

Towards Responsible Integration: Ethical Challenges and Policy Gaps in Tablet-Based Teaching and Learning in Ghanaian Senior High Schools (A Case of Public Senior High Schools in Mampong Municipality of Ashanti Region)

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Abstract

This study examined ethical issues associated with the use of tablets in public secondary schools in the Mampong Municipality of Ghana for teaching and learning. The study used a quantitative approach with a descriptive survey design. A total sample of 256 respondents, including 244 teachers and 12 administrators, was selected by stratified random sampling. The data were collected using structured questionnaires and analysed using descriptive statistics, with the results presented in tables and narrative form. The results showed that the main ethical challenges include access to non-educational and inappropriate websites during school hours, exposure to cyberbullying and online harassment, and insufficient monitoring mechanisms. Tablet integration into teaching and learning is partial and varies from subject to subject due mainly to limited technical support and insufficient training. Although stakeholders generally see tablets as beneficial when used responsibly, concerns about distraction, weak enforcement of ethical guidelines and the need for collaboration between stakeholders remain. The study concludes that tablets have considerable potential to improve teaching and learning, but their effectiveness is limited by ethical challenges, inconsistent integration and limited supervisory frameworks. It recommends strengthening ethical policies, improving digital citizenship education, improving teacher training, establishing effective monitoring systems and promoting collaborative involvement with stakeholders to ensure responsible tablet use in schools.

Keywords: Ethical Challenges; Ghanaian Senior High Schools; Policy Gaps; Responsible Integration; Tablet-Based; Teaching and Learning.

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INTRODUCTION

Technology integration in schools has long been identified as a catalyst for promoting learning through innovation, strengthening teacher–student relationships, and providing learners with diverse educational resources. In Ghana, the integration of ICT into classroom teaching and learning has been steadily increasing, albeit slowly, with disparities in access across subjects and schools (Abedi et al., 2024). The introduction of tablets and other mobile devices represents a new frontier in this integration, reflecting the global trends in digital education. Increasingly sophisticated mobile devices have been adopted across all levels of education. In Ghana, Senior High School (SHS) students have been provided tablets by the government as part of efforts to enhance teaching and learning and equip students with 21st-century skills.

The Ghana Education Service (GES) and the Ministry of Education (MoE) outline that the tablets distributed to SHS students are intended to facilitate access to learning materials, promote collaboration, and support the development of digital skills under the new curriculum (Ministry of Education, 2025). The Government's commitment is evident in its plan to distribute more than five million tablets throughout the country, which shows strong support for technological integration at the second cycle level. Although the policy framework indicates that these devices will improve learning outcomes, the effective integration of technology into education has encountered continuing challenges. Previous studies have shown that ICT tools have not been fully integrated into teaching and learning due to inadequate infrastructure, lack of teacher training, and limited access to equipment such as computers and projectors (Minister of Education, 2025; Kwashigah et al., 2026; UNESCO, 2023). Nevertheless, literature such as Sarpong et al. (2024) found that students' feedback on technology integration in classrooms was positive, indicating that they better understood concepts, kept focusing on studying and collaborated with classmates.

In addition to the challenges of infrastructure, the integration of digital technologies into schools raises ethical concerns about online safety, inappropriate content, effective supervision and the need for digital citizenship education. In Ghana, civil society organisations such as Eduwatch have called for stronger monitoring and implementation measures to ensure the safe and effective use of digital learning initiatives supported by the Government (Antoninis et al., 2023). Therefore, ethical considerations in technology integration extend from the type of content to the mechanisms of monitoring student use. From an ethical point of view, technology must be integrated responsibly and must find a balance between privacy rights and equitable access to digital learning opportunities (OECD, 2023).

This paper explores ethical issues relating to the use of tablets in teaching and learning in high schools in Ghana. Specifically, while some studies such as Oppong et al. (2023) have been conducted on the integration of technology into the SHS, little is known about the ethical problems arising from the use of tablets for daily teaching and learning in high schools, especially in Mampong Municipality, the research site. In addition, many secondary school teachers are not well equipped to use technology in teaching and learning. If teachers cannot integrate technology use in lessons, ethical questions can be raised about its use if it is considered a waste of time. The implications of ethical issues raise concerns about information privacy, data protection and the responsible use of technology when using tablets during teaching and learning. Accordingly, guided by the focus of the study and the identified gaps, these research questions were raised:

1. What ethical challenges are associated with the use of tablets in teaching and learning in Senior High Schools in the Mampong Municipality?

2. How are tablets integrated into instructional activities and learning processes in these schools?
3. What are the perceptions of teachers and administrators regarding the responsible and ethical use of tablets?

LITERATURE REVIEW

Theoretical Review

The theoretical framework for this study is the Technological Pedagogical Content Knowledge (TPACK) framework developed by Mishra and Koehler (2006). TPACK posits that effective technology integration in education occurs at the intersection of three knowledge domains: Content Knowledge (CK), which encompasses subject matter expertise; Pedagogical Knowledge (PK), which involves teaching methods and strategies; and Technological Knowledge (TK), which covers understanding and using educational technologies in teaching. Successful teaching with technology requires teachers to seamlessly blend these domains, enabling them to design instruction in which technology enhances learning without compromising educational goals or ethical standards.

In the context of tablet use in Senior High Schools, TPACK provides a robust lens for examining teachers' integration of these devices into instructional practices. Teachers with strong TK can confidently operate tablets, filter appropriate content, and guide students on acceptable usage. Strong PK allows educators to design engaging, focused learning activities that minimise distractions, while robust CK ensures that tablet applications align with curriculum objectives. This integrated knowledge helps prevent misuse, such as unauthorised access or off-task behaviour, thereby supporting ethical implementation (Mishra & Koehler, 2006; UNESCO, 2023).

TPACK sufficiently justifies its application to this study on ethical tablet use because deficiencies in any of the TK, PK, or CK could lead to poor supervision, student distraction, inequitable access, and negative stakeholder perceptions, prompting stricter policies or reduced adoption. Therefore, by applying TPACK, the study can analyse how training gaps and integration challenges affect ethical practices, teacher confidence, student behaviour, and overall perceptions among stakeholders, highlighting the need for comprehensive professional development to foster responsible technology use in schools (Agyei & Voogt, 2011; Koehler et al., 2013).

Mobile Learning and Tablet-Based Instruction

Mobile learning is the use of portable computing devices like tablets and smartphones to support learning anywhere and at any time (Traxler, 2018; UNESCO, 2023). Tablet-based learning is gaining momentum in formal education settings because tablets are portable devices with learning capabilities. Studies on tablet-based learning reveal positive effects on student engagement and learning, support personalised learning, and enhance collaborative learning activities (OECD, 2023; UNESCO, 2023). The education sector in Ghana has witnessed increased advocacy and rollout of mobile learning initiatives, particularly at the SHS level in recent years. Government initiatives like the Ghana Smart Schools Project demonstrate effort by the government to push for increased integration of tablets in teaching and learning (Ministry of Education, 2025). Findings from these studies demonstrate that tablets can help

students learn their syllabus content, since the content is available on the tablets. Teachers and students can also make use of the tablets to learn independently.

Reports from selected schools where tablets have been introduced for learning purposes show that pedagogical concerns emerge with the introduction of tablets in schools. For example, studies have raised concerns about students getting distracted, over-dependency on tablets by both students and teachers, and the inability to control students when tablets are used for learning in classrooms (Deng 2024). Teachers have raised concerns over ineffective class management when learners are allowed to use their tablets during some lessons. Ethical issues may also emerge during mobile learning. Critics of digital learning devices such as tablets argue that there are ethical concerns about ensuring equal distribution of the devices to all students. Even though the government distributed the devices to selected schools to lessen the digital divide among students, issues such as a lack of electricity, poor internet data network, and inadequate maintenance support for devices when they break in some districts continue to raise ethical concerns about equitable distribution of the devices (Ministry of Education, 2025; UNESCO, 2023; OECD, 2023).

Ethical Challenges Associated with the Use of Tablets in Teaching and Learning

Ethical challenges encountered during the use of technology for learning include issues of privacy, data protection, learner safety, ethical misuses of the devices, and equity in access to the devices and learning resources needed for learning (UNESCO, 2023). Tablets, when connected to the internet, allow learners access to unlimited information. However, unethical challenges are posed when learners access harmful sites, experience cyberbullying from their peers when using internet-enabled devices, and their information is mined by strangers. Studies on the use of mobile phones in Ghanaian educational settings reveal that learners are constantly reminded about the consequences when they misuse their phones during school hours. However, insufficient policies and support to monitor students when using the devices for educational purposes are still challenging schools and educational authorities. Several news stories have been reported about students in various SHSs accessing pornography and playing games during classes using the tablets provided to them by the government (Ministry of Education, (2025). Such instances have raised ethical concerns over how learning is monitored using the devices in SHSs.

Issues of equity and fairness also present ethical dilemmas with technology use. Studies conducted about students' experiences when using devices for learning revealed that a lack of or inadequate technological infrastructure in some districts affected students' ability to utilise the devices for learning purposes (OECD, 2023). Such experiences give rise to ethical issues if every student can benefit equally from the introduction of tablets in schools. Teacher competence to integrate technology for learning also presents ethical concerns with technology use. Improper use of technologies like tablets by teachers raises ethical questions if the resources spent on getting the devices are put to good use (Manu et al., 2024; Mishra & Koehler, 2006). Students may not learn anything new if teachers are incompetent at using the technologies for instructional purposes, thus raising ethical issues.

Teachers' and Students' Perceptions of Ethical Tablet Use

Teachers', students', and administrators' perceptions of ethical tablet use in school impact how tablets are used and regulated. Teachers' beliefs about technology influence how they integrate tablets into instruction ethically (Agyei & Voogt, 2011; Tondeur et al., 2017; UNESCO, 2023). Students perceive tablets as beneficial learning devices that provide easy access to information,

enhance study capabilities, and assist with classroom work (Crompton & Burke, 2018). Teachers are concerned about distraction and misuse. Ethical tensions arise as stakeholders disagree on whether students should be trusted or controlled. Administrators focus on enforcing discipline, safety, and school reputation when developing policies to regulate tablet usage (UNESCO, 2023; Ministry of Education, 2025). This suggests teachers are also concerned about ethics rather than Tablets as instruments of learning. Educational research has shown that stakeholders perceive ethical technology use better when schools develop school guidelines, teach digital citizenship, and collaborate on instructional integration (UNESCO, 2023; OECD, 2023).

METHODOLOGY

This study adopted a descriptive cross-sectional survey design. A descriptive cross-sectional survey involves collecting data from participants at a single point in time to describe characteristics of a population and examine relationships among variables of interest. Data are typically collected in participants' natural settings without manipulating the study environment (Creswell & Creswell, 2017; Setia, 2016). Cross-sectional surveys are widely used in educational research to investigate individuals' attitudes, perceptions, experiences, and use of technologies within specific contexts (Asenahabi, 2019). The cross-sectional survey allows the investigator to study ethical considerations, tablet usage patterns, and students' and teachers' perceptions of tablet usage simultaneously in the selected schools. Questionnaires can collect numerical data from more than one respondent and allow for comparison between groups of respondents by providing descriptions using statistical terms (Creswell & Creswell, 2017; Bolarinwa, 2015).

Population and Sampling

The target population for the study comprised teachers and school administrators in public senior high schools in the Mampong Municipality, Ashanti Region, Ghana. The accessible population was 625 teachers and 12 school administrators of the four public senior high schools in Mampong Municipality. The 12 administrators included the Headmaster/Headmistress or Assistant Headmaster, and two department heads from each school, who oversee the integration and supervision of the tablet. A census of schools was conducted, covering all four public Senior High Schools (SHSs) in the municipality. However, the inclusion of all four schools did not imply that all teachers and administrators within them were surveyed. Consequently, the findings are intended primarily to represent the experiences and perspectives of teachers and administrators in the four participating schools and should not be generalised to the wider SHS population in the Ashanti Region or Ghana without caution.

From the accessible population, a final sample of 256 stakeholders was selected. For teachers, a stratified random sampling technique was used. The stratification was based on the school to ensure proportional representation across the four schools, given the differences in the teacher population. In each stratum, simple random sampling was applied using a random number table to ensure that each teacher had an equal and independent chance of being selected. The sample size for teachers was determined by Yamane's (1967) formula with $N = 625$ and $e = 0.05$. This resulted in a minimum sample size of 244 teachers with a 95% confidence level and a 5% margin of error. The 244 teachers were distributed to the four schools using proportional allocation to ensure representation in proportion to the number of teachers in each school. In addition, 12 administrators, three each were selected through purposive sampling based on the administrator's direct link to the tablet usage. As a result, a total sample of 256 stakeholders

was obtained, comprising 244 teachers selected through stratified random sampling and 12 administrators (three per school) selected through purposive sampling.

Data Collection Tools and Instruments

A structured questionnaire was used to collect the data. Developed from literature on tablet integration, ethical ICT issues, and mobile learning. The instrument comprised three sections: Section A measured ethical challenges associated with tablet use; Section B assessed tablet integration into instructional activities; and Section C measured perceptions regarding responsible and ethical tablet use. All items in Sections A–C were measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire was adapted from validated instruments in prior technology integration and digital ethics studies.

Validity and Reliability

Content validity was established through a comprehensive review of the literature to identify items that measured the constructs under study, followed by expert review. The questionnaire was given to two experts in educational technology and two experts in research who evaluated the relevance, clarity, and comprehensiveness of each item. Based on their feedback, ambiguous items were reworded to enhance clarity and appropriateness. The questionnaire was piloted with 30 respondents (10 teachers and 20 students) from schools not included in the main study to identify potential issues with item clarity, ordering, and comprehensibility. The pilot exercise highlighted minor concerns, which were subsequently addressed before final administration. Reliability was assessed using Cronbach's alpha coefficient to determine the internal consistency of the instrument. The overall Cronbach's alpha for the questionnaire was 0.87, with sub-scale reliabilities ranging from 0.76 to 0.84, all exceeding the acceptable threshold of 0.70. These results confirm that the instrument possessed adequate reliability and validity for data collection in the main study.

Data Collection and Analysis

The researcher sought approval from the schools' authorities before data collection. Respondents were informed about the nature of the study and assured that their responses were kept confidential. Respondents were informed that their participation was voluntary, and that they could withdraw at any point during the study. The questionnaires were administered to the respondents during school hours through trained research assistants. Respondents completed the questionnaires independently, while the research assistants walked around to monitor and provide support if any respondents had questions about the questionnaire items. Data were collected within two weeks.

Data were analysed using the Statistical Package for the Social Sciences (SPSS) Version 25. Descriptive statistics such as frequencies, percentages, means and standard deviations were used to summarise and interpret the responses.

Ethical Considerations

The study adhered to ethical research standards. Permission was secured from the relevant university research ethics board and school management. Participants were informed about the voluntary nature of the study and assured of confidentiality and anonymity. No personal identifiers were collected, and participants were free to withdraw at any time without penalty. All sources were cited appropriately to maintain academic integrity.

RESULTS

Ethical Challenges

This section presents the findings related to the ethical challenges associated with the use of tablets in teaching and learning in the selected Senior High Schools in the Mampong Municipality. The section examines issues such as misuse of tablets, student safety, monitoring, privacy, equity, and teacher competence in guiding ethical tablet use. Data obtained from teachers and students were analysed using descriptive statistics, and the results are presented in Table 4.1.

Table 4.1: Ethical Challenges Associated with Tablet Use in Teaching and Learning

S/N	Statement	Mean	SD
1	Students use tablets to access non-educational and inappropriate websites during school hours.	4.32	0.71
2	Tablets expose students to cyberbullying and online harassment from peers.	4.18	0.79
3	There are inadequate monitoring systems to control how students use tablets in school.	4.05	0.83
4	Students' personal data and privacy are not adequately protected when using tablets.	3.92	0.88
5	Teachers lack adequate skills to guide students on ethical tablet use.	3.78	0.91
6	Unequal access to internet connectivity limits fair use of tablets among students.	3.66	0.97
7	Poor technological infrastructure affects the ethical use of tablets for learning.	3.54	1.02
8	The use of tablets has no significant ethical challenges in SHSs.	2.41	1.11

Source: Researcher's field survey, 2025.

The highest-ranked statement indicated that students' access to inappropriate and non-educational websites is a major ethical concern in Senior High Schools ($M = 4.32$, $SD = 0.71$). This finding aligns with the studies by the Ministry of Education (2025), which reported cases of students accessing pornography and engaging in gaming during instructional hours using government-provided tablets. UNESCO (2023) similarly warns that unrestricted Internet access exposes learners to harmful content, thereby raising serious ethical and safety concerns. The second-ranked statement highlighted cyberbullying and online harassment as significant ethical challenges associated with tablet use ($M = 4.18$, $SD = 0.79$).

This supports the findings of UNESCO (2023), which observed that Internet-enabled devices increase students' vulnerability to digital abuse. In Ghanaian SHSs, limited digital citizenship education further exacerbates this challenge, leaving students ill-prepared to manage online interactions responsibly. The third-ranked statement suggested that inadequate monitoring mechanisms contribute to unethical tablet use in schools ($M = 4.05$, $SD = 0.83$). This finding corroborates the work of Agyei & Voogt (2011) and Koehler et al. (2013), who identified the weak enforcement of ICT usage policies in Ghanaian schools as a persistent challenge. Without

effective supervision and monitoring systems, tablets can be easily misused, undermining their intended educational purpose. Conversely, the lowest-ranked statement indicates disagreement with the view that tablets pose no ethical challenges in Senior High Schools ($M = 2.41$, $SD = 1.11$). This confirms that the respondents generally acknowledged the existence of ethical concerns related to tablet use. This finding is consistent with the OECD (2023), Ministry of Education (2025), and UNESCO (2023), which emphasise that technology integration without adequate ethical safeguards presents significant challenges in developing educational contexts.

Integration of Tablets into Teaching and Learning Processes

This section examines how tablets are integrated into teaching and learning processes in the selected Senior High Schools in the Mampong Municipality. The analysis focused on the extent to which tablets were used to support lesson delivery, student engagement, and classroom activities. The data obtained were analysed using descriptive statistics, and the results are presented in Table 4.2.

Table 4.2: Integration of Tablets into Instructional Activities

S/N	Statement	Mean	SD
1	Tablets are occasionally used by teachers to support lesson delivery.	3.98	0.82
2	Tablets help students access learning materials during lessons.	3.84	0.89
3	Integration of tablets varies among teachers and subjects.	3.76	0.94
4	Teachers use tablets to promote collaborative learning activities.	3.59	0.96
5	School policies restrict students from using tablets during lessons.	3.47	1.01
6	Lack of teacher training affects effective tablet integration.	3.41	1.04
7	Technical challenges limit the use of tablets in classrooms.	3.28	1.08
8	Tablets are fully integrated into all teaching and learning activities.	2.52	1.13

Source: Researcher's field survey, 2025.

From Table 4.2, the highest-ranked statement shows that tablets are used occasionally rather than consistently to support lesson delivery ($M = 3.98$, $SD = 0.82$), suggesting the partial integration of tablets into instructional activities. This finding supports OECD (2023) and UNESCO (2023), who argued that technology improves learning outcomes only when it is intentionally embedded in instructional practice rather than used sporadically. The second-ranked statement indicated that tablets facilitated students' access to learning materials during lessons ($M = 3.84$, $SD = 0.89$).

This finding confirms that technology enhances instructional delivery when appropriately aligned with content knowledge and pedagogical practices. However, the results also suggest that access to digital materials alone does not necessarily translate into meaningful instructional integration.

The third-ranked statement reveals that the integration of tablets varies among teachers and across different subjects ($M = 3.76$, $SD = 0.94$). This finding aligns with Ghanaian studies by Tondeur et al. (2017), which reported that the use of ICT in classrooms largely depends on individual teacher competence, confidence, and subject relevance rather than on institutional policies alone. Conversely, the lowest-ranked statement suggests that tablets are not fully integrated into all teaching and learning activities ($M = 2.52$, $SD = 1.13$). This supports findings by Mishra and Koehler (2006) and UNESCO (2023), who emphasised that the absence of continuous teacher training, technical support, and enabling school policies significantly limits effective and sustained technology integration in Ghanaian Senior High Schools.

Stakeholders' Perceptions of Ethical Tablet Use

This section presents the findings on teachers' and administrators' perceptions of ethical tablet use in the selected Senior High Schools in the Mampong Municipality. The analysis focuses on stakeholders' views regarding the responsible use, monitoring, and regulation of tablets in the classroom. Data obtained from the 244 teachers and 12 administrators were analysed using descriptive statistics, and the results are summarised in Table 4.3.

Table 4.3: Stakeholders' Perceptions of Ethical Tablet Use

S/N	Statement	Mean	SD
1	Tablets can improve learning when used responsibly by students.	4.21	0.73
2	Teachers believe strict monitoring is necessary to prevent tablet misuse.	4.09	0.78
3	Administrators prioritise discipline and school reputation when regulating tablet use.	3.97	0.85
4	Students believe they should be trusted to use tablets ethically.	3.81	0.92
5	Teachers are concerned that tablets distract students during lessons.	3.74	0.95
6	Ethical tablet use improves when clear school guidelines are provided.	3.69	0.98
7	Collaboration among stakeholders promotes ethical tablet use.	3.55	1.02
8	Ethical issues related to tablets are exaggerated in SHSs.	2.36	1.14

Source: Researcher's field survey, 2025.

From Table 4.3 above, the highest-ranked statement reflects a generally positive perception that tablets can improve learning when used responsibly by students ($M = 4.21$, $SD = 0.73$). This aligns with findings by the Ministry of Education (2025), which reported that students value tablets for easy access to information, enhanced study capabilities, and academic support. The second-ranked statement highlights that teachers believe strict monitoring is necessary to prevent tablet misuse ($M = 4.09$, $SD = 0.78$).

This confirms concerns raised by Tondeur et al. (2017), UNESCO (2023), and Agyei and Voogt (2011), who observed that teachers fear distraction and misuse when control mechanisms are weak. This finding underscores the ethical tension between trusting students

and enforcing regulations to ensure responsible technology use. The third-ranked statement shows that administrators prioritise discipline and school reputation when regulating tablet use ($M = 3.97$, $SD = 0.85$). This supports reports by the Ministry of Education (2025), which indicate that school leadership often emphasises safety and institutional reputation over instructional flexibility when developing policies on tablet use. Conversely, the lowest-ranked statement suggests that respondents largely disagree that ethical issues related to tablets are exaggerated in Senior High Schools ($M = 2.36$, $SD = 1.14$). This finding aligns with UNESCO (2023) and OECD (2023), which emphasise that ethical concerns surrounding educational technologies are real and require structured policy measures to promote responsible use.

CONCLUSIONS AND RECOMMENDATIONS

This study sheds light on the ethical challenges associated with the use of tablets in teaching and learning in Senior High Schools in the Mampong Municipality, emphasising the critical role of monitoring mechanisms, teacher competence, and stakeholder collaboration. From the findings, it can be concluded that while tablets are valuable tools for learning, their effective use is significantly hindered by ethical challenges, inconsistent integration, and varying stakeholder perceptions. Students benefit from easy access to learning materials but remain prone to misuse, while teachers often struggle to enforce ethical use due to limited monitoring mechanisms and training. Administrators focus on discipline and institutional reputation, which sometimes constrains flexible instructional use. Additionally, it can be concluded that while stakeholders generally recognise the benefits of tablets, inadequate guidelines, technical support, and teacher training significantly impede their full potential as educational tools. Based on these conclusions, the following recommendations are proposed. Firstly, schools should strengthen ethical policies and digital citizenship education: Schools should develop clear policies and guidelines on tablet use and provide training for students and teachers on ethical and responsible use of digital technologies to mitigate challenges such as access to inappropriate content and cyberbullying. Enhance teacher training and support: Continuous professional development programmes should be implemented to equip teachers with the skills to integrate tablets effectively into instructional activities and guide students on ethical use; this will help bridge the gap between theoretical knowledge and practical application.

Secondly, schools should establish effective monitoring mechanisms to supervise tablet usage, prevent misuse, and ensure equitable access for all students; this includes implementing software solutions and assigning dedicated personnel to oversee tablet usage during school hours. Promote stakeholder collaboration: Administrators, teachers, students, and parents should work together to create a shared understanding of ethical tablet use, fostering a culture of responsibility and trust in digital learning environments. Regular dialogue and awareness campaigns should be organised to address emerging ethical concerns.

Conflict of Interest

I declared that there is no conflict of interest and all authors sought are duly acknowledged and referenced.

AI use Declaration

I duly declared that all AI tools used in the preparation of this work are duly referenced.

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