LEARNING STYLES AND TIME MANAGEMENT: APPLICATION IN A GRADUATE PROGRAM DURING THE COVID-19 PANDEMIC

ESTILOS DE APRENDIZAGEM E GESTÃO DO TEMPO: APLICAÇÃO NA PÓS-GRADUAÇÃO DURANTE A PANDEMIA DA COVID-19

ESTILOS DE APRENDIZAJE Y ADMINISTRACIÓN DEL TIEMPO: APLICACIÓN EN UN PROGRAMA DE POSGRADO DURANTE LA PANDEMIA DE COVID-19

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ABSTRACT

Objective: To describe the application of learning styles and time management theories in the organization of studies in a stricto sensu graduate nursing and health program, in the remote teaching scenario, during the COVID-19 pandemic. Method: This is a qualitative study with an experience report design developed during a workshop held in October 2021 to guide students in the organization of studies to reconcile academic activities and other demands under the view of the Theory of Learning Styles and the Triad of Time Theory. Results: The study shows that the organization of studies and time management positively impacts the academic life and mental health of the student, and in this organization, there are different elements involved, such as elements of distraction, learning style, study schedule, and place and study technique. Conclusion: The study confirms that the organization of studies positively impacts the academic production and mental health of students in a graduate program in the remote teaching scenario during COVID-19 and that the application of the learning style and time management enhance their results.

Descriptors: Teaching; Learning; Mental Health; Education Graduate; COVID-19.

RESUMO

Objetivo: Descrever a aplicação das teorias de estilos de aprendizagem e gestão do tempo na organização dos estudos em programa de pós-graduação stricto sensu em Enfermagem e Saúde, no cenário do ensino remoto, durante a pandemia da COVID-19. Método: Trata-se de estudo qualitativo, do tipo relato de experiência, durante oficina realizada em outubro de 2021 com a finalidade de orientar 16
estudiantes de un componente curricular na organización dos estudios, de modo a conciliarem atividades académicas e outras demandas, sob o olhar da Teoria dos Estilos de Aprendizagem e da Teoria Triade do Tempo. **Resultados:** Verificou-se que a organización dos estudios e a gestão do tempo têm impactos positivos na vida académica e na saúde mental do estudiante e, nessa organización, há distintos elementos envolvidos, como: elementos de distração, estilo de aprendizagem, cronograma de estudio, local e técnica de estudio. **Conclusão:** Confirmou-se que a organización dos estudios tem impacto positivo na producção académica e na saúde mental dos estudiantes de un programa de pós-graduação no cenário do ensino remoto durante a COVID-19 e que a aplicación do estilo de aprendizagem e gestión do tempo potencializam seus resultados.

**Descritores:** Ensino; Aprendizagem; Saúde Mental; Educação de Pós-Graduação; COVID-19.

**RESUMEN**

**Objetivo:** Describir la aplicación de teorías de estilos de aprendizaje y gestión del tiempo en la organización de estudios en un programa de posgrado stricto sensu en Enfermería y Salud en el escenario de enseñanza remota durante la pandemia de COVID-19. **Método:** Se trata de un estudio cualitativo, del tipo informe de experiencia, durante un taller realizado en octubre de 2021 para guiar los estudiantes en la organización de estudios con el fin de conciliar actividades académicas y otras demandas bajo la visión de la Teoría de los Estilos de Aprendizaje y la Teoría de la Triada del Tiempo. **Resultados:** Se encontró que la organización de los estudios y la gestión del tiempo tienen impactos positivos en la vida académica y salud mental del estudiante y, en esta organización, hay diferentes elementos involucrados, como: elementos de distracción, estilo de aprendizaje, horario de estudio, lugar y técnica de estudio. **Conclusión:** Se confirmó que la organización de estudios tiene un impacto positivo en la producución académica y la salud mental de los estudiantes en un programa de posgrado en el escenario de enseñanza remota durante la COVID-19 y que la aplicación del estilo de aprendizaje y gestión del tiempo mejoran sus resultados.

**Descritores:** Enseñanza; Aprendizaje; Salud Mental; Educación de Posgrado; COVID-19.

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With the global health crisis resulting from the COVID-19 pandemic, face-to-face classes were suspended, and schools were closed. This suspension was one of the social distancing measures used to reduce the spread of viral disease and increase deaths.\textsuperscript{1-2} When considering the reality of universities, particularly Brazilian public universities, most do not have the basic infrastructure to function and maintain face-to-face classes, leading to an increased risk of teachers and students being infected by COVID-19. However, due to the relevance of education globally, strategies were taken to resume the school bond, including Emergency Remote Teaching (ERT).\textsuperscript{3}

However, students in Graduate Programs (GP) have reported negative impacts of ERT, such as applied methodologies, which make the teaching-learning process difficult and result in concentration difficulties and anxiety.\textsuperscript{4} ERT became an additional stressor, especially for Nursing and Health stricto sensu students who have already completed undergraduate studies and work, having to deal with autonomy and responsibility in the learning process.

On the other hand, exercising this autonomy and responsibility implies the ability to be organized, without which the student can get lost in the network of demands and resources and feel frustrated and stressed for not being able to fulfill the numerous activities within the stipulated deadlines and, therefore, compromise learning and mental health. Allied to this, the lack of time to reconcile academic activities with work and the excessive production of these activities are among the factors contributing to mental illness.\textsuperscript{5}

The process of thinking about the complexity of the learning process, learning styles, and study conditions is relevant in the learning process, as it favors self-knowledge and improves academic production.\textsuperscript{6} According to Kolb's Theory of Learning Styles, each person has a style by which he learns and deals with daily situations. This learning occurs in a continuous cyclical process consisting of four types of learning: concrete experience, reflective observation, abstract conceptualization, and active experimentation.\textsuperscript{7}

Using this theory implies knowing the predominant learning style and, fundamentally, enabling the student to organize his studies by considering what most favors his own learning. From this perspective, identifying the learning style can be seen as a useful tool to establish a specific learning method for stricto sensu students in Nursing and Health.
In addition to the student understanding his own learning style, organizing what and how to study, in time and with available space and resources, can make the difference, for example, between building his own knowledge and investing the time available to obtain information. In this sense, the Theory of the Triad of Time proposes time management so that the person can organize his varied demands in a balanced way and positively impact different areas of life, for example, personal, professional, and academic. Therefore, learning to manage one's own time is related to positive health outcomes, improved productivity, and achievement or improvement of expected results.

This study is justified by the need to identify the learning style and time management strategies of Nursing and Health stricto sensu students to organize better the process of studying and building one's knowledge. Included in this organization, personal strategic planning and time management help to find a balance in achieving the various demands the student needs to fulfill without compromising the mental health.

**OBJECTIVE**

To describe the application of learning styles and time management theories in the organization of studies in a stricto sensu graduate nursing and health program, in the remote teaching scenario, during the COVID-19 pandemic.

**METHOD**

This is a qualitative study with an experience report design, through which the experience that took place in a pedagogical workshop in the context of ERT due to the COVID-19 pandemic is described, with a descriptive analysis of the data. Workshops contemplating different topics are one of the strategies that have been adopted in the teaching-learning process, by a curricular component offered in a stricto sensu program in Nursing and Health, in the scenario of remote teaching, during the pandemic of COVID-19, in a public higher education institution located in the state of Bahia, Brazil. The component has a workload of 68 hours, organized into 17 meetings, one per week, lasting 4 hours each, and the component development takes place via the Google Meet Platform. The discussions enable a broad view of mental health in the training process, among which activities aimed at promoting mental health and strategies for identifying, preventing, and coping with situations that compromise mental health stand out.

Thus, considering the relevance of the organization of studies in academic life and the difficulties that some students face in this process, especially due to the current pandemic period, in the second half of 2021, it was decided to hold a pedagogical workshop focused on the organization of studies and time management. Based on the application of Kolb's Theory of Learning Styles and Christian Barbosa's Triad of Time, during the workshop held in October 2021, we sought to guide 16 students...
from the curricular component on how to organize their studies and manage their own time, with a positive impact on mental health and academic productivity.

This study was developed in compliance with the relevant ethical aspects, without submission to a research ethics committee, as the data collection was based on the authors’ experiences and according to their own perceptions. The Checklist Standards for Reporting Qualitative Research (SRQR) was used, referring to the reporting of study characteristics.

**Experience description**

The learning experience carried out during the pedagogical workshop occurred according to the methodological steps illustrated below (Figure 1).

![Figure 1. Methodological steps carried out during the experiment](image)

In the first stage, the script was exposed to the topics that would be developed in the workshop: habits, distraction elements, learning style, planning/schedule and study technique; presentation of the theoretical frameworks that underlie the workshop, and invitation for participants to reflect on the relationship of these topics with their study routines. This reflection created a space for everyone to reflect carefully on how they organize their studies and other daily demands and asked the following questions: What causes me distraction? How do I learn best (watching a video, a lecture, etc.)? How do I organize my activities (using a schedule, a sheet of paper, a wall-mounted schedule, an app, etc.)?

Then, an explanation was provided about the relevance of the brain repeating a certain pattern of behavior to save energy. However, there are situations in which the person needs to establish new habits through the conscious repetition of actions for reasons of survival/suitability to the subject’s current environment or a new environment brought about by changes and transformations, such as a new job or new responsibilities and coping with pandemics or catastrophes.
This same reasoning can be used in studies, particularly due to the COVID-19 pandemic. Remote teaching has become a reality on the list of new habits and daily challenges. Therefore, the graduate student must organize himself so that his brain can “learn” to have discipline and, through the conscious repetition of actions, keep the focus on what he intends to study in the available time.

In the next step, through dialogic exposition, a phase was carried out for the pre-organization of the studies, which involved elaborating a table containing a script to guide the group's reflection on how the organization of the studies is carried out, followed by a learning test. In the end, ideas were shared among the participants. Based on their own reality, each student contributed to filling out the guideline considering the following items: distraction elements, learning style, study schedule, study space, and study techniques. The learning style was identified by providing a link for the self-application of the test for each student based on the learning style inventory by Kolb. In the last stage, the participants provided feedback on what the experience lived in this workshop meant to them.

RESULTS

From the dialogic exposition, the understanding of the concepts of the theories related to the management of time and the learning styles, and the application of the test to identify these styles, the participants shared their own learning styles, their experiences regarding the difficulties in the organization of the studies and coping suggestions.

The participants perceived the test application as an opportunity for self-knowledge and reassessing potential domains in which they should invest to improve learning. In addition, they realized that their learning outcomes relate to the predominant aspects of their learning styles. This means that the person may have elements of another learning style and that it is up to them to invest in what they consider to be most favorable.

Regarding the difficulties faced in concentrating on studies, the highlight was the external noise, since the students are at home and the interruption of family members or people screaming in the street is inevitable. The shared ideas and suggestions were seen as relevant by the group, as they shared strategies and techniques that some students did not know but which will be incorporated to better organize the studies with additional gains in academic production and mental health.

Next, a script developed to guide the group’s reflection based on the experiences of each participant is presented, which can also be useful in the individual process of organizing the studies (Table 1).
Table 1. Script for reflections on the organization of studies built from the participants’ experiences

<table>
<thead>
<tr>
<th>Distraction elements</th>
<th>Youtube; cellphone; getting up to get water/coffee; WhatsApp; people at home interrupting; external noises.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning style</td>
<td>Converger; assimilator; accommodator.</td>
</tr>
<tr>
<td>Study schedule</td>
<td>Creating a schedule in the notebook; using an app, a planner, or a paper sheet. Does not schedule; can only perform tasks under pressure; even with enough time, cannot organize a schedule of studies, which generates anxiety and frustration.</td>
</tr>
<tr>
<td>Study space</td>
<td>Living room, after the children go to sleep; study room; bedroom; anywhere in the house with silence.</td>
</tr>
<tr>
<td>Study technique</td>
<td>Choosing a quiet place in the house to study; turning off cell phone sound; putting a sign on the bedroom door not to be disturbed; highlighting unknown terms; writing down ideas next to the text; using the Pomodoro technique; writing down in the notebook any doubts about the text or the readings performed; performing physical activities in the early morning, because it improves creativity, disposition and academic production in addition to being able to comply with physical distance due to COVID-19.</td>
</tr>
</tbody>
</table>

The table built by the group, containing a script for reflection, indicates the difficulties faced and the sharing of ideas and suggestions for possible solutions to situations that interfere with the implementation of an adequate organization of the studies, in addition to confirming that each person has their own learning style.

As an evaluation of the experience, the participants expressed what the meeting was like for them through a song lyric of their choice. The selected songs indicated: reflections on the difficulties they face as graduate students, especially in the scenario of remote teaching during the COVID-19 pandemic, but who move forward in an attempt to improve what is possible; gratitude for the opportunity to learn during the workshop; feeling of lightness regarding what to do to avoid getting sick; change in perspectives and in the way of organizing studies after the workshop; and decreased anxiety, because, based on the strategies discussed in the workshop, they will organize themselves better and talk to family members about the need for collaboration so that they can focus on classes through ERT.

**DISCUSSION**

**Distraction elements**

During the process of acquiring knowledge, attention to the stimulus and memory are fundamental, the latter being responsible for storing the stimuli that make sense to us. There are multiple attentive
processes involved in encoding and storing memory. Thus, achieving success in academic life is directly linked to the individual's ability to concentrate, develop habits and create an environment conducive to achieving short, medium, and long-term goals.

The knowledge acquisition/construction carried out by graduate students involves challenges, as students need to exercise their autonomy and responsibility in the longitudinal process of knowledge construction. In the ERT scenario, due to the pandemic of COVID-19, these challenges have increased. Through the remote modality, the student interacts with colleagues and teachers in different spaces that can be considered an extension of the virtual classroom, including forums on digital platforms such as Moodle, Google Class Room, Meet or Microsoft Teams, online seminars via Youtube, and WhatsApp groups.

In addition to dealing with family demands (socio-affective context), work, and health care, with the advent of the ERT, most students began to face issues related to unpreparedness regarding the use of technologies and Internet connection failures. Besides, during remote classes, the well-known parallel conversation was replaced by chats that occur while the teacher presents an idea. The teacher asks students to write what they understood or ask questions in these spaces during the online meeting. Furthermore, some students can use chat applications to make comments with no regard to the class subject, which also draws their attention.

Another issue is that, in the face-to-face class, a priori, everyone had a common objective: to participate in the class. In the ERT, the student started to share spaces with people with other goals, either in the virtual classroom or with family members who surround him and who often operationalize their own tasks, generating conflicts and making it difficult for the student to concentrate on the tasks. Environmental distractions such as the sound of cars, the "tamale vendor", and the "milk vendor" also generate noise, interfering with the student's concentration.

In addition to these situations, the COVID-19 pandemic has brought a series of impacts on mental health, including increased levels of anxiety and depression. Associated with these impacts, elements of distraction interfere with studies and impact the student's concentration; therefore, there is a worsening of anxiety about not being able to perform the academic activities required by the teacher.

Despite the above, some measures can be useful in managing distracting elements. In the division of spaces, the student can, through dialogue, seek collaboration to build an organization that is favorable to all. On the other hand, understanding that the available time is the ideal time to study and that each person has their own way of organizing tasks is essential for studies to be organized in a realistic, functional, and conflict-free way.
Regarding the distractions caused by messages on the cell phone, a possible solution is to use WhatsApp as an answering machine, thus avoiding, at the same time, the distraction and the anxiogenic feeling caused by the numerous messages. When the person deems it appropriate, he/she will read or respond to messages. Another suggestion is to send messages related to work and academic commitments only during business hours to respect others.

**Learning Style Identification - Kolb Style Inventory**

According to Kolb's Theory of Learning Styles, identifying the learning style is related to the way of learning that works for each person, individually, and the experiences they have in their experiences in the school environment and outside it. This theory includes four styles that, in summary, are defined as a) converger (thinking and doing), with a predominance of abstraction and active experience, typical of those who prefer technical activities and problem-solving; b) diverger (feeling and observing), in which there is a predominance of concrete experience and reflective observation. The person with this style is more sensitive and prefers to observe and use imagination in solving problems; c) assimilator (thinking and observing), in which abstract conceptualization and reflective observation predominate, beyond the interest in abstract ideas; and d) accommodator (feeling and doing), in which concrete and active experience predominate, and there is a preference for intuition, practical, and experimental approaches.13

In this way, the self-application of the learning style test within the scope of stricto sensu graduate studies in Nursing and Health allows the student to identify how he/she learns and deals with academic, personal, and professional demands. As he/she uses the characteristics of his/her own learning style, it is possible to incorporate them to increase performance in his/her academic activities. At the same time, the test results can also be useful for the teacher to develop strategies that are more compatible with the student's learning style.14

**Creating your own schedule**

After defining the distraction elements and the learning style, the next step is to organize the schedule, which can be done through an application, spreadsheet, planner, or another suitable tool for the student. However, activities must be divided, prioritizing what is relevant and within the available time. If possible, the student must anticipate activities, not letting them accumulate, and remember that the day has 24 hours and that how each person organizes tasks makes a difference.

In this sense, the Triad of Time Theory proposes that activities are divided according to the following criteria: important (I), urgent (U), and circumstantial (C), and these criteria make up how people use their own time. The challenge is to apply these criteria in the organization of activities.8
Therefore, defining these criteria and establishing the degree of relevance of what is intended to be accomplished is essential so that the available time is invested rationally and profitably (Figure 2).

![Figure 2. Classification of activities according to criteria - Triad of Time Theory](image)

**Note:** Important (I); Urgent (U); Circumstantial (C).

**Source:** Created by the authors based on Barbosa (2012)\(^8\).

According to the Triad of Time Theory, in the conception of time management, there is no possibility of applying the three criteria to the same activity because, as seen in the figure above, there is no intersection between them. Based on this theory, the activities classified as important are those that the student needs to perform and whose results will be obtained in the short, medium, or long term. So, there is time to do it. Urgent activities are the ones students need to complete in the short term or activities whose due date has expired. These activities include fulfilling tasks not foreseen by the student, which tend to generate stress. The circumstantial activities meet convenience requirements or are appropriate to a given context and do not produce effective results, generating frustrations.\(^8\)

Given the above, the student who can only carry out his activities under pressure is possibly experiencing the sphere of urgency, therefore, a life of intense stress. It is possible that, due to the habit of always behaving like this, in some cases since childhood, this student faces greater limitations in the development of the schedule and even in the learning process. In this case, an individual assessment should be considered, as sometimes it is necessary to have psychological support to identify what, in this person's life history, triggers anxiogenic and low-income behaviors in their own goals.

When setting up the schedule, you should divide the tasks into the days of the week and by periods: morning, afternoon, and night and, if necessary, describe the times for each period. The time available must be used realistically, so when building a schedule, mealtimes must include sleep, leisure, social commitments, academic activities required by the Nursing and Health *stricto sensu* program, professional activities, and physical exercises.

In complying with this schedule, the student should try to focus on what he is doing in the time set aside for each activity with some flexibility, as unexpected situations may occur and it will not
be possible to carry out everything as planned. If there are problems, the student stays focused on what he/she is doing, and there may be other problems involved in which psychological support should be sought.

In this way, a schedule is a tool that can assist in managing study time, which, in turn, helps in the organization of studies and, consequently, can improve student productivity and promote mental health by reducing anxiety and frustration. Thus, managing time practically implies organizing studies so that activities are carried out within the organization. There is evidence that disorganization and non-management of available time are reasons for the imbalance between personal and professional or academic life.\textsuperscript{15}

On the other hand, the schedule and other resources should be seen as coping strategies, not as causing additional stress, pressure, and self-demand. The suggestion is that, at least for 15 days, the student tries to fulfill his schedule as a way of "teaching" his own brain to have "discipline". Although the schedule is a useful tool, the choice of how to organize such a routine should make sense to the student. Therefore, if the person cannot sustain the new one (schedule), he must analyze the existing difficulties and try again.

\textit{Study space}

The study space is described as a factor that can interfere with the learning process, as certain spaces used by students do not always have adequate conditions.\textsuperscript{16} The concept of an adequate place for studying is subjective, but it can be characterized as a space in which the student can maintain his attention and concentration on his object of study: reading a book, listening to a podcast, and watching the class via virtual learning platforms, among others. Given the current pandemic situation, a suitable place to study can also include a quieter place in the house, where there are no other people. Nursing and Health \textit{stricto sensu} students who work in their field of clinical practice can use the work break to study. If possible, it is advisable to look for a place further away from other people to better concentrate on the activity the student is performing.

\textit{Study technique}

The ideal study technique meets each person's subjectivity and is related to the individual learning style. Thus, if the student can learn more when reading a book or through a case study, he should invest in these resources. However, the student must be open to new possibilities; for example, studying in small groups can be useful to clarify doubts about a certain subject and strengthen ideas.

As examples of techniques that can be useful for the graduate student to organize their tasks, we suggest:

a) focus on what you are doing with the identification of distracting elements;
b) be fed and have water in a container close to the place where you are studying to avoid unnecessary interruptions;

c) washing the face with cold water can be useful as a way to "wake up" when feeling sleepy/tired;

d) choose a suitable place to study;

e) pay attention to what you have programmed to study — if you have separated a text, then read this text, understanding the text being read. During the reading, if you identify a word that you do not remember or do not know the meaning of, highlight it and, when reading again, write its meaning next to the text. In this way, you are creating your writing repertoire and, from there, you will be able to build your word index;

f) after re-reading the text, record your understanding of what you have just read through notes in the text itself or, if applicable, by answering questions from previous tests;

g) read as fast as you can understand what you are reading;

h) include rest breaks and try to increase the time spent studying;

i) To avoid feeling anxious and forgetting the idea that came up during the breaks, make records in a notebook or other means. Thus, the idea can be applied when returning to the studies/activities under consideration.

It is emphasized that the techniques presented are just suggestions that can help Nursing and Health stricto sensu students. Such techniques may work for one person and not for another one in the process of organizing studies. Therefore, each person must identify the appropriate strategy considering his/her reality and learning style. At the end of each semester, for example, an assessment can be made of the results achieved through the organization of studies implemented, and the student can challenge himself to improve his results. If necessary, professional help can be requested (pedagogue and/or psychologist).

The study's main limitations are the local dimension of the study and the non-participation of all students in the discussions, as some students claimed unstable Internet connections and others expressed not feeling comfortable sharing their experiences.

CONCLUSION

The experience lived in the workshop on the application of learning style and time management in the organization of studies, through the Learning Styles and Triad of Time theories, had an impact on the academic productivity and mental health of students from a stricto sensu program in Nursing and Health, in the remote teaching scenario, during the COVID-19 pandemic. Based on the pedagogical proposal used, the students expressed that they understood the need to create adequate and conscious habits to exercise autonomy in building their own knowledge.
In this way, reporting this experience made it possible to share ideas and strategies that can be useful for students who experienced the ERT, due to the COVID-19 pandemic, in a Nursing and Health stricto sensu program, but that can be useful in other contexts for students experiencing similar situations. The organization of studies, which includes identifying the learning style, organizing activities in the time available, setting up a schedule, organizing the study space, and defining a study technique, is essential for every student who seeks to reconcile their different activities, obtain good results in studies, and maintain the mental health.

**CONTRIBUTIONS**

All authors contributed equally to the design of the research project, collection, analysis, and discussion of data, as well as in writing and critically reviewing the content with intellectual contribution and in approving the final version of the study.

**CONFLICTS OF INTERESTS**

None to declare.

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