

THE PEAK APP AS A TOOL IN THE TEACHING AND LEARNING OF STUDENTS WITH ADHD

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RESUMO: Por possibilitar uma aplicação prática do conhecimento, a tecnologia pode ser utilizada como mediadora do ensino de estudantes com TDAH. Ao utilizar aplicativos digitais que proporcionem um universo lúdico e atrativo, que aumentem a capacidade de concentração e entendimento das atividades, como o aplicativo PEAK. O presente estudo tem como objetivo analisar os impactos ocasionados com uso do aplicativo PEAK no desenvolvimento da aprendizagem de alunos com TDAH. Trata-se de pesquisa realizada com abordagem qualitativa, através da aplicação de um questionário como mecanismo de investigação. Mesmo diante de algumas limitações, os resultados obtidos mostram níveis satisfatórios quanto a utilização desse aplicativo nas aulas remotas.

Palavras-chave: TDAH. Peak. Hiperatividade.

ABSTRACT: By enabling the practical application of knowledge, technology can be used as a mediator in the teaching of students with ADHD. By using digital applications that provide a playful and attractive universe, which increase the ability to concentrate and understand activities, such as the PEAK application. The present study aims to analyze the impacts caused by the use of the PEAK application on the development of learning of students with ADHD. This is a research carried out with a qualitative approach, through the application of a questionnaire as a research mechanism. Despite some limitations, the results obtained show satisfactory levels regarding the use of this application in remote classes.

Keywords: ADHD. Peak. Hyperactivity.

1 INTRODUCTION

Technology enables the practical application of essential knowledge for the process of social interaction through communication. With this, technology can be used as a mediator of teaching between teachers and students. In the meantime, taking into account the importance of the relationship between technology and education, an analysis of the PEAK application as a learning tool for students with Attention Deficit Hyperactivity Disorder (ADHD) will be

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carried out. With a playful universe, the platform becomes attractive, since visual support is essential for the child's attention to be directed to the game, increasing the ability to concentrate and helping to understand the activities.

This study aims to analyze what impacts the use of the PEAK app has on the development of learning of students with ADHD. In which the level of acceptance of the application during remote classes with the teachers surveyed will be verified in this analysis. Thus, the article is based on a technological approach to teaching and its applications in the context of inclusion due to ADHD.

2 THEORETICAL FOUNDATION

Executive functions comprise numerous cognitive processes, involving skills such as planning, working memory, categorization, and sustained attention, which guide behavior. And, executive dysfunction is related to Attention Deficit Hyperactivity Disorder (ADHD). It presents itself, mainly, through the difficulty in directing the focus of attention and in the storage of information. (CAPOVILLA *et al*, 2007, p. 03).

These alterations can bring problems with reading, writing and/or calculation, compromising the development of students with ADHD. (ABDA, 2016)⁵. Thus, it is necessary to use alternative methods of pedagogical mediation in the teaching of children with ADHD, such as the use of the PEAK application. Since digital games stimulate these executive functions, by providing a manipulation of information, through goals and evaluations.

Digital games have a normative capacity, by stimulating an interpretation and understanding of the rules at each level achieved, through initiative, creativity and rigor. (RODRIGUES, 2014, p. 2). In their studies, Oliveira, Lima, and Couto (2019, p. 12) concluded that digital games can contribute to an improvement in the performance of executive skills. But for this to happen, they need to be planned and have well-defined objectives.

3 TECHNOLOGY IN THE EDUCATION OF CHILDREN WITH ADHD

For a long period, the school was a space that offered outdated teaching methods, with expository classes and traditional methods, in which students lost interest in teaching. And, even in the face of technological advances, many institutions did not apply technology as a

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pedagogical didactic tool. However, students were increasingly up-to-date in the digital age, feeling a disproportion of technological reality during classes. Such events collaborate with the students' lack of interest in classes and school practices.

The use of the PEAK application in favor of teaching has become a necessity. Since, it is more attractive to students, even if it is a challenging way for many teachers. Thus, it is necessary that these professionals, together with the institution, learn to use these new resources that help in learning. A better integration of these methodologies is essential. The results of the research by Rodrigues (2014, p.1), Neves (2011, p. 37) and Alves (2020, p. 6) point out that there is a positive relationship between digital games and learning in the classroom, when mediation is done in a planned way and, therefore, with objectives to be achieved.

The advancement of new technologies has influenced pedagogical models and, consequently, the relationship between the school, teachers and students has changed. With technologies, teachers were able to migrate from the place of knowledge holder, becoming the one who encourages the student to know, considering the constant challenge in teaching practice, renewing their performance. For the researcher Rodrigues (2014, p.1), family members and teachers who do not know the educational value of electronic games tend to identify only the aspects related to fun or distraction that, in this line of reasoning, would not contribute to the child's education

In the face of the new technological era, we can see that education has been transforming. Thus showing that technology is an attractive tool in the teaching and learning process. She has been remodeling the traditional style of learning in a playful and didactic way. Thus, the use of the PEAK application collaborates with a more attractive inclusive education for children with Attention Deficit Hyperactivity Disorder (ADHD).

It is worth noting that this educational and technological process is constantly changing, requiring teachers to update their teaching. The processes of interaction with technology are not exhausted, they are modified from the emergence of other advances, always being a relationship of learning something new (KENSKI, 2003, p.69).

Santos (2010, p.3) points out new ways proposed by Barkley to understand Attention Deficit Hyperactivity Disorder, pointing out the importance of the development of Executive Functions in the subject to improve their school performance. The disorder caused by ADHD in school learning can be intense: it is possible to have low academic performance, even if the child has preserved the general cognitive skills to learn fluidly, considering what is expected

for the age and level of schooling. These children are generally more vulnerable to "school failure" compared to children who do not have the disorder. For example, studies indicate that 35% of subjects with ADHD spend less time in school, 30% have a history of repetition and 46% have a history of suspension of school activities or expulsion from educational institutions (SIQUEIRA *et al*, 2011, p. 82). From this perspective, we will address the use of the PEAK app as a tool for these children.

3.1 THE PEAK APP AS A TOOL FOR LEARNING

It is worth noting that there is still a fear on the part of teachers to use technology as an educational tool. Since, they believe that, by updating their way of teaching, they will lose all the essence that was taught during traditional teaching. In this context, it is necessary to seek ways that transform the way of presenting content, bringing great innovation to the classroom through the use of applications for children to have access to playful content.

Thus, in the face of the expansion of technology in everyday life, traditional teaching has been weakening. And municipal and private schools are increasingly adhering to technological innovations, reformulating the students' routine and using technological resources, especially games and educational digital applications. Such methodology is used as an essential tool in the educational process, providing new forms of teaching and learning. Bringing innovative characteristics to education, capable of motivating teachers and students. It is very significant in the development of autonomy, creativity and in the construction of knowledge.

To obtain such educational results, the use of the PEAK application can collaborate with student learning. This app has fun and educational games, based on educational and scientific research, which helps in self-improvement. Its use works as a brain training, and can be useful to stimulate the learning of children with ADHD, using games and puzzles that challenge memory, language and thought. In addition, this application allows the construction of goals and habits in a healthy and effective way, showing the student's performance at the end of the training. In addition, it is worth noting that PEAK is a free application, but it can be activated as "PEAK Pro", becoming paid. Bringing benefits such as personalized training and limited access to games, with performance information. In view of the study carried out, it was possible to conclude that the two forms of the application, free and paid, are efficient for the development of children with ADHD.

4 METHODOLOGY

It refers to a research that will be carried out in two inclusive schools (A and B) of the Municipal network of Paulista – PE. For an analysis of the development of children with a report of Attention Deficit Hyperactivity Disorder (ADHD) with the use of the PEAK application, during remote classes. It is characterized as a cross-sectional observational study with a qualitative approach.

We used the qualitative research approach, since this type is widely used in the field of social research, as it allows a more flexible approach between subject and researcher, allowing the acquisition of very significant data. According to Denzin and Lincoln (2006, p.22), qualitative research involves an interpretative approach to the world, which means that its researchers study things in their natural scenarios, trying to understand phenomena in terms of the meanings that people give to them.

A questionnaire was applied as an investigation mechanism to analyze the level of acceptance of the application among teachers and the impacts caused by the use of PEAK in the development of students, with the performance of their guardians. The sample universe is composed of 4 teachers from two municipal schools in São Paulo, 2 teachers from school A and 2 teachers from school B, who work with students from the 4th and 5th year of elementary school; and more, 4 students from school A and 3 from school B, all students had a confirmed certificate of ADHD.

The group of professors highlighted were submitted to individual questionnaires about the objectives of the research. We had the effective participation of those responsible for the use of the PEAK application, who used the application by videoconference and the teacher mediated, and observed how the children reacted to this application and through observation the teachers answered the questionnaire.

4.1 RESULTS AND DISCUSSIONS

This study sought to analyze the impacts caused by the use of the Peak application on the development of students with ADHD, based on the application of a questionnaire among teachers. At first, given the difficulties encountered by students in attending remote classes in a traditional way, it was possible to observe that the use of PEAK served as a key to the learning

of children with ADHD. Since, there was an educational impact on the development of these students after using the application in a playful way.

In fact, authors such as Rodrigues (2014, p.1), Neves (2011, p. 37) and Alves (2020, p. 6) were right when they portrayed the positive relationship between digital games and learning in the classroom. Since, after using the application, these students showed a better development in their ability to concentrate, when learning in a playful way. Allied to this, it was observed that the acceptance by these students was positive, by arousing their curiosity and attention, contributing to better productivity. In addition to enabling the active construction of learning. Xavier (2014, p.38) when quoting Piaget reports the student's direct action on the objects of knowledge, with the consequent balance of cognitive structures is what causes learning, as this is sustained by cognitive development.

Regarding the performance of teachers and their guardians, it was observed that most of them were not aware of this application, having an understanding from this study, reaffirming the study by Rodrigues (2014, p.1). In the meantime, after presenting the importance of the application, it was observed that the parents or guardians participated effectively throughout the learning, reporting that at first they felt difficulty using the PEAK application, but gradually adapted. According to Tahan (1968, p.50) During a game, the teacher assumes the important role of mediator, having the function of organizing the activity, establishing rules and ensuring that they are complied with and establishing communication. (DUARTE, 2017, p. 21)

On the other hand, it was possible to observe some negative points, such as the difficulties encountered by some parents and teachers in downloading the application on their cell phone, as it requires a lot of memory. However, given the importance of this study, they were instructed to delete unused files from their device, to make memory available. In addition, some levels of the app are paid, limiting its use after a while, even in the face of student progress.

Since some guardians do not have the financial conditions to make the payment or even do not think this payment is necessary, such a situation ends up limiting the development of students in the activities, by repeating the exercises, instead of evolving in level. Thus, it is necessary to seek new learning methods. In addition, it was observed that some activities are

complex, with no limitation in relation to the age group. This makes learning difficult for some students who find it more difficult to learn.

Thus, in view of the different levels of cognitive development of children with ADHD, some students showed, at first, difficulties in using PEAK. Being solved through the encouragement of their teachers and guardians. Thus, the positive influence of the effective participation of educators and parents is notorious. However, educators still have limitations in relation to the use of technology in the classroom, for fear of losing all essence of traditional teaching. However, we live in a process of globalization, in which changes occur recurrently. And, the educational sector also needs to renew itself, in order to update outdated methods and diversify pedagogical proposals interconnected with the technological process.

FINAL CONSIDERATIONS

According to the study carried out on the use of the PEAK application as a tool in the learning of students with ADHD, it is possible to say that technology has a positive influence on pedagogical models. Since the application contributes to the ADHD person facing their difficulties in concentration and focus, enhancing their creation and interaction skills, through the proposed activities. According to Lopes (2000, p.47), games allow children to internalize concepts and feelings within a social context, later contributing to their development in society.

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For this, it is necessary for the educator to be aware of the needs of students with ADHD. Since, the understanding of this disorder allows teachers to be prepared, so that they know how to act towards these students and their particularities. Thus, the teacher needs to be active and dynamic in his activities, employing adequate resources, considering the individual characteristics of each student.

In addition, the use of the PEAK application contributes to the teacher as the one who stimulates the student's knowledge, in addition to collaborating with the effective performance of those responsible for this teaching process. Positive impacts of the use of the PEAK app on the development of learning of students with ADHD were also observed. Verifying a satisfactory level of acceptance among students and teachers surveyed regarding the application during remote classes. This result is obtained only after proper instruction in the use of the application. Allied to this, the educator-student relationship is the starting point for the success of this pedagogical action, determining the contributions or difficulties in the

student's learning. It also requires multidisciplinary action, involving guardians, teachers and therapists.

ADHD influences the social and affective life of children and their families, and, consequently, interferes in the school context. (XAVIER, 2014, p.63). With this, it is necessary to think of a teaching proposal that includes playful and technological activities. Seeking to contribute to better educational performance of students with ADHD. However, for this to occur effectively, educators need to go through a training process, which enables innovation and reorganization of teaching in an appropriate way, making curricular adjustments.

As for the application, for its affective and broad use by all children with ADHD, it is suggested that it be made available free of charge at all levels, enabling its use in the cognitive and social evolution of students. In addition, some activities proposed by this application are complex, requiring greater individuality in terms of the age group and development of each student. Seeking to facilitate the understanding of all students, according to their specific needs. Given some limitations to the use of technology in the classroom, it is essential for institutions to invest in periodic training for educators. Seeking a renewal of the pedagogical proposal, by using the PEAK application and new teaching methods that should be sought, as a form of inclusive process for students with ADHD.

In summary, it can be concluded that, even in the face of some limitations found, the use of the PEAK application corresponded to positive expectations as a form of learning, providing education with methods capable of motivating teachers and contributing to the construction of knowledge of these students, in a creative and autonomous way. Therefore, the use of games as a teaching method enabled a different learning, by motivating the greater ability of these students to select information. In addition to allowing greater interaction during remote teaching, with the contribution of parents and teachers.

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