# Usability Testing of Electronic Diary "e-Diary" in Secondary Education: A Comprehensive Analysis

# Ortaöğretimde Elektronik Günlük 'e-Diary'nin Kullanılabilirlik Testi: Kapsamlı Bir Analiz

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## Abstract

Usability testing is a technique for evaluating digital products by testing them with real users. This process provides direct feedback on how actual users interact with the application and focuses on measuring the product's ability to meet its intended goals. In this case, we have investigated the usability of e-Diary, a web-based application developed by the Ministry of Education and Science that aims to improve communication between teachers and parents by providing easy access to diary information. This research was conducted by creating surveys, distributed in the secondary schools of the Municipality of Tetovo. The obtained results were used to identify quantitative measurement characteristics regarding the usage of e-Diary, and qualitative conclusions were generated through interviews with teachers and school administrators involved in this study, based on their 10-year experience. The aim of this thesis is to assess the real usability of e-Diary, determining its ease or difficulty of use, and provide conclusions and suggestions for usability improvement.

**Keywords**: Usability testing,  e-Diary, secondary education , fast communication of student results.

## Özet

Kullanılabilirlik testi, dijital ürünleri gerçek kullanıcılarla test ederek değerlendirmek için kullanılan bir tekniktir. Bu süreç, gerçek kullanıcıların uygulama ile nasıl etkileşime girdiğine dair doğrudan geri bildirim sağlar ve ürünün amaçlanan hedeflerine ulaşma yeteneğini ölçmeye odaklanır. Bu çalışmada, öğretmenler ve veliler arasında iletişimi geliştirerek günlük bilgilere kolay erişim sağlamayı amaçlayan, Eğitim ve Bilim Bakanlığı tarafından geliştirilen web tabanlı bir uygulama olan e-Günlük'ün kullanılabilirliği incelenmiştir. Bu araştırma, Tetovo Belediyesi'nin ortaokullarında dağıtılan anketler oluşturularak yürütülmüştür. Elde edilen sonuçlar, e-Günlük kullanımına ilişkin nicel ölçüm özelliklerini belirlemek için kullanılmış ve bu çalışmaya katılan öğretmenler ve okul yöneticileriyle 10 yıllık deneyimlerine dayalı görüşmeler yoluyla nitel sonuçlar üretilmiştir. Bu araştırmanın amacı, e-Günlük'ün gerçek kullanılabilirliğini değerlendirmek, kullanım kolaylığını veya zorluğunu belirlemek ve kullanılabilirliği iyileştirmek için sonuçlar ve öneriler sunmaktır.

**Anahtar Sözcükler** : Kullanılabilirlik testi , e-Günlük , ortaöğretim, öğrenci sonuçlarının hızlı iletimi

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## Introduction

The difference between a well-validated product, application, or software on one side and a failed product, application, or software on the other, in the user's perception, lies in the functionality of the product. This subsequently affects the usability and evaluation of the product, application, or software. In a recent study by the American IT company CA1, it is emphasized that "no feature of applications expresses brand loyalty as ease of use does." The same study emphasizes that the importance of high-quality applications that attract users and are easy to use is further highlighted by the fact that "consumer users will abandon an application and a brand, sometimes even permanently, if it does not load within 6 seconds" (Broadcom.com, 2015).

However, the question arises: What makes a product usable?! Most software tests focus on functionality and fixing all major defects, while usability testing clearly focuses on the user experience. Usability testing mainly determines whether a software product will be easy to use. Usability is a quality that many products possess, but many others lack. There are many reasons why this may occur. Fortunately, there are common and reliable methods to evaluate where design contributes to usability and where it does not, and to assess what design changes need to be made for a product to be usable enough to survive or even thrive in the market. However, the benefits of usability testing extend beyond functional testing and usability. Furthermore, this helps you truly understand the use cases of your product, understand your audience, and build a good product (Jeffrey Rubin, 2008).

Usability testing is important if we want to believe that we are building products for ourselves. We all have unique backgrounds, lived experiences, perspectives, preferences, and abilities. All these things influence how we understand, approach, and experience a product.

Most internet users hope to navigate a website or an application quickly and easily. If any aspect of the website or application is problematic—slow to load, has coding errors, etc.—this increases the likelihood of user abandonment. Even the most aesthetically pleasing website or the smartest application will have a high abandonment rate if it does not load quickly or fulfill its promises.

Since usability testing mimics the real use of software or digital products in real life, it offers many advantages such as:

Direct user reactions, which help focus team efforts on improving the product.

The ability to test different options that would determine the best direction for development or new releases.

Fresh eyes to identify possible issues or problems that may negatively impact usability.

With well-done usability testing, implementers will understand their users. This can minimize project failure risks (Krug, 2010).

The only way to combat the effects of false consensus when designing is usability testing. This allows us to have another perspective, and most importantly, a perspective from actual users who will use the product in real life.

Usability testing is also important for the long-term success of the user. A broader perspective means we can create better for the audience and ensure that more users can be successful with the product. Forbes reports that companies investing in UX have lower customer acquisition costs, lower support costs, and higher customer retention rates. (Travis, 2021)

To give a more concrete example, Shopify reports that one of the most common reasons a customer abandons a purchase is due to a complicated checkout process. When we use usability

testing during the design process, we can identify and address usability issues and complex flows before the product is launched, as well as ensure that the user experience is up to standard.

Usability testing is a technique used in user-centered interaction design to evaluate a product by testing it with users. This can be seen as a very good usability verification practice because it provides direct information on how real users use the application. Instead of showing users a draft and asking, "Do you understand?", usability testing involves testing users attempting to use something for the intended purpose. The specific example to be investigated in this research is the use of "e-Diary" (electronic diary).

The Electronic Diary (E-Diary) is a project of the Ministry of Education and Science (MoES) that enables all information entered in standard printed diaries to be entered electronically. It offers a user-friendly and intuitive interface - the design and number of pages, the column arrangement in the E-Diary fully corresponds to the standard register. Furthermore, tools for quick search, navigation, and page access are provided. The aim of the Electronic Diary is to improve and facilitate communication between teachers and parents by utilizing the opportunities of modern electronic communications, to increase information to parents without having a proactive role - to receive information about their children's grades, activities, and behavior via email on their computer or text messages on their phone. It is sufficient for them to express their desire for this and leave a valid address and phone number. It also provides fast and easy access to diary information from teachers and school administrators, offering centralized and fast statistical analyses at the school and state level for use by MoES and other state institutions, etc.

The electronic diary is implemented as a web-based application built on the existing infrastructure of hardware and software platforms of the Ministry of Education and Science. E-Diary has a large number of end-users - teachers, parents, a large number of employees in state institutions, making it the most used electronic system in the Republic of North Macedonia. Therefore, it is necessary to provide fast, quality, and constant user and technical support for the system, as well as long-term improvement, adaptation to user needs, and expansion of system functionality. (Корисничка и техничка подршка и надградба на информациониот систем Електронски дневник).

The diary uses the ESARU database (Educational Management Information System), which is a system for collecting, processing, controlling, and presenting data that are important for the educational process, both in primary and secondary education in the Republic of North Macedonia (esaru, 2023). The implementation of the ESARU system includes training two administrators from each school at the state level, responsible for entering data into the system. Otherwise, the system was implemented during the period 2009-2010, through the Education Modernization Project (PMO), with creditor support from the World Bank and a grant from the Kingdom of the Netherlands (Ednevnik, 2019).

The electronic diary was introduced in February 2011 with the aim of improving communication between teachers and parents in the education system. This technological innovation was part of a broader effort to integrate technology into education and to create a more efficient and user-friendly way to share information related to student absences, grades, and progress with parents.

According to the Secondary Education Law, Article 74, paragraph 4, all teachers in the country are legally obligated to regularly complete the e-Diary. This legal requirement for completing electronic diaries involves a large number of teachers nationwide. For primary schools, the number of teachers legally required to fill out the e-Diary is 17,997, while for secondary

schools, this number reaches 7,420 (Meta, e-dnevnikot "padna", 2018). This indicates a widespread adoption of electronic diaries in teaching and sharing information with parents.

One of the main benefits of the e-Diary is that the parents of 185,099 primary school students and 69,227 secondary school students receive SMS or email messages regarding their children's absences and grades (Образование, 2023). This enables quick and regular communication between the school and families, keeping them informed about students' academic performance and participation in school.

### Research Objectives

The aim of this research is to evaluate the usability aspect of the current online system "e-Diary" that is officially in use in primary and secondary education, in all public schools of the Republic of North Macedonia, while the case study will focus on all public high schools in the municipality of Tetovo.

The main objectives of this research are:

• The effectiveness of the system

Is the system easy to learn?

Is the system useful for teaching?

Can the system be used to create a diary by teachers?

Can teachers communicate electronically with students and their parents?

• Efficiency of the system

Do users perform tasks quickly?

Can users perform tasks with few errors?

• Satisfaction with the system (Moran, Usability Testing 101, 2019)

Do users like the system?

Are users satisfied with the system?

• Are there any recommendations to improve the system?

Research Questions

To achieve the main objectives, it is necessary to answer the following research questions:

How effective is the system for teachers in terms of ease of learning, ease of use, and overall usefulness?

How efficient is the system for teachers in terms of task performance, speed, and error rate?

What is the satisfaction of teachers with the e-Diary system?

What are the recommendations for improving the e-Diary system?

The key focus of this research is to address the objectives and answer the research questions mentioned above. The achievement of these objectives will be possible through research activities such as planning, executing, and analyzing usability testing of the e-Diary, as well as designing solutions to problems discovered during the testing phase.

## Method

To explore the effectiveness and user experience of the e-Diary system in secondary schools within the Municipality of Tetovo, a comprehensive methodology was employed, incorporating both quantitative and qualitative data collection tools. The primary tool for quantitative data collection was a survey, carefully developed through a combination of existing literature review and expert input. This survey was designed to gather detailed insights into various aspects, including the demographics of the respondents, the frequency of e-Diary use, the perceived ease of use, overall system satisfaction, and suggestions for potential improvements. The questionnaire was distributed to teachers across secondary schools in the municipality, ensuring a broad and representative sample. In addition to the survey, qualitative data was collected through interviews conducted with a purposive sample of teachers and school administrators who had significant experience with the e-Diary system. The interview questions were crafted to delve deeper into the impact of the e-Diary on teaching practices and communication, as well as to identify any challenges or opportunities associated with the system. Participants were also encouraged to share their suggestions for system enhancements. For data analysis, the quantitative data obtained from the survey was analyzed using descriptive statistics, providing a clear and concise overview of the general trends and patterns. Meanwhile, the qualitative data from the interviews was subjected to thematic analysis, allowing for the identification of recurring themes and insights that could inform future improvements to the e-Diary system. (VEAL, 2022)

Before starting the interview, the necessary permissions were obtained from the schools. In addition, consent forms were obtained from the teachers and it was stated that the participation was voluntary. Signed research ethics forms were obtained from the school administrators.

The importance of this research lies in the testing of the "e-Diary" application, which is currently one of the largest projects of the Ministry of Education and Science of the Republic of North Macedonia, and has been in implementation for several years, even with mandatory status for all primary and secondary schools at the state level. The usability aspect of the "e-Diary", addressed within the framework of the research, evaluates the actual state of use of this application and attempts to draw conclusions and provide possible suggestions in the context of improving the quality of the platform in use. At the same time, this implies a trend in improving the quality of primary and secondary education in the Republic of North Macedonia.

## Results

The analysis of the results within the framework of the case study on the usability testing of the "e-Diary" has been approached from two different perspectives. In the first case, responses to questionnaires distributed in high schools in the Municipality of Tetovo have been analyzed, attempting to identify quantitative measurement characteristics regarding the use of the e-Diary. In the second case, through interviews with teachers and school administrators involved in this study, qualitative conclusions about the current use of the e-Diary have been attempted to be drawn, based on the ten-year experience within high schools. Experiences of personnel, exchange

of experiences, challenges of the time, as well as issues addressed within meetings, seminars, training sessions, advice, and working groups within schools, have also been included here.

Analysis of Questionnaire Results

In the scope of the research, a total of four following schools were included: "Kiril Pejcinoviq" Gymnasium High School, "Nikola Shtejn" Communal Medical High School, "8 Shtatori" Economic High School, and "Mosha Pijade" Tetovo Regional Center for Vocational Technical Education. The distribution in schools consisted of 20 teachers from each school. An attempt was made to include both genders in proportion, resulting in the following percentages: females (F) 46.2% and males (M) 53.8%.

From the first group of questions related to the demographics of users, it is worth noting that from the results of Fig.1, it can be observed that 80% of the employed are experienced teachers who have witnessed the use of both the traditional physical diary method and the e-Diary. Thus, this category of employees rightfully can assess the advantages of the e-Diary.
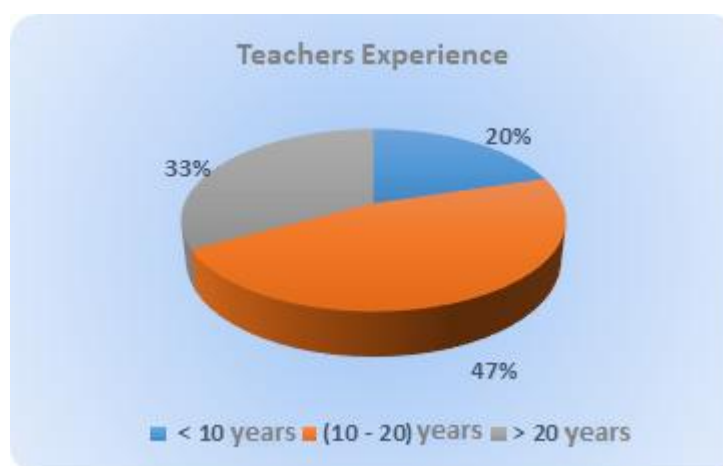


**Figure 1**. Work experience in education

Regarding the utilization of IT devices, although less than 1% are computer science teachers, while the remaining 99% belong to other fields such as machinery, communication and transport, history, language and literature, etc., again, the results show that teachers use IT devices quite well in general.

Even though half of the respondents declare that they have the e-Diary as their first and only platform of this kind they use, again, from the perspective of access and usage, the results show that teachers are confident that they have knowledge above average for using the e-Diary. Only one respondent declares having no knowledge at all, which does not represent even 1% of the respondents. Thus, regarding the demographic questionnaire of e-Diary users, it can be concluded that teachers have the prerequisites and knowledge for optimal utilization of the e-Diary.

From the second group of questions directly related to the usability of the e-Diary, it is worth highlighting that teachers in general are moderately satisfied, where 43% of the respondents are moderately satisfied with the speed of access to the e-Diary, while 47% of the respondents are below average, which leaves something to be desired.

Questions regarding the design sphere show us how satisfied users are with the appearance of the e-Diary, whether they can make changes in font or color, or select the language in which they wish to operate, etc. More than half of the respondents are moderately satisfied with the design

and appearance of the e-Diary, and we see that there are no options for font or color changes. Regarding language, they can choose the language, including Macedonian, Albanian, Turkish, Bosnian, and Serbian. Concerning the navigation modules offered by the e-Diary, 65% of the respondents are moderately satisfied, while the remaining 30% are split in half, where 15% of the respondents think that there is room for improvement, while another 15% consider these modules to be very well adapted.
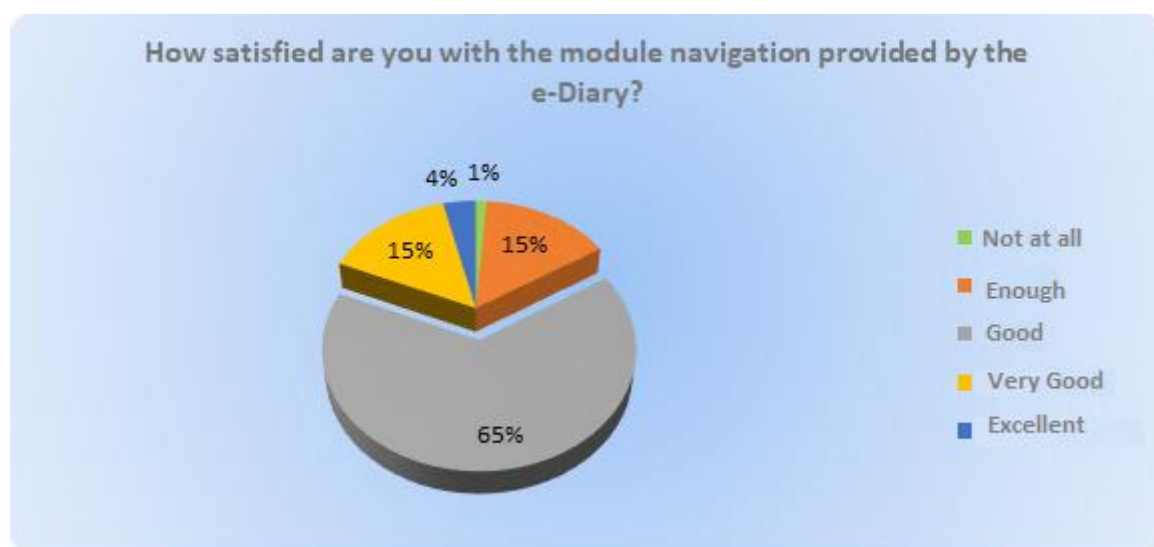


**Figure 2**. Navigation Method and Modules of the Electronic Diary

Regarding the functionality of the e-Diary or the problems encountered during access to it, from the results of the respondents, we see that 74% of them have responded that it often happens that this platform is not functional at all. Connecting it with the subsequent question of how often they attempt to access this platform per day, the majority responded that they try to access it more than once a day, indicating that this is a problem that must be addressed in the future for better efficiency, considering that its fulfillment is also a legal obligation and now there is no physical diary available, which was always at the disposal of teachers.

Regarding the time needed to fulfill obligations towards the electronic diary, from the obtained results, we see that on average, it takes 5 hours to fulfill the obligations of a whole subject for a month, while for those who are class coordinators, considering that they have additional obligations such as recording the held consultations during the school year, parent meetings, excursions, etc., they need an average of 7 hours per month. On the question about the difficulty in identifying the appropriate icon needed, we see that 42% of respondents rarely have difficulty, while the other portion shows a split almost in half, where 28% of respondents often have difficulty, mostly among teachers with less than 10 years of work experience, meaning that most of them have no experience with the physical diary, while 29% declare that they have no difficulty at all in identifying icons, and most of them are pre-trained in the use of the electronic diary. From this, we see that work experience plays a role because those who have used both the physical and electronic diary, considering that the icons are almost similar to those of the physical diary, and the pre-training they have had on the use of the electronic diary, help them to identify more easily. When it comes to the privileges that a teacher has for recording and modifying data, we see that 73% of respondents declare that they are partly sufficient since there is still room for

improvements, while 21% are satisfied and think it is sufficient, and only 6% think that they do not have privileges at all regarding the recording and modification of data.

In the last part of the second group of questions related to the usability of the e-Diary, questions regarding students are included, such as their access to the electronic diary to see data like grades, absences, etc., or the possibility that when they turn 18 years old, their information is not reported to their parents since they are now responsible for themselves. From the results of the respondents, we see that only 19% of them think that students should not have online access to individual results in the electronic diary, while 43% think it might be good, and 38% are convinced that this would be the right action. One of the main goals of the e-Diary is to inform parents in a timely manner about the progress of students at school. Therefore, from the question about how much positive impact informing parents through the e-Diary has on the parent-teacher-student triangle, 54% responded that it has a lot of impact on quick and efficient communication in this triangle, 37% think it has had some impact, while 9% think it has had no positive impact on the use of the e-Diary in enhancing communication among parents, teachers, and students.
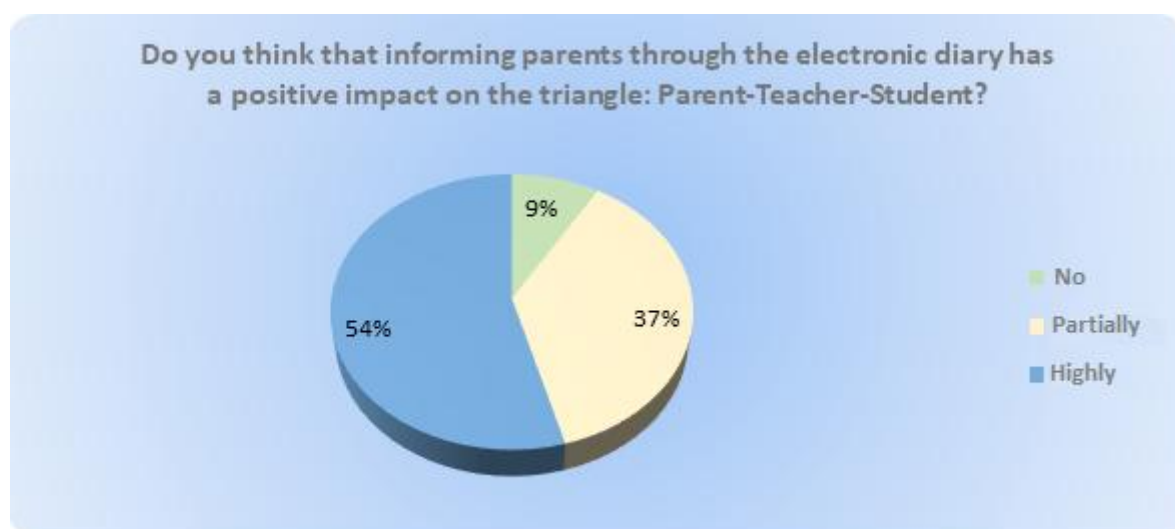


**Figure 3.** Parent-Teacher-Student Triangle

In the third group of questions related to the post-testing phase, we observe that more than 50% of the respondents are satisfied with the modules that the e-Diary already possesses and think that this access is the best and has a perspective for a more fruitful future for data management systems for education in general. They also give suggestions for adding some modules such as: Sending SMS to parents immediately for any new entry in the student portfolio, be it a grade, absence, or remark, translation of certificates into Albanian (and other languages) and printing them, lists of evidence, etc.

The e-Diary is an important technological tool in education and can offer many advantages for both teachers and students in this country. Overall, the e-Diary helps teachers in more effective management of their administrative tasks, allowing them to mark and monitor student assessments and progress more easily. The e-Diary also provides an easy platform for communication and collaboration between teachers and parents. This improves collaboration between teachers and

parents and helps increase parental engagement in their children's education. Therefore, as shown in the following diagram, teachers' satisfaction with this platform is more than positive.
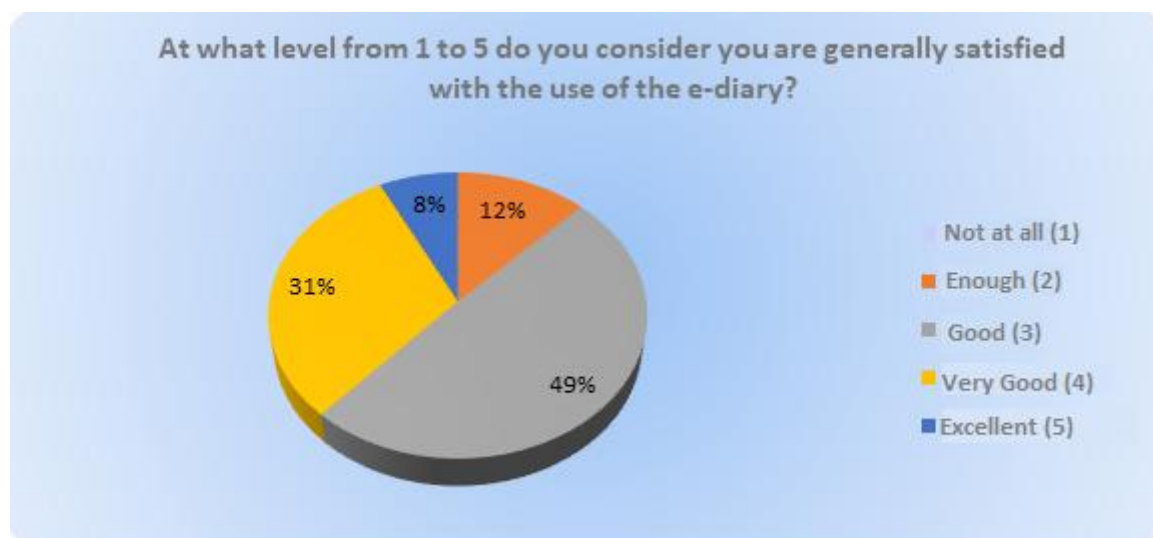


**Figure 4.** Level of Satisfaction from the Utilization of the e-Diary.

Although throughout all the responses we have processed so far, we see support from teachers for the e-Diary, suggestions for new modules, advancement of the same in the learning management system (LMS) for the future, etc. Again, in the question "If you did not have a legal obligation, would you have preferred to switch back to the traditional diary?" 79% of the respondents answered YES, they would immediately switch to the traditional diary, and only 21% would not make that switch. From this, we see that nostalgia, trust in the traditional diary, physically writing down hours, absences, grades, etc., are still deeply rooted in the culture of teachers.

The last question "Any additional comments you would like to add about the electronic diary?!" is left as an open question, where users have expressed their opinions, or any requests or suggestions not included in the previous questions. The comments are diverse, ranging from requests for more sophisticated and faster software, not blocking the program and not deleting data once entered, which often happens, especially with grades, to finding a more practical option for recording absences. It happens that the absence becomes unreasonable or reasonable automatically, regardless of the choice made by the teacher. There are also comments requesting the provision of electronic devices to teachers to fulfill the legal obligation of completing the e-Diary. Strengthening the internet in schools, unhindered access to the e-Diary. The server should be fixed properly, and the responsible persons for this platform should respond faster to the needs of school e-Diary administrators. Delays in responses occur from the Ministry administrators for the e-Diary.

The survey results indicated that the majority of respondents were educators, with over five years of teaching experience, underscoring the reliability of the feedback received. In terms of frequency, most teachers reported using the e-Diary at least once a week, and a notable portion used it daily, highlighting its integration into their routine tasks. The perceived ease of use was generally positive, with teachers giving high marks to features such as grade recording and parent communication, which are critical aspects of their daily responsibilities. However, despite this overall satisfaction, there were areas identified for improvement. Some teachers pointed out technical issues and the lack of customization options as drawbacks, suggesting that while the

system is functional, it does not fully meet all user needs. Common suggestions for enhancing the e-Diary included speeding up loading times, providing better technical support, and allowing for more customization to cater to different teaching styles or school requirements. From the results of the questionnaire, it can be concluded that from the perspective of these segments, it is worth taking further action to improve the e-Diary.

### Analysis of Interviews

Analysis of the results of interviews for e-Diary is an important process to evaluate the performance and effectiveness of this online administrative environment. Through interviews with 4 teachers and 4 e-Diary administrators from participating schools, answering the question, "In your opinion, what positive and negative impact has the electronic diary e-Diary brought?" we gathered valuable and detailed data about their experiences and thoughts on the platform. After completing the interviews, a thorough analysis of the collected data was conducted. This includes evaluating the interview responses and identifying the motives and expectations of e-Diary users. This thorough analysis helped us identify overall trends, prioritize important issues, and address problems identified during the interviews. Analysis of the results of e-Diary interviews may also include statistical methods to understand how users perceive the platform and identify the most effective ways to change or improve its functionality. When the analysis of e-Diary interview results is done carefully and competently, it brings a wide range of advantages to improve the experience of managing data online. Ultimately, this helps us develop a more suitable platform that users appreciate more.

The education system is one of the key components of a country's development. Parents play a crucial role in monitoring their children's success in school. They seek to be informed about their children's absences and successes, focusing on their schoolwork. However, from the interview results, we find that sometimes schools do not provide continuous internet access and e-diary, resulting in delays in recording students' grades and absences. This can affect monitoring the success of children in school and making regular reports to parents. A student's file remains for several years, and the Ministry of Education may always have access to it. This can affect assessing a student's success or a teacher's work. However, to carry out this action, we need a well-functioning system and regular information retrieval from the education system. This requires coordination between schools and the Ministry of Education, as well as good technological infrastructure. If schools had fast internet access and a well-functioning IT system, then the electronic diary would not have a negative impact on school. The electronic diary is a useful tool for monitoring students' progress and tracking changes in a short time. However, to function properly, school technical conditions need to be improved, and Ministry of Education IT administrators need to be ready to address school administrators' errors/requests quickly. In this way, teachers will be able to access the e-diary in real-time without any delay, making the recording of student absences and grades regular and accurate.

One of the advantages of the electronic diary is that it provides access to student data from anywhere they are. This is a significant change compared to previous systems of monitoring students' progress in school, where information was only available within the school premises. In this way, the electronic diary offers a useful tool for tracking children's progress, allowing parents and teachers to be informed in real-time about students' absences and results. However, there is a negative impact of the electronic diary. In some cases, students may not feel adequately assessed by teachers because they believe the teacher does not have immediate access to recording absences and monitoring students' activities in real-time. This can lead to a feeling of dissatisfaction and frustration with tracking their progress by teachers. To fulfill the goals of the electronic diary, it is important to create a new culture between students and teachers, in which both parties must be

responsible and informed about the use of this new technological tool. Teachers must be able to track their students in real-time and provide necessary help and support immediately. Students should also be responsible and actively participate in using the electronic diary, monitoring and reporting their own activities and seeking help when needed. In this way, the electronic diary can serve as a useful tool to increase the effectiveness and quality of the education system, helping to build a new culture of tracking students' progress.

The interviews provided further depth to these findings. Teachers and school administrators praised the e-Diary for its ability to streamline administrative tasks, improve communication with parents, and offer real-time access to student data, which they found particularly beneficial for managing their workload and staying informed about student progress. However, they also echoed the challenges identified in the survey, such as technical difficulties and the limited customization options. Moreover, interviewees emphasized the need for more comprehensive training on the e-Diary, as some educators struggled to fully utilize its features due to a lack of instruction. To address these issues, participants suggested the provision of increased technical support, more frequent training opportunities, and enhancements to the system that would allow schools to tailor the e-Diary to their specific needs. These findings collectively indicate that while the e-Diary is a valuable tool for educators, there is significant room for improvement to ensure it fully supports their needs and enhances their teaching experience.

## Discussion

The e-Diary has proven to be a valuable tool for boosting administrative efficiency and enhancing communication between teachers, parents, and students. With its real-time access to academic records and attendance, the system addresses gaps that traditional diaries could not fill. This study confirms that such technological innovations have significantly improved educational management, keeping pace with global trends in digital transformation. However, the system's success also highlights areas that need improvement. Technical problems, such as slow performance and server outages, point to the need for stronger IT infrastructure and better maintenance. If these issues are not resolved, they could erode user confidence and reduce the system's effectiveness. Additionally, the lack of customization options makes it less flexible for the varied needs of schools and teachers, which is a common drawback of standardized platforms.

One key finding of the study is the impact of inadequate training. Teachers who received sufficient training expressed higher satisfaction and were better equipped to use the e-Diary's features. This emphasizes the importance of regular and well-designed training programs to help all users make the most of the system. Tailored training sessions could also address specific challenges faced by teachers with different levels of tech expertise. The study also explores the broader impact of integrating digital tools like the e-Diary into schools. By automating administrative tasks, the system allows teachers to spend more time on teaching, which could improve learning outcomes. To fully achieve this benefit, the system's operational challenges need to be addressed, and its design should better align with users' practical needs.

Future research could focus on long-term studies to assess the e-Diary's impact on educational outcomes. For example, research could investigate how the system affects student engagement, parental involvement, and academic performance over time. Additionally, gathering feedback from students and parents, as well as teachers, would provide a more complete picture of the system's strengths and areas for improvement.

In summary, while the e-Diary is a major advancement in educational administration, its full potential can only be realized through ongoing improvements and user-focused updates. By

addressing the identified issues and investing in better infrastructure and training, schools can maximize the benefits of this digital tool, creating a more effective and inclusive education system.

## Conclusion

From this research, it can be concluded that a considerable number of teachers are satisfied with the e-Diary system and the opportunities and functionalities it offers, and mainly have positive experiences in using the system, as well as positive attitudes. Also, it can be said that teachers are generally familiar with most of the possibilities the system offers and do not encounter major difficulties during its use. If difficulties arise, teachers usually seek help from administrators, but are generally satisfied with their abilities and believe they can perform all the options the system offers without major problems. From the analysis of the questionnaire results, several key evaluations can be included:

Teachers have sufficient experience and knowledge to use e-Diary. Most of them are responsible and use them efficiently. The majority of teachers are satisfied with the speed of access to e-diary and its design. However, there are parts of the respondents who evaluate these aspects as unsatisfactory. Functionality and access problems in e-diary are challenges that need to be addressed. A considerable number of teachers state that the platform is often not functional, and improvements are needed to increase its efficiency. Informing parents through e-Diary has a positive impact on parent-teacher-student communication. Most teachers value this impact as very important, while some have more restrained attitudes. Overall, teachers have valued e-Diary as an effective tool for monitoring students' progress. They have noticed that e-Diary provides a clear overview of students' performance, helping to identify their specific needs and develop appropriate teaching strategies.

Costs and technical infrastructure are issues that need to be considered. Some teachers have expressed difficulties regarding access to devices and the internet to use e-Diary. It is important to ensure that teachers and students have equal access to technology and infrastructure to effectively use e-Diary. Ultimately, a significant number of teachers are open to improvements and changes in e-Diary. They value the opportunity to develop and advance the platform to better achieve their educational objectives.

Based on the assessments of teachers, it is clear that e-Diary has significant advantages compared to the traditional diary. However, there are also challenges and aspects that need to be addressed to ensure a successful and effective experience of using e-Diary in the teaching context. While e-Diary brings advantages such as easy access, easy distribution, progress monitoring, and efficient communication with parents, it is important to take measures to address issues such as functionality, data security, technical infrastructure, and user responsibility.

Teachers agree that the introduction of e-Diary into the education system of North Macedonia is essential and should be continuously improved. It is necessary to provide appropriate financial and systematic support to equip schools, their staff, and students with the necessary equipment, and for teachers, especially the elderly, to easily learn the technological innovations used during teaching.

In conclusion, the research successfully highlights the usability strengths of the "e-Diary" online system. Teachers find the system easy to learn and use, noting that it adds significant value to their work. The system's design elements, including content, color, icons, and images, are visually appealing and help facilitate their tasks. Additionally, the e-Diary proves effective in monitoring student success and ensuring regular communication with parents, with users

expressing satisfaction with the system's navigation and problem-solving support. Moreover, the platform is recognized for delivering accurate information, further enhancing its reliability and overall effectiveness in the educational environment.

## Declarations

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