School Management Platforms: What Contribution To The Improvement Of Distance Education In The Context Of The "Covid-19" Pandemic?

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Abstract:

Education, as a strategic sector, is at the heart of the digital transformation whose process is enhanced by the implementation of programs for the integration of ICT within educational institutions. The uses of digital tools and computer software in learning and teaching have characterized the first stage of this integration. The second part is represented by the digitization of administrative management of schools by means of platforms dedicated to the organization of the various aspects of school life. Henceforth, this paper focuses on the contribution of school management platforms, in particular, the "DirassaTIC" platform in the continuity of process of distance teaching during the temporary closure of schools in this period of pandemic due to the spread of covid-19. This research work sheds a theoretical and empirical light on this issue with two field surveys conducted among two actors using the platform "DirassaTIC", in this case, school principals and parents. Despite that the school management platform has been a more than effective help during the lockdown, however, shortcomings were recorded.

Keywords: ICT –school management platform – distance teaching- distance education – pandemic.

I. Introduction

In recent years, the world has experienced a development of information communication technologies labeled as a "digital revolution" and presenting major challenges for countries and their economies. Thus, the rise of these new technologies has called for their integration into almost all sectors of activity, among them, the education sector. As a result, initiatives in the digitization of the democratization of ICT use. This digitalization approach has led to the implementation of digital tools in educational institutions. Therefore, the use of these educational technologies by its various stakeholders, including administrative staff, teachers, learners and their parents, has increased considerably. Indeed, according to

(Makri & Vlachopoulos, 2015), (OECD, 2018), (KOUTOU, 2010), ICT contribute widely to school management, from simplifying administrative tasks to their modernization. But also, by making communication between parents, students, teachers, schools, authorities and school organizations faster and more efficient.

In Algeria, education as a strategic sector in at the heart of this digital transformation, which its process is supplied by the implementation of ICT integration programs within educational institutions on all three levels, including the use of digital tools and computer software in student learning and teaching. More recently, by digitizing the administrative management of schools through platforms dedicated to the organization of various aspects of school life,

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such as the "Tharwa" platform of the Ministry of National Education. In this sense, and with a view to better indentifying digital issues in the educational environment, we have, through this work, focused our research on school management platforms and in particular on the use of these platforms within educational institutions both administratively educationally, within the context of the COVID-19 pandemic. Our attention has been focused on the "DirassaTIC" platform dedicated to private schools. Launched in 2014, this school management platform (SMS) aims to bring together the main players in educational life, namely, schools, teachers, students and their parents, by establishing a fluid and effective communication. Harnessing the power of cloud computing for optimal functioning of the education system. DirassaTIC is an intuitive, ergonomic and multi-support platform (PC, tablet and Smartphone) that ensures easy use and it is accessible to all users. In this time of pandemic, special attention has been paid to school platforms all over the world, in order to meet the pressing need of connecting students to their schools. According to the United Nations Organization, the Covid-19 Pandemic has created the greatest disruption of education systems in history, affecting nearly 1,6 billion learners in more than 190 countries and on all continents. Closures of schools and other learning spaces have impacted 94% of the world's student population, up to 99 per cent in low-and middle-income countries (United Nations, 2020). To this end, some platforms have been readjusted others created as a result, such as the "Open School" platform of Quebec's Ministry of Education and Higher Education. In the same vein, the author Thierry Karsenti, was part of this project, testifying to his experience in interview with UdeMNews. He states that the platform "Open school" met a need of both parents and students and allowed students to carry out all kinds of activities during the suspension of classes because of COVID-19. This has been the case since it was released on March 30th, 2020.

In the light of this development, the current study attempts to answer the following question: has The DirassaTIC platform, as a mean of communication and access to remote school services (grade reading, course support, homework, etc.), contributed effectively to overcoming school conditions during the period of closure because of the Covid-19 Pandemic?

2. Theoretical framework

educational sector, which has fundamental role, must adopt the digital solutions necessary for its evolution and growth. ICT facilitates access to education and improve the quality of teaching and learning while supporting administrative activities implementation of through the school management-specific tools. In practical terms, school management platforms are becoming more and more widespread in school and fundamentally modify their components through the use of digital technologies, thus offering many opportunities for schools. Among other things, by improving and facilitating communication between different actors of school life, in particular, parents and school (Hoque, Razak, & Mosa, 2012).

Everything has been achieved by the emergence information and communication technologies that have revolutionized societies, their behaviors and habits. Indeed, thanks to the internet, the means of communication are numerous, fast and efficient. For this reason, Karsenti suggested to schools as early as 2002 the use of digital technologies in order to find new ways to encourage greater collaboration with parents. He states in his article entitled "Optimizing family-school communication through the use of e-mail" that ICT facilitate contact between schools and parents. He refers in particular to the Internet and specially to email [5]. Demonstrating, thus, that it would be more effective than certain methods used such as phone calls or using students as intermediary; on the one hand, because of the other hand, the omission, delay or ineffective transmission of messages to parents by students.

Numerous studies show the importance of

involving parents and/or families in their

children's school life (Đurišić & Bunijevac, 2017), (Desforges & Abouchaar, 2003), (Dumoulin, Thériault, & Duval, 2014), (Naite, 2021). Indeed, most studies reveal that the key factor in student success is parental support. To the extent that, fully involved parents in their child's school life would increase their motivations and thus improve their academic performance. Undoubtedly, school-family collaboration through the involvement of parents in the school follow-up of their children is at the heart of the school reforms that began a few years ago (Dearing, Kreider, Simpkins, & Weiss, 2006), (Souto-Manning & Swick, 2006), (Booth & Dunn, 2009). However, they are still the sources of debate, question and controversy among all stakeholders in the word of education Program for International Student Survey (PISA) 2009 (Reparaz & Sotés-Elizalde, 2019). In the same vein, Epstein (1995) considers that in order to encourage parents to take an interest in school. Indeed, the author constructs a classification of forms of collaboration between the school and the family. She understands improving communication between these two actors by putting in place various means to better inform parents about the different aspects of the child's school life: the child's training, events, progress and academic performance, etc (Epstein, 1995). Thus, increased and regular participation of parents in school life, improves academic performance (Wang, Huebner, & Tian, 2021) and according to (Coleman, 1998), this conduct strongly encourages the child to be more motivated and more diligent in school. Responding to this collaboration, digital technologies have brought about a profound change in the functioning of schools (Oyier, Odundo, Lilian, & Wangui, 2015), which now rely on them for communication, educational support, sharing and data exchange. In a nutshell, all of these services can be grouped within a school management platform, which can be defined as a service acting as an intermediary in accessing information, content, services or goods published or provided by third parties. Beyond its technical interface, it organizes prioritizes content and presentation and connection with end-users. In fact, these school management platforms provides as well as the safeguarding of administrative information and school records on digital media, which limits data loss and thanks to adapted software, school managers can monitor the absenteeism of teachers as well as students (Souhaliho & Mian, 2018). Indeed, the administrative function of this platform consists in, on the one hand, to better organize and disseminate information in order to improve and facilitate communication between the different actors of school life, while ensuring transparency of exchanges, among other things, through a messaging service. On the other hand, it automates many repetitive administrative tasks, including the development of transcripts and school certificates. To transmit or request general information (meeting of parents-teachers, announce canteen menus, etc.), communicate information about the student's academic performance marks and online newsletters. It informs about the different aspects related to the life class (online class diary, photos of school trips, etc.) and encourages collaborative work (duties and exercises online...). As for the pedagogical function, the school, via this platform, has the opportunity to communicate all the information relating to the students and the animation of school life, such as the schedule, delays, absences and homework to be rendered or the medical record of the student. This is with the aim of providing optimal supervision and follow-up of the students' educational path.

As a result, the digital solutions provided by school management platforms are part of a vision of reforming and modernizing the education sector. Effective integration of school management platforms would enable students to fully understand the benefits it can offer to the various players in school life, particularity in terms of organization, management, performance, communication, collaboration and educational follow-up of students, especially in times of crisis.

3. Methodology

In order to collect information about the reality of the contribution of school management platforms, in particular, the "DirassaTIC" platform, two surveys were carried out. The first survey was undertaken with school leaders and the order affected the parent of pupils in these schools, thus assessing according to each of these two school actors the contribution of the DirassaTIC during the Pandemic. To this end, using the online tool "Google Forms", we have designed two questionnaires relating to our two surveys. We deliberately introduced a few similar or even identical questions to both questionnaires in order to compare the answers obtained and so as to find out if there is a match in the perception of the platform by principals and parents. The survey was conducted among principals and parents in schools using the DirassaTIC school management platform within three private schools located in the district of Oran. Indeed, our survey was conducted among a sample of 68 subjects, 3 head teachers and 65 parents; 16 men and 49 women, spread over the three schools mentioned. The data collection was carried out entirely online. The results of the School Leaders Questionnaire were processed using the Excel analysis tool, which consisted of a flatsorting analysis of the results. As for the second questionnaire, which concerns parents of students, we performed a flat sorting (univaried) and cross-sorting (bi-varied) analysis using the SPSS data analysis software as well as

the Excel tool for graphic representation of the results.

4. Results

Owing to this, we have chosen to present and analyze key findings based on our main research objective. It is worth noting that we have dealt with the results of both surveys at the same time while trying to follow a certain chain in the exploration of these surveys. To this end, it remains important to clarify the vision of school leaders on the integration of digital technologies within schools and to see later, what skills administrative staff has and whether there is a real need to communicate via a DirassaTIC platform for the two actors in this survey. This part of the work will be followed by the judgment of the latter two regarding the effectiveness of DirassTIC, the obstacles met by the directors in order of importance and an evaluation on the usefulness of the DirassaTIC platform. This assessment will be added to the estimate on the effectiveness of the DirassaTIC platform during the current health crisis.

4.1. Participants

The three principals of the three schools that joined the DirassaTIC platform participated in this survey with a total of 65 parents who took part in the study. Based on the results, we found that gender representation in the parent sample in not fair. In fact, the majority is represented by women to the tune of 49 women, while only 16 men responded to the questionnaire.

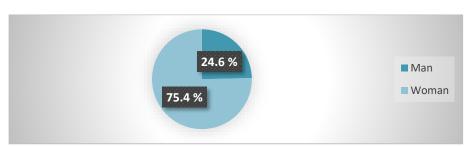


Figure N°. 01: Percentage breakdown of parents by gender

Source: Personal construction of the authors

4.2. The integration of digital technologies in schools, what vision for the head teachers?

We wanted to know the perception of school leaders regarding the integration of digital technologies at the school level, all are unanimous in the face of this issue and say that digital presents an opportunity for their schools and places itself at the of their strategies.

Figure N°. 02: Vision for School Leaders on Integrating Digital Technologies into Schools



Source: Personal construction of the authors

4.3. The digital technology skills of administrative staff

In order to apprehend the quality of the use DirassaTIC platform, we asked principals to make an overall assessment of the digital knowledge and skills of administrative staff, and then to indicate approximately the percentage of staff with the computer skill required to use the platform effectively. The directors expressed separate judgments regarding the numerical skills of administrative staff, one of whom felt that their skills were excellent, while the other two stated that they were average and insufficient, respectively. The rate of competent staff using the platform also differs; it is estimated for each school, between 30 % and 40 %, between 50% and 60% and between 70% and 80%.

4.4. The need to communicate via a school management platform

In order to know the opinion of parents on the need to integrate a school management platform in schools in the digital age, we asked them if they considered it essential to establish communication between the school and parents via this type of platform. Not only, the parents responses were more than conclusive, as more than four-fifths, or 84% of parents, responded favorably to this question. But still, 79% of them feel that they prefer to send their children to school that use this platform. Similarly, on this subject, the heads of schools were unanimous and claimed that they often encouraged the parents of students to communicate with the school via the platform. And the opinions of the three principals agree that nowadays, this mean of communication is essential for any school.

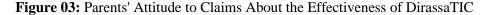
4.5. Judgment on the effectiveness of DirassaTIC

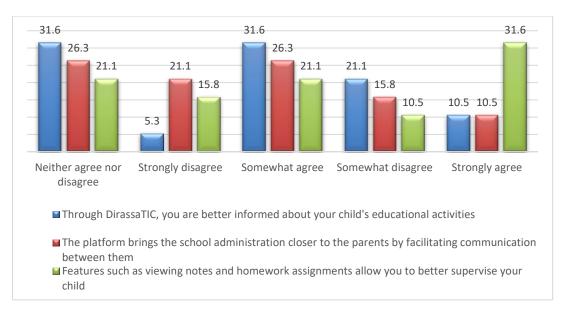
We asked directors to express their degree of agreement or disagreement about four assertions based on the effectiveness of the DirassaTIC platform. According to the results obtained, two-thirds of directors agree on three statements; DirassaTIC allows the connection between the school administration and parents

through facilitated communication. They are better informed about their students' educational activities and agree that the DirassaTIC platform brings added value to their schools. In terms of the lower management costs resulting in the use of DirassaTIC, only

one director disagreed with this assertion, as for the other two, they remained neutral.

In addition, the Figure "3" below, illustrates the degree to which parents agree or disagree with the three statements expressing the effectiveness of the platform.





Source: Personal construction of the authors

According to the results obtained, 42,1% of parents say they are better informed about their educational children's activities through DirassaTIC. 31,6% remained neutral in relation to this statement and 26,4% of parents do not seem to agree with this point as shown in Figure"3" below. Regarding the reconciliation between school administration and parents through facilitated communication DirassaTIC, 36,8 % of subjects responded favorably to this proposal, while a virtually equal percentage of parents (36,9%) expressed disagreement with this rapprochement. In terms of parental supervision of students, a majority of 52,7 % of parents find that the features of DirassaTIC allow them to better supervise their children, compared to 26,3% who indicated the opposite.

4.6. Obstacles and evaluation of the usefulness of the DirassaTIC platform

In order to contribute to the elimination of any constraint that could constitute an obstacle to the use of the DirassaTIC platform, among the six barriers to the questionnaire, we found that the most significant obstacle for one of the directors was the lack of interest or willingness of administrative and educational staff to use the DirassaTIC platform. As for the other two principals, the first obstacle, they say, is the lack of time in the teachers' schedule to explore the possibilities of using the DirassaTIC.

In addition, and in order to measure the satisfaction of parents and school principals with the DirassaTIC school management platform, we asked them to assess its usefulness on a scale ranging from 1 to 10. Parents of

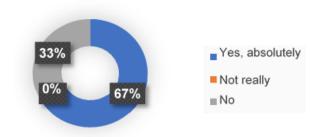
students gave the platform an average score of 7,53. For the directors of the estabilishments, they gave the platform an average score of 7,67.

4.7. Efficiency of the DirassaTIC platform in a pandemic situation

In order to know whether the DirassaTIC platform has effectively helped to overcome

critical school conditions and to ensure the continuity of work remotely from the closure of thes schools involved in this pandemic. We first interviewed the directors and their answers are mentioned in Figure "4" below;

Figure 04: DirassaTIC effectiveness in overcoming academic difficulties during the pandemic, according to principals

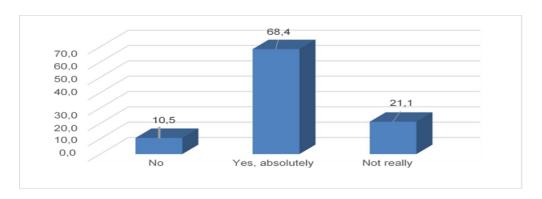


Source: Personal construction of the authors

Based on the results obtained, two directors claim that DirassaTIC holds an efficient role. At the same time, the third director interviewed responded negatively to the question while stating that his institution propounded to use another more simplified platform.

On the other hand, parent' responses regarding the effectiveness of the DirassaTIC platform in overcoming school difficulties during the pandemic were more than positive. Indeed, according to the results presented in Figure "5", 68,4% of parents absolutely say that the platform allows them to overcome school conditions during school closures. However, 21,1 % of parents do not really see its effectiveness during the pandemic and 10,5% are adamant thet the platform does not remedy this situation.

Figure 05: The effectiveness of the DirassaTIC platform in overcoming academic difficulties during the pandemic



Source: Personal construction of the authors

4.8. Judgment of the effectiveness of the DirassaTIC based on the frequency and incentive of its use

After analyzing most of the questions in the second questionnaire by flat sorting, we want to further refine our results by performing a crosssort analysis. We then selected a few questions deemed relevant to the verification of our assumptions. As these are qualitative variables, the appropriate statistical test is the Chi-two or Khi-square (χ^2) test, which consists of testing the statistical significance of a combination of two qualitative variables. Its purpose is to test the independence of two variables studied in a cross-tabulation, through the test of the null hypothesis (H0) which assumes the absence of a relationship between the two variables.

4.8.1. Cross between the encouragement of the administration to communicate with it via the platform and the assertion that through DirassaTIC, parents are better informed about the educational activities of their children

According to the results obtained, 42% of parents who are often encouraged by the school to use DirassaTIC as a means of communication and information and say they are better informed about their children's educational activities. 55% of parents who are sometimes encouraged to do so, also agree with this statement. On the other hand, 67% of parents who are never encouraged to communicate via the platform, do not agree on being better informed, the remaining 33% remained neutral.

Table N°01: Test of the chi deux relating to the cross-tabulation N°01

Chi-square test					
	Value	ddl	Asymptotic (bilateral) significance		
Pearson chi-square	92,513 ^a	15	0,000		
Likelihood ratio	88,958	15	0,000		
N valid observations	65				

Source: Personal construction of the authors

By analysing the χ^2 test, we reject the H0 hypothesis which assumes that there is an independence between encouraging the use of DirassaTIC and improving the flow of information between the school and the parents. We therefore accept H1 because there is a dependence between these two variables and the asymptotic (bilateral) significance being less than 0.05 tells us that this dependence is significant.

4.8. 2. Cross between the encouragement of the administration to communicate with it via the

platform and the assertion that DirassaTIC makes it possible to bring the school administration and parents closer together

According to the results obtained, 42% of parents who are often encouraged by the school to use DirassaTIC as a means of communication and information say they are closer to the school administration. 44% of parents who are sometimes encouraged to do so, also agree with this statement. On the other hand, all parents (100%) who are never

encouraged to communicate via the platform, do not agree on this rapprochement.

Table N°02: Test of the khi two relating to the cross-tabulation N°03

Chi-square test					
	Value	ddl	Asymptotic (bilateral) significance		
Pearson chi- square	127,765 ^a	15	0,000		
Likelihood ratio	96,999	15	0,000		
N valid observations	65				

Source: Personal construction of the authors

By analysing the χ^2 test, we reject the H0 hypothesis which assumes that there is an independence between the incentive to use DirassaTIC and the rapprochement between the school administration and the parents. We therefore accept H1 because there is a dependence between these two variables and the asymptotic (bilateral) significance being less than 0.05 (significance threshold) tells us that this dependence is significant.

4.8. 3. Cross between the encouragement of the administration to communicate with it via the platform and the assertion that features such as the consultation of notes and homework to be

done allows parents to better supervisetheir children

According to the results obtained, 71% of parents who are often encouraged by the school to use DirassaTIC as a means of communication and information say that it allows them to better supervise their children. 55% of parents who are sometimes encouraged to do so, also agree with this statement. On the other hand, 67% of parents (100%) who are never encouraged to use the platform, do not agree at all on this point, the remaining 33% are neutral.

Table N°03: Test of the khi two relating to the cross-tabulation N°05

Chi-square test				
	Value	ddl	Asymptotic (bilateral) significance	
Pearson chi-square	95,780 ^a	15	0,000	
Likelihood ratio	88,278	15	0,000	

N valid	65	
observations	03	

Source: Personal construction of the authors

By analysing the χ^2 test, we reject the H0 hypothesis which assumes that there is an independence between encouraging the use of DirassaTIC and improving the parental supervision of pupils. We therefore accept H1 because there is a dependence between these two variables and the asymptotic (bilateral) significance being less than 0.05 (significance threshold) tells us that this dependence is significant.

5. Summary and Discussion of Results

Through this study, we focused on the contribution of the DirassaTIC platform in the context of the Covid-19 health crisis. To this extent, the survey results show that the schools surveyed possessing the DirassaTIC school management platform have an average student-per-class ration of 14,68 and an average ration of students per teacher of 6,68. These two ratios are very much within international standards, which are around 20 students per class and 10 students per teacher, which allows for favorable conditions for the integration of ICT within these schools. Moreover, we find that all the acquisition of the DirassaTIC platform within these schools testifies to this desire [18].

However, the effective use of the DirassaTIC platform depends, among other things, on the knowledge and skills differ across the three schools and are for each: excellent, average and insufficient. At one school level, about 75% of staff is able to use the DirtassaTIC platform, compared to 55% and only 35% for the other two schools. To this end, we were interested in the handling of DirassaTIC and it appears that the school mainly organized training sessions for their administrative and pedagogical staff which, according to one of the schools, would have had no difficulty in familiarizing themselves with the platform. On the other hand, some difficulties were noted in the other

two (67%). At the same time, the results of the parent-student survey illustrated the degree of difficulty in using DirassaTIC by parents. Indeed, the majority of students' parents (63,2%) had no difficulty in familiarizing themselves with the DirassaTIC platform. This nuance with that administrative staff who has more difficulty, seem quite normal because they perform various manipulations on the platform including, the capture and extraction of data, unlike parents whose interactions with the platform are limited.

Regarding barriers to optimal use of DirassaTIC, we note that according to the directors, the three most recurring obstacles (66,67%) are: the lack of interest or willingness of administrative and pedagogical staff to use the DirassaTIC platform, the lack of technical support and, finally, the lack of time in the teachers' schedule to explore the possibilities of using DirassaTIC. Moreover, regarding the effectiveness of DirassaTIC, 67% of principals and 42,1% of parents admit that it allows them to be better informed about the students' educational activities. As for the rapprochement between the school administration and parents through facilitated communication via the platform, the opinions of parents are mixed and only 36,8% have found this rapprochement, while the majority of directors (67%) responded favorably. In terms of parental supervision of students, a majority of 52,7% of parents find that the features of DirassaTIC allow them to better supervise their children. And finally, for the majority of principals the platform would bring added value to the school.

Principal and parents of pupils also spoke about the need for communication between the school and parents via a school management platform, both subjects agree perfectly on this point. Indeed, the directors are unanimous in admitting that this type of platform has become indispensable to any educational institution. This statement is in line with the directors' strategy, previously mentioned, which places a central emphasis on digital technology. A large majority of parents (84%) agree with the principals, especially since 79% of them consider this platform as a criterion when choosing a school. Indeed, parents have said that they prefer schools that have integrated the platform; this is explained by the massive and undeniable use of technology that is spreading at high speed and in particular the Internet that facilitates and simplifies communication. It should be made clear that communicating or obtaining information online. especially through platforms tends to become more widespread, so schools must put themselves in the interest of promoting this type of communication.

The pandemic facing the world has had a significant impact on all sectors, including education, which has had to take drastic health measures by ordering the closure of all schools. Continuing the school year and delivering courses in this crisis situation was a major challenge for schools, and alternative teaching methods had to be found in order to adapt to the new heath measures. In this context, we wanted to know the role of DirassaTIC platform during the pandemic. The principals and parents the students were then asked to give their opinion on this subject. The majority of directors (67%) and parents (68,4%) absolutely assert that DirassaTIC has overcome the educational conditions related to the heath Nevertheless, we find it difficult to accept that the platform can cope with this critical school situation. As for the responses of the subjects, they remain quite superficial because they are based solely on the role of platform which is informational and communicational. Indeed, when it comes to ensuring and maintaining communication between the school and the parents, it seems that the platform has played its part well. Whereas, if we consider the entire school ecosystem, which is obviously not limited to school-parent communication, we

can see that there is more to it than just school-parent communication, the main component being teaching-learning activities, it seems clear that the platform lacks the important digital usual school conditions we know. These include the introduction of a distance education system (e-learning), the creation of virtual classes, and the integration of online assessment and automatic rating systems. As a result, since the platform does not have the adequate means to carry out the main school activities, it seems clear that it is not adapted to the health crisis situation.

Finally, parents and principals evaluated the usefulness of the DirassaTIC platform in virtually the same way. The average score given by the parents was 7,53 and the score given by the principals was 7, 67. This allows us to conclude that the usefulness of DirassaTIC is rather satisfactory.

6. Conclusion

The importance of integrating digital technologies into the education sector is well under way. To this end, for years, our focus has been on digital solutions for education and in particular, school management platform. We then questioned whether their use contributed effectively to the continuity of remote school operations during the temporary closure of schools during pandemic period due to the spread of Covid-19. The field survey focused on the "DirassaTIC" platform dedicated to the private sector for the sake of feasibility and means. The results have shown that school management platforms have a positive impact on schools. On the one hand, they have a positive impact on the management of schools by facilitating work and automating certain repetitive tasks. And on the other hand, they allow parents to better mentor their children through features such as checking marks and homework. Especially when the data is updated regularly by the school and parents adapt easily to this platform and make frequent use of it.

Although responses the received are overwhelmingly in favour of the use of DirassaTIC, most parents do not seem to see the point of using the platform in this pandemic period. Among the responses, a parent pointed out that the school used the Viber mobile app or the Zoom platform to contact students and deliver classes. This suggests that this mode of school management platform, supposed to bring school actors closer together, would eventually have presented its limits and in particular in the face of the heath crisis, because ultimately the platform does not allow for the introduction of alternative measures such as distance education (Visio-conference), which is particularly necessary in the situation facing schools at this time. In the hope that this work will contribute to find solutions to assist principals, students and their parents in the continuity of the functioning of distance teaching during the this period of pandemic due to the spread of Covid-19, we therefore suggest to the developers of the "DirassaTIC" platform and those of similar platforms to integrate new and more sophisticated features, in line with recent technological advances in education, but above all in order to meet the current need of schools to remedy in general the exceptional school conditions and in particular, in a current heath crisis that is likely to continue. Among these features, we refer to e-Learning, the creation of virtual classes, the introduction of an automatic scoring system, or according to one of the schools surveyed, adding to the platform a system of management of the school's accounting (expenses, tuition fees, payroll management, etc.).

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