Parallel Use of Two ICT Platforms

A case study of the NTI high school in Luleå and their parallel use of

SchoolSoft and Google Apps

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Abstract

The aim of the study is to investigate if the teachers at the NTI high school in Luleå, Sweden experience any difficulties with the parallel use of two IT administrative platforms, more specifically SchoolSoft and Google Apps. The investigation consists of data collection through an online questionnaire and four complementary interviews to receive a general and more elaborate opinion on the matter. The findings illustrate that a majority of the teachers, to some extent, experience some sort of difficulties regarding the use of the two platforms. The results are cross-examined to reveal that the most common difficulty is that teachers experience themselves to be performing double work since they are repeating the same procedure in both platforms. Two solutions are suggested, one long term and one short term. The long term is to establish a taskforce that continuously work with usage development. This involves everything from staff education on how to use the two platforms to further research on how to use the two platforms most efficiently. The second suggested solution is short term and involves establishing basic guide lines in order to help teachers who are in need of basic structural system use.

Key words: ICT, SchoolSoft, Google Apps, Parallel Use, Platform
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1. Introduction

The NTI-schools are a part of AcadeMedia, the leading company in non-municipal education in Sweden. The NTI-schools have concentrated on adult education and high schools, spreading from Lund in the south up to Luleå in the north. The NTI high school in Luleå, along with several other NTI high schools in Sweden, uses SchoolSoft as their main IT administrative platform and they also use Google Apps for slightly similar purposes. These two platforms are ICT (information and communication technology) solutions that are basically explained as information storages online. Teachers use these in order to administrate grades and attendance, etc. and to give students access to information whereas students use them for handing in assignments. This solution has made an astonishing change in accessibility for both students and teachers. However, the principal and other staff members responsible for the use of Google Apps have seen that there are staff members, mostly teachers, who have problems with the administrative use of it due to different reasons. The NTI high school will, to some extent, work in parallel with this project to introduce new applications to the staff in Google Apps. They will continuously work to ensure the secure and qualitative use of Google Apps, since a lot of sensitive information could be at risk. Google Apps was introduced only a few years ago as compared to Schoolsoft which has been in use for several years. Therefore, a decision was made not to focus individually on the platforms in the parallel use. This essay will, however, focus on the two platforms as complements to each other and how efficiently they work together.

1.1 Aim

The aim of the study is to display if the teachers at the NTI high school in Luleå experience any problems with the use of two IT administrative platforms. Should the study show that the teachers experience problems then these will be closer examined. After examination, solutions will be suggested in both a long- and short term perspective to solve the most urgent problems today as well as potential future problems.

1.2 Method

This study used a quantitative method to receive wide input on what sort of problems the teachers might have with the usage of two IT administrative platforms. This was
complemented with semi-structured interviews with four teachers to look even closer into what might be the reasons for the problems the teachers experience, all according to Patel and Davidson’s (2003) guidelines. The questionnaire was sent out to all 17 attending teachers at the school to maximize the input of experiences and the interviewees were randomly picked from the staff. The results from the questionnaire and the interviews were analyzed separately in the search for tendencies and trends, which gave clues to what the problems might be. It was then discussed and further narrowed down into key problems with the usage of the two IT administrative platforms.

1.3 Material
The material that was used for the interviews and the questionnaire was specially constructed for the purpose of this study.

1.3.1 Questionnaire
The material that was used for this part of the study was an online based questionnaire constructed to explore whether the teachers experience a problem and what it might be. Patel and Davidson (2003) state that the questionnaire is a method designed to receive wide and general input on a matter, which benefits this issue. The questionnaire comprised both qualitative and quantitative questions. This allowed the informant to elaborate further on two instances through short motivations to their answers. This decision rendered the possibility to receive some qualitative results from the questionnaire which was more time efficient in contrast to having the entire study based on qualitative interviews. The guiding principles provided by Patel and Davidson (2003) and Trost (2007) were considered for the construction of the questionnaire and how the study methods were performed and whether or not it was a suitable method to answer the issue. The data was collected with a Google Apps questionnaire and automatically compiled into a summary document and tables of the result. The result from the online questionnaire in Swedish can be found Appendix 1. However, to preserve the anonymity of the informants the decision was made not to add the summary document.
1.3.2 Interview

The material for the interviews was a list of questions constructed to receive elaborate answers to a general problem. Patel and Davidson (2003) state the importance of tag questions when constructing questions for a semi-structured interview, this was thus considered. The interviews were recorded to help the process of analyzing, according to what Brinkman and Kvale (2009) mention on interview techniques. Patel and Davidson (2003) also discuss the ethical aspect of recording people in interviews. Therefore, the present writer was the only one who had access to the recordings and they were erased after the analysis process was completed. This was done in order to guarantee the anonymity of the interviewees. The semi-structured interview was chosen over a structured interview because it is, according to Patel and Davidson (2003), the most suitable method in search for elaborate answers to the questions at issue. The interview questions in original language (Swedish) can be found in Appendix 2.

2. Background

The term IT administrative platforms is chosen to constitute an ICT solution where school staff have access to and are able to administrate all sorts of information that can be found and needed in high schools today. An IT administrative platform can be seen as an online file storage along with a sub-system where school staff can administrate information which students have access to. The problem that the superiors at the NTI high school have noticed is that not all teachers use both of the two platforms. This causes communication problems between teachers and students, e.g. students misunderstand and they become confused about how they are supposed to use these IT administrative platforms. When this happens the whole concept fails, since neither the students nor the teachers can benefit from using these ICT solutions. This could then lead to the teachers choosing not to use the platforms, which in its turn could lead to stagnation in developed didactic use of ICT solutions. It is worth mentioning that a communication problem is also found between school staff members, according to the principal at the school.

During a short conversation with Staffan Rådelius, former principal of the NTI high school in Luleå, he declared that the idea with introducing Google Apps was not for it to be seen as an administrative solution, but rather a parallel ICT solution comparable to Microsoft Office.
This suggests that those in charge then did not anticipate the problem, that those in charge today experience among the staff.

2.1 SchoolSoft

The primary IT administrative platform that the NTI high school use is SchoolSoft. It is an IT solution that has “everything needed for administrating a school, from pre-school up to adult education” (SchoolSoft, 2011a, my translation). This shortly summarizes the program. It is a customized IT solution specially constructed to fit almost all schools. It can administrate everything from class lists providing students with important information, available twenty-four hours a day to those who have access to a computer with an Internet connection (SchoolSoft, 2011b).

The NTI high schools use, as mentioned, SchoolSoft as the primary platform and this means that they store all data there. Information such as test results and attendance should be considered as delicate and sensitive information. Attendance administration is very important since high school students in Sweden receive financial aid from The Swedish National Board of Student Aid (CSN). Students lose the right to financial aid if unauthorized absence is reported on several repeated occasions in a given month (The Swedish National Board of Student Aid, 2012). This is not a problem for the NTI high school since they use SchoolSoft to continuously report attendance. The platform facilitates this important administrative process through a direct connection with the CSN.

Administration is only one of the key features of the program. Another feature is that SchoolSoft closes the growing gap between school and concerned parents. This problem is solved by giving parental logins to those in custody of the student, which grants access to the student’s school results. This gives the custodial parent a chance to keep track of what their child is doing in school and how the progress advances (SchoolSoft, 2011b). This is an important part of the NTI high school’s policy, since communication between home and school is vital to a good learning environment (The NTI High School, 2011).

2.2 Google Apps

Google Apps is an IT solution provided by one of the major IT companies in the world, Google Inc. (2011a). It is a package of several applications (programs) tied together.
Therefore, to share is an important part of using Google Apps. To share something is to invite another user to have access to that same information. To receive a comprehensive picture of Google Apps an elaboration of the applications is necessary. There are more applications available to incorporate into Google Apps suited for educational use. These, however, are the fundamental ones.

**Google Mail**

Google Mail is an email application which is the base in Google Apps. All users, ergo students and school staff, receive a Google Mail account which is also a Google account. This is used to access all Google related applications or websites (Google Inc., 2011b).

**Google Calendar**

Google developed this calendar as an interactive calendar to suit all kinds of schedules. A perfect example of Google calendar is that the user can plan meetings and share these with other users. These users can then, through a single click, choose to attend these meetings and this automatically updates their calendar with all the relevant information such as time, place and reason for the meeting (Google Inc., 2011c).

Another important part is that users are able to share their calendar with other users so that when they are planning meetings they are able to see the other users’ calendars. This makes the planning process significantly easier for the one doing the planning (Google Inc., 2011c).

**Google Docs**

This application is a word processing software, equivalent to the commonly used Microsoft Word. The addition that Google Docs have is that documents can be shared with multiple users. This does not only mean that multiple users can access and read a text document at the same time but also alter it. This is something innovative with Google Docs, that, for example, five students can work on a report at different geographical places at the very same time. They can then share the document with the teacher, who in real time has access to the document and can give continuous feedback comments (Google Inc., 2011d). This could be a good tool and asset for a behavioristic or sociocultural learning environment. The behavioristic theory in basic suggests that progression is reached through continuous feedback. The sociocultural learning theory, on the other hand, suggests progression through interaction with other learners.
There are aspects of Google Docs that need improvement. The spellcheck is better in leading word processing software, for example, Microsoft word, a part of the Microsoft Office. Furthermore, copying text from a Microsoft Word document into Google Docs might create issues with the format.

**Google Site**

Google saw the use for a lobby in Google Apps for educational purposes and therefore introduced Google Site. It offers a visual tool to incorporate multiple applications, easy for users to access and manage. Teachers can use Google Site to create what can be seen as a wiki structured\(^1\) website with integrated Google applications (Google Inc., 2011e). Any kind of information can be incorporated, using a Swedish high school course in mathematics as an example:

- Add relevant links e.g. to a syllabus for that specific course in mathematics.
- Assignments for the students, provided through a link to a Google Docs Document.
- Lesson plans, students can access and find out what they are going to do during future lessons. This is also a good asset for students who have missed lessons to find information on how to compensate for this absence.

**2.3 Previous research on IT administrative platforms**

IT administrative platforms or ICT platforms are part of a relatively new field of information and communication technology. Therefore, there has been considerably little research performed on it. There has, however, been some research conducted on SaaS (system-as-a-service) or in general terms called cloud computing (Sviridova, Sviridova & Tymoshenko, 2011). This technology constitutes the use of computer software which accesses information via an Internet connection. This makes the user not dependent on a local server\(^2\) but rather dependent on non-local Internet servers. In layman’s terms this means to have access to the information from any place at any time as long as a computer with an Internet connection is available.

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\(^1\) Wiki is a collaborative database structure, invented by Ward Cunning. Most commonly found on the free online encyclopedia ([www.wikipedia.org](http://www.wikipedia.org)).

\(^2\) A computer with the main purpose to contain multiple hard drives with information which can be accessed with computers connected to a local network, possibly placed within the same house as it is accessed from.
According to Wang and Jin (2010), Pocatilu, Alecu and Vetrici (2010) and Sviridova et al. (2011), the example Google Apps is an appropriate solution for educational use just because of the cloud computing accessibility. Pocatilu et al. (2010) also bring up some disadvantages with cloud computing, one being the dependence on an Internet connection. A problematic aspect of this matter is that Swedish schools are supposed to be available for anybody entitled\(^3\) to go there. However, Swedish schools as the NTI, indirectly assume that students have access to an Internet connection at home. Even though it is very rare today that students do not have Internet access at home it is still problematic to assume this and by doing so excluding some students from utilizing all provided tools. According to statistics (Findahl, 2011:10), 88% of the Swedish people over the age of 12 have access to an Internet connection at home. This shows that 12% of potential students may not have access to the Internet at home and may be negatively affected by teachers taking Internet access for granted. The absence of specific, objective, third-party research conducted on SchoolSoft makes it complicated to compare it to Google Apps. An alternative is to look at the basic equivalent function in both, which is cloud computing (accessing information via the Internet). Then, the researchers’ (Wang & Jin (2010), Sviridova et al. (2011) and Pocatilu et al. (2011)) conclusions are applicable to both of the two IT solutions, since all the researchers emphasize the cloud computing function as the key feature, solving the accessibility problem today and in the future.

3. Presentation and Analysis

The result from the questionnaire is presented with a short summary of the opinions that was expressed. Complementing tables to questions 1, 2, 5-14 of the result can be found in Appendix 3.

The data was collected by the means of the teachers answering an online questionnaire (see Appendix 1). The questionnaire as a whole received 13 out of 17 possible answers (76%), a majority of the opinions among the teaching staff from the NTI high school in Luleå. Furthermore, the gender representation was 54% (female) – 46% (male) and the average age was between 31-35 years old.

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\(^3\) E.g having a secondary school degree before attending high school.
3.1 Questionnaire

Question 1-2. Analysis of the background questions regarding age and gender

It is worth mentioning that 76% of the approached teachers answered the questionnaire and that it was close to a perfect distribution between female and male. This gives the general gender view, even though women are considerably over-represented in the teaching staff. The average age (31-35 years) suggests that most of the teachers have been working with computers during their own education, which offers a chance of them being comfortable with using computers.

Question 3. Do you experience any difficulties when working in parallel with two administrative platforms?

When asked about if they experience any difficulties when working in parallel with two IT administrative platforms, 69% agreed on this. Some express frustration towards the lack of clarity and consistency on how to use the platforms and that this affect the students in a negative manner. However, a few teachers believe that the students are more experienced with and tend to primarily use SchoolSoft over Google Apps. This result shows that students at least use one of the platforms, which is fundamental for teacher-to-student communication. Furthermore, this result suggests that those teachers who only use one platform, SchoolSoft being the most frequent one, will not have the opportunity to use the practical tools and applications that Google Apps provide. Something also worth mentioning is that a few teachers experience having to do double work with the two platforms. What they mean by this is that they have to perform the same task in both platforms, for example, putting up assignment information on both because they do not know which platform the students check on a regular basis. This is a serious issue that need to be considered in the discussion since this is not supposed to occur, but rather the opposite.

Question 4. Do you think that you have a clear and structured way of working with SchoolSoft and Google Apps?

When asked the question above, 78% of the teachers consider themselves as having an explicit and clear method when working with SchoolSoft and Google Apps.
The result from this question shows positive result when looking at teacher-to-student communication. The teachers consider themselves to have a good method for working with the platforms. However, the communication problem appears to remain when looking at the result from question 3 and this makes it somewhat problematic to analyze. A majority of the teachers experience a communication problem, but at the same time they also consider themselves to have a clear way of working with the platforms. Worth mentioning is that several teachers express that they understand the importance of having a dialogue with the students on how to use the two platforms. This shows that the teachers also understand the importance of being flexible when working with ICT solutions.

Question 5-7. Do you agree that there are guidelines on how a teacher should work with SchoolSoft and Google Apps? Should such guidelines exist? Do you consider there to be a need for a formal education for teachers on how to use SchoolSoft and Google Apps practically?

Questions 5 and 6 were regarding guidelines on how to use the two IT administrative platforms. The question was asked in a way that assumed that there were already established guidelines to see how the informant reacted to this, even though such formal guidelines did not exist. 69% of the teachers did not have any knowledge of these guidelines. Furthermore, 62% agreed that some sort of guidelines should be established. When asked if they thought the staff needed education on how to use the two platforms, 69% agreed on this.

This result shows that the teachers disagree on whether there are any guidelines on how to use the two platforms. Some teachers explicitly express that they do not want any formal guidelines on how to use them, because they want to maintain the usage flexibility. That is, being able to change the way they work with the platforms so that it could be customized to efficiently fit the requirements of the group. In other words, adapting the tool to the group, not the group to the tool. It is problematic that 29% of the informants are under the impression that there are established guidelines on how to use the two platforms. One possible explanation could be that the informants know how to use SchoolSoft to report attendance etc. and interpret that as a guideline.
Question 8-9. How often do you use SchoolSoft/Google Apps in your work?
The teachers were asked how often they use SchoolSoft and Google Apps. The answers received were that all of the teachers use SchoolSoft every day. Most likely because the teachers are obliged to report attendance in SchoolSoft. Only 38% use Google Apps every day but 69% estimate that they use Google Apps at least three times a week. The future use of Google Apps depends on teachers actually using it on a close to daily basis. Otherwise it is neither reasonable nor economically responsible to continue the use. These results are interesting to examine and compare to the next questions (10-13) because they could provide a clue to why a majority of the teachers do not use Google Apps on a daily basis but still several times a week.

Question 10-13. Which of these tasks do you perform in SchoolSoft/Google Apps/Both

These questions were designed as such: The teachers were given a number of administrative tasks and then asked to categorize them by indicating on which platform they performed these tasks, either in SchoolSoft alone, Google Apps alone or in both. The overall result was that SchoolSoft was used for administrative tasks such as to give students access to material for assignments, provide the students with lesson plans and syllabi. Lesson attendance is, as mentioned, performed in SchoolSoft, which all teachers agreed on. However, worth mentioning is that 64% state that they give students access to assignment material on Google Apps and that 85% use it for students’ handing in assignments. To clarify, this showed that Google Apps, in general, is not necessarily used to provide students with information but rather used to collect assignments from students.

These results illustrate tendencies on how often the teachers use SchoolSoft. It shows that all the teachers, according to established obligation, use SchoolSoft daily to report attendance. The results further suggest that the teachers, to a large extent, use Google Apps for assignment-related purposes, which is its supposed main purpose. However, it is important to take into consideration the result from questions 8-9. The results discussed above show that only a few teachers use Google Apps on a daily basis so it is hard to tell to what exact extent the 85% use it. To clarify, essentially all teachers use Google Apps for assignment-related purposes but if it is used once a week or once a month is impossible to
conclude without further data. It is possible to refer to the result in questions 8-9 that some teachers may use Google Apps to distribute information regarding assignments but maybe not for handing in assignments. The result shows that 69% use Google Apps more than three times a week but these figures are too unreliable to base a solid conclusion on. This raises the question of how essential Google Apps is in the teaching. Is it used only for handing in assignments or is it used to its full potential (integrating use of several applications)? However, to reach a reliable answer to this question more specific data is needed. Therefore, will this question not be concluded in this essay.

**Question 14. Which of these tasks do you perform without the help of ICT tools?**

On this question the teachers were asked which of the administrative tasks (report attendance, give access to material, etc.) they perform without the help of the IT administrative platforms. The general answer was that they perform planning-related tasks without the help of neither of the two platforms nor their tools.

This result can be explained with the fact that only a few of the teachers have tried working with the Google Calendar application. Another aspect of it is that teachers may not have time to plan their work in front of a computer but rather write it down in a physical calendar, in that way not being dependent on having access to a smartphone or a computer, which is dependent on electric power.

**Question 15. Do you think that these ICT solutions are good tools for teachers’ line of profession?**

The last question was if the teachers thought that these kinds of ICT platforms are valuable tools for a teacher in the 21st century, and as many as 92% thought so, that is everyone but one of the answering teachers.

There is thus an indirect consensus between the teachers on this matter since only one teacher disagreed. This suggests that there is a genuine interest among the staff to work with these kinds of ICT platforms.
3.2 Interviews

The interviews conducted are presented in short summaries below. The interviewees are referred to as Teacher 1, 2, 3 and 4. They are all referred to as male to simplify the question of preserving their anonymity, even though the interviewees were both male and female.

Interview 1

Teacher 1 considers himself comfortable when working with computers and confident in using both of the two IT administrative platforms. From experience he knows that students tend to check SchoolSoft more often than their Gmail in Google Apps, thus, SchoolSoft has become his primary contact channel with the students. He also emphasizes that the advantage with SchoolSoft is the parental access and the fact that the NTI high schools market themselves with this as an important part of their educational package. However, Teacher 1 finds some difficulties with the planning system in SchoolSoft. Sometimes things end up on the week plans but not on the specific lesson plans and the other way around. It is this sort of inconsistency that can lead to confusion for students. He uses SchoolSoft for administrative purposes (e.g. reporting attendance) and uses Google Apps only for subject matrixes (an individual progression document for students), an important tool when working with formative evaluation. The problem Teacher 1 experiences is that students do not know how to work with the two IT administrative platforms and that they do not check their Gmail regularly. His experience of the parental access in SchoolSoft is overall positive and that it is user-friendly, all according to feed-back from those in custody of the students. When asked about education on how to use the two platforms, Teacher 1 states that he does not benefit from arranged group-instructions that the school provides. He learns from testing on his own, using a trial and error technique (learn-by-doing technique). Furthermore, he states that he does not appreciate the idea of major collective decisions that oblige the teachers to try out specific applications in Google Apps. He would rather see that those in charge of the project try to encourage the teachers to use additional applications. He felt that he is obliged to use instead of wanting to use the ICT tools, especially some applications in Google Apps. Lastly, Teacher 1 clearly states his opinion on the user-friendliness of both the two platforms: they are both easy to learn and use and they complement one another in a good way.
Interview 2

Teacher 2 experiences problems with the two platforms mostly because there are two. This is the main reason why he tends to use SchoolSoft most of the time. The biggest issue he finds with the two platforms is that the graphical interfaces differ very much from one another. By this he means that the basic visual structure of the software, for example, the cataloguing system of folders he experiences as complicated in Google Apps. This is more or less a question of user-friendliness, which in this case is better in SchoolSoft. This makes the teachers work in two different ways when dealing with the two platforms. Furthermore, from his own experience he thinks that SchoolSoft has less of a learning curve compared to Google Apps. With this he means that it is easier to comprehend up to a basic level and from there confidently use it on a daily basis without need for assistance. Further, he expresses having some problems with getting the students to use both of the platforms. The behavior that he sees today is that students usually tend to use only one of the two platforms. This opens up an entire new question and field of interest in the use of two platforms, whether or not the students find difficulties working with two platforms. To solve the problem with students who only use one platform he started to instruct the students he is mentoring to forward all their e-mails to the platform they use most frequently. Another thing Teacher 2 is concerned with is that information is forwarded from Windows Live (the previous e-mail system) to SchoolSoft and then to Google Apps. His concern is whether all information reaches SchoolSoft or not. The last step in the chain depends on whether or not the teachers choose to make the information available on Google Apps as well. Another way of solving the problem with distributing information to students efficiently is by using the social media platform Facebook. He saw the opportunity, since almost all of his students use this social media platform several times a day. Therefore, he started to use this as an information distributing channel. Lastly, Teacher 2 would like, for future use of the two platforms, to integrate the e-mail function and document versatility from Google Apps into SchoolSoft, thus eliminating the issue with two platforms. Another alternative would be to add a synchronization function, making the same information available on both SchoolSoft and Google Apps at the same time. Furthermore, he also requests, if possible, for a proper SchoolSoft application for smartphones (Android and IOS). The current solution for
smartphones is a mobile version of the regular platform in a web browser, which works very poorly.

**Interview 3**

Teacher 3 experiences some problems when starting to work with Google Apps as with any other new software or tool. The foremost problem is that it will take some time to figure out which work-related tasks are most appropriate to perform in SchoolSoft and/or in Google Apps. This is only considered as an adapting period, it will take a while for all staff members to get used to working with these two platforms. He uses SchoolSoft for formal administrative tasks, such as reporting attendance, do formative evaluation and report grades. When using the two IT administrative platforms he experiences some problems with maintaining currently revised versions of documents on the two platforms, since there is no synchronization function. He thinks that the best way is to figure out on your own how to best use these ICT tools and proceed with that. However, he agrees that some type of guidelines could be established and clarifies that these are to improve the efficiency and eventually save time on administrating. Furthermore, he emphasizes the importance of having a clear dialog with the students on how they, as a group, are using the two platforms.

Teacher 3 thinks that a good solution with the parallel use is using Google Site and incorporating everything into that. Further, from earlier experience, he suggests that all teachers get their own Google Site and through this site give access to all classes. This would then work like a teacher’s personal teaching lobby where all students could start when looking for any kind of information related to the course. By giving it a general design it only takes some slight revising to update the site for years and classes to come. Here, he has an idea of some guidelines on the general design of the site so that all sites fairly resemble each other. This could facilitate and optimize the work experience for students. He also discusses the issue of having sensitive information (grades, evaluation and similar personal information) on Google Docs and he expresses the clear opinion that this information is more appropriate to store on a different platform, in this case SchoolSoft. For the future use of SchoolSoft and Google Apps Teacher 3 sees himself using SchoolSoft only to report attendance, grades and give access to other evaluation-related material. The rest of the
administrative tasks should be performed in Google Apps and this is how he would like to see all teachers work in the future.

Interview 4
Teacher 4 has an overall bad experience of using the two IT administrative platforms. He has some issues with remembering how to use the platforms, when not using them continuously. Furthermore, he expresses a clear opinion towards the current file list system (how files are listed in the layout) in Google Docs. It is very hard to work with efficiently and he spends a lot of time and energy on this frustrating matter. He would like to have a system similar to the Gmail listing system. However, he likes the communicative function in Google Docs, i.e. that a teacher can give feedback throughout the writing process. He agrees on the idea of establishing guidelines and that this would give the teachers a basic idea of how the two platforms are supposed to be used separately. This separation, he believes, is the solution to the problem. Through clear instructions and according to established guidelines in this scenario, the students would receive clear and consistent instructions on where to find what information. He is open to having, if possible, a synchronization function added to the system, but would rather like the scenario with established guidelines on how to use the two platforms separately. This could, according to Teacher 4, solve the problem with performing double work on the two platforms and most problems related to that. Lastly, he would like for the platforms to be more customizable for the users so that if new problems come up then these could be solved locally.

Summary of the interviews
This section will be devoted to sum up the general and recurring opinions from the four interviews. Teachers 1, 2 and 3 consider themselves to be comfortable with working with the two IT administrative platforms. However, to some extent all of the four interviewees experience doing double work with the two platforms. Teachers 2 and 4 have some issues with the general differences of the two platforms. They do not resemble each other, therefore, they cannot be used in the same manner but rather dealt with in separate ways. According to Teachers 1’s and 2’s observations and experiences, the students also tend to have problems working with two platforms. The main problem is that the students generally only use one platform and the most frequently used is SchoolSoft. That is why Teacher 1 and
2 now use SchoolSoft as their primary platform. Teacher 3 mentions an adapting phase that needs to be considered when discussing the issue of using two IT administrative platforms in parallel. That is, all teachers have to take some time to develop an individual method to work with the two platforms. There were a few suggestions on how the interviewees would like the platforms to work in the future, e.g. Teacher 2 would like to integrate Google Apps into SchoolSoft, while Teacher 4 would like to completely separate the two platforms and consider them and work with them as individual programs. The latter suggestion would then be backed up with established, concrete, basic structural guidelines on how to use the two platforms, which Teacher 2, 3 and 4 agreed would be a good idea.

4. Discussion

According to the results from the questionnaire the teachers disagreed on several things, a good example was whether or not they experienced any difficulties in the parallel use of the two IT administrative platforms. According to the results, some teachers have experienced problems while others have not. However, since as many as 70% agreed, to some extent, that they experienced some sort of difficulty this situation clearly signals for a major evaluation.

This result is still not the most confounding, since 78% agreed when asked if they considered themselves to have a clear and explicit method of working with SchoolSoft and Google Apps. This is despite the fact, that there seem to exist multiple cases of malfunctioning teacher-to-student communication. This is based on the recurrent opinion on none-working communication expressed during the interviews. Furthermore, they consider themselves as flexible in the way they work with the platforms, which would suggest that the teachers customize their application of the tool to fit the need of the group and situation. However, this can cause a problem later on when discussing the nature of consistency, i.e. whether or not the systems are used consistently. Consistent habits are beneficial to people and to change things which supposedly go by routine could easily confuse. Ergo, the teachers ask for some sort of consistency in the current ICT solution. When or if a routine, even a simple one, is temporarily changed too many times for the purpose of solving a non-recurring problem, then this could become a risk for the original routine to disappear, a routine which was constructed to fit almost all situations. In system programming this is called patching, if
a system has some sort of weakness or bug then this is solved by re-writing that part of the program. However, it is important to remember that it is common that patches might change other working parts of a system. Therefore, it is very important to be cautious when dealing with even smaller less significant changes.

A reason for this problem with logical consistency could in fact be the absence of clarity and structure on how to use the two platforms. From the result of the questionnaire and the interviews the teachers agreed on establishing guidelines as a possible solution to basic problems (communication, distribution, etc.). However, since a lot of teachers explicitly took a stand against establishing guidelines, that is an aspect to discuss as well. Some teachers clearly stated that they were not at all interested to have guidelines to follow for several reasons. One teacher expressed that he was afraid that the creative aspect of didactic customizability of these two platforms would be impaired. This is not necessarily the case, since the guidelines could be established to offer a frame of reference. This gives a starting point for the teachers who experience problems with using the platforms properly because of the multiform alternatives that they offer. Ergo, teachers who struggle to use the two platforms efficiently can apply these guidelines to improve their use. That does not entail that the teachers who are well capable of using the two platforms untrammeled need to apply them. There are, however, a few teachers that could greatly benefit from some basic structure.

The problem most teachers experienced with the parallel use of the two platforms is having to do double work, e.g. a teacher is distributing instructions for a written assignment on both Google Apps and SchoolSoft. They do it because from their experience most students only use one platform. This could, to a larger extent, become a major problem and is already in some cases today from what is shown in the results. An alternative solution is to simply perform all formal administrative tasks, such as report attendance, grades and formative evaluation in SchoolSoft. This is in order to have the parental access but mainly because the platform is designed to withhold sensitive information (SchoolSoft, 2011b). As for other administrative tasks such as manage assignments and provide information related to a course, this can easily be distributed through Google Apps only. A good possibility to solve the communication problem, when being uncertain of which platform the students use frequently, is to instruct the students on how to forward e-mail from the SchoolSoft e-mail
to Gmail (Google Mail). These basic guidelines could most likely solve a great part of the communicative problems, which are due to a lack of praxis on how to administrate information.

This section will focus on education and further education for teachers and other school staff on how to use SchoolSoft and Google Apps. The teachers were asked in the questionnaire if they would like to have formal education and/or further education on how to use and/or improve their use of the two platforms and almost 70% approved of this idea. This shows that most of the teaching staff would like to and could benefit from education and/or further education. There are some exceptions, that is, the teachers who are comfortable enough to use the two platforms and manage to develop their skill on their own. However, those teachers should not be obliged to attend courses. A solution to this request would be to assign a task force to continuously work to improve the use of the two platforms and also be in charge of this requested education and further education.

It is important to look at the validity of this study and also to what extent these results can be used. An important aspect of validity is to point out that the target group consisted of 17 informants and 13 of them answered the questionnaire. This gave an answering rate of 76% and in most quantitative research that number would be alarmingly low. In this case, however, the difference between 76% and 100% answer rate is only four teachers. Furthermore, most of the results point in the same direction which entails that the teachers agree with each other. 13 people is still a representative part of the teaching staff with a next to equal representation in gender, 54% (female) – 46% (male). These results are unfortunately not appropriate to generalize to any larger extent outside of this case. Furthermore, parts of this essay could be applicable to other similar cases, but should rather be considered as conclusive elements to the result of this study based on this specific situation. The NTI high school in Luleå is not the only existing school in Sweden that uses both SchoolSoft and Google Apps. The fact is that there are several other high schools in the NTI group, as part of the AcadeMedia educational company, that share this IT solution setting (The NTI high school, 2011).

A problematic aspect of this essay is that there is no previous research performed on cases similar to this one, with the use of two parallel ICT platforms. However, Wang and Jin (2010),
Sviridova et al. (2011) and Pocatilu et al. (2010) all conclude that cloud-based computing is the future of ICT tools in education. This suggests that the IT industry probably will be presented with similar cases and situations and have to work out a strategy to solve these.

The conclusion that can be drawn from this study is that there are a number of problems with the use of two IT administrative platforms. Most commonly these problems are traced back to the lack of clarity and consistency in the parallel use. This negatively affects the communication between teachers and students as well as between teachers. Therefore, the suggestion, based on the findings in this study, is to:

(1). Establish basic guidelines that suggest that SchoolSoft only should be used for formal administrative tasks, such as, reporting attendance, grades and administrating similar information that should be considered as sensitive. Google Apps should then be used to administrate the remaining information, e.g. assignments or assignment-related information. Evaluation, as meant by evaluation matrixes, could be stored on either of the two but preferably SchoolSoft, since parental access is an important part of SchoolSoft and formative evaluation is something that those in custody should have access to.

(2). Assign a group to work on continuous staff development in the use of the two IT administrative platforms. Cooperation with the rest of the NTI high schools around Sweden is vital to build a good network and together improve the use of these two platforms. This group does not necessarily need to consist of more than a few people but those people should have a genuine interest in development of this kind. Their goal should be to motivate the whole staff at the NTI high school in Luleå to use both SchoolSoft and Google Apps to their full potential.

5. Summary and Conclusion

This essay was a case study based on an investigation of the parallel work with two IT administrative platforms, SchoolSoft and Google Apps. The aim was to find out if the teaching part of the staff at the NTI high School in Luleå found any difficulties with the parallel work. The data was collected through a web-based questionnaire that was sent out to all 17 teachers at the high school. The data was then automatically compiled in a secure web-based software. The result gave a general view of the opinions on the parallel use of
two IT administrative platforms. After receiving the result from the questionnaires four informants were randomly picked for complementing interviews to receive a more specific description of the everyday use of the two platforms and what problems existed. Through cross-analysis of the result from the questionnaire and the interviews the results were then considered and discussed with support from the background to ensure the scientific validity of the study. The conclusion that can be drawn from this study is that there has been found clear evidence that a majority of the teaching staff at the NTI high school experience difficulties with the parallel use of two IT administrative platforms. Further research is needed to find a specific problem but what this study has shown is that it most likely consist of several minor problems with the IT solution as it is used today. From the result and discussion two concrete suggestions were put together to solve the problems at hand.

Suggestions for further research: look into how the students and other parts of the school staff, e.g. janitors, school nurses, etc, experience working simultaneously with two IT administrative platforms. Suggested approaches are, (1) if the informants find the ICT situation today satisfactory or (2) a comparative study or evaluation of experiences from before and after establishing guidelines.
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Appendix 1: The Questionnaire used for the study

NTI-gymnasiets användande av SchoolSoft och Google Apps

Just nu pågår en undersökning här på NTI-gymnasiet av lärares användande av SchoolSoft och Google Apps. Syftet med undersökningen är att se över användandet för att kunna förbättra produktiviteten för att i slutändan spara in tid för er lärare.

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Är du man eller kvinna

- [ ] Kvinna
- [ ] Man

Hur gammal är du?

- [ ] 25-30
- [ ] 31-35
- [ ] 36-40
- [ ] 46-50
- [ ] > 50

Upplever du det som svårt att arbeta med två administrativa program parallellt? Ja eller Nej, om ja redogör kort vad du tycker är svårt med användandet

---


Anser du att du har ett tydligt och strukturerat sätt att använda dig av SchoolSoft och Google Apps? Ja eller Nej, om Nej förklara kort vad du tror det kan bero på:

[ ] Ja
[ ] Nej

Anser du att det finns några riktlinjer för hur man som lärare på NTI bör använda sig av SchoolSoft och Google Apps?

[ ] Ja
[ ] Nej

Anser du att det behövs riktlinjer?

[ ] Ja
[ ] Nej

Anser du att det behövs utbildning för att på ett praktiskt sätt kunna använda SchoolSoft och Google Apps?

[ ] Ja
[ ] Nej

Hur ofta använder du dig av SchoolSoft i ditt arbete?

[ ] Varje dag
[ ] Mer än 3 gånger i veckan
[ ] Färre än 3 gånger i veckan
[ ] Mer än 5 gånger i månaden
[ ] Färre än 5 gånger i månaden

Hur ofta använder du dig av Google Apps i ditt arbete?

[ ] Varje dag
[ ] Mer än 3 gånger i veckan
Färre än 3 gånger i veckan
Mer än 5 gånger i månaden
Färre än 5 gånger i månaden

Vilken av dessa saker utför du i SchoolSoft?
- Ger elever tillgång till ämnesplaner och dylika officiella dokument
- Ger elever tillgång till uppgifter
- Ger elever tillgång till planeringar
- Rapporterar närvaro
- Schemaläggning av lektioner
- Schemaläggning av din egen tid
- Sköter kommunikation mellan elever och andra lärare
- Inlämning av elevuppgifter

Vilken av dessa saker utför du i Google Apps?
- Ger elever tillgång till ämnesplaner och dylika officiella dokument
- Ger elever tillgång till uppgifter
- Ger elever tillgång till planeringar
- Rapporterar närvaro
- Schemaläggning av lektioner
- Schemaläggning av din egen tid
- Sköter kommunikation mellan elever och andra lärare
- Inlämning av elevuppgifter

Vilken av dessa saker utför du i båda?
- Ger elever tillgång till ämnesplaner och dylika officiella dokument
- Ger elever tillgång till uppgifter
- Ger elever tillgång till planeringar
Rapportera närvaro
Schemaläggning av lektioner
Schemaläggning av din egen tid
Sköter kommunikation mellan elever och andra lärare
Inlämning av elevuppgifter

Vilken av dessa saker utför du utan hjälp av dessa IKT-verktyg?
Ger elever tillgång till ämnesplaner och dylika officiella dokument
Ger elever tillgång till uppgifter
Ger elever tillgång till planeringar
Rapportera närvaro
Schemaläggning av lektioner
Schemaläggning av din egen tid
Sköter kommunikation mellan elever och andra lärare
Inlämning av elevuppgifter

Anser du att dessa IKT-verktyg är ett bra hjälpmedel i en lärares arbete?
Ja
Nej

Tack så hemskt mycket för att du tog dig tiden att svara på den här enkäten! Är det något du vill tillägga så skriv det gärna här under.
Appendix 2: The Interview Questions used for the study

Intervjufrågor

Tackar för att du har svarat på min enkät och jag tänkte nu ställa några fördjupande frågor om ditt användande av SchoolSoft och Google Apps.

- När du svarade på enkäten så fanns det en fråga om du fann några problem med att parallellet använda dig av två stycken IKT-administrativa platformer. Anser du att det finns några svårigheter med just detta?
- Kan du ge en beskrivning av dessa svårigheter? Upplevs flera problem, vad upplevs då som största?
- Vad tror du orsaken till detta/dessa problem kan vara?
- Vad tror du kan vara lösningen på detta/dessa problem?
- Hur skulle du vilja se att man använder sig av SchoolSoft och Google Apps i framtiden på effektivaste sätt?
Appendix 3 – Figures containing result from the questionnaire

Figure 1: Describes gender representation of teachers who answered the questionnaire (Question 1)

Figure 2: Describes age of those who answered the questionnaire (Question 2)

Figure 3: Shows the answer frequency of if there are guidelines (Question 5)

Figure 4: Shows the answer frequency of if guidelines are needed or not (Question 6)

Figure 5: Describes the answer frequency of if the teachers need education on how to use the two IT administrative platforms (Question 7)
Figure 6: Shows answer frequency of how often teachers use SchoolSoft in their work (Question 8)

Figure 7: Shows answer frequency of how often teachers use Google Apps in their work (Question 9)

Figure 8: Shows answer frequency of which given administrative tasks teachers perform in SchoolSoft (Question 10)
Table 9: Shows answer frequency of which given administrative tasks teachers perform in Google Apps (Question 11)

Table 10: Shows answer frequency of which given administrative tasks teachers perform in both SchoolSoft and Google Apps (Question 12)
Table 11: Shows answer frequency of which given administrative tasks teachers (Question 13) perform without the use of ICT tools.

Table 12: Shows the answer frequency of if teachers believe that ICT tools are good for teachers' line of profession (Question 14).