Scientific Narratives in the Study of Student Time Management: A Critical Review

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Abstract

Effective time management plays a major role in the performance society, and not only psychological, but also socio-cultural and pedagogical factors are involved in students' effective organization of time. Mainstream scientific discourse has argued that effective learning depends to a large extent on students' organizational skills. However, researchers have paid scant attention to the socio-cultural and pedagogical aspects that are involved in the development of these skills. The purpose of this article is to critically analyze the dominant scientific narratives on the study of the effective use of time by students. To this end, this study was designed based on a critical review of the literature from 1990 to 2021. The Web of Science and Scopus databases were consulted. A total of 51 papers met the inclusion criteria. The results suggest that learning to organize and optimize academic time is important for social coordination, well-being and achievement of students' academic and life goals. However, the acceleration of instructional time has a major emotional impact on the school population. The conclusion is the need to investigate the subjective and collective experiences of students on the emotional impact that speed, work overload and multitasking have on their academic and personal lives.

Narrativas Científicas en el Estudio de la Gestión del Tiempo en los Estudiantes: Una Revisión Crítica

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Resumen

La gestión eficaz del tiempo desempeña un papel importante en la sociedad del rendimiento, y en el caso de los estudiantes, en aquélla intervienen, no sólo factores psicológicos, sino también socioculturales y pedagógicos. El discurso científico dominante ha sostenido que el aprendizaje eficaz depende en gran medida de la capacidad de organización de los alumnos. Sin embargo, los investigadores han prestado escasa atención a los aspectos socioculturales y pedagógicos que intervienen en el desarrollo de esta habilidad. El propósito de este artículo es analizar críticamente las narrativas científicas dominantes sobre el estudio del uso eficaz del tiempo por parte de los alumnos. Para ello, se diseñó este estudio a partir de una revisión crítica de la literatura desde 1990 hasta 2021. Se consultaron las bases de datos Wos of Science y Scopus. Un total de 51 artículos cumplieron los criterios de inclusión. Los resultados sugieren que aprender a organizar y optimizar el tiempo académico es importante para la coordinación social, el bienestar y la consecución de los objetivos académicos y vitales de los estudiantes. Sin embargo, la aceleración del tiempo instructivo tiene un gran impacto emocional en la población escolar. La conclusión es la necesidad de investigar las experiencias subjetivas y colectivas de los estudiantes sobre el impacto emocional que la velocidad, la sobrecarga de trabajo y la multitarea tienen en su vida académica y personal.

Palabras clave: revisión crítica, narrativas científicas, estudiante, tiempo, habilidades de gestión del tiempo

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Time is an undeniably important factor in anyone's life and professional projects. In the academic context this variable attracts maximum attention from teachers and families who see students' efficient use of time as a strategy to be used for confronting the different and complex academic activities found in the different educational stages, especially in secondary and higher education. Times for learning in formal educational settings are often subjected to constraints, the timetables and deadlines for activities ruled by the teaching time clash with the students' forced work pace. Academic stress among students has increased in recent years and will be chronic in a very high percentage of young people by 2021, according to the WHO.

In 2017 the Organization for Economic Co-Operation and Development (OECD) conducted research on a sample of 540,000 students aged 15 and 16 from 72 different countries. Sixty-six percent of students reported feeling stressed by low grades, with 59% stating frequent worry about taking difficult exams. In addition, 55% of students reported anxiety about school tests, even when they felt prepared. In short, the data show how the dynamics of academic life and performance are a major cause of stress for students (OECD, 2017).

Therefore, tackling the problem of students' efficient use of time without considering the above could result in rash, unrealistic conclusions and, even worse, stereotypical representations of teenagers and young people. These distorted images could lead to almost all the responsibility falling on the students themselves, based on the assumption that an underlying lack of will, motivation or skills is to blame when students state that they "feel pressured," "work against the clock" or find that they "have no time."

The truth is that the school model has evolved over time into a competitive framework. In temporal terms, speed logically has to be adopted. In cultural terms this means adopting post-materialist values (Inglehart, 1971) of the liquid society (Bauman, 2007/2009), the performance society (Han, 2012), and the lightness civilization (Lipovetsky, 2016).

Paradoxically, this lightness also "nourishes the spirit of heaviness" (Lipovetsky, 2016, p. 15), depending on the subject's ability to overcome adversities in life by making personal use of their resources. Lightness and heaviness are two sides of the same coin, according to Lipovetsky (2016). On the one hand, a society that cultivates individual freedom and comfort through the experience of the present time. On the other hand, the society of heaviness,

which comes from a narcissistic culture that needs to emphasise lightness; that is, presentism and individuality.

In this spirit of heaviness, the hidden facet of performance society "produces depressives and failures" (Han, 2012). For most young people of this generation the values of personal accomplishment and effort are guarantees of success. Positive attitudes from young people are linked to the concept of accomplishment and reward for effort, values instilled at home and reinforced in school settings in which the effective use of time and the ability for organization are essential.

The culture of effort, play an extremely important role in schools on a daily basis. However, it should be noted that this excessive positivity also results in disorders, which are harmful to students' mental health and affect their self-esteem and academic performance.

The theoretical framework from which our object of study is approached is indebted to sociocultural (Elias, 1984/1989) and critical (Han, 2012; Rosa, 1989/2016) approaches applied to the analysis of time.

As effective time management is correlated with performance society and self-disciplined individuals, this article aims to provide a critical analysis of dominant scientific narratives on the effective use of time by students. This analysis aims to establish whether the research community mirrors this dominant social narrative.

To that end an initial analysis of the implicit assumptions made by researchers is conducted, followed by a summary of scientific evidence using a multidisciplinary approach. Finally, to complete the critical study, an inductive critical analysis is applied to publications from the last thirty years.

Scientific Narratives on the Effective Use of Time by Students

The study of time management in different fields has provided a wide range of results. Scientific narratives are a valuable resource for detailing how "they christen the problem" and generating plausible explanations. Different epistemic schemes can be used to analyze a single phenomenon. The following section aims to provide a comprehensive interpretation of the construct of "time management".

The Neuroscientific Approach

Behaviors associated with planning, setting goals and prioritizing tasks are linked to brain function. Executive functions are in charge of the cognitive control of behavior, including basic cognitive processes such as attentional control, cognitive inhibition, work memory and cognitive flexibility (Lezak, 1995). The implementation of these superior functions requires the simultaneous use of other basic executive functions such as cognitive flexibility and planning, which are directly linked to time management.

Dysfunction in some of these functions, such as planning, would explain why school students diagnosed with Attention Deficit and Hyperactivity Disorder (ADHD) find it difficult to plan, organize and prioritize tasks and manage study time (Rohde et al., 2019). Due to dysfunction in activation, which plays a part in organizing tasks and materials, calculating time, and prioritizing and initially preparing work, students with ADHD are more likely to display heightened procrastination patterns. Postponement is the avoidance strategy most commonly used by school students with ADHD.

In the field of neuroscience, behaviorally, time management is a skill, which results from correct dynamics in the chemistry and operation of the brain. When these dynamics are dysfunctional, difficulties can be observed in the ability to plan and organize time (Seli & Dembo, 2019). Therefore, ADHD is not so much a problem of will as the result of problems stemming from the dynamics of brain chemistry.

The Psychological Approach

Psychological examination of the study of time management provides a different interpretation of this construct. Although concepts vary, they all share the same narrative concerning the important role of these skills in decision-making processes. Essentially, in psychological research time management has been defined and operates on the basis of three categories: i) as metacognitive strategies for self-regulation (Chuvgunova & Kostromina, 2016; Garzón Umerenkova et al., 2017; Liu et al., 2009); ii) as a result of the adoption of a specific temporal perspective (Bajec, 2019); iii) as an acquired behavior or pattern which can be trained and modified (MacCann et al., 2012).

Studies on the self-regulation of learning and the strategic use of time by students reflect this close relationship. The Pintrich model (Pintrich, 2004) incorporates the time management of study into behavior strategies. The strategic use of academic time allows students to make decisions on key aspects of the study process: effort, setting up short- and medium-term work plans, calculating the time it would take to complete different academic activities.

Another line of research studies the effective use of time, explained by the temporal perspective adopted by the students when undertaking academic and personal actions and projects. The concept of temporal perspective is understood as an unconscious and subjective behavioral factor which allows individuals to manage their time and refers to the dominant trend among students in focusing on the past, present or future. Thus, an effective organization of time is not so much a matter of skill in the strategic use of time, but the way in which students give their individual experience coherence and meaning by coding it into temporal categories (Boyd & Zimbardo, 2005).

Forward-looking behavior is associated with responsibility, goals, and meeting deadlines, as well as the general concern for the later consequences of this behavior. Educational research developed following the theory of temporal perspective has shown that the future perspective is an important predictor in students' strategic use of academic time. In contrast, a fatalistic view of the present reveals a disheartened, defenseless and negative stance with regards to the future and life in general, in addition to a lack of temporal orientation. Volitional and affective self-regulation is closely linked to the predominance of the forward-looking temporal perspective (Burns et al., 2021).

Additionally, the temporal perspective theory developed by Nuttin (1980) and Nuttin and Lens (1985) highlights the roles of the psychological perspective of time in decision-making processes and in explaining human behavior. The work of Kruger et al. (2008) stresses that the temporal perspective is a psychological mechanism enabling human functional and adaptive development.

A third set of psychological studies describes the construct of time management as a skill which needs to be exercised, practiced and automated. Time management is understood as skills in the effective administration of study time and is included with others in the category of study skills. This is

the basic narrative of most psycho-educational interventions to improve students' study habits, as the effective use of time is the factor with the most impact on the academic performance and mental well-being of students. Research by De Jager (2014) shows that only 18% of students aged 16-21 are skilled in organizing their study time.

The Sociological Approach

Sociological studies combine different narratives interlinked by a common guiding thread: the social substratum characteristic of the information society which transforms the uses of time and the temporal experience of individuals. In terms of productivity, time management has been linked to "doing more in a shorter space of time". Information overload, which in turn leads to a lack of attention, immediacy and acceleration since performance guidelines, as well as connectivity, reinforce the importance of time management as a strategy for coordinating with the remaining social times. On the one hand, learning to manage time correctly promotes social assimilation and integration. On the other, it protects the individual from the processes of acceleration (Rosa, 2011), flexibility and dilution of the temporal experience (Bauman, 2007/2009).

For children and teenagers, school becomes an instance of temporal literacy. Students adapt to the temporal structure of school through social practices such as the teachers' control of time and their own autonomous time management. This temporal literacy takes the form of a temporal grammar based on individual responsibility and a temporal horizon geared to an accelerated and flexible future. In behavioral terms this is the expression of a new disciplinary strategy (Foucault, 1969/1978), which takes the form of social practices subordinate to productive time. This self-regulation of time, as opposed to the control of time, becomes a tool for disciplining hyperculture. Romo Parra (2012, p. 28) illustrates this idea when stating that "we inherit the concept of time as an economic factor, essentially monetary, and as its price goes up, it makes us think of it as a scarce resource".

However, our current interpretation of time has been modified by the phenomenon of temporal acceleration (Rosa, 2011, 1989/2016). Educational time is subordinate to productive time. The former expands the temporality of the subjects while the latter makes it possible to *perform better in a shorter*

time. The consequences can be observed in the school pace, and as with time, the academic pace has sped up considerably.

Thus, following Rosa (2011), the individual experience of time is affected: time is seen as a precious commodity and time and stress pressures are heightened. In keeping with Rosa (2011, p. 20) time is considered scarce when "speed is doubled and the distance to be covered is quadrupled," leading to a need for doubling or tripling the time employed in undertaking and coordinating everyday activities. The "slippery slope" phenomenon formulated by Rosa (2011) explains this process: "a capitalist cannot stop and rest, stop the race and make sure of their position (…) because stopping is the same as being left behind" (p. 21).

Against this backdrop of acceleration, learning to self-regulate time is both liberating and oppressive to the individual (Bunn et al., 2019).

Fear of "not being left behind" reinforces acceleration due to the demands for speed and flexibility in the social and productive spheres. This acceleration is also accompanied by a dominant ideology based on individual freedom, and with it "the rhetoric of obligation *"I have to"* which now is not based on the rhetoric of progress, but on the inherent need of a competitive world" (Rosa, 2011, p. 31).

The academic pace of students has continued to speed up in the last decade (Hakanen et al., 2006). For instance, the flexibility afforded by new technologies to children and teenagers in school has not led to an increase in free time or more balanced mental, affective, cognitive and social conditions. In fact, stress indices have increased among school students. Excessive responsibilities, heavy workloads and tasks both within and outside school, teacher assessments, competitiveness, fear of failure, family pressures, changes in dietary habits and sleep patterns, and cognitive exhaustion are just some of the precursors to stress in school.

The Pedagogic Approach

The pedagogic narrative on effective academic time management is mostly driven by psychological interpretations linking the construct to skills which can be learned and improved through practice and technique, currently including technological devices such as digital calendars and planners. In addition, a socially shared normative interpretation views efficient

organization of academic time as an indicator of personal maturity and academic competence. The abundance of titles in pedagogic publications correlating the efficient organization and administration of academic time with successful, excellent or good students is hardly surprising.

Improving students' time management skills is not just part of the teaching function of schools as mediators for the constitution of human capital required by the job market. From the perspective of socialization, this learning at school is also a form of early learning in preparation for adult life and the professional world. Moreover, it is a type of learning which maximizes autonomy and the potential for action and decision-making.

The pedagogic approach combines this discourse of efficiency and performance with the normative discourse of the *good student*. Making good use of time, planning tasks in the short and medium term, setting longer-term academic and life goals, and acting diligently and in an orderly fashion showcase the habits and strengths of the character of the *good student* (De Bofarull, 2019). The Aristotelian tradition, education as a way of building character based on the practice of virtuous habits, has been integrated into Positive Psychology through the writings of Peterson and Seligman (2004) on distinct forces and their relationship with happiness. The habit of efficient time management is linked to the virtue of courage or bravery, representing the will to reach objectives through perseverance and diligence.

Hegemonic Scientific Evidence of Efficient Time Management In Academic Settings

While scientific narratives allow facts to be interpreted, scientific evidence represents the facts observed as a part of a particular mental and cultural framework. Scientific theories are sophisticated cognitive complexes occurring in the framework of research programs which find their origin both in empirical evidence and in a given historic-scientific and sociocultural context. The apparent linear connection between scientific theory and evidence is disavowed if we analyze this relationship, emphasizing the context in which the theory was established. At this level the connection between theory and empirical evidence is expressed through the interpretation and ontological, epistemological, methodological and ethical decision-making of the scientific community.

A common guiding thread can be observed in the dominant scientific narratives on time management among students: an epistemology in the third person with thin descriptions (interpretations of facts which follow the prejudices or regimens of truth of the scientific community) and lacking in thick descriptions (interpretations of facts based on the significance which agents attribute to their actions) (Geertz, 1973). Moreover, the available evidence generated in the predominant research program is mostly psychological and geared towards the individual. It pays less attention to evidence that is sociocultural (lifestyle, predominant values, temporal cultures), pedagogic (school culture, teaching styles, support systems for students) and ergonomic (mental overload of students), all of which necessarily influence the practices applied by students for efficient time management.

The prevailing views available in research on academic time management prioritize soft internalizing explanations in education and an almost resigned assumption that students experience difficulties in efficient time management due to executive dysfunctions, the adoption of unsuitable study strategies or a lack of willingness on their part. An exception to the interpretation of these findings is the study by Strom et al. (2016) pinpointing the academic institution and lifestyles of students as factors explaining their unsuitable handling of time. The values of performance society and consumerist society are reflected in academic practices, especially in middle and high school. An excess of activities (school and afterschool), too little sleep, an excessive exam load, the intensive use of technologies for students and their impact on free time are factors to be taken into account in the research and actions aimed at improving students' academic time management skills.

Everything suggests that now more than ever an efficient management of study time is working "against the clock" and making use of critical media literacy. However, scientific research suggests otherwise. Learning to efficiently manage time requires a suitable strategy to increase self-control, reduce stress and improve academic performance (Burrus et al., 2017; Won & Yu, 2018).
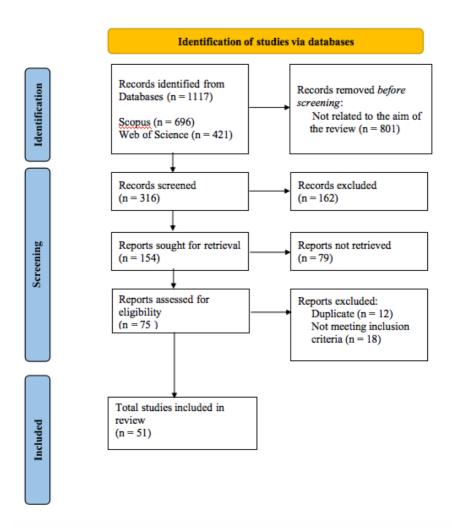
Method

Search Strategies

Figure 1. Flowchart of literature selection process

A literature review was carried out to gain more in-depth knowledge of the narratives and accounts provided by researchers regarding students' academic time management. The keywords selected were extracted from ERIC and the search timeline comprised papers published between 1990 and 2021. The search databases selected were Web of Science (WoS) and Scopus. The search terms were combined based on the following expressions (time management AND: students; race; minority groups; gender differences; ADHD; disabilities; primary education; secondary education; higher education; undergraduate education).

Creation of a File

A file was created with five columns containing the most relevant information for the analysis of results:

- References: authors and year of publication
- Database from which the papers were obtained
- Study design
- Sample and country
- Relevant results and conclusions

The complete file is hosted at https://doi.org/10.6084/m9.figshare.19657716. In the end, only a total of 51 sources were referenced and included in this article's References marked by an *.

Results

The dominant scientific narratives around time management by students are consistent with the values and lifestyles characteristic of the performance society.

Time is Precious

The studies on academic time management by the student are based on an economicist interpretation of time. Academic efficiency is attained when the student makes an effective use of time (Razali et al., 2018).

In addition, most of the studies analyzed refer to research examining the skills for organization and effective use of time among students in secondary and higher education (Amida et al., 2021; Awadalla et al., 2017; DiPipi-Hoy et al., 2009; Eldeleklioğlu et al, 2010; Dolan et al., 2015; Hensley et al., 2021; Pottinger et al., 2009; Rogers, 2013; Sansgiry et al., 2004; Tabvuma et al., 2021; Tops et al., 2020; Trueman & Hartley, 1996; Wennberg et al., 2018; Wilson et al., 2021). This suggests that these educational stages are the ones which have adapted to the economy of time the fastest. This time requires productive actions to be executed promptly and diligently. In addition, as the time of academic learning is no longer restricted by timetables or institutions, given the flexibility provided by new technologies, the importance of the skills for the efficient management of academic time has increased (Martin et al., 2020; Nonis et al., 2006). Flexibility and acceleration lead to the phenomenon of multitasking and any student unable to adapt to this new setting of academic productivity will be at a greater risk of failing or dropping out from school.

Learning to Work Against the Clock

As stated, temporal acceleration has led to changes in subjectivity. The faster pace of academic work has intensified for both students and teachers. The logic of haste is imperative to carrying out an increasingly higher number of actions in an increasingly shorter length of time. The consequences for the academic performance and psychological well-being of the students are closely connected and tend to affect girls more than boys (De Paola and Gioia, 2016; Kuang-Tsan and Fu-Yuan, 2017). It is possible that the gender differences and the ways to confront time pressure might be due to the higher number of activities carried out by girls in the home compared to their male peers, whose socialization focuses more on productivity values. The irregularity of the temporal socialisation in which boys and girls have been educated, is also a factor to be taken into consideration by the authors.

Efficient Time Management and Discourse of Deviation

The impact of temporal acceleration on students has led to academic institutions incorporating support programs for students which focus on time management (Bellman et al., 2015). Thus, the actions geared towards the

development of the necessary skills for efficient time management are especially aimed at students whose behavior deviates from the mean or norm required. In the case of the school and college, this comprises students suffering from ADHD, dyslexia, cognitive difficulties, developmental disorders and other learning difficulties (Abikoff et al., 2013; Breaux et al., 2019; Davies et al., 2002; Deng & Xuan, 2009; Evans et al., 2016; Giust & Valle-Riesta, 2017; Green et al., 2011; Janeslätt et al., 2014; Keptner & Rogers, 2019; Kirby et al., 2008; LaCount et al., 2018; Langberg et al., 2013; Lewandowski et al., 2013; Martin et al., 2020; Persson et al., 2017; Prevatt et al., 2017; Reed & Jones, 2021; Reed & Kennett, 2017; Sauvé et al., 2016; Siddiqi & Memon, 2016; Solanto & Scheres, 2021). It is also useful for adult university students who have to combine their studies and work or students from ethnic minorities (Keptner & Rogers, 2019; Meeuwisse et al., 2013; Schatzel et al., 2013).

However, the studies selected—with their psychological and economicist interpretation of time—do not reflect that the dynamics of temporal acceleration are structural and that they therefore do not only affect individuals but also institutions. By juggling with time processes through timetables and calendars as well as through the flexibility not offered by ICTs in terms of timetabling and space, educational institutions regulate academic activities. The logic of productivity and flexibility has provided students with a new way to experience time in academic settings (Mukhtar et al, 2020). As in the professional world, this new logic has increased the volume for students. Educational institutions have adopted a synchronization mechanism similar to these new performance and flexibility demands, which lead to disciplinary regulations for members of the institution. Time is no longer experienced as a process but rather lived like a race "against the clock." On an individual scale it demands great self-discipline in terms of time as learning to manage time efficiently is now like learning to avoid the phenomenon of temporal acceleration.

Conclusions

The critical analysis of the scientific narratives and evidence on academic time management by students leads to the following conclusions. Firstly, the hegemony of the economicist and individualist discourse in the research

carried out and the erosion of socio-cultural discourses which offer scientific evidence on the impact of the dynamics of acceleration and pressure in students' effective use of academic time. The studies selected present a predominantly positivist epistemological orientation in which time is a discrete and quantifiable unit. In addition, the relative lack of qualitative studies on the topic examined should be highlighted.

Secondly, the management of academic time as a malleable and trainable skill at the service of the academic performance and mental well-being of the students has been examined. However, these studies do not specify how far the difficulties for correct time management can be explained, not only as a neurocognitive or cognitive dysfunction attributable to the individual, but as the result of the effects of the collision of two types of time: institutional time, ruled by speed and productivity, and the subjective time of the students themselves, ruled by paces, expectations, goals, and temporal perspectives.

This phenomenon, which has a significant social impact, is conditioned by the values, culture and social and instructional factors of each environment (Bennett & Burke, 2018). All interfere with the conception of time, on its consideration in a dual personal and social nature, which pervades the individual commitment to the fulfillment of tasks, whether daily ones or other medium- or long-term tasks undertaken. In this path towards self-regulation, the level of procrastination shown by students acquires enormous value, considering their potential to delay and, more importantly, to postpone those tasks that must be completed within a given period (Tuckman, 2003). In any event, "time management is a learned skill and therefore susceptible to intervention, which multiplies its importance in preventing procrastination" (Garzón Umerenkova & Gil Flores, 2017, p. 9). Found in several texts and narratives in this study, this perspective underscores willingness, which is a good motivator in time management, on the one hand, and awareness of students with attention deficit disorders who, however, find time management difficult to regulate on the other.

Finally, a lack of studies analyzing the conditions in which the study of academic time management is now carried out on institutional level has been observed. Linking the analysis of students' organizational skills with the academic demands, lifestyles and new student profiles, particularly at university level, could offer a more comprehensive vision of these time organization and management skills. Although twenty-four hours are the same

for everyone, efficient management of this time remains unequal. And it is so not only because of individual differences, but because of the institutional barriers and cultural gaps behind this. Hence it is easier to understand that for part-time students, mature students, ethnic minorities and students with special needs and learning difficulties, learning to organize and manage academic time effectively is an exercise of compensation and resilience for handling the temporal dynamic they face, rather than a strategy for their own self-determination and self-development.

If we take an economistic and psycho-pedagogical approach, there are several studies that demonstrate the close relationship between the nature of time and student performance. This approach based on Carroll's model (1963) or on what is known as "effective learning time" (Abadzi, 2009; Aronson et al., 1998) has, in recent decades, shaped a certain trend in time management leading to productive time and excellence. This model will be truly successful if the expectations regarding the quantity and quality of this time are met or, in other words, if there is a consideration of time as both quantity and meaning (Husti, 1992). However, the influence of several indicators on the final result must be assessed in order to achieve this objective. Among them are the motivation of the agents participating in the instruction, the value of the knowledge and the resources available, all of which are part of effective time. However, studies have also shown that neither this notoriety nor the relationship between performance and time has been demonstrated, but rather the opposite, and therefore, there is little or no connection between time spent and improved results (Horng et al., 2010). In short, the way we manage time today involves several variables, attitudes and the mindset of our past. Similarly, studies continue to be published, including those with a phenomenological approach, which demonstrate that adverse childhood experiences influence the academic performance of both younger and university students (Hall et al., 2021). The values of the past determine the value of future time.

Technologies and especially digital technology will increasingly play a greater role in this future time, since it undeniably permeates everyone's life and particularly that of students, throughout the different stages of their education. They establish a close relationship between time and digital competence and where good use or misuse of it can affect the effectiveness of the work that results. As acknowledged by Galindo-Domínguez and Bezanilla

(2021), those students who manage their time better and even get better academic results owe it to a better use of digital competence. Racing against the clock creates a handicap in this task that not only affects the knowledge acquired but also shapes the basis for future education.

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