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Scientific

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"Multitasking" and Its Impact on Students from Teachers' Perspective

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Abstract

The demanding pace of modern society pushes us to multitask in order to achieve maximum efficiency and effectiveness. A key open question is whether multitasking is effective? Numerous studies have demonstrated the effects of "multitasking" on a psychological, cognitive and socio-emotional level. The results showed that students who engage in multitasking more often while completing their schoolwork tend to have lower academic performance. In addition, it was shown that multitasking is positively correlated with increased procrastination.

Keywords: multitasking, media multitasking, procrastination, school performance

Introduction

Several studies have showcased the impact of multitasking in the cognitive functions of the brain, with memory and attention being prominent. Therefore, attempting to perform two or more tasks simultaneously contributes to repeated switching between tasks, as well as to an increase in unfinished tasks (Gazzaley, Rosen, 2016; Cheever, Peviani, Rosen, 2018; Madore, Wagner, 2019).

However, despite the effects, teenagers, given their familiarity with technology, tend to adopt multitasking in their daily lives, even claiming that it contributes to concentration (Butler, Weywadt, 2013; Kaiser Family Foundation, 2010). Despite the prevailing perception of adolescents, several studies have highlighted the negative consequences of multitasking. More specifically, multitasking and media multitasking has been directly correlated with an increase in pre-existing levels of anxiety in adolescents, as a compensatory factor for the avoidance of

stressful situations, procrastination and reduced school performance (Carvalho, Hopko, 2011; Reinecke, Hofmann, 2016; Kokoc, 2021).

Taking the above into consideration, this study investigated adolescents' familiarity and opinions about multitasking, the association of multitasking with school anxiety, procrastination, and decreased school performance. The research questions that are asked are the following:

1. How is multitasking related to the academic performance of adolescent students?

2. How is multitasking linked to procrastination as a means of avoiding stressful situations?

Literature Review

The term "multitasking" comes from the world of computers and describes the ability of an operating system to perform multiple tasks simultaneously. However, the human brain does not work in the same way as an operating system. Despite the widespread use of the term in the literature, it is not always encountered with the same terminology. Sometimes it can be referred to as the simultaneous execution of two tasks and sometimes as the coordination of different life roles. As mentioned above, multitasking refers to the execution of multiple simultaneous tasks, either physical or mental, at the same time (Kramer, Schmidt, 2021). Attempting to perform two or more tasks simultaneously results in repeated switching between tasks, contributing to an increase in incomplete tasks. Attempts to perform tasks simultaneously cause interference between networks, contributing to slower information processing and errors (Madore, Wagner, 2019).

Media multitasking has been directly associated with the emergence of psychopathology in adolescents. More specifically, it is linked with increased levels of sensation seeking (Sanbonmatsu, Strayer, Medeiros-Ward, Watson, 2013), social anxiety, depression, and neuroticism (Becker, Alzahabi, Hopwood, 2013). For adolescents experiencing stress and anxiety, media addiction in the hope of reducing distress may be maladaptive because, despite the immediate relief it provides, it may prevent them from learning adaptive coping strategies that help solve problems (Carvalho, Hopko, 2011; Cheever, Peviani, Rosen, 2018). Moreover, the singularities that are observed in adolescent brain development, make them particularly vulnerable to the dangers of media multitasking and may lead to deficits in social interaction (Cheever et al., 2018). At the same time, media use and multitasking during face-to-face communication constitutes a new communication "norm" (Xu, Wang, David, 2016). Adolescents' high engagement in media multitasking contributes to disengagement from important social functions (Wallis, 2010; Armakolas, Lora, Waligóra, 2024). Adolescents who multitasked in the media faced greater difficulties in focusing attention in their daily lives (Baumgartner, van der Schuur, Lemmens, te Poel, 2018).

Reinecke, van der Schuur, Lemmens, and te Poel's (2018) study of a sample of German adolescents suggested that although internet multitasking is directly related to procrastination, it is not directly related to reduced psychological functioning, suggesting that not all forms of internet use associated with procrastination are necessarily harmful.

Admittedly, multitasking, especially with Social Networking Media (SNM), while learning, studying, and completing schoolwork is rapidly increasing among adolescents in the digital age and is directly related to decreased school performance (Demirbilek, Talan, 2018; Lau, 2017). Furthermore, it has been correlated with problems with attentional distraction and difficulties with self-regulation of students (May, Elder, 2018; Wu, 2017; Papanikou, Armakolas, Panagiotakopoulos, Dritsas, 2023). Additionally, it was found that adolescents who multiprocessed in NCDs to an excessive extent exhibited lower attentional control and reduced school performance (Kokoc, 2021; Armakolas et al., 2025).

Research Methodology

To support the results of this study, qualitative research was chosen. During the initial stage of the research design, the researchers selected weighted scales that answered the research questions, after adjusting the scales. Regarding the interviews, a total of six secondary school teachers participated, all six of whom were women. The interviews were conducted in person during the month of April 2024. During the interviewees' passage through the space, the researcher referred extensively to the purpose of the research, the maintenance of confidentiality, as well as the participants' right to interrupt or withdraw from the interview at any time. In addition, the interviewees were informed about the recording and transcription of the interviews. The first questions that were posed concerned demographic data. The above techniques aimed at creating a climate of intimacy and trust between the interviewer and the interviewee, before proceeding with the main part of the questions (Bell, Waters, 2018). The duration of the interviews ranged from 30 to 40 minutes.

As far as the quantitive study is concerned, to enhance the validity and reliability of the questionnaire, a pilot application was implemented before its final form. The axes that emerged from the interviews were the following: A) Multitasking and adolescence, B) Procrastination and adolescence, C) School performance and adolescence. The first axis concerned the effectiveness of multitasking and the questions arose from the work of David, Kim, Brickman, Ran, and Curtis (2015) and Junco and Cotten (2012). The second axis concerned the measurement of procrastination. and was developed according to the research of Hasanagic, (2019). The third axis was based on the research of Birchmeier, Grattan, Hornbacher, and McGregory (2015).

Analysis – Results

Thematic Axis 1: Multitasking and Adolescence

In terms of this axis, we wanted to explore the views of educators on whether multitasking is a characteristic of adolescents and we focused primarily on media multitasking. Secondly, we examined (depending on the answer given to the initial question) the possible causes of multitasking. In addition, we attempted to investigate the frequency of multitasking as well as the tasks that adolescents choose to perform simultaneously during their studies at home, focusing mainly on distraction due to mobile phones or computers.

More specifically, regarding the first research question on whether they consider that "multitasking" is a characteristic of adolescents, and specifically media multitasking, all teachers responded positively. “For the most part, yes, I believe so.” (P.3). “Of course, I consider it a characteristic of adolescents.” (P.4). However, one participant, despite giving a positive response, emphasized that each student is an individual case, stating: *“I believe so, although of course each student’s case is different”* (P.5). With regard to the reasons behind the emergence and adoption of multitasking among adolescents, all teachers pointed to the use of technological devices such as mobile phones and computers. One teacher characteristically remarked: *“Most children are quite absorbed by electronic means of engagement (primarily mobile phones)… they show difficulty concentrating on a single activity, because their mind is often ‘stuck’ on the message they are waiting for, or on the reactions they ‘expect’ to receive from a post…”* (P.3). Similarly, other teachers highlighted the pervasive role of technology in students’ lives, noting: *“Mobile phones have now become an extension of their hand”* (P.6), and *“The mobile phone and the computer do not allow them to focus entirely on the task they have undertaken. They function as a constant distraction…”* (P.4).

In addition, four teachers mentioned the hectic and demanding pace of everyday life as a possible reason for the emergence of multitasking among adolescents, noting that it contributes to the lack of time needed for concentration and the completion of a single task. As they characteristically stated: *“…the modern pace of our society somehow forces us all to be potential ‘multitaskers’*.” (P.2); and *“A possible cause could be the generally faster pace of daily life, in which both their parents and most members of society are also engaged.”* (P.3). Finally, one participant identified the lack of personal interests on the part of adolescents as another potential reason for the appearance of multitasking.

In the next question, the participants were asked whether they believe that during study time at home adolescents fully concentrate on their work or if their attention is likely distracted by the mobile phone or the computer, all teachers responded affirmatively, stating that adolescents’ attention is indeed diverted. Regarding the tasks they perform simultaneously, they mentioned the following: sending messages, watching videos, sharing and commenting on photos and

videos, listening to music, playing electronic games, following news feeds, and checking reactions to posts they have uploaded. Characteristic statements include the following: *"They listen to music, communicate with their classmates, play games."* (P.1); *"...they chat or comment on messages and photographic material. They may, of course, also just browse through the news feed or watch videos of humorous interest."* (P.3); and *"...as well as check the reactions to a post they have uploaded."* (P.6).

Furthermore, three of the teachers attributed the teenagers' distraction during the study to having social media accounts and the fear of missing out on important information. An indicative statement is the following: *"...has profiles on various Social Media and they believe that they must be active constantly, lest they miss some important news, information and find themselves outside the company and developments.*" (P.2).

In conclusion, regarding the first thematic axis, all teachers stated that multi-tasking is a characteristic feature of adolescents and attributed its adoption both to the use of technological devices (mobile phone, computer) and to the demanding pace of everyday life. Furthermore, all teachers agreed that adolescents' attention is distracted during study time at home and reported that they simultaneously engage in the following activities: sending messages, watching videos, sharing and commenting on photos and videos, listening to music, playing electronic games, browsing news feeds, and checking reactions to posts they have uploaded. Finally, three of the participants highlighted the significant role played by social media.

Thematic Axis 2: Procrastination and Adolescence

In the present section, we attempted to examine the possible procrastination that adolescents display regarding their school duties and obligations, based on the responses we received from the teachers, as well as the reasons they usually give for requesting an extension to complete a school assignment or to change the agreed date of a test.

More specifically, in the first question posed which refers to when students submit the homework assignments given to them, the majority of teachers reported that students hand in their work even after the submission deadline, while some do not submit it at all. Characteristic statements include the following: 'Many will hand in an assignment much later, after repeated pleas, or not at all.' (P.4). 'Possibly even after the submission deadline.' (P.6). Only one teacher mentioned that students usually submit their work by the actual deadline."

In terms of the second research question which investigates if students wish to request an extension for completing a school assignment or a change in the date of a pre-arranged test, all teachers responded positively. The most common reason put forward was the students' overloaded daily schedule due to extracurricular activities and the study required for other subjects. 'Often the reasons are that they

will not have enough time because of their private tutoring lessons, or because they have to study for another test…' (P.3). '…they tell me that they have many extracurricular activities and other subjects to study, and because of this, their time is overburdened.' (P.5)."

To conclude, regarding the second thematic axis, it was observed that students generally show a pronounced procrastination about their schoolwork and obligations. The most common reason for wanting to extend either a school assignment or an exam was the students' busy daily schedule.

Thematic Axis 3: School performance and adolescence

In the present axis we studied adolescents' school performance based on their active participation in class during the lesson. We also investigated their school performance based on their actual school performance during the previous four months, evaluated by teachers as poor, average, excellent.

Specifically, when asked if most students actively participate in class, four out of six teachers reported that the number of students who actively participate has decreased dramatically. "No, many of my students do not actively participate in class. "*With difficulty I manage to get a small percentage to participate and not always the same*." (P.4). "*Unfortunately, not, and certainly not to the same degree*." (P.3). At the same time, one participant stated that they usually participate actively, while a teacher stated that it depends on the lesson and the stimuli they receive from the teacher.

Regarding the question whether they believe that students intend to check their cell phones during class, and for this reason, they are probably not participating, three of the teachers answered positively. Specifically, they stated: "*The mobile phone is an important tool for communicating continuously and during the lesson. They do not participate and are often distracted by the mobile phone, either openly or secretly*." (P.4). "*Their mobile phone is an extension of their hand*." (P.6). At the same time, two of the participants noted that mobile phone is not the main reason for non-participation. "*Surely all students would like to be able to check their mobile phone, but it is not a main reason for non-participation, in my opinion*." (P.3).

Finally, a teacher stated that the cell phone is not a reason for not participating in class because its use is prohibited during class time.

In the last question regarding student performance during the previous four months, most of the teachers reported that many students have average to poor performance, with few student exceptions. *The answer was indicative: "Average (for most students), bad for a fairly respectable percentage (25-30%), excellent for a few children (usually 2–3 per class of 16–18 children)* (P.3).

Possible reasons for students' mediocre performance are the lack of motivation and stimulation on the part of students, learning gaps, and the students' overloaded

daily schedule. "*In my school due to lack of stimulation*." (P.2). "*They have many gaps in their knowledge, have many extracurricular activities, and do not know how to study*." (P.5). Worth mentioning is the statement of an educator who attributed the lack of motivation on the part of students to the general disorientation of modern society. *"...in an era of easy enrichment through hyper-self-promotion (thanks also to social media), children are impressed and want to imitate a 'skill' that does not require the cultivation of any other skill..."* (P.3).

To conclude, a significant number of students don't actively participate mainly due to their low academic level, lack of interest, and the teaching approach, while the use of mobile phones does not constitute a primary reason for non--participation. Finally, regarding students' performance, it was described as average, with only a few exceptions, and attributed to the lack of motivation and stimulation on the part of the students, to learning gaps, and to their overloaded daily schedule.

Discussion

The research findings align partially with prior studies, confirming that multitasking, particularly with media, is a prominent trait among adolescents. This finding supports the conclusions of researchers like Baumgartner et al. (2018) and Foehr (2006), who noted that media multitasking has become a lifestyle for teenagers. Furthermore, the study revealed that most adolescents don't find it difficult to perform multiple tasks at once, a result consistent with the research conducted by Butler and Weywadt (2013) and Carrier, Cheever, Rosen, Benitez, and Chang (2009).

Regarding procrastination, we concluded that it is evident in the adolescent population based on the study's findings. According to educators, students often submit their assignments after the deadline and frequently ask for extensions to complete a school project or to change the date of a pre-arranged test. This finding is consistent with the research of Beutel et al. (2016), which examined the increase of procrastination in the youth population, as well as with the research of Özer, Demir, and Ferrari (2009).

As far as procrastination is concerned, it became clear that the more students engage in multitasking, the higher their levels of procrastination. Multitasking has been directly associated with procrastination in previous research as well. Specifically, the use of the Internet is considered a potential alternative multitasking activity for procrastinating individuals for the following reasons: thanks to mobile Internet connections and smartphones, media content and communication are almost ubiquitous and permanently available with virtually no cost or effort (Klimmt et al., 2018). Furthermore, several online activities (e.g., social media use, gaming, and watching videos) promise instant gratification and pleasant experiences and can therefore be particularly attractive to those who postpone

tasks when faced with an aversive or difficult assignment (Sirois, Pychyl, 2013; Ettinger, Cohen 2020).

Adolescents' perception of their proficiency in multitasking may not reflect reality due to developmental differences related to brain function (Carrier, Cheever, Rosen, Benitez, Chang, 2009; Carrier, Rosen, Cheever, Lim, 2015). Finally, it was found that students who are more frequently involved in multitasking while completing their schoolwork tend to have lower self-reported academic performance, as well as lower actual academic performance. This finding is supported by a multitude of studies (Junco, Cotten, 2012; Demirbilek, Talan, 2018; Rosen et al., 2013; Lee, Lin, Robertson, 2012; Kokoc, 2021).

Conclusion

Regarding the first research question, a clear distinction emerges. While students who perceive multitasking as effective in completing their school obligations demonstrate high levels of both self-reported and actual academic performance, this positive association is contradicted by their actual behavior. Specifically, the data show that the more frequently students engage in multitasking, the lower their performance tends to be, indicating a significant gap between perception and reality Furthermore, with regard to the tasks they perform most extensively while studying at home, the findings of the qualitative study revealed the following: sending messages, watching videos, simultaneous engagement with social media, sharing and commenting on photos and videos, listening to music, playing electronic games, browsing news feeds, and checking reactions to posts they have uploaded.

Regarding the second research question, we conclude that the more students engage in multitasking, the higher levels of procrastination they exhibit. Additionally, the findings showed that procrastination is evident in the adolescent population regarding their school duties and obligations. From this finding, we conclude that the fast pace of daily life pushes adolescents to adopt multitasking as a way of life, which contributes to the increase of procrastination.

Future research could focus on the development of reliable and valid scales for measuring multitasking during adolescence. Finally, it is considered appropriate to examine the variations in multitasking across the different stages of adolescence and levels of schooling.

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