


COMPUTERIZATION OF THE CLASS DIARY: PERSPECTIVES AND CHALLENGES IN THE IMPLEMENTATION OF THE DIGITAL DIARY IN THE MUNICIPALITY OF BENJAMIN CONSTANT-AM

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ABSTRACT

The use of technology is a reality that is presented at the international, national, regional and local levels in the various segments of society, including in the area of education. This work sought in general terms to evaluate the perception of teachers in relation to the project of implementation of the digital diary in the municipal schools of Benjamin Constant. The research is of a descriptive exploratory nature, directed by a bibliographic and field research, based on a qualitative approach method, having as data collection instruments the interview and participant observation. Among the authors who form the theoretical framework, Castro (2016), Meirinhos and Osório (2011), Kenski (2009), Hessel and Abar (2007), Almeida and Rubim (2004) stand out. The research pointed out that teachers conceive the digital diary as a facilitator of the teaching work capable of promoting greater optimization of time and practicality of the records of activities, however, they expressed concern about the challenges associated with its implementation regarding the lack of technological skills on the part of some teachers and the need for availability of technological resources in schools that subsidize the execution of activities, such as the internet and computers.

Keywords: Education, Technology, Digital Diary.

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1 INTRODUCTION

The Digital Diary is a tool from technological advances in the educational sectors, which, like other technologies, aims to provide practicality, innovation and agility in activities, modifying the methodological dynamics of the administrative and pedagogical dimension of institutions. The Digital Diary, according to Castro (2016, p.14), was designed for teachers to store data electronically, such as daily school attendance, partial grades per subject, and the content taught in each class. It replaced, in this way, the old paper diary used in school.

Meirinhos and Osório (2011, p.43) state that the educational and training systems must undergo a transformation in the face of the new social and technological demands that society has presented in recent years. On the above, it is necessary to highlight that incorporating Information and Communication Technologies is a necessity of current educational societies to better take advantage of the advantageous benefits of the technological world.

The implementation of the digital diary directly affects the professional life of teachers who need to adapt to the necessary changes that go through learning and/or developing new skills, adapting to new working methods, detaching themselves from past practices and learning new ones. This context led us to the following questions: a) What is the view that teachers have in relation to the digital diary? b) What are the main challenges that would hinder the implementation of the digital diary and what would be the prospects for the use of the digital diary, in the perception of the teachers? c) Is there interest on the part of teachers in using the digital diary to replace the manual diary?

In order to answer these questions, the research sought, in general terms, to evaluate the perception of teachers in relation to the project of implementation of the digital diary in the municipal schools of Benjamin Constant; In specific terms, it was dedicated to a) knowing the conception of teachers in relation to the digital diary; b) To identify the main challenges and perspectives, in the perception of teachers, in relation to the implementation of the digital diary in municipal schools and; c) To verify the preference of teachers in relation to the digital or manual form of the class diary.

The motivation to carry out this research arose from the experience of working at SEMED in the performance of monitoring and guidance functions for planning, evaluation and filling out of class diaries with professionals from the Municipal Education Network Schools in the municipality of Benjamin Constant, in which it was observed through the

practice of teachers in terms of the use of the manual³ diary the report of some difficulties regarding the way to fill in the information, insufficient space for organizing and filling in the information, waste of time and fatigue in manual filling, among others. It should be noted that the use of the manual diary is a reality in the entire municipal education network in the Alto Solimões region⁴, since there is no digital diary in these schools.

The municipality of Benjamin Constant is the first in the region, within the municipal education network, to move towards the computerization of the class diary. It is an important step for municipal education that seeks to facilitate the work of education professionals and to better organize and control school records aiming at practicality and time optimization.

This is the relevance of having carried out this research, since it was possible to evaluate the project of implementation of the digital diary in a region where this practice is presented as a pioneering action in the municipal education network. In addition, this research presents itself as a contributing instrument for the Municipal Department of Education of Benjamin Constant in the use of information that deals with the challenges and perspectives of teachers regarding the replacement of the manual method by the digital method of the class diary, contributing to the establishment of strategies on how to deal with the difficulties and expectations of teachers in the face of changes with the implementation of the digital diary.

This work is organized preceded by an introduction containing the contextualization of the theme, problem, objective and justification, followed by the section that deals with the method or formalism that describes the methodological procedures that guided the realization of the research, then the analysis and discussion of the results is presented that exposes the research data in a combination of field research and bibliographic research, Finally, the final considerations and references used in the work are presented.

³ The municipal schools of Benjamin Constant use the Class Diary with manual registration, which is an official document of the School Unit. It is an instrument that makes it possible to record the attendance and use of each student, it is also in it that the work of teachers in institutions can be controlled and confirmed, this document is the full responsibility of the teaching professional, and it is observed that it must be filled out in pen without the presence of erasures.

⁴ In the State of Amazonas, the micro-region of Alto Solimões includes 9 municipalities, namely Amaturá, Atalaia do Norte, Benjamin Constant, Fonte Boa, Jutai, Santo Antônio do Içá, São Paulo de Olivença, Tabatinga, Tonantins.

METHOD OR FORMALISM

All scientific research requires the use of methodological procedures necessary to configure a formal and scientific aspect of the study. It serves as a guiding instrument for the researcher to develop his research and achieve its objectives. Prodanov and Freitas (2013, p. 14) argue that methodology is the application of procedures and techniques that must be observed for the construction of knowledge, with the purpose of proving its validity and usefulness in the various spheres of society. The research carried out presents aspects of bibliographic and field nature. These two types of research contributed significantly to the realization of this work.

Initially, it was necessary to conduct a bibliographic survey in order to identify and select the main literatures and authors that discussed the theme in question. In this sense, the bibliographic research was fundamental to elucidate the knowledge about the researched theme, enabling a theoretical framework capable of marking and interpreting the study variables more clearly. Flowers; Souza, (2008, p. 104), state that bibliographic research is of fundamental importance because it is the first step of any study [...]. It is through a well-done research that it becomes possible to investigate all the data of an issue.

Bibliographic research was a constant throughout the elaboration of the work, enabling support for the field research, as Marconi; Lakatos (2009, p.188) point out that the phases of field research require, in the first place, the realization of a bibliographic research on the theme in question [...] As a second step, it will allow the establishment of an initial theoretical model of reference, in the same way that it will help in the determination of the variables and the elaboration of the general plan of the research.

The instruments used for data collection were interviews and participant observation. The participants of the research were 7 teachers from the municipal school network, each representing a school in the urban area, in addition to the teachers participated in the research the Secretary of Education of the municipality. Regarding the interview conducted with the teachers, it had the purpose of obtaining information to know the teachers' perception about the challenges and perspectives in relation to the implementation of the Digital Diary to replace the manual diary.

As for the interview conducted with the Secretary of Education, it was sought to verify the perception and implementation strategies of the Digital Diary in the municipality in

relation to the necessary technological resources and the development of human and technical skills of the teachers.

As for the participant observation, it served to better understand the reality of the researched group in relation to the routine of using the class diary.

The research is exploratory, descriptive and has the character of a method of qualitative approach.

RESULTS AND DISCUSSIONS

In this section, the data collected in the field research are discussed in the light of theoretical contributions. At first, we are concerned with presenting the context of the research field, then the conception of teachers in relation to the digital diary and their perception of the possible challenges and perspectives for the implementation of the Digital Diary is presented, in addition, the conception of the Municipal Department of Education in relation to the digital diary and its planning strategies to deal with the possible difficulties and needs of teachers during the process of implementation of the digital diary.

THE CONTEXT OF THE RESEARCH

The research took place in one of the 62 municipalities of the State of Amazonas, located in the sub-region of Alto Solimões. The Upper Solimões, in the context of the Amazon River Basin, comprises nine municipalities: Fonte Boa, Jutaí, Tonantins, Santo Antônio do Içá, Amaturá, São Paulo de Olivença, Tabatinga, Atalaia do Norte and Benjamin Constant (research site). It is worth remembering that the upper Solimões region is located on a triple border, with the cities of Tabatinga (Brazil), Leticia (Colombia) as the point of convergence, and the geographical limitations between Brazil and Peru occur through the Solimões/Amazon rivers.

Benjamin Constant is a Brazilian municipality in the interior of the State of Amazonas, which according to data from the Brazilian Institute of Geography and Statistics (IBGE) 2017 has a population of 41,329 inhabitants that is formed by a great diversity of indigenous peoples. The municipality is 1,120 km away from the capital Manaus, as the crow flies.

Regarding the educational institutions related to the Municipal Network, the municipality has a total of 58 schools, 08 in the urban area and 50 in the rural area, of these, 24 are indigenous schools and 26 non-indigenous. Currently, the municipality has

9,997 students, 405 effective teachers and 9 pedagogues, according to data from the Municipal Department of Education-SEMED (2019).

TEACHERS' CONCEPTIONS ABOUT THE DIGITAL DIARY

Immersed in a world of networks of connections, society lives its social and cultural relations in a dynamic and complex way, due to scientific advances in the field of technology. Inserted in the most diverse areas, technologies offer changes and transform many environments. Schools are not left out of this universe, teachers and students can enjoy the benefits, including with regard to the instruments and tools inherent to the teaching-learning process linked to information technology in education. With each new technological tool, new debates arise, paradigm shifts, thus presenting new conceptions. This is because, according to Hessel and Abar (2007, p.69) "when it comes to the presence of technology in schools, several problems arise due to accommodation to old technologies, mistrust in the way of acting and thinking, and even lack of knowledge".

Depending on people's conception of technology, this can influence the process of acceptance or resistance to its use. In this topic, we focused on an analysis of the teachers' conceptions about the Digital Diary based on the data from the interview conducted in the field research.

Frame 1 – Teachers' conceptions about Digital Diary

| Teachers | Question 1 - Conception of Digital Diary |
|----------|---|
| The | For those who keep in touch with digital, this would make it easier at the time of a mistake, as there would be no erasure. The moment to fill it out would be calmer. |
| B | It's great. But for those who do not have computer mastery, it will be a difficulty. In view of typing and other mechanisms that information technology requires. |
| C | The digital diary is an achievement that still needs to be discussed and its true importance for the teaching process verified. Perhaps it allows for less detail-oriented work and that in this process it is possible to advance in the day-to-day more quickly. |
| D | The digital diary facilitates the teacher's work, because we would not need to spend so much time filling out a class diary, I see the digital diary as a facilitator of the educator's work. |
| And | I see it as a registration instrument that brings the advantage of archiving the document all digitally, but I think that for the reality of our communities in the rural area, indigenous and non-indigenous as a very big difficulty, because not all teachers have a cell phone or computer. |
| F | It would greatly facilitate the progress of the work in the secretariats with regard to grades and the daily monitoring of teachers. |
| G | It is an innovative pedagogical tool, with very good and agile support as well. But at the same time still a little far away in our city; and internet accessibility is still weak. But in general terms, the digital diary brings changes and allows the teacher to adapt to the transformations that are proposed to him. |

Source: Field research, 2018.

The conception of the teachers in relation to the Digital Diary is permeated by the understanding of considering it in general terms as a pedagogical instrument that would facilitate the teaching work in relation to the various operational activities that the teaching practice requires, but who also understand that the use of the Digital Diary requires specific handling skills and technological resources that in the absence of these would result in difficulties of use. Similar to the teacher's conception, the Municipal Secretary of Education understands that the digital diary will enhance educational actions and will contribute to a more qualified monitoring of the educational process, however, in her conception the possible problem regarding the implementation of the digital diary would be the internet service and the resistance of the teachers themselves regarding the acceptance and adaptation to the use of the Digital Diary, See:

"Regarding the implementation of electronic diaries, we prospect optimizing and enhancing educational actions through the elimination of the class diary, thus reducing the use of paper, contributing to a more qualified monitoring of the educational process. However, we are faced with some obstacles in relation to the internet service in the region, the resistance on the part of some teachers regarding the changes and use of new technologies, as well as the recognition of the need for training" (Municipal Secretary of Education of Benjamin Constant, interview 2018).

It is observed in the speech of the teachers and the Secretary of Education that both parties conceive the Digital Diary as a beneficial instrument for education and teaching practice, without disregarding their concerns with possible obstacles that would hinder the use of the Digital Diary.

In this process of incorporating new practices, the manager assumes a fundamental role of articulator between all parties involved in the process of change and adaptation to new technological work practices. This is because, according to Almeida and Rubim (2004, p. 14), for the insertion of ICTs in schools, "it is up to each manager to mobilize the participants of the school community, to have the technological resources for the articulation between the administrative and the pedagogical, and to leverage processes of continuing education and in-service training of its professionals". This articulation between the parties involved in the process of change and professional training helps to minimize possible resistance, which can often be linked to the fear of the "new", of having to learn again. We find it difficult to abandon old practices to learn new ones, to replace work methods with others we do not know, but professional life requires updating new practices, especially in an era when technology is part of living in society.

3.3 MAIN CHALLENGES AND PERSPECTIVES IN RELATION TO THE IMPLEMENTATION OF THE DIGITAL DIARY IN MUNICIPAL SCHOOLS

The insertion of technology in the educational segment generates a strong impact on the daily life of the school environment, which gains a new dynamic with the use of technological resources. However, although the dissemination of technology has advanced, in many school contexts the use of technology is still very incipient, this is the case of the municipal schools of Benjamin Constant, in which the use of technological resources is limited in the practice of teachers, restricting the exposure of a few classes with the support of the media resource, data show and exploratory visits to computer labs, With the caveat that not all schools in the municipality have this technological space.

This reveals that there is little contact between teachers and digital technologies in the school environment. This scenario can be associated with two factors: first, the lack of ability to handle digital technologies on the part of teachers; second, scarcity of technological resources made available by the school. Regarding the first aspect, Motta Roth and Marshall (2007) state that it is of paramount importance to ensure the expansion of teachers' knowledge regarding new technologies. Regarding the insertion and integration of technologies in the school context, Borges (2006, p.9) reminds us that "the difficulties for the integration of ICT in the school universe have their origin in several factors, and most of them are due to the absence of educational policies that organize and implement strategies for their effectiveness".

Due to technological advances, schools are faced with many challenges, but also with prospects for improvements both in the administrative and pedagogical dimensions. The results below present the challenges and perspectives of teachers in relation to the project to implement the digital diary in the municipal schools of Benjamin Constant.

Chart 2 – Challenges and Perspectives on the implementation of the Digital Diary

| Teachers | Question 2 - Challenges and perspectives in relation to the Digital Diary |
|----------|--|
| The | The challenge would be in the difficulties of some teachers who in the digital age still have little knowledge about typing, copying and pasting, among others. And that some do not have the "notebook" material. The new perspectives would be in relation to typing, which makes it possible to correct without having erasures, to fill in at home with tranquility. |
| B | Internet access. Many schools do, however, the teacher is deprived of access. |
| C | The challenges are many, first, we would have to have the necessary tools, then training courses. Perspectives improvements in the registration of class activities. |
| D | One of the challenges would be quality internet in our city, we know that the internet signal is not always available to help us. Other challenges would be to make sure that all teachers have access to this tool, as we know that many teachers are not allies of technologies and this would make the work difficult. |

| | |
|-----|--|
| And | The difficulties will be that not everyone has cell phones or computers, and if it is with the use of the internet the difficulty becomes even greater, as not everyone has access to the internet. But I have the perspective that if it is gradually implemented with the help of training with guidelines, it can become a great registration instrument, greatly facilitating the way of archiving at SEMED. |
| F | One of the main challenges is the absence of quality internet in schools, as teachers need quality internet to meet their perspectives. And the help of computers for each teacher. |
| G | As I mentioned above, the biggest challenge is really the access, we already have it, but not with the quality necessary to serve all municipal education networks. And when the prospects are so great, it would save time and communications would be more accurate and faster. |

Analyzing the teachers' statements, the main challenges of implementing the Digital Diary would be linked to the lack of quality internet, absence of tools such as computers, cell phones, as well as the lack of ability to deal with digital technologies. And that the prospects for using the digital diary would be due to the ease of recording data, with greater speed, better organization of registration and transfer of information, without risk of erasures in the document, in addition to enabling better archiving and sharing of information.

In general, learning how to handle the Digital Diary will be the biggest challenge for teachers and school management. On the other hand, ensuring and promoting training for the handling of these new technologies and providing the necessary technological infrastructure for teachers to develop their activities is a requirement of the Municipal Department of Education, which in this proposal for the implementation of the Digital Diary project considers that,

"The search to guarantee continuing education professionals and provide subsidies for the development of teaching work is a management policy that aims to ensure the success of the activities of all education professionals in the Education Network, especially knowing the needs of reality when it comes to technology. Therefore, one of the first steps to be taken with the change from paper diaries to digital diaries is to promote training in order to provide knowledge of this new technological tool" (Municipal Secretary of Education of the Municipality of Benjamin Constant, interview, 2018).

It is necessary to recognize that the use of new technologies requires new technological skills, so all faculty, school management, as well as the Secretaries of Education must seek to develop and improve their skills in the digital world more and more if they wish to have practicality, dynamism and new tools that promote greater agility in administrative and pedagogical work. Moraes (2004, p.1) states that "[...] Driven by the entry of new digital technologies, this moment reveals itself as a great opportunity to

catalyze important educational changes and transform the way we conceive school, education and life itself".

The challenges are constant and diverse in the school context, however we must think that with the challenges also arise the opportunities to carry out new activities, especially in relation to technological tools that can undoubtedly provide significant changes to the educational sphere, about this, Moran (2007, p.167) says that "the more technologies advance, the more education needs human people, evolved, competent, ethical". Corroborating this, Delors (2006, p. 100) states that "the twenty-first century needs this diversity of talents and personalities, even more so exceptional people, equally essential in any civilization".

The civilization we live in today, characterized by an information society, requires a new time, a new space and new ways of thinking and doing education, because "the wide access and wide use of new technologies condition the reorganization of curricula, management modes and methodologies used in educational practice" (KENSKI, 2004, p.92). In this new dynamic of the digital age, it is necessary for schools to update their pedagogical, didactic and administrative practices by making use of new technologies in the search for improvement in the educational process.

DIGITAL DIARY: AN OPTION FOR TEACHERS

Despite the concerns of the teachers about the possible problems that could hinder the implementation of the computerized diary, the survey pointed out that there is a willingness of the teachers to prefer the digital diary instead of the manual diary, and among the 7 interviewees 5 are in favor of the implementation of the digital diary, as shown in the table below:

Chart 3 – Most advantageous type of diary according to the teachers' perception

| Teachers | Question 2 - What is the most advantageous type of diary in the perception of teachers |
|----------|--|
| The | (Digital diary) - Its practicality would turn to typing, which would allow it to be completed faster, due to the series of shortcuts that typing allows. |
| B | (Manual class diary)- In my point of view, the manual class diary would remain. This is because, in addition to not having knowledge of digital, we are already familiar with the manual class diary. |
| C | In reality, only with pedagogical practices, we will see to what extent the digital diary can help us in the pedagogical practices of the classroom. First, check what the digital diary can contribute. |

| | |
|-----|---|
| D | (Dário digital)- Because it would facilitate the teaching work, it would make more time for us to do other day-to-day work. |
| And | (Digital diary) - the digital class diary is in my conception the most advantageous, because it will be more practical in the act of filling it out, taking into account that before it is implemented, teachers go through training to learn how to deal with the filling of this digital diary. |
| F | (Digital diary) - enables quality and fast work. Thus facilitating the work of the school as a whole. |
| G | (Digital diary) – Certainly the digital diary, but always pointing out what is necessary and fundamental for its practicality: quality internet. |

The research pointed out that teachers conceive the digital diary as a facilitator of the teaching work, capable of promoting greater optimization of time and practicality of the records of activities, linking their choice to the digital class diary instead of the manual class diary, due to the ease and practicality that its implementation would promote in the school environment. The biggest complaints in relation to the manual diary are the difficulty in filling out the activities, the delay in filling out and the excessive care that must be taken not to make a mistake since it cannot be erased. These factors motivated teachers in 2019 to request from the Municipal Department of Education the replacement with another diary that they believe to be simpler to fill out. Like teacher B, many teachers who opt for the manual class diary do so due to the lack of technological skill, which would in fact make the work of these teachers difficult.

The process of implementing the Digital Diary requires responsibilities from both parties, because if, on the one hand, the manager needs to meet the infrastructure conditions, with regard to equipment and technological resources and professional training, on the other hand, professionals are responsible for effective participation in the training process, since "the digital learner needs to master the operation of computer devices, transform raw information into useful knowledge and learn to learn uninterruptedly" VILLELA (2009, p.38). This is because the presence of technologies requires a posture of the entire school community, everyone inserted in this context must seek knowledge based on personal, social and professional needs in order to meet the new educational demands.

FINAL CONSIDERATIONS

Companies and Institutions in the public and private spheres have sought in technologies answers to solve or minimize their problems. This has led to the insertion and dissemination of technology in the various segments and spaces of society.

The educational area has used the facilities promoted by technology to model its educational process. Thus, technologies are presented as a valuable administrative, pedagogical and didactic instrument in the educational context.

One of the main problems with the use of technologies is the lack of ability to handle them. Not all professionals have kept up with the pace of technological advances, becoming stagnant in old practices, many averse to technology. It is not a matter of invalidating knowledge, but of updating it, integrating it.

The Municipal Department of Education (SEMED/BC) through the project to implement the digital diary has bet on technologies as an instrument capable of promoting greater ease, practicality and saving of time and resources in teaching practice. This is an action that is configured as a pioneering practice in the region in relation to the municipal public network.

At the time the research was carried out, the Digital Diary project was in the initial phase of implementation in municipal schools. The project had been approved by the municipal government and was only waiting for the bidding process of the company that would serve with the service. This stopped us from pointing out exactly the fruits of this practice, which led us only to evaluate the conception of the teachers and the possible challenges and perspectives that these professionals were able to visualize with the implementation of the Digital Diary project. In this term, the research at the time pointed to a predisposition of teachers to adhere to the digital diary.

However, this field of research is open to new studies, which can analyze the implementation process in the current scenario, seeking to show the results of this practice, what has changed and what has been achieved in terms of positive and/or negative results in the school context, since the Digital Diary was only actually able to be implemented in the year 2024, thus requiring a wait of time of experience of use to measure its impacts and results for education in the municipality of Benjamin Constant, State of Amazonas.

The present research assumed the pioneering spirit of being the first to study the computerization of the class diary in the municipal school network in the Alto Solimões region, analyzing the pioneering action of implementation of the digital diary in the Municipality of Benjamin Constant.

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