

Perceived Helpfulness and Adoption Intentions for Real-Time Attendance Text Notifications: Insights From School Stakeholders

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ABSTRACT

Students who miss school regularly are more likely to fall behind in coursework, disengage from learning, and experience longer-term educational difficulties (Attendance Works, 2015). Chronic absenteeism remains a persistent barrier to student success (Gottfried, 2014), creating a need for timely, accessible, and actionable communication between schools and families. Real-time attendance text notifications represent one such approach, offering schools a way to inform parents and guardians immediately when a student is absent and potentially enabling earlier intervention. This pilot study examined school stakeholders' perceptions of a real-time attendance text-messaging system designed to notify users when a student is absent. The study involved 43 participants who volunteered to participate in a six-month intervention. Each participant was assigned a fictitious child within the system and received real-time absence notifications intended to simulate an authentic school-to-home communication process. Participants included parents/guardians, educators, and administrators from Maryland public schools. At the conclusion of the intervention, participants completed a structured post-use interview or survey based on their experience with the system. The study focused on three research questions: how school stakeholders perceived the helpfulness of real-time attendance text notifications, whether they believed the notifications would prompt immediate action, and whether they believed the system could help reduce absenteeism. Findings suggest that participants responded positively across all three areas. Most participants viewed the notifications as helpful and valuable, believed that receiving a text message shortly after an absence would encourage immediate action, and agreed that a technology-based system could help reduce absenteeism. These findings provide preliminary evidence that real-time text notifications may serve as a practical, user-friendly communication tool to strengthen school-family engagement and support early attendance intervention.

Keywords: Absenteeism, Communication, Attendance, Notification, Perception, Stakeholders

INTRODUCTION

Chronic absenteeism remains a major challenge in K–12 education because it affects students' academic performance, engagement, and long-term educational outcomes (Dräger et al., 2024; Gottfried, 2014; Keppens, 2023).

Students who miss significant amounts of school are more likely to fall behind academically, disengage from learning, and experience social and emotional difficulties. Because absenteeism can develop gradually, schools need effective ways to identify attendance problems early and communicate with families before absences become chronic.

Digital communication tools have created new opportunities for schools to strengthen attendance monitoring and family engagement. Among these tools, real-time text-messaging systems offer a practical way to quickly notify parents and guardians when a student is absent. Compared to traditional methods such as mailed notices or delayed phone calls, text messages can provide immediate, direct, and accessible communication. This timeliness may help parents and guardians respond more quickly, verify absences, and take action when needed.

Although real-time attendance notifications have strong practical potential, less is known about how school stakeholders perceive these systems after actually using them. Most prior work has focused on absenteeism interventions broadly or on the technical benefits of digital communication systems, rather than on users' direct experiences with attendance notification tools. Understanding these perceptions is important because stakeholders' views of a system's helpfulness, value, and usability can influence whether the system is accepted, trusted, and used effectively.

This study examined school stakeholders' perceptions of a real-time attendance text-messaging system implemented for a fictitious child over six-months. Specifically, the study explored whether participants found the notifications helpful, whether receiving a text within 15 minutes of an absence prompted immediate action, how valuable they considered the notifications, and whether they believed such a system could help reduce absenteeism. The study also considers whether these perceptions varied across demographic characteristics such as role, age, gender, and computer proficiency. In addition, participants were asked whether they would want to continue receiving such notifications if the child were their own and what improvements they would recommend.

The findings of this study contribute to ongoing conversations about human-centered digital systems in education by showing how school stakeholders respond to real-time communication tools intended to support attendance intervention. The study also provides practical guidance for designing attendance notification systems that are useful, acceptable, and responsive to the needs of diverse users.

LITERATURE REVIEW

Chronic Absenteeism and Its Consequences

Studies have consistently linked chronic absenteeism to negative educational outcomes (Ginsburg et al., 2014; Gottfried, 2014). Students who miss substantial amounts of school are at greater risk of lower academic achievement, weaker engagement, and reduced chances of long-term success in school (Attendance Works, 2015; Gottfried, 2014). Gottfried (2014) found that chronic absenteeism is associated not only with academic difficulties but also with socioemotional challenges, underscoring the broad impact of

repeated absence on student development. These effects make absenteeism more than just an attendance issue; it is also an equity and opportunity issue.

The urgency of addressing absenteeism increased after the COVID-19 pandemic, when absenteeism rates rose sharply in many school systems (Dee, 2024). As schools continue to recover, there is a greater need for early, practical, and scalable interventions to help families and schools respond before attendance problems become chronic.

Family-School Communication and Attendance Intervention

Family-school communication is widely recognized as a critical component of attendance improvement. When families receive timely and clear information about student attendance, they are better positioned to respond, ask questions, and work with schools to resolve issues. Epstein and Sheldon (2002) showed that stronger family and community involvement can contribute to improved school attendance. Similarly, Sheldon and Epstein (2005) emphasized that family-school partnerships can meaningfully influence student outcomes.

Traditional communication methods, however, are not always timely enough to support immediate action. Mailed notices, delayed attendance calls, or end-of-day communication may miss the window in which a parent or guardian can intervene quickly. Digital communication tools, especially mobile-based tools, offer a more immediate way to reach families. Because text messages are widely used and can be delivered quickly, they offer a practical channel for school-to-home communication.

Real-Time Digital Notifications as an Educational Intervention

Real-time digital notifications have been shown to support timely awareness and response in a variety of settings. In education, systems that provide immediate information can help families and educators identify problems early, monitor changes, and intervene before issues worsen. Wu (2022) noted that digital real-time systems with push notifications can strengthen timely information exchange and user responsiveness. In attendance contexts, real-time notifications may be especially valuable because they communicate a problem as it occurs, rather than hours or days later.

Attendance Works (2015) and Germain et al. (2024) have both emphasized the importance of early detection and timely intervention in reducing chronic absenteeism. A notification system that delivers absence information immediately may therefore support one of the core conditions needed for successful intervention: speed. If parents or guardians know quickly that a student is absent from a class or from school, they may be more likely to follow up, verify the reason, or take corrective action.

User Perceptions, Usability, and Adoption

The success of a digital attendance tool depends not only on whether it functions technically, but also on whether intended users perceive it as useful, valuable, and practical. Research on technology adoption consistently shows that user perceptions influence whether a tool is accepted and used effectively (Davis, 1989; Venkatesh & Bala, 2008). In educational settings, perceived usefulness often plays a major role in shaping user acceptance.

Attendance notification tools are particularly relevant because they support ongoing communication rather than one-time use. If families and school stakeholders view the messages as helpful, timely, and easy to act on, they are more likely to see the system as worth using. On the other hand, if notifications are perceived as confusing, excessive, or difficult to interpret, their effectiveness may be limited.

Despite this, relatively little research has focused specifically on user perceptions of real-time attendance notification systems after direct use. This study helps fill that gap by examining how school stakeholders responded to a real-time text-messaging intervention over months.

Gap in the Literature

Prior work has established that absenteeism has serious consequences, that family-school communication matters, and that digital tools can support timely information sharing. However, fewer studies have examined how stakeholders perceive a real-time attendance notification system after experiencing it firsthand. This gap is important because stakeholder perception can influence practical implementation. A system may be technically effective, but if users do not find it helpful or actionable, adoption may be limited (Davis, 1989; DeLone & McLean, 2003).

This pilot study addresses that gap by examining school stakeholders' perceptions of the helpfulness, immediacy, and potential for absenteeism reduction of real-time attendance text notifications delivered in a simulated yet sustained usage context.

RESEARCH QUESTIONS AND METHODOLOGY

Research Questions

This research sought to answer these three questions:

1. How do school stakeholders perceive the helpfulness of real-time attendance text notifications?
2. To what extent do stakeholders believe real-time attendance notifications will prompt immediate action?
3. To what extent do stakeholders believe real-time attendance notifications will help reduce absenteeism?

Research Design and Recruitment

This study implemented and evaluated a real-time attendance text-messaging intervention designed to improve timely parent/guardian awareness of student absences and encourage quicker responses to absenteeism. The study used a single-group, posttest-only usability and acceptability design to examine participants' experiences with the system after six-months.

Participants were recruited through emails sent to school staff in the approved county and schools, as well as through word of mouth and flyers. Flyers were distributed to parents and guardians during after-school pickup

times, at Parent Teacher Association (PTA) meetings, and in surrounding communities. To be eligible, participants had to be 18 years of age or older and either a parent/guardian of a high school student enrolled in a Maryland public school or a current educator or administrator in a Maryland public school who was also a parent/guardian of a high school student.

The analytic sample used in the results section included 43 participants with complete responses on the post-use survey. Most participants were between 31 and 50 years old (34 participants), most identified as female (27 participants), and nearly half reported advanced computer proficiency (21 participants).

Enrollment and Intervention Procedure

Individuals who agreed to participate were contacted by Zoom or email. During this contact, they were provided with the informed consent form and informed that participation was voluntary and that they could withdraw at any time without penalty. Participants who consented provided a phone number, which was used to link them to a fictitious child within the text-messaging system. As an alternative, participants could also visit the school's website, create an account, and either be automatically linked to a fictitious child or create and enroll a fictitious child of their own. Each participant was assigned a research participant number to support de-identification of responses.

After consent and enrollment, participants received real-time text message absence notifications for a fictitious child over six months. First, each participant received a brief welcome text explaining who was sending the message, what type of notifications they would receive, when the messages would be sent, the purpose of the system, and how to get help if needed. Thereafter, participants received absence notifications after attendance was taken. These messages identified the specific class and period during which the fictitious student was absent, explained that the absence could be resolved if the student returned, and provided instructions for seeking assistance. After five or more absences, participants received additional messages showing both the current absence and the cumulative absence count, while also emphasizing the importance of attendance and maintaining an open line of communication.

At the end of the six months, participants completed a structured post-use interview or survey based on their experience with the system. The instrument collected demographic information, including role in the school system, age group, gender, and self-reported computer proficiency.

For this paper, the analysis focused on three core perception items:

- whether receiving a text message within 15 minutes of an absence would prompt immediate action,
- the value of receiving real-time attendance notifications by text message, and
- whether an interactive technology-based solution could effectively reduce student absenteeism.

Responses were recorded on five-point ordinal scales. For immediacy and absenteeism reduction, the response options ranged from strongly agree to strongly disagree. For value, the response options ranged from extremely valuable to not valuable at all.

Data Analysis

Quantitative responses were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations. To examine whether participant ratings were more positive than a neutral position, one-sample t-tests were conducted using the midpoint of the response scale (3) as the test value. Effect sizes were interpreted using Cohen's d.

RESULTS

Perceived Immediacy of Action

Participants rated whether receiving a text message within 15 minutes of an absence would prompt immediate action. As shown in Table 1, most participants selected either "Strongly agree" (69.7%, $n = 30$) or "Agree" (23.3%, $n = 10$). A smaller number selected "Neutral" (4.7%, $n = 2$) or "Disagree" (2.3%, $n = 1$), and no participant selected "Strongly disagree." These results suggest that participants generally believed timely notifications would prompt a rapid response to student absences.

The mean rating for perceived immediacy of action was $M = 1.40$, $SD = 0.695$ (see Table 2). A one-sample t-test indicated that this rating was significantly positive, $t(42) = 13.168$, $p < .001$. The effect size was very large, with Cohen's $d = 2.008$ and Hedges' $g = 1.972$, indicating a strong perceived effect of timely text notifications on motivating immediate action.

Table 1: Perceived immediacy of action ($N = 43$).

Response	n	%
Strongly agree	30	69.7
Agree	10	23.3
Neutral	2	4.7
Disagree	1	2.3
Strongly disagree	0	0.0
Total	43	100.0

Table 2: Descriptive statistics for the three outcome measures ($N = 43$).

	N	Mean	Std. Deviation
Perceived immediacy of action	43	1.40	.695
Perceived value of real-time notifications	43	1.40	.623
Perceived effectiveness for reducing absenteeism	43	1.65	.842

Perceived Value of Real-Time Notifications

Participants also rated the value of receiving real-time attendance notifications by text message. As shown in Table 3, most respondents rated the notifications as “Extremely valuable” (67.4%, $n = 29$) or “Valuable” (25.6%, $n = 11$). Only 7.0% ($n = 3$) selected “Neutral,” and no participants selected “Of little value” or “Not valuable at all.” These results indicate that participants generally viewed the notification system as a highly valuable communication tool.

The mean rating for perceived value was $M = 1.40$, $SD = 0.623$ (see Table 2). A one-sample t -test showed that this mean was statistically significant, $t(42) = 14.697$, $p < .001$. The effect size was again very large, with Cohen’s $d = 2.241$ and Hedges’ correction = 2.201, suggesting that participants’ perceptions of the value of the notification system were strongly positive.

Table 3: Perceived value of real-time notifications ($N = 43$).

Response	n	%
Extremely valuable	29	67.4
Valuable	11	25.6
Neutral	3	7.0
Of little value	0	0.0
Not valuable at all	0	0.0
Total	43	100.0

Perceived Effectiveness for Reducing Absenteeism

Participants rated whether an interactive technology-based solution could effectively reduce student absenteeism. Responses were mostly favorable. As shown in Table 4, 51.2% ($n = 22$) selected “Strongly agree” and 37.2% ($n = 16$) selected “Agree.” A smaller proportion selected “Neutral” (9.3%, $n = 4$) or “Disagree” (2.3%, $n = 1$), and no participants selected “Strongly disagree.”

The mean rating for perceived effectiveness in reducing absenteeism was $M = 1.65$, $SD = 0.842$ (see Table 2). A one-sample t -test indicated that participants’ responses were significantly positive, $t(42) = 12.861$, $p < .001$. The effect size was very large, with Cohen’s $d = 1.961$ and Hedges’ correction = 1.926, indicating that participants generally believed the intervention could play a meaningful role in addressing absenteeism.

Table 4: Perceived effectiveness for reducing absenteeism (N = 43).

Response	n	%
Strongly agree	22	51.2
Agree	16	37.2
Neutral	4	9.3
Disagree	1	2.3
Strongly disagree	0	0.0
Total	43	100.0

Across all three research questions, participants responded positively to the real-time attendance text-messaging intervention. Most participants believed that receiving a notification shortly after an absence would prompt immediate action, viewed the notifications as highly valuable, and agreed that such a system could help reduce absenteeism. The one-sample t-tests and very large effect sizes further support the strength of these positive perceptions. Taken together, these results suggest that real-time attendance notifications may serve as a practical and acceptable tool for strengthening school-family communication and supporting early intervention around student absence.

DISCUSSION

The findings of this pilot study suggest that school stakeholders responded positively to the real-time attendance text-messaging system. Across the three main outcome measures, participants generally viewed the notifications as valuable, believed that receiving a message shortly after an absence would prompt immediate action, and saw potential for the system to help reduce absenteeism. These findings support the idea that timely digital communication can strengthen connections between schools and families and create opportunities for earlier attendance interventions.

One of the strongest findings in this study is the importance of timing. Most participants agreed or strongly agreed that receiving a text message within 15 minutes of an absence would prompt immediate action. These findings suggest that timeliness is a key strength of the intervention. When families are informed promptly, they are better positioned to verify the reason for an absence, respond immediately, and communicate with the school before the issue escalates. Such prompt notification aligns with prior research emphasizing the importance of early identification and timely intervention to address absenteeism (Attendance Works, 2015; Germain et al., 2024). The very large effect size for this measure further reinforces that participants did not simply respond favorably in a general sense but viewed timely notifications as a strong motivator for action.

Participants also rated the real-time attendance notifications as highly valuable. Most respondents selected either “Extremely valuable” or “Valuable,” and none rated the notifications as having little or no value. This indicates that participants viewed the messages as more than just informational updates. Instead, they appear to have seen them as meaningful communication tools that could support awareness, monitoring, and follow-up. This finding

is consistent with technology acceptance research showing that perceived usefulness plays an important role in shaping how users respond to and adopt a system (Davis, 1989; Venkatesh & Bala, 2008). In the context of this study, the strong ratings of value suggest that stakeholders recognized the practical relevance of receiving attendance information in real time.

Participants were also generally positive about the role of a technology-based system in helping reduce absenteeism. Most agreed or strongly agreed that an interactive app could be effective for this purpose. Although this study did not measure actual reductions in absenteeism, the perception that such a tool could contribute to reducing absenteeism remains meaningful. Stakeholder beliefs matter because they can shape acceptance, trust, and willingness to engage with the intervention. If parents, guardians, and educators believe that a system has the potential to help, they may be more likely to use it consistently and respond when needed. Schools that are considering adopting this kind of system should pay particular attention to message timing, clarity, and accessibility, since these elements likely influence whether families view the notifications as helpful and worth acting on.

Overall, the results suggest that real-time attendance text notifications are viewed positively by school stakeholders and may offer a practical way to support early attendance intervention. While more research is needed to determine their direct impact on absenteeism outcomes, this pilot study provides encouraging evidence that such systems are seen as helpful, valuable, and capable of prompting timely action.

LIMITATION

The findings of this study should be interpreted within the context of the study's limitations. The study was a pilot study with a relatively small sample of 43 participants. Participants responded based on their experience with a fictitious child rather than an actual child, which was appropriate for testing the notification system but may not fully capture how individuals would respond in a real-life situation involving their own student. In addition, the study focused on self-reported perceptions and did not measure actual changes in attendance behavior or reductions in absenteeism. As a result, the findings should be understood as preliminary evidence of perceived usefulness and potential. Finally, participants were drawn from Maryland public schools, and the sample was composed primarily of parents/guardians and adults aged 31–50, which may limit the applicability of the findings to other populations and settings.

CONCLUSION

Chronic absenteeism continues to challenge schools, families, and students, making timely communication an important part of early intervention efforts. This pilot study examined school stakeholders' perceptions of a real-time attendance text-messaging system and found that participants generally responded positively to the intervention. Most participants viewed the notifications as valuable, believed that receiving a message shortly after

an absence would prompt immediate action, and agreed that a technology-based notification system could help reduce absenteeism.

These findings suggest that real-time attendance text notifications may serve as a practical and accessible communication strategy to improve school-family communication and support early awareness of student absences. In particular, the strong positive responses regarding immediacy of action highlight the importance of timely outreach in attendance intervention. When parents, guardians, and educators receive attendance information quickly, they may respond before absenteeism patterns become more serious.

This study should be understood as preliminary. Because it was a pilot study involving a fictitious child and focused on perceptions rather than actual attendance outcomes, the findings do not demonstrate that the intervention directly reduces absenteeism. However, they provide encouraging evidence that stakeholders value this type of communication system and believe it has the potential to support absenteeism-prevention efforts.

Overall, this study contributes to the growing conversation about human-centered digital systems in education by showing that real-time attendance alerts are perceived as helpful, actionable, and promising as part of a broader attendance-support strategy. As schools continue to explore technology-based solutions to strengthen family engagement and improve student outcomes, real-time text messaging may represent a practical step toward more responsive and proactive attendance communication.

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