


**INAPPROPRIATE USE OF CELL PHONES IN THE CLASSROOM: IMPACTS ON
CONCENTRATION AND LEARNING AT ECIT ADVOGADO NOBEL VITA**

**USO INADEQUADO DE CELULARES EM SALA DE AULA: IMPACTOS NA
CONCENTRAÇÃO E APRENDIZAGEM NA ECIT ADVOGADO NOBEL VITA**

**USO INAPROPIADO DE TELÉFONOS CELULARES EN EL AULA: IMPACTOS EN LA
CONCENTRACIÓN Y EL APRENDIZAJE EN ECIT ADVOGADO NOBEL VITA**

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Robson Silva Cavalcanti¹, Carla Rossana de Araújo Torres Nogueira², Hugo Soares Cavalcanti³, Marcos Vinícius Dionízio da Silva⁴, José Jonas Almeida Silva⁵, Maria de Fátima Silva Cavalcanti⁶, Ana Amélia Cavalcanti Nunes⁷

ABSTRACT

This study addresses the growing challenge of inadequate cell phone use in the classroom and its impact on student learning and attention. Assuming that, while mobile devices can be pedagogical tools, their uncontrolled use has become a central concern, this work aims to investigate the practices of improper cell phone use at ECIT Advogado Nobel Vita in Coremas-PB. The specific objectives were to identify the purposes of this use and to understand the perceptions of both students and teachers on the subject, focusing on the dynamics of attention and learning. The methodology employed a mixed-methods approach, combining quantitative and qualitative elements. Data collection was carried out using semi-structured questionnaires, administered via Google Forms, to a sample of 135 students and 18 teachers from the mentioned school. Quantitative data were analyzed using percentages and graphs, while open-ended perceptions were processed through thematic analysis to identify relevant patterns and categories. The results revealed that inadequate cell phone use is widely prevalent, with 68.1% of students admitting to engaging in this practice. This incidence compromises attention and content assimilation, with 65.1% of students recognizing that cell phone use hinders their concentration. The teacher's perspective corroborated these findings, with 88.9% of teachers observing improper use and 90% stating that it negatively affects classroom dynamics, with 70% reporting this occurrence frequently. These data highlight that inadequate cell phone use constitutes a significant obstacle to the teaching-learning process. The main contributions of the project lie in providing a localized and empirical diagnosis of a global problem, emphasizing the urgency of effective approaches. The study points to the pressing need to implement strategies that promote student awareness and institutional policies that limit improper use, while also considering the potential of technology as a pedagogical tool. It is recommended that the school

¹ Master in Environment. Universidade Federal da Paraíba (UFPB).

E-mail: robsonsilvacavalcanti@yahoo.com.br

² Dr. in Psychology. Pontifícia Universidade Católica (PUC), Rio Grande do Sul.

E-mail: carlaratorres@gmail.com

³ Student. ECIT Advogado Nobel Vita. E-mail: hugosoarescavalcanti13@gmail.com

⁴ Student. ECIT Advogado Nobel Vita. E-mail: vinihs123@gmail.com

⁵ Student. ECIT Advogado Nobel Vita. E-mail: zejonnas.as@gmail.com

⁶ Specialist in School Management. Universidade Federal da Paraíba (UFPB).

E-mail: fatimasilva.cavalcanti@gmail.com.br

⁷ Portuguese Language Teacher. ECIT Advogado Nobel Vita. E-mail: ana.nunes2@professor.pb.gov.br

community agree on clear guidelines and explore the potential for conscious use of technology. Furthermore, a new study is suggested to investigate the direct correlation between improper cell phone use and academic performance among low-achieving students.

Keywords: Cell Phone Use. Classroom Distraction. Academic Performance. Educational Technology. Teacher Perception.

RESUMO

Este estudo aborda o crescente desafio do uso inadequado de celulares em sala de aula e seu impacto na aprendizagem e na atenção dos estudantes. Partindo do pressuposto de que, embora dispositivos móveis possam ser ferramentas pedagógicas, seu uso descontrolado se tornou uma preocupação central, o trabalho visa investigar as práticas de uso indevido de celulares na Escola Cidadã Integral Técnica (ECIT) Advogado Nobel Vita, em Coremas-PB. Os objetivos específicos foram identificar as finalidades desse uso e compreender as percepções de discentes e docentes sobre o tema, com foco na dinâmica de atenção e aprendizado. A metodologia empregou uma abordagem mista, combinando elementos quantitativos e qualitativos. A coleta de dados foi realizada por meio de questionários semiestruturados, aplicados via Google Forms, a uma amostra de 135 alunos e 18 professores da referida escola. Os dados quantitativos foram analisados utilizando porcentagens e gráficos, enquanto as percepções abertas foram tratadas por análise temática para identificar padrões e categorias relevantes. Os resultados revelaram que o uso inadequado do celular é amplamente prevalente, com 68,1% dos alunos admitindo praticá-lo. Essa incidência compromete a atenção e a assimilação de conteúdo, sendo que 65,1% dos estudantes reconhecem que o celular prejudica sua concentração. A perspectiva docente corroborou esses achados, com 88,9% dos professores observando o uso indevido e 90% afirmando que este afeta negativamente a dinâmica das aulas, com 70% relatando essa ocorrência com frequência. Esses dados evidenciam que o uso inadequado do celular constitui um obstáculo significativo ao processo de ensino-aprendizagem. As principais contribuições do projeto residem em fornecer um diagnóstico localizado e empírico de um problema global, destacando a urgência de abordagens eficazes. O estudo aponta para a necessidade premente de implementar estratégias que promovam a conscientização dos alunos e de políticas institucionais que limitem o uso inadequado, ao mesmo tempo em que se considera o potencial da tecnologia como ferramenta pedagógica. Recomenda-se a comunidade escolar pactuar diretrizes claras e explorar o potencial do uso consciente da tecnologia. Sugere-se, ainda, um novo estudo para investigar a correlação direta entre o uso indevido de celulares e o desempenho acadêmico de alunos com baixo rendimento.

Palavras-chave: Uso de Celulares. Distração Escolar. Desempenho Acadêmico. Tecnologia Educacional. Percepção Docente.

RESUMEN

Este estudio aborda el creciente desafío del uso inapropiado del teléfono celular en el aula y su impacto en el aprendizaje y la atención del alumnado. Partiendo de la premisa de que, si bien los dispositivos móviles pueden ser herramientas pedagógicas, su uso incontrolado se ha convertido en una preocupación central, el estudio busca investigar las prácticas de uso indebido del teléfono celular en la Escola Cidadã Integral Técnica (ECIT) Advogado Nobel Vita, en Coremas, Paraíba. Los objetivos específicos fueron identificar los propósitos de este uso y comprender las percepciones de estudiantes y docentes sobre el tema, centrándose en la dinámica de la atención y el aprendizaje. La metodología empleó un

enfoque mixto, combinando elementos cuantitativos y cualitativos. La recopilación de datos se realizó mediante cuestionarios semiestructurados administrados a través de Formularios de Google a una muestra de 135 estudiantes y 18 docentes de la escuela. Los datos cuantitativos se analizaron mediante porcentajes y gráficos, mientras que las percepciones abiertas se analizaron mediante análisis temático para identificar patrones y categorías relevantes. Los resultados revelaron que el uso inapropiado del teléfono celular está generalizado, con un 68,1% de estudiantes que lo admiten. Esta incidencia compromete la atención y la asimilación de contenidos, ya que el 65,1% del alumnado reconoce que los teléfonos celulares dificultan su concentración. La perspectiva docente corroboró estos hallazgos: el 88,9% del profesorado observó un uso inapropiado, el 90% afirmó que impacta negativamente en la dinámica de clase y el 70% reportó esta ocurrencia con frecuencia. Estos datos demuestran que el uso inapropiado del teléfono celular constituye un obstáculo significativo para el proceso de enseñanza-aprendizaje. Las principales contribuciones del proyecto residen en proporcionar un diagnóstico localizado y empírico de un problema global, destacando la urgencia de implementar enfoques efectivos. El estudio destaca la necesidad apremiante de implementar estrategias que fomenten la concienciación del alumnado y políticas institucionales que limiten el uso inapropiado, considerando también el potencial de la tecnología como herramienta pedagógica. Se recomienda a la comunidad escolar acordar directrices claras y explorar el potencial del uso consciente de la tecnología. También se sugiere un nuevo estudio para investigar la correlación directa entre el uso inapropiado del teléfono celular y el rendimiento académico del alumnado con bajo rendimiento.

Palabras clave: Uso del Teléfono Celular. Distracción Escolar. Rendimiento Académico. Tecnología Educativa. Percepción Docente.

1 INTRODUCTION

The proliferation of mobile devices, especially cell phones, has radically transformed the forms of social, cultural, and educational interaction. These devices have significant potential as pedagogical tools — for example, in accessing online content and interactive resources — but their inappropriate use in the classroom has been widely associated with distractions that compromise attention and academic performance.

Recent studies show the negative impact of cell phone use on concentration and learning. The 2022 Programme for International Student Assessment (PISA) report, for example, points out that about 80% of 15-year-old Brazilian students report being distracted by the use of cell phones during math classes. These students performed lower compared to those who were more concentrated, losing, on average, 15 points in the assessment (OECD, 2023; AGÊNCIA BRASIL, 2023). In addition, students who spend up to one hour a day on their cell phones performed 49 points better than those who spent between five and seven hours connected (EDUCAÇÃO UOL, 2023). These data reinforce the limits of the total ban on devices and suggest the need for structured pedagogical integration with clear criteria.

In addition to the academic impacts, the excessive use of smartphones has clear implications for students' mental health. An integrative review published in 2020 in *Cadernos Brasileiros de Saúde Mental* pointed out that excessive or dependent smartphone users have a higher prevalence of anxiety, depression, and sleep disorders (NUNES et al., 2020). Another study conducted by the Federal University of Lavras (UFLA) in 2023 identified an association between smartphone addiction and high symptoms of depression, anxiety, stress, as well as body dissatisfaction and dysfunctional eating habits (UNIVERSIDADE FEDERAL DE LAVRAS, 2023). Such findings broaden the debate beyond academic performance, highlighting ethical and social implications in the educational process.

Faced with this complex scenario, the contemporary debate on the use of cell phones in education goes beyond the dichotomy between prohibition or total liberation. The literature suggests the need to establish pedagogical, ethical, and organizational criteria that guide a responsible and intentional integration of technology into the curriculum. In Brazil, this discussion reached a new regulatory level with the sanction of **Law 15,100, of 2025**, which restricts the use of cell phones and other portable electronic devices in public and private schools of basic education. Although the law provides for exceptions for pedagogical purposes, accessibility, health, or fundamental rights, it signals a more rigorous and

centralized approach to promoting a focused learning environment and protecting students' mental health (BRASIL, 2025).

In real-world contexts, the distinction between legitimate educational uses — such as research, consulting virtual learning environments, or reading texts — and non-classroom behaviors, such as social media, personal messaging, or gaming, is not always clear. This ambiguity highlights the importance of contextual investigations, which consider the particularities of each institution, the perceptions of the actors involved and the concrete conditions of infrastructure, time management and school culture.

In view of this scenario, this study aims to investigate the practices of cell phone use at the Escola Cidadã Integral Técnica (ECIT) Advogado Nobel Vita, located in Coremas, Paraíba. The objective is to understand how the inappropriate use of these devices manifests itself during classes and what effects are perceived in the attention, participation and learning of students. The choice of this full-time public school is justified by the particular challenge of managing long school days with high expectations of academic engagement.

For the purposes of this research, "inappropriate use of cell phones" is defined as any use during the school period that is not aligned with pedagogical objectives — such as social networks without didactic purpose, exchanges of personal messages, games and entertainment videos. This definition seeks to distinguish productive uses from disruptive ones more clearly.

The objective of this work is to investigate the inappropriate use of cell phones during classes at ECIT Advogado Nobel Vita, in Coremas-PB, identifying the purposes of this use and understanding the perceptions of students and teachers on the subject

2 THEORETICAL FOUNDATION OR LITERATURE REVIEW

Education, as a social and cultural practice, has always been linked to historical and technological transformations. Since classical philosophy, human formation has been understood as an integral process that involves both cognitive development and the ethical dimension. For Plato (2006), in *The Republic*, education should guide the soul towards the common good, articulating knowledge and values. Hannah Arendt (2007) takes up this debate when she states that educating is introducing young people to a common world, in which responsibility and tradition are intertwined. This perspective reinforces that the role of the school goes beyond technical instruction: it is about forming citizens who are aware of their performance in the public space.

In the contemporary context, marked by technological ubiquity, the cell phone has become a central cultural artifact. Pierre Lévy (1999) describes cyberculture as the new condition of humanity, in which collective intelligence is enhanced by digital networks. In education, authors such as Kenski (2012) and Moran (2015) highlight that mobile devices can favor more autonomous, interactive and personalized learning. However, these same resources, when used without pedagogical criteria, can fragment attention and compromise the quality of learning.

Recent research confirms this ambivalence. The 2022 Programme for International Student Assessment (PISA) report showed that 80% of 15-year-old Brazilian students reported being distracted by cell phones during class, and that these students performed lower in mathematics compared to more concentrated students (OECD, 2023; AGÊNCIA BRASIL, 2023). These results reinforce international evidence that the time of exposure to digital devices is correlated with a drop in school performance when not pedagogically mediated.

From the psychological and pedagogical point of view, Ausubel (2003) already stated that meaningful learning depends on sustained attention and links between new contents and previous cognitive structures. The dispersion caused by the inappropriate use of cell phones tends to hinder this process. Kuhn and Pease (2016), when analyzing argumentation skills in educational environments mediated by technology, also pointed out that informational overload can reduce the quality of concentration and critical reasoning.

Another aspect to consider is the effects of excessive smartphone use on students' mental health. An integrative review conducted by Nunes et al. (2020) identified a higher prevalence of symptoms of anxiety, depression, and sleep disorders among cellphone-dependent users. Research from the Federal University of Lavras (UFLA) also associated smartphone addiction with disorders such as high stress, body dissatisfaction, and dysfunctional eating habits (UNIVERSIDADE FEDERAL DE LAVRAS, 2023). Such findings broaden the debate beyond academic performance, highlighting ethical and social implications in the educational process.

From this perspective, Paulo Freire (1996) argues that educational freedom should always be accompanied by ethical responsibility. School education needs to contemplate the capacity for self-regulation in the use of technologies, promoting critical digital citizenship. Cortella (2014) reinforces that education should also be concerned with moral formation, stimulating respectful coexistence and co-responsibility. Bauman (2001), when reflecting on

liquid modernity, warns of the challenges of living in societies marked by fluidity and excessive stimuli, a scenario that requires new forms of discipline and time management.

Therefore, the literature indicates that the issue of cell phones in the classroom cannot be reduced to the dilemma between allowing or prohibiting. It is a broader challenge that involves: (a) understanding the cognitive effects of digital distraction, (b) exploring the pedagogical potential of mobile devices, (c) articulating ethical and social dimensions of student education, and (d) proposing strategies that reconcile technological innovation and pedagogical focus. Although there is already relevant research, there is still a need for situated studies that contemplate specific realities, such as that of full-time public schools, where extended time and high performance expectations make care management a crucial challenge.

3 METHODOLOGY

The present study adopted a mixed approach, integrating quantitative and qualitative elements in order to provide a comprehensive understanding of the phenomenon investigated. This is a descriptive and exploratory research, which sought both to characterize the inappropriate use of cell phones in the classroom and to explore the perceptions and experiences of the participants involved.

The investigation was carried out with a convenience sample composed of 135 students and 18 teachers from the Lawyer Nobel Vita Technical Integral Citizen School (ECIT), located in the municipality of Coremas, Paraíba. The selection of participants occurred in a non-probabilistic manner, with the voluntary and spontaneous adherence of the subjects, respecting the principle of free participation.

For data collection, a semi-structured questionnaire was used as the main instrument, developed and applied through the Google Forms platform. The questionnaire was designed to include both objective questions, which allowed the quantitative treatment of the data, and open questions, aimed at the qualitative deepening of the participants' perceptions. Among the aspects addressed, the frequency and purpose of the use of cell phones in the classroom were highlighted, as well as the perceptions about the impact of this use on concentration and learning. Although the instrument proved to be functional, no formal procedures related to the validation and reliability of the measurements were documented.

The questionnaires were applied during the school period, at previously organized times so as not to interfere with regular pedagogical activities. The participants were assured

anonymity and confidentiality of their answers, by signing the Informed Consent Form, fully respecting the ethical principles of research with human beings.

With regard to data analysis, the answers to the objective questions were examined through descriptive statistics, including the calculation of percentages and the construction of graphs that made it possible to identify patterns of use and perceptions among the different groups. The answers to the open questions were submitted to thematic analysis, a procedure that involved exhaustive reading of the material, identification of units of meaning, coding of emerging categories and systematization of the central themes, which allowed for a greater depth of the reasons associated with inappropriate use and perceptions about its impacts. It should be noted that no specific procedures for the treatment of missing data or atypical cases (outliers) were explained.

The study followed the ethical guidelines established for research with human beings, and was submitted to and approved by the Research Ethics Committee of the institution, under opinion number [insert CAAE/opinion]. The methodological approach thus guaranteed the legitimacy of the investigative process and the reliability of the information produced.

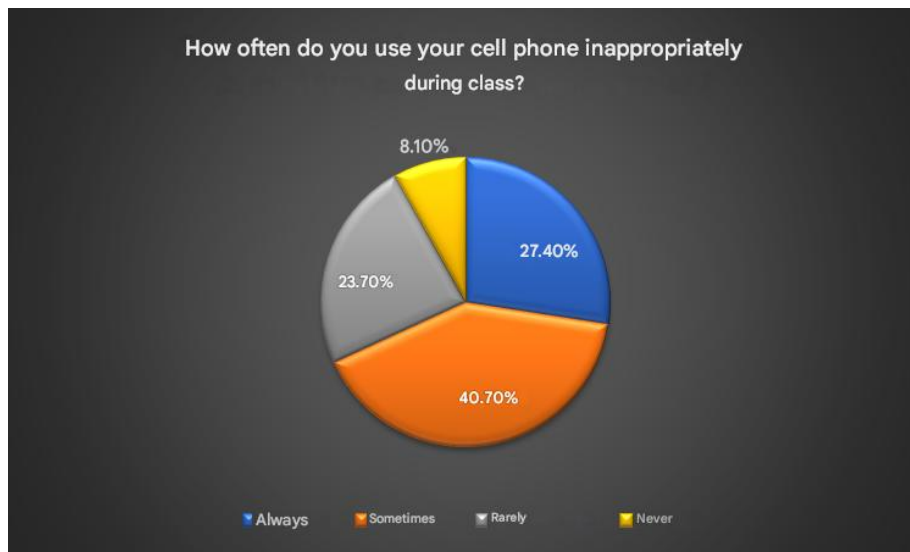
4 RESULTS AND DISCUSSIONS

This section presents and discusses the main findings of the research, originated from the application of questionnaires to 135 students and 18 teachers of the Escola Cidadã Integral Técnica (ECIT) Lawyer Nobel Vita, in Coremas-PB. The results are analyzed from the perspective of the frequency and purposes of inappropriate use of cell phones by students, as well as the perceived impact on concentration and learning, both in the view of students and teachers.

4.1 FREQUENCY AND PURPOSES OF INAPPROPRIATE USE OF THE CELL PHONE

Figure 1

Graph 01 How often do you use your cell phone improperly during classes?



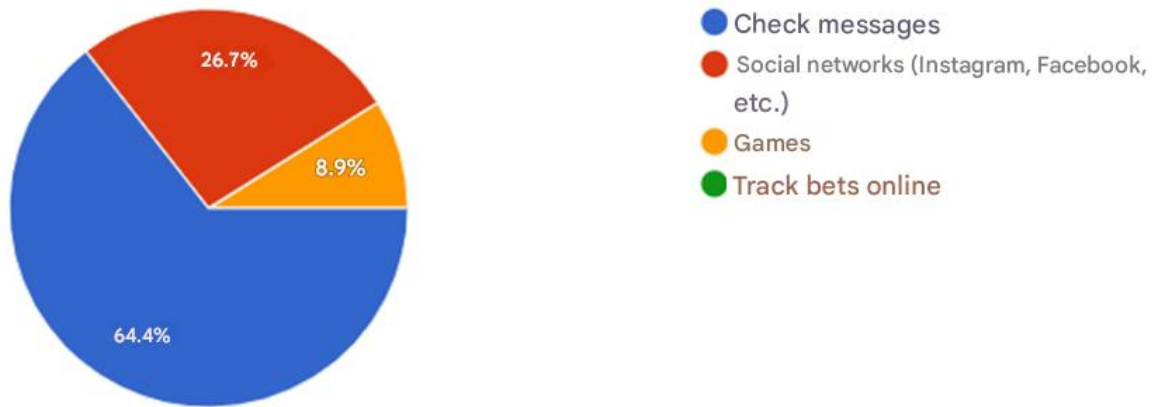
Source: Forms Questionnaire (2024)

The data reveal a high prevalence of inappropriate use of cell phones by students during the academic period at ECIT Lawyer Nobel Vita. **68.1% of the students** reported using their cell phones improperly during classes, with 40.7% saying they did it "sometimes" and 27.4% "always". Only a minority (8.1%) stated that they do not check the device during a 50-minute class, while the vast majority (91.9%) perform at least one check. In terms of attendance, most students (57.8%) check their cell phones 1 to 2 times per class, but a considerable portion (26.7%) check 3 to 5 times, and 7.4% indicate more than 5 checks.

These findings highlight a scenario of widespread misuse, which imposes significant challenges to sustained attention, student engagement, and classroom management. The prevalence, even if categorized as "sometimes", suggests that the behavior manifests itself frequently enough to fragment attention and potentially impact academic performance, corroborating the literature that associates smartphone handling with distractions and loss of focus (OECD, 2023; EDUCAÇÃO UOL, 2023). The reduced share of students who never check their cell phones may indicate greater self-discipline or school environments with stricter rules and monitoring.

Figure 2

Graph 02 What do you use your cell phone the most for in the classroom?



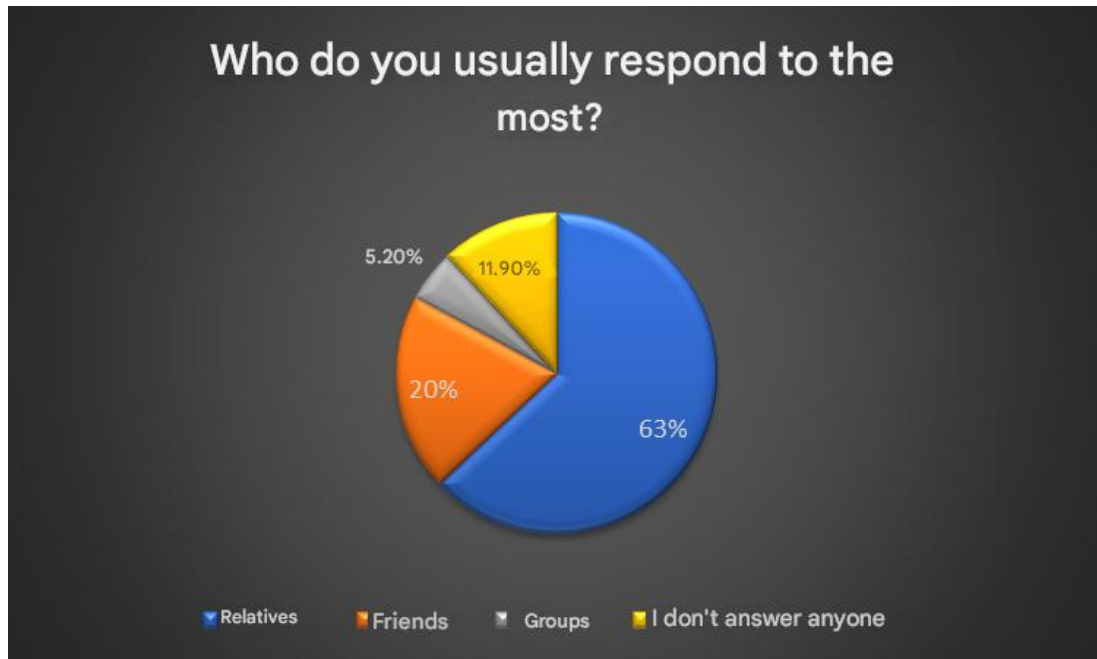
Source: Forms Questionnaire (2024)

The analysis of the purposes of use reveals that **interpersonal communication is the main driver of digital engagement in the classroom**. "Checking messages" represented the main purpose with 64.4% of the responses, followed by "Social networks (Instagram, Facebook, etc.)" with 26.7% and "Games" with 8.9%. The category "Follow online betting" registered 0%. In comparative terms, the leading activity was 2.41 times more frequent than "Social networks" and 7.23 times more frequent than "Games", characterizing a high concentration of use in few activities, according to the Herfindahl-Hirschman concentration index (HHI) of 0.493.

This predominance of messaging (64.4% claim to check messages) suggests that digital distraction is deeply incorporated into the academic routine. Studies on attention and digital multitasking show that frequent interruptions impair information coding and performance in subsequent assessments, in addition to impacting classroom dynamics by social contagion. The contrast between "Check messages" and "Social networks" indicates that, although the consumption of social content is relevant, the impulse to check messages, possibly associated with academic obligations or even family expectations of response, prevails as a habit of rapid reward cycle. This pattern favors a frequent checking cycle, reducing the windows of concentration and promoting the constant alternation of tasks, which increases the student's extrinsic cognitive load (SWELLER, 1988).

Figure 3

Graph 03 During class, is the use of Whatsapp to answer short?



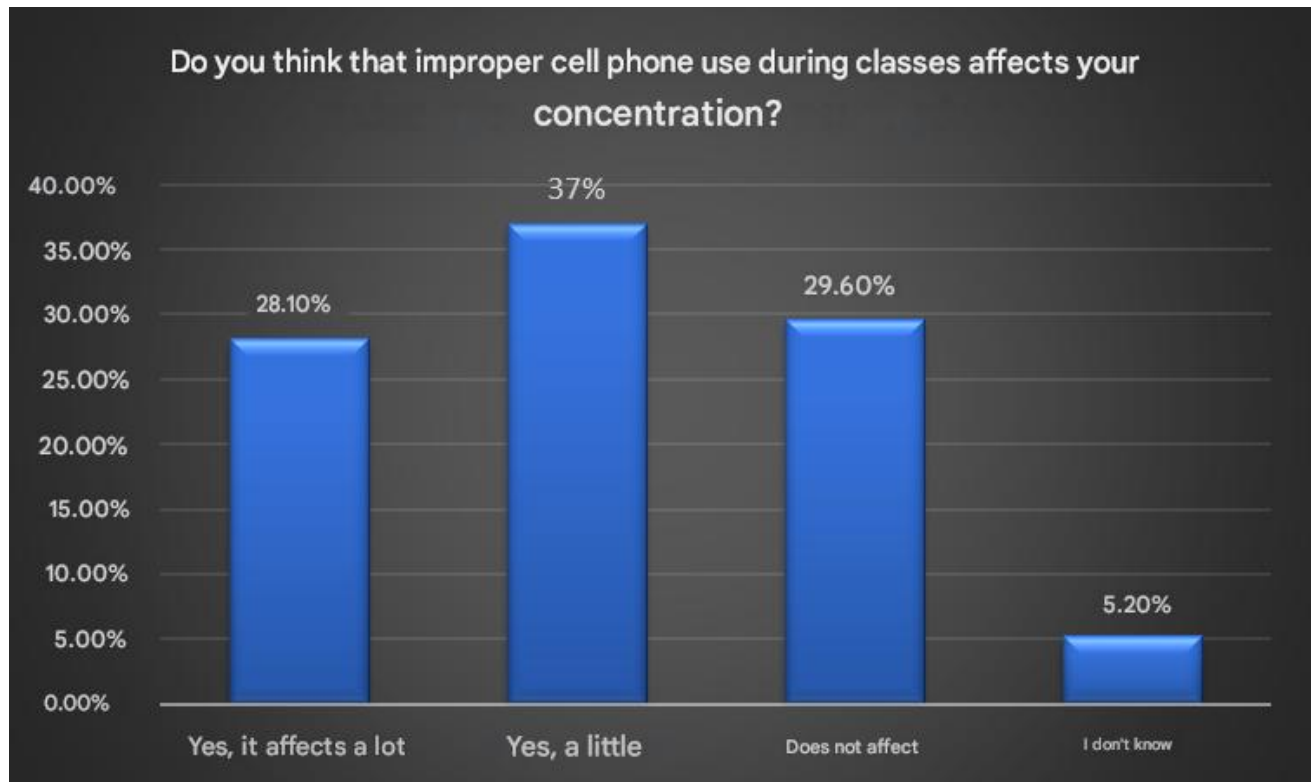
Source: Forms Questionnaire (2024)

The analysis of "Who do you usually answer the most?" reinforces the centrality of direct communication, with a predominance of responses to family members (63.0%), followed by friends (20.0%). This strong asymmetry in the priority of response, with family members concentrating more than three times the proportion of friends, suggests that interruptions are largely driven by affective and practical factors of daily life. In environments that demand sustained attention, such as school, such findings indicate that interruptions come mostly from direct contacts and not from passive entertainment, which requires approaches that consider communication essential without compromising focus.

4.2 IMPACT ON CONCENTRATION AND LEARNING

Figure 4

Graph 04 Do you believe that the improper use of the cell phone during class affects your concentration?

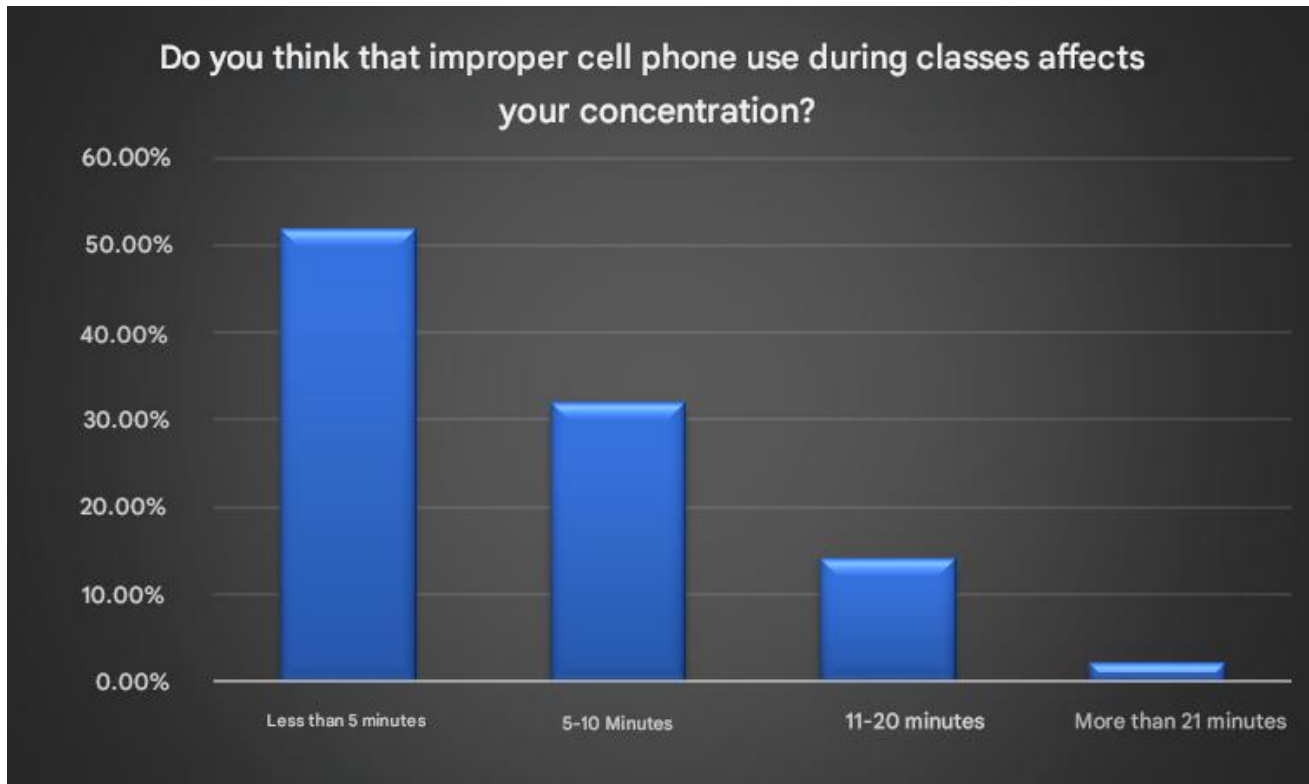


Source: Forms Questionnaire (2024)

The perception of the impact of cell phone use on concentration is widely recognized by the students themselves. **65.1% of students admitted that cell phone use impairs their concentration**, with 28.1% stating that it affects "a lot" and 37.0% that it affects "a little". Only 29.6% did not perceive a significant impact. This self-perception of most students, although with variation in intensity, highlights that distraction by cell phone is a problem experienced and recognized. The portion that declares not to be affected may, however, reflect greater self-regulation or an underestimation of the typical performance losses of multitasking, which may be subtle and cumulative (RAVIZZA; UITVLUGT; FENN, 2017).

Figure 5

How much time do you usually spend on your cell phone improperly during class?



Source: Forms Questionnaire (2024)

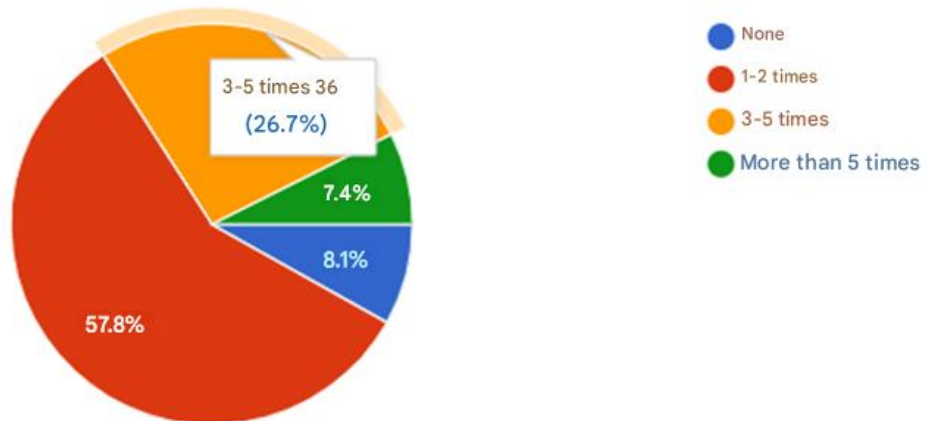
Regarding the perceived time to regain concentration after misuse, the results indicate that most participants (approximately 52.0%) regain focus in "less than 5 minutes", and another 32.0% in "5–10 minutes". Together, **84.0% of the students are within 10 minutes of distraction**. However, a portion of 16.0% needs more than 10 minutes (14.0% for 11–20 minutes; 2.0% for more than 21 minutes), suggesting the existence of subgroups with greater attentional vulnerability. Although most perceive short interruptions, frequent and sequential interruptions can accumulate cognitive costs and fragment attention, affecting content retention (SANA; WESTON; CEPEDA, 2013). These findings are consistent with the literature on cognitive load and multitasking, which highlights the cost of task switching and the need for sustained attention for meaningful learning (AUSUBEL, 2003).

Figure 6

How many times do you usually access your cell phone without consent during class?

How many times do you usually check your phone during a 50-minute class?

135 responses



Source: Forms Questionnaire (2024)

The teachers' perspective strongly corroborates the students' perception of the problem. **88.9% of the teachers observed the inappropriate use of cell phones in the classroom**, and **90% stated that this negatively affects the dynamics of classes**, and 70% reported this occurrence frequently. This high agreement between teacher observation and student self-perception reinforces that the inappropriate use of cell phones has become a significant and ubiquitous obstacle to the teaching-learning process at ECIT Lawyer Nobel Vita.

5 CONCLUSION/FINAL CONSIDERATIONS

The present study showed that the inappropriate use of cell phones during classes at ECIT Advogado Nobel Vita, in Coremas-PB, has a significant impact on students' concentration and learning. The high prevalence of this behavior and the predominance of message checking as the main purpose reveal a pattern of use that competes directly with the attention dedicated to academic activities. Both students and teachers recognized that these practices negatively affect the teaching dynamics and classroom management, confirming the need for pedagogical and institutional interventions.

The research offers contributions at three different levels. On the pedagogical level, it provides evidence for the planning of classes that minimize distractions and promote greater engagement, suggesting the adoption of active methodologies and strategies for the intentional integration of cell phones in the learning process. At the institutional level, it supports the formulation or revision of internal rules and teacher and student training programs aimed at digital citizenship, self-regulation, and ethical use of technology. At the level of educational policy, it offers a situated portrait of the phenomenon, allowing for dialogue with national guidelines and orientations on responsible technological integration in public education.

For future research, it is recommended to investigate: (i) variations in inappropriate cell phone use as a function of grade, course or school shift; (ii) the relationship between frequency of misuse and objective indicators of academic performance; (iii) the efficacy of specific interventions, such as care contracts, active methodologies and structured pedagogical use of cell phones, using quasi-experimental designs; and (iv) the role of classroom climate and perceived social norms in regulating the use of devices.

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