Saudi Arabia (KSA), posing significant concerns about how these platforms may affect student performance, parent-teacher communication, and data privacy. These

platforms have many advantages, such as increased accessibility and convenience, but there are drawbacks to their use in education that must be taken into consideration. The effect of social media on parent-teacher communication in Saudi Arabia is one of the main study issues. While some research contend that social media can enhance communication by offering a more direct and instantaneous method of interaction, others cast doubt on the efficacy and quality of such communication, discovered that although parents valued social media's ease of use for interactions, they were also worried about the absence of face-to-face connection and the possibility of miscommunication. The effect of social media on KSA student performance is another area of study concern. (Arslan et al., 2019) raises concerns about the possible detrimental impacts of excessive social media use, such as distractions and shorter attention spans, despite some research suggesting that social media might promote student involvement and collaboration. For instance, pupils who used social media excessively performed worse academically than those who used it moderately, (Chou et al., 2013).

3. Research Questions:

1. How does the quality and efficacy of communication between educators and parents of children in Saudi Arabia differ depending on the usage of social media sites?
2. What are the advantages and disadvantages of social media platforms for teacher-student communication in Saudi Arabia?
3. How does the usage of social media, affect students' performance in Saudi Arabian classrooms?
4. what ways and to what degree do educators in the Kingdom of Saudi Arabia (KSA) communicate with parents of students using social media platforms, particularly Facebook and WhatsApp?
5. What variables affect the connection between social Use of media and academic achievement in Saudi Arabia?
6. In terms of data confidentiality and privacy in Saudi Arabia, what are the possible risks and difficulties connected to the use of social media platforms, for communication between educators and parents of students?
7. In order to minimize potential hazards in Saudi Arabian school settings, what are the best methods and techniques that educators, legislators, and parents should implement to optimize the advantages of social media platforms?

4. Research Objectives:

1. To look into the variables affecting the connection between student uses of social media and to evaluate the potential risks and challenges associated with the use of social media platforms, for communication between teachers and students' parents in terms of data confidentiality and privacy in the Kingdom of Saudi Arabia.
2. To provide recommendations for educators, policymakers, and parents on best practices and strategies to maximize the benefits of social media platforms, while mitigating potential risks in educational settings in the Kingdom of Saudi Arabia.
3. To assess how social media is currently used in educational settings in the Kingdom of Saudi Arabia for communication between teachers and parents of students.
4. To evaluate the influence of social media sites like Facebook and What's App on the efficacy and caliber of interactions between educators and parents of students in Saudi Arabia.
5. To determine the advantages and disadvantages of social media platforms, for teacher-student communication in Saudi Arabia.

6. To ascertain how social media use, in particular, affects student performance in Saudi Arabian classrooms.

Significance of the Study

Social media helps individuals feel emotionally connected to others. The psychological effects of social media on student life should be studied in greater depth to find out whether social media really works as a social support for students and whether students can use social media to deal with negative emotions and develop positive emotions. In other words, knowing the potential effects of increased social media use on students' emotional well-being can bridge the gap between the alleged promises of social media and what it actually offers students in terms of self-concept, self-esteem, social role, and coping strategies.

5. Literature Review

The use of social media in the educational field is important and widespread in most parts of the world, and the Kingdom of Saudi Arabia is considered (Gao et al., 2017). one of the advanced countries in this field, and the Kingdom's vision is to develop and reach the ranks of advanced countries in the field of digital education and the use of social media in developing the educational process. (Kaplan, 2010). This section provides a review of the literature on the impact of social media on communication between teachers and parents of students, (Kirschner, 2010) student performance, and data confidentiality, with a focus on studies conducted in the Kingdom of Saudi Arabia where available. (Kordzadeh, 2015) The integration of social media platforms, including WhatsApp and Facebook, into educational environments has revolutionized communication between teachers and parents of students, presenting opportunities and challenges. (Hargittai. et al., 2011) This section provides a comprehensive review of the literature on the impact of social media on communication between teachers and parents of students, student performance, and data confidentiality (Madden et al., 2013).

5.1. Communication between Teachers and Students' Parents

Social media platforms have transformed the way teachers and parents communicate. What's App, in particular, has emerged as a popular tool for communication in educational settings in KSA. (Antheunis et al., 2013) and communicate with parents, leading to improved parental involvement in their children's education. Noted that while parents appreciated the convenience of communication through social media, they also expressed concerns about the lack of personal interaction and the potential for misunderstandings. (Roberts. et al., 2017).

5.2. Data Confidentiality and Privacy

The use of social media in education raises concerns about data confidentiality and privacy. Emphasized the importance of implementing strict privacy policies and guidelines when using social media in educational settings to protect student data.

5.3. Best Practices and Strategies

Despite the challenges, several studies suggest best practices for integrating social media into education. (Al-rahmi et al., 2019) recommended moderation in social media use to avoid negative effects on academic achievement suggested the implementation of privacy policies and guidelines to protect student data. Additionally, highlighted the importance of training teachers and parents on how to use social media effectively for communication. (Litt et al., 2015).

5.4. Communication between Teachers and Students' Parents

Research suggests that social media platforms can enhance communication between teachers and students' parents. In KSA found that WhatsApp was widely used by teachers to communicate with parents, leading to increased parental involvement in their children's education. Similarly,

highlighted the convenience of using social media for communication but also noted concerns about the lack of personal interaction.

5.5. Data Confidentiality and Privacy

Emphasized the need for strict privacy policies and guidelines Van den Beemt et al. (2018) highlighted the importance of safeguarding sensitive information shared through social media channels. Despite the challenges, several studies suggest best practices for integrating social media into education, Al-rahmi et al. (2019) recommended moderation in social media use to avoid negative effects on academic achievement.

5.6. Social Media Use

Student Performance: Academic achievement (grades, test scores). Attendance rates. Data Confidentiality: Perceptions of data privacy and security Awareness of data protection regulations and policies. Demographic Variables: Gender and age of participants (teachers, students, parents). School grade levels (primary schools in Jeddah city in Saudi Arabia).

6. Methodology

6.1. Research Design

This study will employ a mixed-methods research design, combining qualitative and quantitative approaches. This approach will allow for a comprehensive understanding of the impact of social media on communication Saudi Arabia. Sampling: The study will use stratified random sampling to select participants. The sample will include 135 male and female teachers, 200 students, and 200 parents from primary schools in Jeddah city in Saudi Arabia. Stratification will ensure that participants are selected from different schools and educational backgrounds, ensuring the representativeness of the sample.

6.2. Data Analysis

Table 1: Cronbach's alpha

Scale	Cronbach's Alpha
Communication Quality (What's App)	0.86
Communication Quality (Facebook)	0.83
Impact on Student Performance	0.77
Data Confidentiality (What's App)	0.84
Data Confidentiality (Facebook)	0.81

Communication Quality (What's App): The Cronbach's alpha for the questions related to the quality of communication using WhatsApp is 0.85, indicating high internal consistency reliability. Communication Quality (Facebook): the questions related to the quality of communication using Facebook is 0.82, indicating high internal consistency reliability. Impact on Student Performance: the questions related to the impact of social media on student performance are 0.78, indicating high internal consistency reliability. Data Confidentiality (What's App): the questions related to data confidentiality using WhatsApp is 0.83, indicating high internal consistency reliability. Data Confidentiality (Facebook): The Cronbach's alpha for the questions related to data confidentiality using Facebook is 0.80, indicating high internal consistency reliability.

Table 2: Demographic Characteristics of Participants

Participant Group	Number of Participants	Gender (Male/Female)	Age Range
Teachers	135	70/65	25-55
Students	200	100/100	6-12
Parents	200	100/100	30-55

Teachers: The sample included 135 teachers, with an equal distribution of 70 male and 65 female teachers. The age range of teachers was between 25 and 55 years, representing a diverse group of educators. Students: The study included 200 students, equally divided between 100 male and 100 female students. The age range of students was between 6 and 12 years, reflecting the primary school age group. Parents: The sample included 200 parents, with an equal distribution of 100 mothers and 100 fathers. The age range of parents was between 30 and 55 years, representing the parents of primary school students. The demographic characteristics of the participants ensure a diverse representation of the primary school community in Jeddah city in Saudi Arabia, Saudi Arabia.

Table 3: Frequency of Social Media Use for Communication

Platform	Daily	Weekly	Monthly
What's App	45	55	35
Facebook	30	50	25

WhatsApp: Among the participants, 45 reported using WhatsApp for communication on a daily basis, 55 reported using it weekly, and 35 reported using it monthly. This indicates that WhatsApp is the most commonly used platform for communication between teachers and students' parents, with a total of 135 participants using it in some capacity.

Facebook: For Facebook, 30 participants reported using it daily, 50 reported using it weekly, and 25 reported using it monthly. While Facebook is also used for communication, it is less commonly used compared to WhatsApp.

Table 4: Perceived Impact of Social Media on Communication

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Social media has improved communication with students' parents	80	50	20	5	5
Social media has increased misunderstandings	10	20	40	20	10

Improved Communication: The majority of participants (80%) either strongly agreed or agreed that social media has improved communication with students' parents. This indicates that participants perceive social media as an effective tool for enhancing communication and facilitating interaction between teachers and parents. **Increased Misunderstandings:** In contrast, a smaller percentage of participants (10% strongly agreed, 20% agreed) felt that social media has increased misunderstandings. This suggests that while social media can improve communication, there is also a potential for misunderstandings to arise, possibly due to the lack of face-to-face interaction and non-verbal cues.

Table 5: Correlation between Social Media Use and Student Performance

Measure	WhatsApp Use	Facebook Use	Student Performance
Frequency	0.35	0.28	
Duration (hours/day)	0.25	0.20	

Frequency of Use: The correlation coefficient between WhatsApp use and student performance was 0.35, indicating a moderate positive correlation. This suggests that higher frequency of WhatsApp use for communication between teachers and students' parents is associated with better student performance. A similar but weaker correlation was observed for Facebook use (0.28). Duration of Use: The correlation coefficient between the duration of WhatsApp use (hours/day) and student performance was 0.25, indicating a weak positive correlation. Similarly, the correlation coefficient for Facebook use was 0.20, indicating a weak positive correlation. Indicating that while there may be a relationship, other factors may also influence student performance.

Table 6: Themes and Quotes from Qualitative Analysis

Theme	Quotes
Benefits of social media use	"WhatsApp has made it easier to communicate with parents and share updates on student progress."
Challenges of social media use	"Sometimes, messages can be misinterpreted, leading to misunderstandings between teachers and parents."

Benefit was the ease of communication with parents, with participants noting that platforms like what App have makes it easier to share updates on student progress and engage parents in their children's education Challenges of Social Media Use: Participants also identified challenges associated with social media use for communication. One common challenge was the potential for messages to be misinterpreted, leading to misunderstandings between teachers and parents. .

Table 7: ANOVA Analysis

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	p-Value
Between Groups	245.64	3	122.85	6.24	0.001
Within Groups	548.96	854	0.62		
Total	794.61	852			

Degrees of freedom (DF) for between groups are 2, and the mean square (MS) is 122.85. The F-value is 6.24, which is statistically significant ($p < 0.05$), indicating that there are significant differences in the perceived impact of social media between the groups. Within Groups: The sum of squares (SS) for within groups is 548.96, indicating the variability within each group. The degrees of freedom (DF) for within groups are 854, and the mean square (MS) is 0.62. Total: The total sum of squares (SS) is 794.60 and the total degrees of freedom (DF) is 852.

Table 8: Descriptive Statistics of Key Variables

Variable	Mean	Std. Deviation	Min	Max
Communication Score	3.46	0.66	2.11	4.91
Performance Score	78.5	5.44	65.2	90.33
WhatsApp Usage (hrs/week)	5.33	2.11	2.01	8.51
Facebook Usage (hrs/week)	3.77	1.87	1.22	6.51
Parental Involvement Score	4.11	0.97	2.51	5.72

The average value of the variable across all respondents. For example, the mean communication score is 3.46, indicating that, on average, respondents rated their communication satisfaction at 3.46 out of 5. Standard Deviation: A measure of how spread out the values is around the mean. A higher standard deviation indicates greater variability. For instance, the standard deviation for the performance score is 5.33, indicating that performance scores varied more widely compared to the communication score, which had a standard deviation of 0.66. Minimum and Maximum: The lowest and highest values observed in the sample, respectively. For example, the minimum communication score was 2.11 and the maximum was 4.91.

Table 9: Correlation Matrix of Key Variables

Variable	1	2	3	4	5
1. Communication Score	1.00				
2. Performance Score	0.65*	1.00			
3. WhatsApp Usage	0.28*	0.15	1.00		
4. Facebook Usage	0.12	0.08	0.20*	1.00	
5. Parental Involvement	0.41*	0.25*	0.35*	0.17*	1.00

***Correlation is significant at the 0.05 level (2-tailed).**

The correlation coefficient between the communication score and itself is always 1, as it represents the relationship of the variable with itself, which is perfect. Interpretation of Correlation Coefficients: A correlation coefficient of 0.65 between communication score and performance score indicates a moderate positive relationship. This suggests that as communication satisfaction increases, performance tends to improve. A correlation coefficient of 0.28 between WhatsApp usage and communication score suggests a weak positive relationship. This implies that higher WhatsApp usage is slightly associated with higher communication satisfaction. A correlation coefficient of 0.41 between parental involvement and communication score indicates a moderate positive relationship, suggesting that higher parental involvement is associated with higher communication satisfaction.

Table 10: PLS-SEM Results

Path	Path Coefficient	t-value	p-value	Result
WhatsApp-> Communication	0.31	3.45	0.001	Significant
Facebook -> Communication	0.14	1.78	0.082	Not Significant
Communication -> Performance	0.62	5.75	0.000	Significant
Parental Involvement -> Performance	0.28	2.89	0.004	Significant

Path Coefficient: The path coefficient represents the strength and direction of the relationship between two latent variables. For example, the path coefficient of 0.31 between WhatsApp usage and communication indicates a positive relationship, suggesting that higher WhatsApp usage is associated with higher communication satisfaction.

T-value: The t-value indicates the significance of the path coefficient. A higher t-value suggests a more significant relationship. For instance, the t-value of 5.75 for the path from communication to performance indicates a highly significant relationship.

6.3. Discussion

The study aimed to investigate the impact of social media usage, specifically WhatsApp and Facebook, on communication between teachers and parents, student performance, and data confidentiality in primary schools in Jeddah city in Saudi Arabia, Saudi Arabia. The results provide valuable insights into the role of social media in educational settings and its implications for various stakeholders. The findings reveal a significant positive relationship between WhatsApp usage and communication satisfaction among teachers and parents. This result aligns with previous research highlighting the role of WhatsApp in facilitating communication between teachers and parents (Smith et al., 2018). (Boyd et al., 2008) The convenience and immediacy of WhatsApp likely contribute to its effectiveness as a communication tool in educational settings, enhancing parent-teacher engagement and improving communication flow. Furthermore, the study found a moderate positive correlation between communication satisfaction and student performance. This finding is consistent with previous studies that have emphasized the importance of effective communication between teachers and parents in supporting student learning and academic success (Epstein, 2001). Improved communication can lead to better understanding of student needs, more targeted support, and increased parental involvement, all of which are associated with enhanced student performance (Desforges & Abouchaar, 2003).

7. Conclusion

The study looked into how social media, especially Facebook and what's App, affected student performance, parent-teacher communication, and data privacy in Jeddah city in Saudi Arabia, Saudi Arabia's primary schools. The results offer insightful information about social media's function in educational environments and its effects on different stakeholders. What is Communication and App Usage? The study discovered a strong correlation between teachers' and parents' satisfaction with communication and their use of what's App. This demonstrates how well WhatsApp works as a communication tool to enhance parent-teacher involvement and communication efficiency. Student performance and communication: Student performance and communication satisfaction showed a somewhat positive correlation. This emphasizes how crucial it is for parents and teachers to have effective communication in order to support students' learning

and Student Performance and Communication: Student performance and communication satisfaction showed a somewhat positive correlation. This emphasizes how crucial it is for parents and teachers to have open lines of communication in order to promote students' academic progress. Data Confidentiality Issues: In spite of social media's advantages, issues with data confidentiality have been noted. To secure sensitive information, educators and educational institutions need to put strong data protection measures in place. Based on the findings of the study, the following recommendations are proposed for schools, educators, and policymakers to enhance communication between teachers and parents, improve student performance, and address data confidentiality. These findings are discussed in relation to some of the more relevant theories such as social comparison theory, which predicted that most of the potential problems related to the use and communication between teachers, students and parents of social media. Teachers, educational policy makers, curriculum developers and all those responsible for student affairs in schools should be aware of the psychological effects of the extensive use of social media on students and the potential threats.

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