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Erik Høivold

Buskerud fylkeskommune

**RAPPORT**

**Om læringsutbytte med bruk av IKT for elever ved Kongsberg videregående skole**

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| **Foreword**  Thank you to all students of study specialisation by Kongsberg high school (KOVS) and body students for their responsive time use in answering the questionnaire. A special thanks to the students in sociology and sosialantropologiklassen 2014/15 who participated in a pilot and even used data from the survey to own ICT exams. Treats from their responses can be found in the attachment 4.  Without initiative from the multi-year old colleague and oppmuntringsråd Jan-Arve over land, so I had not come in time with such a comprehensive examination. His counsel under way have secured higher quality on the report.  Section Head Aril Svinterud compiled as soon as the interest for the exam and has given wholeheartedly support all the way, but first and foremost read countless drafts and come with precise and sober guidance.  Lektor in the Norwegian Mona Hanheide Evju should have a cordial thank you for his very thorough review to luke out mass language error.  It was the school management by KOVS as compiled decision in March 2015 to complete the survey and should have a thank you for the. I hope i show me the task worthy and can get renewed confidence to conduct a modified examination for school year 2015/16 in april/May 2016.  I have chosen to use "we-form" completed in the entire examination to show that this has been a collective collaboration where many have contributed to the result, but i am responsible for the final product.  You have little time, so read the summary on the next page, then Appendix 1 with the percentage-summaries and then conclusions and measures from page 84. The whole report reveals many exciting student responses and new discoveries - that after 12 years with ICT at KOVS comes silver flashing come out into the light.  Good reading!  Erik Høivold, Coordinator  Degree in political science, lektor in language and social studies  **Summary**  Transportability digital competence, steering, customization and class management get good feedback from the half of students, but just as many reports that teachers missing ready management with standards and procedures for digital learning. Lack of teacher competency is partly a basic to much non-professional activity in the hours. Transportability digital practice with digital guidance and assessment is good says a large majority of the students. On the other hand is the use of digital planning and self-evaluation deficient.  Students can broadly divided into three groups: approx. 70% of students at study specialisation and they that take a påbyggingsår by Kongsberg high school in the school year 2014/15 has a good digital competence, appropriate behavior and good attitudes. Approx. 25% of students say that they are missing important general digital skills, in all 90 of the 363 students who took part in the study. It is a small group of "Super Users" with very good digital skills. Many students say they need increased skills in the source use, several mathematics tools and presentation tool. The Communications Platform It's learning is used relatively small.  Ict is used as well as all the time in the three subjects Norwegian, mathematics and social studies, since the students answer that they use 1 hour and 30 minutes per day in the subject they have expressed about.. Pupils have fenders almost always up. It is then used pc also to a part not-professional tasks, such as social media, games, news, movie etc. in all estimated the non-disciplinary activity on the screen to approximately 1 hour and 20 minutes per day. Considering that the total is 60 minutes break time, so is not the outside of professional ICT-time as high as expected.  The study confirms that there is a clear connection between digital practice, motivation and learning results. There is a considerable difference in digital practice students with good learning results and those with medium and lower results. In the survey we found that approx. 20% of students spend a lot of time on non-professional digital activities in the school life. Many of them take a digital lifestyle with a focus on entertainment also at school. Their attitudes to the use of digital tools bring to the missing professional proximity and they experience that they get less follow-up from teachers and medelever. The consequence for some of these 70 students are lower the learning-yield and that they are not able to complete further education. Furthermore older students get, the more clearer see the negative effects, but they will even take the responsibility to change its own behavior.  On the other side, is part of students who have high motivation, very good digital practice and very good character in general. These "Super Users" is characterized by that they spend a lot of time on professional activities and small on non-professional activity. Students use many digital assets, after ask and get laereres digital guidance and assessment, and participate actively on it's learning, in its own planning and in the self assessment (part up in t sentences).  Ict is used for more and more learning activities. Learn the book and classrooms used less, and experienced by a del students as less important. Students wish to a certain extent to collaborate digital, but they experience teachers facilitator for small for them. Teachers are also not good enough to avoid digital "Uro" and bullying.  There are some logical differences between school steps, then students undergoes a development in digital competence, source work custom and training. Recognition of the consequences of bad choices and the responsibility to change the behavior increases with age. The non-professional behavior looks still not out to decrease, but turning over on other activities. Students at VG2 is most clearly on the need for laerers digital control, but also looks laerers missing ICT competency. Vg2 students scores even also lowest on basic digital skills. A part students at VG3 has a good digital practice. Body students use ICT most professional of all, is satisfied with the free teachers digital practice with planning, guidance/assessment and self-assessment. A part students at VG3 and body has been school hire and has much more non-professional digital behavior. On the way is a large gap between the professional strongest and the professional weakest students of VG3 and body.  The specific technical differences between the Norwegian, mathematics and social studies can be understood pedagogical. Mathematics subject are less digitally. Students Use It's learning much less and are uncertain on several other digital assets such as source work. Mathematics students are ICT- proficient and well satisfied with their laereres competency. The digital veilednings and Assessment Practice is much less than in the other two subjects, and it can be explained professional. Community subject are source outreach with comprehensive web use, but is also the subject where it is reported about much non-professional activity on the net. Students are clear of the consequences. Students are experiencing a share digital turmoil and bullying. Students in the Norwegian need more digital guidance from the teacher and confirm that they also get it. Ict do not contribute much to increase the concentration, says Norwegian liveth. Students are experiencing more independent of learn the book than mat and social studies students. There is a clear connection between digital practice, motivation and learning results. Students who have missing digital competence, weak and weak ICT use and formation ends up with the lack of results and vice versa.  Gender plays a certain role to understand the digital learning. Boys are experiencing itself as more competent and help themselves, while the girls want closer digital contact with teachers and medelever. Motivated students also has more ICT competence and are more professional digital active in many ways, while the less motivated with lower competency, is more concerned about the non-professional activities and less learning intervention. Digital competent students are closer to the doctors and are more professional ICT active.  The exam may be all in all confirm that there is a certain but not a strong correlation between class leadership, how much school pupils efforts, most ring and learning yield. The survey was answered by a representative sample of students with a reply per cent on 73%. With such a high response rate can all the mentioned findings generali seres for all students on department Maurits Hansen and all body students.  The proposed 44 measures to improve the school ICT practices and increase student learning. Most of the dishes themselves against transportability digital practice, with improved digital class leadership and veilednings and Assessment Practice. Teachers should improve their digital control in the classes. More formativ digital assessment may be recommended, also more digital planning and evaluation of teaching. Teachers should facilitate more digital fagspesifikt student cooperation and reduce the scope of the digital bullying.  The majority of students wish to increase their digital competency. In parallel should they are challenged to develop their digital behavior to learn more. Here you have the school leadership, teachers and pupils a shared responsibility. The balance between the professional and non-professional digital activities should be regulated better. In addition needed a significant specialisation in the professional work with digital tools, especially in the source work. Students should change their kildesøk from one-sided use of Google and Wikipedia Search to search on fagsider as teachers and publishing offers. Many students continue to demand more training in the resources that KOVS pay for so that it's learning, licenses to Excel and NDLA, for increased new value.  Approximately 20% of the students have bad digital habits, and it must be corrected many actions against this composite student group to increase their learning yield. The report reveals that such behavior will evolve over time. It is important to get in close contact with these students at a time and in a constructive manner. Some are most motivated by the boot in VG1, while other first looking problem on VG3 and is the first then willing to change their behavior.  Increased learning dividend in the technology rich school offers many digital challenges where the school management and teachers must go in front of with a good example and ready management. On the way to this and future generations that grow up in a digital life get expert guidance and avoid digital arounds such to learning.  KOVS was a digital pioneer school in 2003 when we opted to wide on ICT, but students' answers in this report puts enough school only as a mediocre digital school.  **Content**   1. Background…………………………………………………………….9 2. Method……………………………………………………………..12 3. Laerers digital class leadership.…………………………………………….27 4. Laerers digital veilednings and Assessment Practice……..……………………..37 5. How much school pupils motivation and digital behavior.………………………………45 6. Students' digital interaction..…………………..…………………….68 7. How much school pupils digital competency………………………………………………74 8. Learning yield and ICT………………………………..………………83 9. Conclusions and actions..…………………..…………..……..……..84 10. Recommendations…………………………………………………..………….93 11. Sources………………………………………………………….……..96   **Attachments:**   1. Percentage summary of ICT Survey 2. Questionnaire, April 2015 3. Forskningsdesign, March 2015 4. Treats from the students' method tasks, June 2015   **Figure OVERVIEW**  Figure 1: Model of factors that affect the learning environment  Figure 2: Model for student learning environment  Figure 3: correlation between variables in the student Survey  Figure 4: correlation between the variables  Figure 5: the benefits and challenges of the use of quantitative method  Figure 6: the benefits and challenges of a qualitative examination  **Table OVERVIEW**  Table 1: To what extent do you think that the teachers of the subject controls the ICT use?  Table 2: To what extent do you think that the teachers of the subject stand out as competent ICT users?  Table 3: Teachers gives me know about what i need to improve to get increased learning yield when I use the PC  Table 4: student groups that points out that the management of teachers and ICT competency is deficient  Table 5: We have discussed us to common rules for PC use in hours along with the teachers in the Subject  Table 6: I want the teachers to take more control of PC use in class room  Table 7: Students who want more digital control from teachers  Table 8: My use of the PC to the outside the professional activities in the hours depends on the Learn's digital competency  Table 9: My use of the PC to the outside the professional activities in the hours is dependent on the Learn's ability to class management  Table 10: I believe that i get a better learning yield of the subject if i do not have access to the social media  Table 11: student groups who want more digital class leadership  Table 12: you have found that the teacher uses ICT to tailor schemes especially designed to help you with your professional challenges?  Table 13: Students who have received a tailored digital arrangements for learning  Table 14: Teachers provides digital professional feedback along the way while I work with a task, theme Olympics.  Table 15: teachers in the subject uses digital assessment forms by full day samples  Table 16: The digital feedback from teachers in the subject are better associated with the dimensions of the theme, topic, period  Table 17: The digital feedback is more to help for me in the further the learning process  Table 18: which students reports about much use of the assessment with the use of ICT  Table 19: teachers in the subject using ICT to increase my participation in the planning of my learning  Table 20: Teachers use ICT to increase my ability to evaluate my learning  Table 21: which students are invited to the digital planning and evaluation?  Table 22: It is important for me to have the best possible understanding of the school student my  Table 23: I want to master the subject at school  Table 24: The use of your PC/mobile helps me to understand the subject better  Table 25: which students are fully or partially in disagreement in the ICT increases motivation?  Table 26: Time Use in school life to professional digital activities  Table 27: which students use ICT much to professional activity?  Table 28: I make the most of the subject without other aids than ICT  Table 29: it is so good web resources in the subject that you do not have the need for textbook?  Table 30: I can base my learning on web-based teaching without having to be physically present at school  Table 31: which students successfully to learn only with the use of web resources and without learning the book?  Table 32: approximately how many hours per week in the school life you use it's learning to professional activities?  Table 33: which students use it's learning Lite?  Table 34: What do the different student groups about the usefulness of it's?  Table 35: Digital aids that is often used or as good as each work session  Table 36: which students use professional search and encyclopedia (Wikipedia and Google) much?  Table 37: I have greater concentration and quiet when I use ICT  Table 38: which students think ICT gives less ro and more interference?  Table 39: Time use at school to Facebook/Instagram/Snap Chat  Table 40: Time use at school to News  Table 41: Time use at school to see on non-professional film  Table 42: which students use more than 4 hours per week on Facebook/Instagram/Snap Chat and/or on the news?  Table 43: How many are never on the outside professional activities  Table 44: which students never use time on social media, film or play?  Table 45: My outside the professional PC use runs out of learning the dividend in the Subject  Table 46: Students who agree that the outside-professional ICT use has negative pages  Table 47: which students will even take more responsibility to regulate the non-professional ICT use?  Table 48: I collaborates often digital with other students in the Subject  Table 49: It is better to give medelever professional feedback with the use of ICT  Table 50: teachers to facilitate that we as medelever can provide digital professional feedback to each other  Table 51: What student groups believe that teachers not facilitate digital student cooperation?  Table 52: Other how much school pupils ICT use interferes with, Leave gates and prevents learning  Table 53: Outside of professional ICT use with communication between students at school affect my learning negative  Table 54: What student groups experience that other students creates digital fussing?  Table 55: I know the cases of digital bullying this school year  Table 56: Students who have experienced digital bullying  Table 57: I can restore deleted files, also from the Recycle Bin  Table 58: I can remove many viruses and program addition  Table 59: What student groups responds that they have poorer general digital competency  Table 60: I ve mastered to assess and be critical to digital sources  Table 61: I ve mastered to interpret and analyze digital sources  Table 62: What are the differences between the how much school pupils digital skills?  Table 63: I have great skill in the use of it's learning  Table 64: Students who believe their skills in the use of it's is deficient  Table 65: Which digital tools you need more training in for increased learning yield?  Table 66: Students who want more training in Geogebra and Excel  Table 67: student learning yield measured in candid characters and subjective self assessment   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 1. **Background**   "Norway did a school political decision in 2006 that have woken up much international attention within an important indicator area; digital competence was the fifth base craft in schools shape Knowledge Raised." After 12[[1]](#footnote-1) years with the implementation of digital learning at KOVS is now a mapping of the status of how much school pupils competency that is also an important indicator of whether the school and teachers provides its expertise in a good way.  Kongsberg high school (KOVS) has in a twelve year period developed information and communication technology (ICT) as educational tools on all plan in the school's business. All teachers got notebooks in 2001. Already in the school year in 2003/04 got all students on a study specialisation deals on notebooks as one of the first schools on land base. In 2006 was also body classes pcs. In 12 years have both teachers and pupils radically increased its use of ICT. In the day is much of the teaching and assessment characterized by ICT use. Research the report "the relationship between ICT use and learning yield", (edited by Krum deceit in 2013, hereafter rendered as SMILE) "points out that the per in day exists for the small research about monitors and indicator system for the relationship between learning and ICT use in secondary training in Norway, and therefore can get to a certain extent argue that the area so far have been more meaningful controlled than knowledge-driven". KOVS has taken[[2]](#footnote-2) an important step to do something about this by to initiate research on their own pupils and acquire knowledge about student attitudes and behavior. Improved knowledge of his pupil's digital experience is an important setter  to develop the school ICT strategy.  **1.1 What is SMILE report?**  Smile report from June 2013 is a very comprehensive study. The report includes the 8 counties performed on missions from Kommunesektorens Organization (KS) and the University of Bergen. "Smile- study shows that the ICT, digital tools and digital teaching aids have changed much of the underlying the foundations for teaching, knowledge and learning" (ibid, S307). "Background for SMILE-study is that we have too little Research based knowledge… which shed light on the relationship between the learning and ICT use in further education……". Smile report has "desired to help to develop education monitors, indicators and indicator system that aims to evaluate the selected indicator areas by the Norwegian education and how these evolve over time". OECD Printer: "…….policymakers and researchers cannot request in a position two monitor what is truly going on in school unless critical kpis about intensity, purpose and context of use of technology in education are available. So the objective of the digital[[3]](#footnote-3)[[4]](#footnote-4)[[5]](#footnote-5) aids in class room must be evaluated based on the scope of use (professional and non-professional), the purpose of using these aids and the context of ICT will be used.  "National education monitors for the ICT area has been completed at regular intervals in the last ten years, and especially is the ITU-Monitor[[6]](#footnote-6) (at ITU at the University of Oslo) and monitor the studies to the center of ICT in education[[7]](#footnote-7) that have formed some of the backdrop for the smile study. Reporting ICT use by KOVS is based on both the smile-study and on the monitor the studies. Designed for KOVS-study is the same as for the smile-study, but of course a drastic simplification when it is only quantitative and only corrects itself against some students and not all relevant actors at school. Some of the questions are retrieved from there, while the other is retrieved from the monitor[[8]](#footnote-8) and other again from the king farm's research (King Farm, 2014). Smile report includes many counties and schools where many actors from the school leadership to elevråd is informants, while KOVS survey has only students who informants. We have chosen to limit the focus to the three disciplines; Social Studies, Norwegian and mathematics.  **1.2 students and thus the school challenges**  Some key challenges for KOVS is that students reports about forholdvis low professional motivation, student participation and student democracy and support from home. The school learning environment is further characterized by medium professionally most and assessment for learning. (Student Survey, 2015). Through the transfer rate for 2014/15 showed that 14% of students of study specialization have not completed and passed the college.[[9]](#footnote-9) 35% of body students will not complete.[[10]](#footnote-10) teachers have over many years observed much non-professional web use among students, occasionally under performance and low concentration on theoretical tasks. This is not documented but forms the backdrop for the demand for this ICT exam.  **1.3 Theme**  Are you curious about the youth while the use of ICT in school life? Here you can read what students say about their digital practice. This project seeks to collect, process and communicate data about all students at study specialisation and body on KOVS. The main purpose is to examine interrelationships between students' experience of learning environment and their learning yield. Both the students' professional educational and non-professional use of ICT in school life be included. The report was prepared on the basis of a quantitative survey among 373 of the school pupils in April 2015.  **1.4 Objectives**  This study aims to increase the understanding of school management, teachers and pupils at KOVS for the scope and content of the professional and non-professional digital activities in the school life.  The intention is that the mapping should end up with a precise and credible description of students' digital competence, formation and behavior. Transportability digital behavior will be revealed through the students' glasses. It is important to remove the "digital pulse" for the first time in 10 years, to find a status and suggest measures to adjust the rate. Each part of the report proposes actions based on emitted student answers, which can strengthen the student learning results.  To meet the students' challenges, so it is a measure of the conclusions from this report will be communicated to the management and teachers at KOVS. The final objective is further development of the digital practice to school management, teachers and pupils. Without the teachers adjusts its digital practice, we can not expect that the students will clear it.  The project has the  long-term aims to further develop the school strategy for ICT use based on knowledge about digital practice more than based on opinions.  **1.5 Issues**  How the strength of pedagogical use of ICT at study specialisation and body by KOVS for increased learning?  Delproblemstillinger:   1. How is laerers digital class leadership according to students? 2. What veilednings and Assessment Practice has teachers? 3. The digital professional behavior students have at school? 4. The digital non-professional behavior students have at school? 5. How is the digital interaction between students? 6. What digital skills have students at KOVS? 7. What challenges are there in digital practices between the school steps? 8. What challenges are there in digital practices in subjects Norwegian, mathematics and social science? 9. What relations are there between gender and digital practice? 10. What relations are there between his pupil's motivation and digital practice? 11. What interrelationships between the digital competence and digital practice? 12. What relations are there between his pupil's digital practice and their learning yield?   We are looking for students' vision on their own digital practice and on the teachers practice. The survey does not include what teachers or school leadership thinks about these questions.  **2. Method**  **2.1 Concept Clarifications**  An *indicator* is defined as "some you can "navigate" after when to complete the education monitor ring - it can give us more insight over time on developments within the core area in the education context". "An indicator is something that popular said pointing in the direction of something, gives an indication of something or similar".[[11]](#footnote-11)[[12]](#footnote-12) Percent Roundup has indicators measured in percent that can be compared with the next exam.  *Education monitor erin*g is defined as "to periodic/continuous assess….The education ... and how it develops over time. In the smile study and in KOVS-study[[13]](#footnote-13) is the relationship between IT use and learning yield, and how this changes over time, which is in focus. It means that the students at KOVS also participates on surveys in the two upcoming school years 2015/16 and 2016/17. KOVS study means to assess, based on a student exam, how ICT is implemented to students in a micro plan.  *Digital competence*is the skills, knowledge, creativity and attitudes that all need to be able to use digital media for learning and most ring in the Knowledge society. It is the craft that bridges the gap between the skills that to read, write and rain, and the Competency required in order to use the new digital tools and media on a creative and critical manner. The competency is therefore more than skills.[[14]](#footnote-14)[[15]](#footnote-15)  With *digital behavior*(or ICT behavior) means activity that develops the digital craft. This concept is operationalized to include what activities that students do on your PC and mobile during a's worrying, as opposed to listen to learning, print on paper, oral activity, use the textbook etc.  *Digital formation*points toward an integrated holistic approach that enables us to reflect around the impact ICT has on different merits that communicative competence, social competence, students' critical attitudes mm.[[16]](#footnote-16)  *Digital practice*is a collective term that includes both the competency, behavior and formation. Digital practice should increase the digital and general craft and the formation of the eleven, but digital practice can also narrow down and reduce his pupil's competence and formation. This can happen if the eleven focus one-sided on social media, violent and unethical games and news and pure entertainment, especially when this goes at the expense of digital learning activities.  *Digital uvaner*here means not-professional activities during the school life such as activities on social media, games, movies and other entertainment.  *Digital action* includes various activities initiated by the school management and from teachers to improve students and teachers digital practice.  *Learning environment*can be understood as the total cultural, relational and physical conditions at the school that has significance for the student learning, health and well being. The education directorate adds basic a learning environment concept that understood Communication, Interaction and Conflict Solution, and where the learning environment is something that is in a mutual overlapping relation to the outer frame factors, his pupil's own prerequisites, learning yield and under the view to model illustrates: [[17]](#footnote-17)  **Figure 1: Model of factors that affect the learning environment[[18]](#footnote-18)**    *Learning results*or *learning yield* is for your convenience, defined as stage characters, both objective assessed by learning and subjective considered by the eleven themselves.  Other fagbegreper is defined later in the respective parts. That is a goal that the term use is consistent and precise through the whole exam so that the limits of what is meant by each term and what is not meant, is most clearly possible.  The report distinguishes between *digital behavior* or ICT use discussed in section 5 and *digital competence*, also referred to as ICT skills, which are discussed in section 6. Competency provides the basis for good digital practice and vice versa.  **2.2 correlation between the variables**  Problem positions includes eight independent variables. An *independent variable* is: "it [variabelen](http://snl.no/variabel/vitenskapelig_begrep) as a researcher is interested in the effect of. Also referred to as the cause variable or explanation variable. For example a researcher wish to study whether through which individuals education level affects the voting through in the selection. The education will then be independent variable. Voting through in selection is however [*avhengig variabel*](http://snl.no/avhengig_variabel)*. the* effect of independent variable examined by studying how dependent variable changes as a result of changes in the independent variable". [[19]](#footnote-19)  The eight independent variables are: class leadership, veilednings and Assessment Practice, behavior, skills, interaction, school step, fagvalg, gender, motivation and digital competence. The dependent variable is learning yield. The main problem is about the factors that affect the learning. This is a comprehensive questions and literature, perhaps best summarized by Hattie in his meta studies, may not agree on some unique Causal connections. [[20]](#footnote-20)What contributes to learning yield, means clearly many more factors than this exam looks on.  From the "analysis of student and Personnel Exam" is prepared by the learning Room in 2015 we find the following understanding of the interrelationships between different variables to explain student learning yield: "In this report we build robust interrelationships across the data sources, mainly Student Exam, VIGO-data and personnel survey. We build on a theoretical model where we think about us that good class management contributes to higher motivation and efforts of students, which contributes to increased professional most ring. This is expected to lead to better professional results, that several complete and consists and that fewer ends.  **Figure 2: Model for student learning environment**      We find coating for this theoretical model by the use of stianalyse. In the figure on the next page ses model up against own reported the characters from the student Survey, but the model also keeps when we use real data from VIGO (characters, completed and passed and closed)  **Figure 3: correlation between variables in the student Survey**    The arrows shows the correlation between the variables and all contexts has a positive sign. The variables that is located at the bottom of the model is the so called *independent variables* and measures the various aspects of the class management. It basically shows the analysis that good class management contributes to increased job satisfaction of students, increased experience of influence (right), and a strengthened inner motivation (attitudes to school work). Students' inner motivation helps to explain the students' efforts in the school work. But the efforts must also lead to most ring if the results should be better. Good class management also helps your students will experience peace of mind in teaching situation (they dare to say from), which in turn leads to better results. [[21]](#footnote-21)  Ict analysis by KOVS is built up in the same way. We have asked the students about how laerers digital class management affect their motivation, digital behavior or digital use and digital interaction with other students. This is referred to as the *efforts* in figure 2. This affects in the next batch of students' digital competence, or most ring. The sum of these explanation variables are coming to the end of the expression in his pupil's learning yield. This dependent variable is in the box to the far right. The variables can be presented in the following overview where the arrows shows how the variables affect each other:  **Figure 4: correlation between the variables**     |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  | Motivation |  |  |  |  | | Ict CLASS LEADERSHIP |  | Ict USE/BEHAVIOR | → | Ict COMPETENCY | → | The LEARNING-YIELD | | Ict GUIDANCE AND ASSESSMENT | → | Ict STUDENT-INTERACTION |  |  |  |  |   We want the student survey by KOVS should investigate how strong the students experience that each of these variables affect their final learning results.  The importance has gender, school step, fagvalg, student motivation and digital competence for digital behavior? It is a big difference between the boys and girls in relation to their data use? Other studies have pointed out that the boys have somewhat higher expertise in some specific areas related to computer games, hardware, programming etc. Will this survey find significant difference between the genders?  We also ask about the correlation between the school steps and ICT behavior. Change the behavior of the school step? Is there more convenient landscaped body students different ICT users than study special hows the end students?  Fagvalg may explain data behavior in several ways such as described in section 2.9 on isolations. Some ICT tools are not useful in mathematics, but good in the social studies and the Norwegian as samskriving and search functions. The different faglaererne has different fagkulturer as reflected in how teachers approach the use of ICT.  **2.3 Scope Scope**  All students on a study specialisation and body was invited to answer a comprehensive questionnaire (see Appendix 2). The survey contained 174 questions. Students from the other departments was not included in this stroke, so the conclusions does not apply to the entire KOVS. 373 pupils answered the survey in April 2015. It was in all 510 students who were invited to complete the survey and then will answer percentage 73%. It is a slightly high response rate that the exam results can generali seres for the entire study special hows the end and for body students.  10 of replies was not reliable when over 50% of the keystrokes were either 0 or 1 after each other that indicates that the person has only held the key down to be finished.[[22]](#footnote-22)  When the number of responses 363. | |  |   Among the respondents it was reasonably good distribution of gender and school step. This means that the respondents were representative of the universe, by that it was not a over the representation of one gender or one school step.  Answer the split on the three technical disciplines was also representative and big enough to speak about the entire specialist group. Such was the answer the distribution:   * 138 students chose to focus on the Norwegian, 38% * 137 students chose to focus on mathematics, 38% * 86 students chose to focus on a social science, 24%   This gives a good enough basis for general standardise the results to the three mentioned projects.  The distribution of the answers in mathematics live distributed as follows:   * Practical mathematics P1 or P2: 67 Reply * Theoretical mathematics, 1T: 40 Reply * Realfags or mathematics for social studies: 111 Reply * Mathematics for body, 2PY: 22 Reply   This shows that the answers that mathematics pupils have given, benefits on all four groups, so that the results are reasonable representative of all the groups that takes mathematics. These answers are not analyzed in this report.  We find also a good distribution between the three program subjects Individuals and society:   * Sociology and Social Anthropology:     48 Reply * Policy and human rights: 28 Reply * Social knowledge:      16 Reply   The answers to the question of whether you go in a researcher class has been misunderstood page in all 329 of the 363 answers have checked YES. The intention was that only the researcher classes 1STA, 2STA and 3STA, in everything about 80 students should match the here. Thus the answers do not valide and it does not make sense to analyze them.  The distribution of the learning yield is good in the two groups high (character 5.6) or medium (character 3.4). But there are relatively few students who have checked on the "low" character - only 10 students. This constitutes approximately 3% of the students. The foundation for general isere about this group students are considered as for the poor.  The survey was answered by a representative sample of students with a slightly high response rate that 73%. Then all the mentioned findings generali seres for all students on department Maurits Hansen and all body students.  55% of respondents were girls. This corresponds approximately with student mass and therefore helps not to a systematic distortion in the answers.[[23]](#footnote-23)  When it comes to this report scope, so has the number of analyzes of the interrelationships between variables been limited to those areas that seemed most fertile. It is thus many contexts that have not been analyzed and that the sharp reader can detect that a forglemmelse. In such cases a feedback will be very welcome so that the material can be further analyzed   * 1. **Quantitative data**   "Quantitative methods signify the practices where the researcher first earns itself comparable information (data) about the many exam objects and so expresses these details with the numeric…." (Silver Berg, E. 2007, p. 288). Quantitative methods include formalized principles that will lay the foundation for a stringent research process from problem formulations, research design, data selection and data analysis to interpretations and conclusions. Data will be docked to the specific variables and the applied standardized methods for data collection. The variables can thus be expressed in numeric values, and data material can be described with tables, graphical characters or statistical goals that the average, variation and correlation, and analyzed by means of e.g. variance, Factor or regression analysis.[[24]](#footnote-24)  Searching for the truth has traditionally appeared as the basic measurement and that science s legitimation. According to "the sea of Galilee imperative" (after Galileo Galileis formulation from about 1600), with research under search everything, uncover all mysteries, through penetrate the unknown and give candid explanations of everything. Research will not directed by the ruling opinions, but search true knowledge without regard to other interests.[[25]](#footnote-25) With Galilei in baktankene has this report sought to render the students' response as objective as possible, be careful with pulling far-reaching grandeur and sought to suggest actions that are closely together with the students' responses.  The advantage of  using quantitative method is that we collect responses from many students can organize them using the digital tools and express them with numbers and percentages.  Moreover as the results can generali seres for the whole group, all students who were invited to participate. We can with affordable large security our opinions about all students at study specialisation and body for the school year 2014/15.    **Figure 5: the benefits and challenges of the use of quantitative method**   * Benefits:   + Cost-effective data collection (low cost per unit that is included in the survey)   + No direct contact between the researcher and exam devices   + The answers can be analyzed mathematical/Statistics * Challenges:   + Do not know how the question and answer options are interpreted/understood by examination devices   + Little detailed data [[26]](#footnote-26)   "Cost" for the students at KOVS is that they used approx. 20 minutes of a base hour to answer. Even if the study shows a correlation between two variables, so it can only be a statistical and no reel cause context. For this reason it is important to have a good theoretical basis that have thought through with the background in previous research which contexts that are most credible and larger-than-life. Theory and model presented in section 2.2 is of high quality and have been empirically tested in several years of student exams. An advantage of quantitative analysis is that the results can generali Zeresh said to other secondary schools and compared with the next year student carbon. It is possible to set up certain hypothetical contexts which is strengthened or weakened by the students' responses. We can not "prove laws", but see a pattern and be better to propose realistic action that hit the target group better than random actions based on the goat conviction and faith. Now it is not weight added something presentation of theoretical background with Hypothesis testing, since this extents measure is a mapping of a digital practice and is not strengthening or avkrefting of a theory of digital behavior.  Plan adopted by the management of the KOVS in March 2015, is to collect data over three years, including the school years 2015/16 and 2016/17. Quantitative data collected by the use of a digital questionnaire. Spørreundersøkelsen contains in all 174 questions. See Appendix 2. The questionnaire was quality checked by teachers in the three parties involved all. It was also done a pilot study with a few students to find out if your questions were ready and are perceived as they are intended. So was the final questionnaire sent out and answered by students via it's learning. Then the processing of data with NSD State and Excel.   * 1. **The validity and reliabilitet**   "It is important to ensure good målevaliditet. Social scientists therefore uses a lot of time to develop good [indikatorer](http://snl.no/indikator) or [indekser](http://snl.no/indeks) that captures the concepts that study on a precise manner. At the same time it is important to be precise and accurate in the measurement of these indicators, to ensure a high degree of [reliabilitet](http://snl.no/reliabilitet), i.e. measures actual measure it they shall". Indicators in the KOVS survey is based on questions used in four other similar studies. So we have sought to include the questions that best possible uncovers the reality we will describe and analyze. [[27]](#footnote-27)[[28]](#footnote-28)  Reliabiliteten is very dependent on the students was set to respond sant and had patience to answer all questions. Of the comments at the end of the exam, shows that many students found the digital survey on it's was too long and that many questions was poor formulated. This reduces reliabiliteten to data material, but it was still relatively few that are not completed or only pressure 0,0,0 or 1,1,1, then only 10 answers or 3%, was rejected for these reasons.   * 1. **Qualitative data**   The results of the quantitative survey will be able to update some contexts that it may be fruitful to pursue in a less qualitative examination. We scissors from Cappelen Damm: "Signs of qualitative method:   * You get a lot of information about the few devices. * You as a researcher has near/much contact with the or the that you researcher on * The goal is to find out how a player makes sense to the world around them and what reasons you have to do what you do. * The information is presented as a text that both shows what the scientist have found out and how she interprets the findings their"[[29]](#footnote-29) .   Blikstad-Balas' studies of a few looks at young peoples' attitudes to the use of ICT on a regular GA's worrying for example new insights into the major differences that exist in looks at young peoples' attitudes to digital life. Depth interview with some students who have a "typical" ICT use[[30]](#footnote-30) within a subject area, can reveal much and give more insight with focus on some specific areas than a quantitative report can give.  **Figure 6: the benefits and challenges of a qualitative examination**   * Benefits:   + Detailed data (complementary answer)   + Can set relevant follow-up questions * Challenges:   + Time-consuming to plan and carry out   + A good part after the work   + Direct contact between the researcher and exam units (impact)[[31]](#footnote-31)   First and foremost it will cost a lot of time and resources to complete. It is an idea to let the students conduct interviews as a part of their method learning, but it is difficult for students at VG2 and VG3 to produce reports that are good enough that they can be used by the KOVS. Should a teacher complete a qualitative study, so must KOVS set of enough resources to this.  Smile-report emphasizes qualitative methods and type the following: "at the same time have SMILE-designed made it possible to use the qualitative methods as an important validation of the quantitative findings, together with the contextual interpretation of the frame. For example, we have been able to follow up his pupil's quantitative self reporting around the outside the professional ICT use, with both interview data, focus group data and observation data from the class rooms. This has created a form of triangulation and validation of the quantitative findings that difficult had made themselves do without a Mixed Method Design." hence it is difficult to obtain valid[[32]](#footnote-32) knowledge of digital practice students at KOVS only by to ask them to match in a digital questionnaire.  To any continued qualitative study made it a random selection of some students in selected academic year or fagvalg. These interviews can go more in depth and increase the understanding of contexts for some selected looks at young peoples' attitudes ICT use. A elevs selection situations, learning strategies and dilemmas can more clearly be uncovered. KOVS can also investigate the respective transportability digital practice with a quantitative and perhaps also a qualitative study?   * 1. **Building up the report**   In Chapter 3 and 4 of the report  we look at the class leadership and guidance and work environment, which according to the model in section 2.2 is the underlying variables that comes first and may explain the value on the other variables. Chapter 5 and 6 presents how much school pupils motivation, digital behavior and interaction with other students. This affects again how much school pupils digital competence that is analyzed in chapter 7 and chapter 8 looks at learning yield and ICT. The most important findings and actions are summarized in Chapter 9.[[33]](#footnote-33) Then follow some recommendations for school leadership in Chapter 10.  Chapters 3 to 7 have first a presentation of student responses from the survey with focus on to summarize the most important findings. If many students says fully or partly agreed in a claims , we have an important discoveries that we want to clearly do. The same applies to the also if students says that this is rarely or never. Then we want to answer the question: What students apply this specifically for? to answer this question, we make a cross table analysis to understand how the different student groups have black.  Cross tables contains five underlying variables: gender, school step, fagvalg, student motivation[[34]](#footnote-34)[[35]](#footnote-35)[[36]](#footnote-36)[[37]](#footnote-37) and student competence. Sixteen of the questions concerning these[[38]](#footnote-38) underlying variables. These variables have a certain explanation power for students answers on the remaining variables. To put it another way, class leadership affects how much school pupils efforts that again affect their most ring and learning results. How much school pupils efforts are both a dependent variable but also a reason variable, i.e. an independent variable that affects the learning. A dependent variable is a effect. What can explain that a specific student group has a specific digital practice?  The justification for that we check whether it is a strong or weak correlation between individual student groups and the answers from the full range of students, is to be able to insert the measures aimed at teachers and pupils in a specified group.  It is easy to identify students by gender, academic year and fagvalg. It is admittedly not so obvious to realign the gender specified actions, but it was still important to understand whether there are major differences between the boys and girls with according to ICT. We have also selected to investigate the interrelationships between the student motivation and ICT competence and their digital behavior. These prerequisites must be present for that learning to occur, namely that the eleven will learn and that the eleven has the required digital skills. If not eleven has interest in or ability to digital learning, so affects the behavior and results.  The students were asked to match for in all 158 independent variables. The answers are grouped in five main chapters:   1. Laerers digital class leadership 2. Laerers digital veilednings and Assessment Practice 3. How much school pupils digital behavior 4. How much school pupils digital work environment 5. How much school pupils digital competency 6. How much school pupils learn   Within each of these chapters in the report it is contains subchapters where it plain in footnotes what variables that will be analyzed. A complete overview of all the variables with the corresponding values mentioned in the questionnaire in Appendix 2.  If the analysis can designate interrelationships between individual student groups and digital practice (grouped by whether it applies to single live, teachers or between students), so be strengthened the hypothesis context. If however the analysis shows less than 10% difference between the groups as this is highlighted in the current route with the LF which stands for little difference. Over 10% difference provides a stronger foundation to insert an action in this area. The report contains many such proposals for measures that it is desirable that KOVS its leadership takes position to. Some of the many actions should be considered taken so to see if it gives an effect. If the next years ICT research shows a sustained change in behavior so it can be caused by many conditions where an important reason can be the enforcement of one of the actions this report proposes. But it can also be other reasons that are not caught in a future ICT exam. It is not realistic to uncover clear laws in conjunction between an independent and a dependent variable but if the groups answered more than 10% different than in 2015 and this is changed to 0% difference in 2016, so it can be that the KOVS is on track after an important indicator that school can actually affect, i.e. monitoring. But it is the many conditions that KOVS have not particularly large impact opposite.  As an attachment is located percent summary of the discoveries in the ICT exam, the actual questionnaire, adopted forskningsdesign from KOVS leadership and goodies from the students' method tasks.   * 1. **Percent Summary**   "A indicator system provides important "Map" for school owners in relation to the "Where shoe press" and which areas should take priority in the future to better learning the dividend for the students when ICT is used."[[39]](#footnote-39) indicators can be percentage that points in the direction of something. Smile report and student exam has that purposes to develop such system that summarizes the status in for example how much school pupils motivation expressed in a number that can be compared from school to school and year to year. This is very useful and more and more used in the school research, when we can better understand change and express with figures a development trend.  It is therefore prepared a report which seeks to summarize the entire ICT exam with a few key figures in percentage in the same way as the student Exam contributing. They call this a criteria based report when the emphasis on certain criteria that the expression of student motivation, job satisfaction etc. the management of KOVS has the latest years priority to present student survey to all staff in husmøter, no later than the autumn of 2016. This has created a growing awareness among teachers about the results of the survey. Then the results have been analyzed on section meetings where the single classes and their answers have been the subject of interpretation. It has resulted in interesting and fruitful conversations about the balance between the job satisfaction, motivation, learning pressure and learning results.  When the report from the student survey is well understood in laererkollegiet, so maybe could also a short summary of ICT report will get the same reception? It is different from the digital behavior depending on the subjects, and it should be discussed in the respective sections. Methodology In Percent Roundup is the same as for the student Survey; it is a measure in percent. The percentage indicates how many students who are completely/partly agreed in a claims. So we can see how strong correlation there is between the two most important independent variables: school steps and fagvalg[[40]](#footnote-40) and different dependent variable (e.g. digital time use). Appendix 1 contains the Percent Roundup.   * 1. **Isolations**   This ICT report contains only a presentation of the answers from the students who focused on one of the three subjects: mathematics, Norwegian or social studies. Other subjects is not covered by the study. The justification for fagvalget is that this is three different subjects with affordable different teaching plans, pedagogy and therefore different instruments, including digital practice. Mathematics teaching the user other aids such as Excel and Geogebra, Norwegian student oppøver skills and might be using digital encyclopedia, fagsider samskriving, while social science is more source focused.  The advantage of these three fagvalgene is that all three of these subjects goes over three years and they will therefore include students with different technical maturing degree. The number of teachers involved in these three subjects areas, is limited in contrast to for example the foreign language teachers. Foreign Languages during the partial without the use of ICT. The idea is that the option only to include ICT usage in mathematics subject to capture important aspects of ICT use general in science.  The justification for that only study specialisation and body was selected is that of the Study Programs KOVS offers, so is these two reasonable as when they emphasize theoretical subjects more than practical skills. If the exam had including cookery studies, education or music, so had to a to take into account that learning plans, instruments and student foundation is a completely different. Digital methods used probabaly differently in these subjects. Therefore was kun students at study specialisation on KOVS and body students included in this ICT study. It is approx. 500 students. Students within the other studiespesialiseringene have other educational and professional and thus ICT professional challenges as it is for extensive to include this first year.  Explanation variables that the fathers education, characters from the Youth School, gender, digital lifestyle and dependencies to ICT at your leisure time is clearly important factors to understand how learning occurs. But they are not included in this study as this is the relation KOVS cannot change on. The Variables general motivation, attitudes to school and ICT, physical plagues/toil unit is also of great importance, but falls outside the this research has the capacity to include in this instance.  The questionnaire contained 174 questions. These were considered the most important and most relevant questions about ICT and learning. It was made a comprehensive selection among approximately 400 questions used in other ICT exam and questions students in sociology class 2014/15 suggested. Moreover we must avoid getting too much data that it is difficult to process and that may not be completely relevant. It took about 20 minutes to complete the examination.  Learns and their digital behavior is not covered by this study even if we are aware that the teacher is of great importance for how much school pupils ICT use, learn no and student results.  It can be developed a partial report which takes even more fagvalg where we have student responses. Pupils have namely black on which matematikvalg they have done. Moreover students have checked[[41]](#footnote-41) for the selected programfag within Individuals and society.  [[42]](#footnote-42)   * 1. **Ethical Assessments**   It is important that the study is the total anonymous and that it is voluntary to participate. Students can at any time withdraw from the exam. It is not possible to track the answer presentation to single liver or less student groups. Nor is the questions aimed at some teachers, only against the three ". Data is stored on a 100% secure way. For 2016 can KOVS search NSD state whether the approval. Such approval is not formally required, but will mean an ethical quality assurance.  Center of ICT in education were asked to assess whether KOVS should ask the students about the characters. The survey asked not exactly character, but only above, below or medium. Their reply was that if some students do not want to enter the characters, it must of course be technically possible and they must at any time be able to pull its participation in the survey. This sensitive information is not detectable when it is not connected to a central database.  [[43]](#footnote-43)  All pupils taking part in the survey, you should know the general results by that this is presented in the base group hours at the end of the school year 2014/15. This did not do when the report first appeared in the next academic year. But just as fully should students get knowledge of the results before the next ICT exam as suggested completed in April/May 2016.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | 1. **Transportability DIGITAL CLASS LEADERSHIP**   *Digital class leadership* in technology rich environments is that the teacher must be able to "take actions two create and main tain a learning environment conductive two successful instruction", "which also includes the physical design of the surroundings, determination of rules and procedures and maintain the students' attention in the hours and their participation in activities". This is operationalized to ask about laerers ICT practice, ready management also of non-professional use of ICT[[44]](#footnote-44)[[45]](#footnote-45) and to customize the training.  When we look at the class management first so we have an assumption that the class management a the most important underlying variable that can explain his pupil's answer on the other variables.  **3.1 Transportability competency in the ICT and management[[46]](#footnote-46)**  We start this chapter with to uncover students' vision on learn' digital skills. Digital competence is a prerequisite for good digital class leadership.    Free teachers ICT management denoted by approximately 43% of students as very good or quite good. The majority of the answers is slightly in the direction of good governance. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Free teachers ICT competency is described by 37% of students as highly or very competent. On the other hand responds 23% that teachers is very low or very low ICT competent. Total Image shows that the teachers have only a bit of medium digital competence and management according to the students.  Transportability the use of ICT in teaching in the selected discipline shows that the majority of pupils have good experiences when they confirms that:  "My teachers in teaching the use of ICT in a professional and pedagogical good way" 78% completely/partially agree  "Teachers gives me the clear learning objectives for my PC use in the subject" 55% completely/partially agree  Let us look closer at the last claim:  Table 3 shows that the students are shared in the vision of the laerers digital control. Such was the answers to the other allegations also. School is happy with that only 50% of students perceive their teachers as ICT competent with clear and good governance?  **Table 4: student groups that points out that the management of teachers and ICT competency is deficient**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | Vg2 says most strongly disagrees that the teachers have high ICT competency. Vg2 is approx. 10% less than the VG1 and VG3 and approx. 20% lower than the body where 51% believe teachers is very or very competent. | | The Norwegian- mathematics or social studies students? | Samfunnsfags and Norwegian live scores with their teachers about 7% lower than mathematics liveth. | | Motivated and focused students? | Ready context which motivated students says fewer teachers missing management and competence. Difference of approx. 15%. | | Students with good digital competency? | Clear trend where pupils with high competency believes teachers have good expertise | | Students with high learning yield? | Students with high learning yield believes 10% more often than those with medium that teachers have good governance. |   The students who after illuminates better ICT competence and control from teachers, is especially students at VG2, in Social studies and Norwegian. Moreover says a part students with lower motivation, craft and learning yield that teachers need to increase their digital competency.  **The appropriate action:**   * Learn' ICT competency should be increased in several areas, especially in digital class leadership and guidance of students. It can be to use ICT more pedagogical, insert clearer learning objectives and/or be clearer on his pupil's improvement opportunities.   **3.2 Transportability management of ICT Usage[[47]](#footnote-47)**  Here we ask what students think about transportability digital class leadership. 58% say its partially or completely agreed in the claim: "We have clear rules for PC use in school hours in the subject". We go etc. and ask about learn the influence of the:    Table 5 shows that many disagree in that the teacher has taken the steering, completed a discussion about the screen use and come to an agreement. This is a clear signal about the lack of digital class leadership. KOVS established any fixed rules for screen use for some years ago, but student responses may indicate that this is not consistent followed up.  So it is a question of students wish to management and thus will accept the majority of the class under laerers leadership comes up to.  This table shows that the Opinions are divided about how much class leadership students will accept. Student mass parts toward the middle again and it is not possible to safely determine how much teacher control a class will accept. It is only a bit of weight of the opposition. As such action will get mixed reception on general base, but there are enough students who will support that teaches occasionally take control, e.g. by asking them to put down the screens or that the harness is switched off.  Only 19% corresponds to partially or completely agree: "I perceive that cheating on school samples is a problem in the subject". 69 students bothered by cheating, it is quite a lot of people and there must be the mean that there is more cheating than teachers picks up. On the other hand is 70% disagree. All in all it may not be necessary that the KOVS increases the control under the samples?  **Table 7: Students who want more digital control from teachers [[48]](#footnote-48)**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | 41% of the body is for more control, while only 31% of the VG1. The other is between | | The Norwegian- mathematics or social studies students? | Social studies students are most for management, with 43% completely/partially agree, then norwegian on 35% and mathematics at only 28%. | | Motivated and focused students? | A certain context where higher motivated students want a little more control | | Students with good digital competency? | The lower competency, as well as less interest for management. The difference between those with high and low competency is 12-15% | | Students with high learning yield? | Students with low learning yield want clearly less steering, approx. 15% difference, then those with high yields, approximately 5% less than students with medium character: 3.4 |   A part body students, motivated students, students with good ICT competency expresses that they could ask for better learning management of ICT in class room.  **The appropriate action:**   * Increased ICT management from transportability side, especially in body classes by preparing ready PC rules with students, more ICT management in class room and reduce the digital cheating on samples.   **3.3 Class Leadership and outside the professional ICT use[[49]](#footnote-49)**  The next three claims revolves around the interaction between the teacher and student:  A majority believes it is not "teacher that has the blame" by his missing digital competency.  It is a little bit more that is agreed in this assertion compared with previous claims. So poor class management get more students to think that they can be on social media, news and game than to follow learn's bad management.    Here parts student mass in 50-50 and it is difficult to draw conclusions from these answers.  All in all drawn it is not a clear picture of the students' attitudes to class management and ICT. On the one hand wanted more learning management to reduce non-professional use of ICT in the hours, while on the other side is about half of the students disagreed in that it is the teachers that is the reason that they use time on non-professional digital behavior in the hours. We have not had clear answers on what is the reason for the missing faglighet, motivation, attention and boredom. The survey has given the answer that it is not unique is the lack of good class management that is the reason.  Student goods regarding web access is interesting and should be investigated closer. To what extent want students that teaches occasionally detents harness, ask them put down the screen, observes what students moving about the net and/or provides tasks that do not involve free search on the web? A qualitative examination such as Blikstad-Balas has performed will be able to give us more answers.  However, we can analyze the answers with regard to who is the most positive to more learning management.  **Table 11: student groups who want more digital class leadership[[50]](#footnote-50)**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | On the one hand says VG1 and body less agree compared with VG2 and VG3, approx. 10% difference. The difference between the VG1 and VG2 is the entire 20% | | The Norwegian- mathematics or social studies students? | Mathematics liver is at least agreed in the claims, approximately 5% less than the other subjects | | Motivated and focused students? | LF | | Students with good digital competency? | People with higher competency is more positive to more ICT management, approximately twenty cubits% difference. | | Students with high learning yield? | LF |   The students who want more class management is especially on VG2 and students with higher ICT competency. When many students at VG1 and body do not want to be in the ICT management, so they will either take more responsibility even or have the greatest possible freedom without laerers restrictions  **The appropriate action:**   * The access to the non-professional use of ICT should be limited in a part hours think a part students especially on VG2 and VG3 * It should be technically easier for learning to turn off and on the web for the students in the course of a school hour. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **3.4 ICT use to cover how much school pupils the need for custom training[[51]](#footnote-51)**  UDIR writes that custom training is a through-principle in the entire basic training and is set forth in training law § 1-3. Here indicates that the "opplaeringa should tilpassast capabilities and the Etna Dene maximal the individual eleven, apprentice and learn the candidate". "Custom training is not a destination in itself, but a remedy for that students should experience increased learning yield. This training must be adapted to the individual elevs capabilities and prerequisites, at the same time that it is important to maintain a community for the students. It is all about to find a balance between the individual elevs capabilities and assumptions and the community that students are a part of." has students special digital prerequisites, so shall the school take this into account. Make KOVS it?[[52]](#footnote-52)  About 40% of students responds that they have found that the teacher uses ICT to custom training to their technical challenges. It is a high number of that will fit in light of how resource intensive this is for teachers. According to the pupils will obviously several teachers to adapt than we assumed in advance. Those who believe ICT should be used much to customize the training get here support in student responses.  **Table 13: Students who have received a tailored digital arrangements for learning**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | Many fewer in body and VG1 have seen this compared with VG2 and VG3. The difference is approximately 20% for body and approximately 13% of the VG1. | | The Norwegian- mathematics or social studies students? | There is a considerable difference where social studies students scores 52% while the Norwegian 34% and mathematics where 39% say its completely/partially agree that they have been special arrangements once or more  Times | | Motivated and focused students? | A certain correlation between higher motivation and more participation in the schemes | | Students with good digital competency? | Unclear Context | | Students with high learning yield? | LF | | |   Many students have experiences with Adapted arrangments. It is especially students at VG2, VG3 and social science students. It is clear that the KOVS provides custom training. On the other hand can much digital customization mean that the normal during the view has some weaknesses so that the then must be repeated in smaller groups. There are the most students at VG1 and body that has not received digital customizations.  **Actions that should be taken into account:**   * Mapping of which methods in the day used to digitally customize learn. * Map add which students who have special digital needs where the competitive good digital solutions. Students in the Norwegian, mathematics, on VG1 and body say they do not have an especially fit. * Students should regularly are invited to anonymously evaluate under the view especially with the focus on digital class leadership and be able to make suggestions to changes. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 1. **Transportability DIGITAL VEILEDNINGS AND ASSESSMENT PRACTICE**   With *Digital assessment* means the use of your PC on the samples under way in the school year and by full day samples at the end of a stage. "Raaheim also talked about formativ and summativ assessment, where formativ is learning for, while summativ is learning. He believed that there are largely summativ learning which nanoscience more at universities and colleges. Exam is an example of summativ learning. When he is in the sector and ask about why they have written exam is the answer that they must test students whether they can actually what they absolutely must be able to, while Raaheims answer is whether there are several options to test the students ability knowledge. He emphasized that there is a difference between to have knowledge of and to have knowledge about." So digital assessment can be a digital test with fixed answer options and automatically fixes and calculation of the score. But digital assessment can also be assessment for that eleven should increase their learning progress toward greater competency. So the matching experienced enough more of students as a guide. It gives them the opportunity to correct their own errors and deliver a better product, something most students prefer. [[53]](#footnote-53)  Digital assessment forms are for example receipts, tests on it's learning, web Tasks folder assessment etc.  *Digital guidance* is feedback from teachers to students under way in write processes, as an aid in to complete work before it will be considered. Advisory can occur at it's learning as messages or in the documents with the use of the track changes and notes, but it can also be used in sams print mapping tools such as Google trans or similar tool.  We choose to see on the class leadership and then laerers use of digital guidance and assessment in chapter 3 and 4 as this is the variables that form the basis for his pupil's motivation and effort. According to the model in section 2.2 is laerers behavior a reason that explains much of his pupil's digital behavior as an effect of laerers management.  **4.1 Digital veilednings and Assessment Practice [[54]](#footnote-54)**  Teachers have traditionally either written a guidance or assessment on the actual prøva with pen or taken the time to give the eleven a verbal feedback. The digitalisation of the school has opened on the ability to write Components machined into the sample answer completion, create statements with more extensive comments (such can be used to more students and several times and thus ressursbesparende for the which guides/considers), view to laereplanmål, links with solution proposal, learning resources etc. Digital guidance opens for many new solutions that can be experienced learn end for the students to avoid that the "prøva goes straight in the trash". What is the scope of the teacher uses ICT to guide students or give feedback and/or assessments?  Two of the response options was "so well that each work session" or "often". It did for the above question, but not for the following questions in section 6.1 and section 6.2. That is why we have chosen to render the first two values as "often" when it does not make sense to write that there are matching "each work session". Here we encountered on a measure challenge as the answer choices were not good enough.  Table 14 shows that 34% of students at KOVS responds that it as well as each work session or often given digital feedback from teachers. But almost as many says that the doctors "sometimes provides professional digital feedback. And the last third section is rarely or never digital guidance. The reason may be that the doctors providing guidance orally or in plenary. For students can be better or as good as a digital message.    A majority responds that digital assessment is often used by full day samples before Christmas and around Easter. We must remember that the students were asked about the subjects Norwegian, mathematics or social studies. Option to digital assessment is written on paper or orally and it can be more convenient in mathematics. The scope of the answer option "often" is slightly lower (45%) when it comes to digital under way assessments during the school year. In sum displays these answers a comprehensive digital assessment practice by KOVS. In relation to the documentation and the opportunity for follow-up, so is digital assessment better than options where the guide does not be written down or stored.  51% responds that the digital feedback (both for guidance and Assessment) is often to aid in the further the learning process.  The table shows that 79% of students responds that the digital feedback from teachers in the subject are better associated with the dimensions of the theme, topic, period than at other types of guidance. It is interesting that students are barely positive to digital assessment. We can assume that the assessment probably is relatively predictable since it is a direct continuation of the subject matter which is reviewed. When digital assessment brings order and predictability so it is clearly preferable for students and they respond thus marginally positive.  Here it had been exciting to find out how the assessment takes place and which tools are used. This can be included in the next year the examination.  The digital feedback from the teacher is often more pronounced than if these come on paper or orally about what the students work with says 47% of the students. The rest of the students believe not, when they might get a good written feedback on paper or an oral conversation with a teacher.  The digital feedback is more to help for the students says a large majority if we also takes with those who answer "sometimes". It is only 13% who believe this is not for professional assistance. For these students can it be that such a digital message is too little concrete and may seem a little "distanced development and remove".  In sum is the digital assessment practice by KOVS very good for half of the students. It is in addition a large group of approximately 30% as responds that the assessment is good "sometimes". A smaller number said that the teacher uses ICT in the matching work rarely or never. So it is an active assessment and learning practice by KOVS, and we now wish to find out whether there is a difference between the subjects or school years. It can be specific technical reasons.  **Table 18: which students reports about much use of the assessment with the use of ICT?**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | Girls or boys? | Boys believe teacher user rating with ICT 10% less than the girls answer | | School Step? | Most useful experience body with approx. 13% more a ST classes. | | The Norwegian- mathematics or social studies students? | There is a big difference where mathematics live user ICT in guidance and assessment much less than the Norwegian with approx. 25%. Social studies students using this approx. 6% less than in the Norwegian, i.e. LF. | | Motivated and focused students? | Less motivated students report less digital assessment practice as positive. The difference vs higher motivated students is approximately 15-20%. A part lower motivated students responds that digital guidance is to small help in further work | | Students with good digital competency? | Digital feedback is used as well as each work session or often says those with high competency approximately 15-20% more than those with low digital competency | | Students with high learning yield? | Guidance and assessment is used between 10 and 18% more for those with high (6 or 5) than those with medium (3 or 4) yield. Students with low gain get 20% less guidance than they on the medium yield. | | |   Here are the students asked if teachers use of ICT in feedback and usefulness of such guidance for the students. The student groups that have most dividend are girls, body students, Norwegian live, motivated, ICT competent students and those with higher learning yield. They experience that the digital feedback is of benefit. Other groups, as VG1 students and mathematics life, says that the laerers use and their advantage of digital assessment not so high.  **The appropriate action:**   * Digital assessment for learning experienced as useful for the students and should be used more under way in the learning process rather than summativ assessment at the end. * Since this is an important field especially highlighted both in KOVS Report and in the smile report, so should teachers get more training in digital under way assessment through colleague based training at KOVS.[[55]](#footnote-55) * The Use and usefulness of digital assessment should be increased to VG1-students and mathematics liveth. * A systemizing of how it's learning is used by teachers to guide and assess the students, could shed light on quantity and quality of this form of digital communication.   **4.2 Digital planning and evaluation of the under the view [[56]](#footnote-56)**  With *digital planning and evaluation* thinking we here on the use of the internet and especially it's learning to give students homework, ukeplaner and half of the plans and let the students even create your own plans with their own ways of working and measure. There are planning tools on it's learning and many on the web that can be used so that Mindmap. Digital plans can be taken up by a later evaluation and shared with other students.  The evaluation of the learning can involve an assessment of their own efforts or the effect of teaching. The digital way to do this can be as exams or tests on it's or Facebook exams. The benefit to the teacher and student is that computer summarizes and presents the answers about desirable with a statistical tool, such as a bar graph etc. option is to plan and evaluate the analogue, but as we all know, and so the papers away.  The table shows that planning with the use of ICT is not done very often, only by a third of the teachers. We notice that 23% of students writes that teachers rarely or never use ICT to increase the participation in planning.  Table 20 shows greater use of ICT at evaluation than by planning. It is the same response percent on often, but the number of students who answer "sometimes" has here increased by 5%.  We mark again that as many as 21% of students writes that teachers rarely or never use ICT to increase how much school pupils the opportunity to evaluate the learning. The relatively high response the percentage on the "don't know" may well be interpreted as it is not done, when the students do not remember it. It is clear from these two tables that planning and evaluation does not happen as often and not digital. This substantiate the student exam that through many years has reported that student participation by KOVS is far too low compared with a national standard.  All in all we can sum up with that for approximately 1/4 part of students are digital planning and evaluation not in use. The advantage of planning and evaluation in general is the possibilities for eleven to "lifting eye and get an overview of the start and end of a learning process.  KOVS is satisfied with that only 1/3 of students responds that the digital aids are often used to this priority learning work? It is conceivable that this important work is done on the "old" way on paper or orally. The drawback is that these documents often disappears under way. To Student and Teacher make a meta reflection[[57]](#footnote-57) on learning through one year by taking the plans and compare with results so can just such documents will be of great benefit.  It can also be envisaged that approximately 2/3 of teachers do not use digital assets to plan the work but uses laerebokas table of contents or give students a årsplan on paper. This plan is revised may not be systematically under way in the school year? Many teachers have no experience with that students make own evaluations and evaluate under the view with the use of the survey tools on the net, e.g. by use of it's learning, Google docs or other tools.  **Table 21: which students are invited to the digital planning and evaluation?**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | Most planning and Evaluation on VG1 approx. 8% more than for the other school steps | | The Norwegian- mathematics or social studies students? | Mathematics live answer 36% that this is used rarely or never, against the Norwegian 16% and social science 10% | | Motivated and focused students? | Not so the relevant context | | Students with good digital competency? | The lower skills as well as less reports that the students learn to use such digital tools | | Students with high learning yield? | Approx. 10% more often respond students with high characters that they participate in planning and evaluation. |   Student groups that participate in laerers use of digital tools in the planning and evaluation is especially body and social studies students. Mathematics live designates itself with extra low use. It is not as relevant to the relationship between how much school pupils motivation, skills and yield in relation to how much they think teachers use these tools.  **The appropriate action:**   * Digital planning and evaluation of the learning should be used more when many students believe this is used for small. By adding the digital plans and evaluate continuous so can progress and under the view become more flexible. This applies especially to students at VG3 and mathematics liveth. * Planning and calendar functions on it's learning can casualty clinics in new contexts, e.g. fully completed for all subjects in a class on VG1. This can help to improve predictability for the students by the use of flexible digital solutions.   **5. How MUCH SCHOOL PUPILS MOTIVATION AND DIGITAL BEHAVIOR**  This chapter starts with a brief review of the students answer 3 questions about their general motivation. Then it will be their digital efforts, or behavior analyzed. Both professional and non-professional activities are of interest in the ICT study.  **5.1 Student Motivation[[58]](#footnote-58)**  Two claims applicant specifically to uncover students' general motivation:    So we can conclude that the pupils have high general motivation. We cannot find the support to argue that it is poor motivation that explains a part of the outside the professional ICT behavior.  Then we have some questions about how much school pupils attitudes and motivation specifically linked to ICT.  70% answer: "The use of your PC/mobile helps me to understand the subject better"  65% answer: "I come faster in time with what I will do in the hours, when I use ICT"  63% answer: "It is more motivating to work with technical challenges by the use of ICT in this subject.  Table 24 shows that 67% of students are experiencing fully or partly agree that ICT enhances learning. This matches our experience, when the introduction of the PC in the class room was a motivation factor in itself. Motivated students learn more.  So they all most students experience that ICT is a great help in learning. But 1/3 is not agree in these claims.  **Table 25: which students are fully or partially in disagreement in the ICT increases motivation?**   |  |  | | --- | --- | | Girls or boys?  [[59]](#footnote-59) | LF | | School Step?  [[60]](#footnote-60) | There are the most gratuitous on VG3, approximately 5% more than on VG1 and body. | | The Norwegian- mathematics or social studies students?  [[61]](#footnote-61) | Big difference when 35% of matt students correspond partially or completely disagree to that ICT increases motivation. While the social studies is on 23% and the Norwegian only on 17%, i.e. they think ICT is motivating. | | Students with good digital competency? [[62]](#footnote-62) | Clear correlation both between digital motivation and digital competence. Approx. 38% with very good competence is totally agree in the three claims. Approx. 40% with low skills are fully or partially disagreed with the three claims. | | Students with high learning yield?  [[63]](#footnote-63) | Little difference between the groups (abbreviated hereafter to LF). It means less than approx. 10% difference between the students. We have chosen to set the limit for high signifikans on 10% difference. |   Students who are fully or partially disagree in that the ICT is to help in the learn no, we find the most among students with lower digital skills, among VG3-students and mathematics liveth.  56% of students are partially or completely agreed in the following claims: "I know what is learning objectives for each hour". Therefore is only a little over half of the students sure timens target, while 40% is partially or completely disagree. It is learn the responsibility to clarify what students will learn in an hour, and here have teachers is clearly the potential for improvement according to the students.  **The appropriate action:**   * For a part pupils can focus more on digital learning strategies increase motivation. They need to make the experience that ICT is to help to understand, get up and running more quickly in and/or resolve technical challenges. Digital resources must be seen as relevant, give a plus in relation to non-digital methods, provide increased most ring, better results etc. * Teacher must clearly do learning objectives for the hour at startup   **5.2 how long the user students ICT to professional tasks**? [[64]](#footnote-64)  Your answers indicate that roughly 45% of students use 7 hours or more per week to digital professional activities on the PC in the school life. It means approximately 1 ½ hours per's worrying. We assume that this applies to only one subjects,[[65]](#footnote-65) and then we can stop us to ensuring that the technical use is very extensive when subjects are a maximum of 1 ½ hours per day. Your mobile phone is used very little to professional activity. [[66]](#footnote-66)  **Table 27: which students use ICT much to professional activity?**     |  |  | | --- | --- | | Girls or boys? | LF | | Class Step? | Body students using ICT much more than the VG1 students, 60% vs. 34% use 7 hours or more to the professional activities. | | The Norwegian- mathematics or social studies students? | Social studies students use ICT a part more than mathematics live, 53% vs. 37% use 7 hours or more to the professional activities. The Norwegian live answers in the middle. | | Motivated and focused students? | No clear correlation | | Students with good digital competency? | 47% of students with a high level of competence against 14% of students with low competency using ICT 7 hours or more. | | Students with high learning yield? | LF |   Body students, social studies students and students with a high level of competence using ICT more than others. Vg1 students, mathematics liver and students with lower digital competency using ICT less to professional work. Mathematics live general reports less use of ICT, perhaps this is more fagbestemt than lack of competence?    **The appropriate action:**   * Teachers should increase the scope of professional ICT use, including digital tasks for VG1 students general so that they get more digital experience.   **5.3 most used professional ICT Activities[[67]](#footnote-67)**    Students use ICT most to:  Analyze and assess the subject matter (e.g. to solve puzzles in the subjects) 58%  Understand and apply the subject matter (e.g. visualization of theoretical professional material) 54%  Remember and repeat the Concepts and definitions 51%  This shows that pupils have an extensive ICT use, where ICT is used for several learning activities from the reproduction of the analysis.    This table will say to us that the majority of pupils have the need for classrooms with textbook parts of or the entire time. But it is also relatively many students who wish to use ICT even more, 33% constitute 126 students. Half of these students, or 16%, say they can do it all in the subject only by the use of ICT. This can be interpreted as that they want to clear all the way without textbook and get under the display on the web. An alternative interpretation is that the teacher has designed the learning so that students focus on digital tasks. For example if the teacher user NDLA all the time, and there is no use for the textbook.  **5.4 less use of Textbook[[68]](#footnote-68)**  When so many students are so happy to use the Internet in its learning, so might mean that learn the book is on the way out, and it is therefore important to ask the students about their relationship to learn the book.  Table 29 shows that half of the pupils have the need for textbook, but just as many will survive without. So textbook is not 100% obvious in all classes and in all subjects. We immediately sees on who can other such vices(4) learn the book.    Almost 40% of students believe they in high or in quite high degree does not need to be present at school. It means that they have a good impression of the digital learning resources and think they can learn the subject on their own by using the digital aids. When many students want such learning arenas then open it for some questions:   * How should the school select out which students who will be taxd from the requirement of presence? * What makes it with the classes and with the school that a part students are not present? * These students actually ready to acquire the subject on their own? * The differences between the digital learning in various subjects?   Both NDLA and Web School in Buskerud offers such learning methods. Part-time students and students who takes up again subjects can use these offerings and achieve greater flexibility and the opportunity to combine studies, job and leisure.  **Table 31: which students successfully to learn only with the use of web resources and without learning the book? [[69]](#footnote-69)**   |  |  | | --- | --- | | Girls or boys? | Boys is 5% more positive to clear only with ICT without Textbook | | School Step? | Body and VG1 is most positive when 25% and 18% respectively say yes to that ICT can solve all professional needs. Vg3 and VG2 is clearly more skeptical | | The Norwegian- mathematics or social studies students? | 16% of the Norwegian students say they can make the most of the subject without learn the book. | | Motivated and focused students? | A clear correlation between high motivation and the desire for web-based teaching | | Students with good digital competency? | The better digital skills, the more independent of the textbook and more web-friendly | | Students with high learning yield? | Those with low gain will make more professional work with the use of ICT. Otherwise LF. |   The student groups that are most positive to the digital display without the use of the textbook is generally boys, Body, VG1, the Norwegian live, students with high motivation and students with low gain. The latter group (which we must remember the are quite small) is perhaps tired of classrooms and teachers and will therefore try alternative learning with the use of the school. Students with lower digital competence has obvious benefit of using learn the book.  The public schools and KOVS adds up to high presence and use of the textbook, but there are many students who do not believe it is necessary to get at school and have the textbook to learn. There is a growing challenge for school that barely many students want an alternative learning arena and methods.  **The appropriate action can be:**   * Consider the reduced use of learn the book and more ICT use in VG1, for body students and Norwegian liveth. It can mean that the NDLA should also be used more in these student groups. * The school should consider how they can meet students in norwegian and social studies with high motivation and good digital skills, that wants to use multiple digital aids without attendance at school.   If many of the active, motivated students not participating in the class room or in the social cultural environment at school as this can have a negative spillover effects as this is the students that creates a positive learning environment also for those with medium or low motivation and increase their job satisfaction and perhaps also work efforts.  **5.5 Use of it's learning [[70]](#footnote-70)**  The answers shows that approximately half of the students using this communication platform 1 hour or less per week in the relevant trades, i.e. in the slice approx. 12 minutes per's worrying. Many students have the van to check continue on it's to read messages and assessments from the teacher and perhaps download useful documents. And we must remember that it's not a pedagogical platform, but only a facilitate learning. Nevertheless, 12 minutes per day is termed as limited use considering how many resources subject teachers and school has been added into it's learning.  Can Low use explained by the quality of the content? It does not so ago about 70% believe that it's is useful as communication platform, fagrommet in the selected subject are tidy and well organised and also that it's works well as a pedagogical tool.  The low use of it's is an important findings and the next question is when:  **Table 33: which students use it's learning Lite?**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | LF | | The Norwegian- mathematics or social studies students? | Mathematics live user it's a part less than social studies students 44% vs. 63% User 1 hour or less on it's per week | | Motivated and focused students? | Low motivated students use it's a part less than highly motivated 70% vs. 40% User 1 hour or less on it's per week | | Students with good digital competency? | Students with low competency user it's a part less than those with high competency 64% vs. 51% User 1 hour or less on it's per week | | Students with high learning yield? | No clear correlation |   The table shows that those who use it's at least, is mathematics live that may not have or see the need to use it's, or that their teachers not using it's active. Then low motivated students who may not want to read messages from their teachers. Furthermore user students with less ICT competency it's learning little. They may not have knowledge about how it's can and should be used.  Why choose pupils to use it's so small?   * Teacher does not use it's, but choose to communicate via other channels * Learn the missing knowledge about the use of it's and do not exploit the platform * It's that tools do not contribute to orderliness and structure and is not optimal * Students missing knowledge about good use of it's * Students choose to communicate with teachers and find professional material in other ways   The first three claims have not this exam any answer on. But on the last two are the reason to respond Yes for a part students.  **The appropriate action can be:**   * Increased focus on professional ICT use on VG1, especially in the Norwegian student where many students scores low on the use of digital resources * Increased focus on more use of it's to pupils with low competency that say its low motivated. They may want to be able to follow the better with on what happens in the subject and which documents and resources teacher has laid out? It is an unused potential in it's for maths liver so they get more advantage of it's? * Increase the quality/relevance/currentness of fagsidene on it's so that students and teachers not rather select to use e.g. Facebook as communication channel and to share documents etc. * Increase the use of it's as pedagogical aid by adding the lectures, organise folders directly related to the teaching and assessments etc.   **5.6 advantage of it's learning?[[71]](#footnote-71)**  Mapping of the use of it's learning shows that it is used the most to the following activities (often or as good as each work session):   * Deliver Receipts: 89% * Check the homework: 80% * Check the characters: 76%   Activities that are medium used is to use links, communicate with teacher, do test/exam, work with laerers fagressurser.  Activities that scores at least (rarely or never) is:   * Communicate with other students 83% * Use the calendar/planner 61% * Make folder matching 37%   **Table 34: What do the different student groups about the usefulness of it's?**   |  |  | | --- | --- | | Girls or boys? | There is a major difference between gender on the question of whether it's is useful. 22% fewer of the lads look advantage of it's. | | School Step? | Vg2 students are most positive to it's as communication and pedagogical platform, approx. 10% more than the other. | | The Norwegian- mathematics or social studies students? | Approx. 10% fewer mathematics liver is completely or partially agree that it's is a good communication and pedagogical tool. The organization of the it's shows LF. | | Motivated and focused students? | Among students who do not want to learn the most, there are many students who did not find that it's is a great tool to communication and pedagogy. | | Students with good digital competency? | LF | | Students with high learning yield? | It is approximately 15-20% fewer of those with medium yield that responds that it's is useful as learning platform. |   The suitability of the it's as communication platform and pedagogical tool is considered to be somewhat lower of boys, mathematics liver and students with medium or lower learning yield. It is a paradox that KOVS and teachers use a lot of resources to update the it's, while students may not be open to check messages, assessments, receipts etc.  **The appropriate action is to:**   * Teachers should consider adding out fewer resources on fagsidene on it's learning so that it becomes more affordable for the students to become familiar with and make use of some resources rather than to ignore fagressursene so that often happens in the day. * Assess Whether The functions on it's used small should get more attention to increase the use so that use of the planner, calendar, folder assessment, lessons, use learning objectives and facilitate the communication between students (which now takes place in other locations). Perhaps teachers can use it's more actively in toward the student learning? * Do the developers of it's aware that students use is limited and that increased quality for more pedagogical use is required if not it's shall only be a documentation platform.   **5.7 which digital assets user students? [[72]](#footnote-72)**  *Digital assets* are operationalized to include all conceivable applications and apper students user on PC and mobile. Here is included for example the use of the Word, One note, digital search to samskriving and use of e.g. NDLA.  This can be interpreted as that the simplest and traditional aids most used. We can assume that the "to google questions" to find answers and so present with Powerpoint is very popular. Many tools have high response rate, but it also shows that many important digital aids are in limited use such as instruction videos, online newspapers and fagsider.  It is important to note that NDLA use is at 27%, while 39% of students answer rarely or never. This is it is important to note since it laid down the major resources in the development of the NDLA also from KOVS his side. Other web resources that scores the lowest is:   * Apper on mobile: 83% uses this rarely or never * Mindmap 83% * Translation program 62% * Samskriving on net 63% * Fagsider on net 60% * Publishers' web pages 56% * Dictionaries 52%   With dictionaries thinking of e.g. iFinger Search, and this is enough most in språkfag. This exam has not focused on foreign languages and can explain the low percentage of students who crosses the dictionaries. Translation program that Google Trans scores 62%. It is good that this is relatively rare when it is not a quality assured way to understand jargon.  It also mentioned different "new" resources that are not used as much of the students so that Mindmap, Google docs for samskriving, professional web pages, forlagets web pages and Excel. This should be a source of concern as this may be said to be very useful tools in any written subjects as social studies and Norwegian.  **Table 36: which students use professional search and encyclopedia (Wikipedia and Google) much?[[73]](#footnote-73)**   |  |  | | --- | --- | | Girls or boys? | Girls answer "often" approx. 7% more than the boys | | School Step? | Vg2+VG3 user fagsøk approx. 5% more than VG1 and body. Vg1 designates itself at less use of digital encyclopedia. 11% less than the VG2 and 20% less than the body and VG3 | | The Norwegian- mathematics or social studies students? | Clear Difference: where 93% and 78% of social studies students responds that they use these 2 resources every hour or often. The Norwegian liver is on 62 and 81%, while mathematics liver is much lower on 31 and 23%. | | Motivated and focused students? | LF | | Students with good digital competency? | Some less professional use for those scores with his skills as lower. | | Students with high learning yield? | Completely clear correlation between the corresponding low character and responds that they use digital resources small. No clear difference between those with high and medium learning yield |   The scope of the use of digital resources in the three selected subjects shows the differences that can hang together with the way it under the displayed and learned differently. This is clearly in web usage. It is logical to assume that the professional mathematics resources are less used because they are less suitable in this subject. The students who use these digital resources at least, is also VG1 students, those with less digital competence and those with low learning yield. When a student has several or all of these four characteristics, so it is a good reason for learning to be extra attentive and to contribute to the eleven user PC a professional adequate.  **The appropriate action that should be considered:**   |  | | --- | | * Increased training and focus on the important digital educational resources used in little day, that Mindmap, use of fagsider and publishers' web pages. * NDLA should state is in several subjects facing several students when many not useful make up this large digital resource * Increased use of digital sams print mapping tools such as Google docs considered important pedagogical training which should be used more in Social studies and Norwegian. So can students immerse the quality of their cooperation and e.g. take some decisions along the way and give each other consecutive corrections and improvements. * Students with low learning yield should be focused on the increased use of professional resources such as more and better digital search beyond Google and use of Wikipedia. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **5.8 how much school pupils digital concentration and tranquility with ICT**[[74]](#footnote-74)  We are interested in to find out what positive effects much digital behavior can provide. It can be so that the learning is more focused and intensive care when students jobs on your PC?  This table shows that many disagree or know not. I.e. it is a mixed picture where many agree that the PC use means more peace, while others reporting on a certain scope of digital noise in class room. This is a disadvantage of much use of ICT in learning.  **Table 38: which students think ICT gives less ro and more interference?**   |  |  | | --- | --- | | Girls or boys? | 10% difference between the genders where the girls believe they get less ro with ICT | | School Step? | Vg2 and VG3 is most disagreement in the ICT provides ro (46% or 41% disagree), while VG1 and body only answer to 31% or 34% disagree. | | The Norwegian- mathematics or social studies students? | Only 41% of students with focus on mathematics liver is agree that ICT provides more concentration, while there are 59% for Norwegian and social studies. | | Motivated and focused students? | LF | | Students with good digital competency? | LF | | Students with high learning yield? | Of those who writes that they have a low learning yield, so it is between 54 and 70% that is partially or completely disagree in that ICT provides more peace of mind. |   The students who believe ICT creates turmoil and interference is especially girls, VG2 and VG3, mathematics liver and students with low learning yield. And vice versa believe boys, VG1, Body, Norwegian and social studies students that ICT provides more peace and concentration. The latter group is in other words students who prefer the PC use as it gives peace in the classroom and in them yourself.  **Here you appropriate measures must be:**   * Teacher should guide ICT usage in class room and regulate our screens and time on the web more often than in the day, when continuous availability reduces the concentration of a part students.   **5.9 outside of professional ICT use?[[75]](#footnote-75)**  *Outside of professional ICT use*: With inappropriate behavior means all behavior that does not lead to learning, we are thinking specifically of entertainment and distraction on your PC so as to use social media, search for news or play digital game that is not a part of mathematics and also not contribute to professional learning.  Time Per Week in school time when your PC or your mobile phone is used for outside professional activities on Facebook/Instagram/Snap Chat shows that 58% of students uses less than 1 hour per week, i.e. approx. 12 minutes per day to this. This shows that the majority of students reporting forholdvis very little time spent on social media in relation to what we had expected.  Table 40 shows that 73% responds that it will go with up to 1 hour to see on the news in the school life. This is the not-professional related when the question was that outside professional activities. 10% correspond over 4 hours per week, approx. 50 minutes per day. It is the much when it arrives on top of the other non-professional activities.  Table 41 shows that the time to the film per week is less than an hour for 84% of the students. Only 5% uses more than 50 minutes/day for film. The students was then asked about the time the scope for other non-professional activities and 88% User 1 hour or less on Skype and 90% User 1 hour or less on games. All in all, this outside professional activity could be described as moderate.  Moreover says 73% of students that they use 1 hour on other activities without that this is specified. It had been interesting to know which activities it is.  Now we shall see on three different time use; the with a medium consumption, those who spend a lot of time on outside of professional behavior and to the end they that responds that they never use time on this.  **5.9.1 Medium non-professional ICT use**  Answers must be understood so that the pupils were asked to estimate the time on each of the five mentioned activities. Approx. 78 % of students said that they use only 1 hour or less per activity per week it means 6 hours in the week, representing 1 hour and 20 min. per day. Now we have a realistic picture of how much school pupils many non-professional digital world that match reasonably well with the we assumed in advance.  An average student is located in the 1-3 hours non-faglighet per day. Unfortunately we have not more accurate answers, and it is very great difference to use 1 hour and use 3 hours per day. We must remember that the students were asked if the entire school day, breaks included. Time set aside for breaks are 60 minutes[[76]](#footnote-76) and will then have a student who answers 1 hour, may only use the breaks.  **5.9.2 High non-professional ICT use**  What with the students who are very dependent of non-professional web use at school? We see above that they who answer over 4 hours per week, i.e. approx. 50 minutes per day on social media is 17% of students, 63 students. More than 50 minutes daily on the news reported by 10% of students, 34 students. These students can in addition to spend a lot of time on the news, film, Skype, games and other that were the other five activities where they were asked to assess the time. When we asked about the total time on non-professional activities, so we can not draw a holistic view of these pupils. But let us say a part of these students are in the group students who answer they use of 1 hour of the news per day, in all 22% of students, and over 1 hour of the game, in all 5%, so is the total time to non-professional activities 3 hours and 20 minutes per day or half of the school life. It is almost half of the school day considering that an average's worrying is on 7 ½ hours. So much time to outside professional activity affects clearly the professional learn. So little time on professional digital activity is clearly worrying.  **Table 42: which students use more than 4 hours per week on Facebook/Instagram/ Snap Chat and/or on the news?**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | Furthermore older, the more use of both social media and of the news. For social media is the change from 10% on VG1 to 24% for VG3 and body. The increase in the time spent on the news is only 7%. | | The Norwegian- mathematics or social studies students? | Mat-students answer 10% less that they use 4 hours or more on Facebook etc. than the other two fagvalgene. News answers social studies students 7% more than the other. [[77]](#footnote-77) | | Motivated and focused students? | Of gratuitous students answer 33% that they use more than 4 hours on social media in the week, while among the motivated it located on 18%. The gratuitous user 0 time on the news against 10% for the motivated | | Students with good digital competency? | LF | | Students with high learning yield? | LF |   Students who is 4 hours or more on the three mentioned social media is especially VG3, Body, unmotivated und students and social science students. The former three we assume is school rent, simple and straightforward. the assumption that much non-professional activity goes out of learning the dividend could not be verified.  **5.9.3 Low non-professional ICT use**  Let us finally see on the group of students gazing up at the away non-professional ICT use completely. How many answer "never"?  So here we can see that it is also many students who does not tempt at all to entertainment on the web in the course of the school day. But social media will be checked by over 90% of the students.  **Table 44: which students never use time on social media, film or play?**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | There are the most VG1 students who crosses the never on social media, but the difference to the body is only 5%. Vg1 is more on the game, while the body is more on the film and news.  This reflects that different age means something for what kind of non-faglighet students abroad. | | The Norwegian- mathematics or social studies students? | Mat-students answer 13% more often that they never watching movies. The Norwegian Live is located approx. 10% over the other subjects in that they never play in school life.  Otherwise LF | | Motivated and focused students? | Completely clear correlation when high motivation means that eleven never use time on social media, movie or gaming. | | Students with good digital competency? | Very clear correlation between the competency and zero time spent on not mention-professional activities. | | Students with high learning yield? | LF |   Group students who answer "never" on these three questions are on VG1, mathematics liver (movie) and highly motivated students with good digital competency. It is worthy to note that it is not a no clear correlation between no entertainment activity and learning yield.  **The appropriate action:**   * Restrict access to ICT. * Visible make the total time for a normal student and especially for "Super Users" as the obvious is much on your PC without a professional focus. This applies especially to students at VG3, Body, social studies students and unmotivated und students.   **5.10 consequences of outside-professional ICT use**  This follows questions about how much school pupils not-professional ICT use in the school life. Here showed the answers that:  The majority of students resets itself partially or completely disagree with the following five statements:  I am so dependent on PC and mobile use that i must use it to non-professional activities: 78%  Use of the PC/mobile is not useful to learn skolefag: 67%  Outside the professional PC use in school hours goes out over the assessment of the subject: 60%  Use of the PC/mobile interferes with me at school: 59%  The first four claims shows that the majority of students do not experience outside the faglighet as a major problem. Let us look a little more closely on the answers to the last claim:  Table 45 shows that it is almost as many as is agreed including not know who disagree in their claim. This shows that even if not ICT creates a big problem for learning how to teachers often argue, so know still half of the students that social media, entertainment and gaming goes out over and reduce the learning results.  For those that are totally agree that a lot of non-faglighet go out of the characters, so is the 17% of students with character 6 or 5, further is the 10% with character 3 and 4 and 10% for those with character 2. We have set limits for significant correlation by 10% difference, so 7% (which was 8 students) is too small to conclude with a clear context.  It is not large negative effects of outside-professional ICT activity according to over half of the students. But half of the students acknowledge that it still affects learning enjoyment. What is the reason that so many students do not know on the negative consequences of much non-professional ICT activity? The responses can be interpreted in three ways: Students under report intentionally, students outside the professional activities is much less than assumed or that there has been a self-regulation over the last few years after it has been much focus on students as "Face booking" through many hours.  First interpretive: Students respond strategically when school ask them about the "abusing" PC resource to the entertainment etc. in the school life, because they want to avoid that school adopts measures that will help prevent them in to spend time on non-professional activities. Students can be understood as rational agents who want to ensure their privileges by to be very careful to specify that they really uses a lot of time on social media, games and other. This can lead to under reporting and erroneous deductions.  Another interpretation of the answers is that most students actually uses less time than assumed to such activities and that we succeed better than assumed that school in to regulate how much school pupils not-professional ICT use in the school life. It means that the teachers and pupils have been better to lay down the screen under non-digital activities. It is only a small group of students who are dependent on the net entertainment to get through the school days.  A third interpretation is that his pupil's use of social media mm actually has gone down as a response to that many teachers, parents, media have pointed out the negative effects of excessive ICT availability in class rooms.  But back to the half of the students which according to Table 29 recognizes a part negative consequences. Who are they?  **Table 46: Students who agree that the outside-professional ICT use has negative pages**   |  |  | | --- | --- | | Girls or boys? | Boys corresponds approximately 10% more than the girls that ICT goes out over the picture should emphasize. Approx. 5% multiple responses from the boys that interferes with ICT is not useful or that they are dependent. | | School Step? | It is clear difference between school step and experience that learn will be adversely affected: VG1 answer 25%, VG2: 26%, VG3: 36% and body 30% completely/partly agreed in the negative effects. The same image drawn in the answers about ICT interferes with where the VG3 corresponds to 10% more partial/totally agree than VG1. Body stands out when 10% more than in ST classes responds that the PC is not useful in learning | | The Norwegian- mathematics or social studies students? | Clear difference where social studies students stands out from the Norwegian and mat (that corresponds quite equally) by approx. 15-20% corresponds to partially/completely agree that ICT use goes out over the matching, learning yield and that they are so ICT dependent that it affects school work negative. | | Motivated and focused students? | Among those that are completely agree that they are dependent on non-professional ICT is the 10% more that is completely/partially disagree in that it is important to have an understanding of the school subjects. | | Students with good digital competency? | Weak correlation between the higher competency, as well as more aware of the negative sides of much non-professional ICT use | | Students with high learning yield? | A bright and clear correlation between how much school pupils learning results and agreed that a lot of non-professional ICT use go out of character. The lower the character of the the more agree in the negative consequences. The lower character as well as more clearly that the PC is not useful in learning the work. It is up to 20% difference in the answers between students with high and those with low learning yield. |   The groups that designates itself when they marks that learning yield becomes worse with a lot of non-professional ICT use, is boys, VG3 and body pupils more than the younger students. Further is social studies students more concerned about the negative consequences than other technical groups. More motivated students and professional strong students are more aware of the loss of learning at much non-professional ICT.  Tesen that ICT forces the professional strengths and slightly older modnere students most, therefore can be confirmed.  **The appropriate action:**   * Increasing awareness opposite VG1 students specifically about that there is a negative correlation between learning yield and outside the professional ICT use * A part social science students will have a good amount of increasing awareness on an adequate ICT use, when they report about a part negative consequences of much non-professional use * The group of students who are very much on non-professional activities on the net should initially be better than today and earlier. How can the negative effects at low learning results perhaps are muted.   **5.11 how much school pupils desire increased faglighet[[78]](#footnote-78)**  76% of students to say its partially or completely agree that they need to take more responsibility to reduce its outside the professional PC use in hours. The study shows with these answers a relatively clear picture of the many school children who even want to take a responsibility to reduce own entertainment and distraction in hours. They will even have control and does not wish that school teachers and set the necessary limits. They will take responsibility for your own learning.  **Table 47: which students will even take more responsibility to regulate the non-professional ICT use?**   |  |  | | --- | --- | | Girls or boys? | Boys respond 10% more often than girls that they need to take more responsibility for their outside the professional ICT use in the Hours | | School Step? | Furthermore older, the more ready to take responsibility, 10% difference between VG1 and body | | The Norwegian- mathematics or social studies students? | Mat-students answer 10% less completely/partially agree that they must take responsibility in relation to.  Non-professional ICT use. Perhaps because they use the PC less in matt hours? | | Motivated and focused students? | LF | | Students with good digital competency? | The lower ICT skills as well as more clearly on that they will take responsibility to reduce the not-professional ICT use | | Students with high learning yield? | LF |   Most students will self regulate their PC use, and there are many students who want to take more responsibility for their non-professional use, especially boys, VG3 and body and students with lower characters. This is enough students who have repeatedly been notified about and even recognizes a need for more self-regulation. But they will do it without laerers active guidance and limit setting?  **The appropriate action?**   * More focus on VG1 how much school pupils compared to non-professional ICT can help them be more effective learn end * Map add which students starting on VG1 with deficient ICT skills with the use of digital mapping tools * Grasp the students with poor ICT skills when many of these will take more responsibility to come across on professional ICT use. But when they need early guidance and increased skills. |  1. **How MUCH SCHOOL PUPILS DIGITAL INTERACTION**   In this chapter we see especially on the class environment and how medelever affect each other on the good and bad in technology dense classrooms. *Digital student collaboration* means interaction with the use of ICT tools, including to guide each other and share sources.  **6.1 Digital student collaboration[[79]](#footnote-79)**  The students should answer some claims about digital impact between students in the subject compared with other type of cooperation.  Many students answer that they often cooperate digital with other students in the subject (82%). Furthermore Black 62% that: "I learn more of the subject when i cooperate digital with other students than when I am working alone". This is a confirmation of a socio-cultural laeringssyn. "A sosiokulturelt laeringssyn builds on an assumption that the learning takes place through the use of language and participation in social practice. This perspective on learning emphasizes the importance of social frames around human actions".[[80]](#footnote-80)  We see in this table that the number of students who are positive to a closer, more binding cooperation is significantly lower. Here we see that the entire 32% is completely or partially disagree. There is also a large group of "don't". It can be interpreted as that half of the students are skeptical to medelevveiledning and to that this will be digitally. Here it is natural to refer to the report 21 Century learning skills[[81]](#footnote-81) where the student cooperation is described as a step-by-step increasing ability to first sharing of a common product, so take important decisions in the community and then to actually samskrive.  On the other side as is the other half of the students positive to more cooperation and think it is better to get comments from other students digital than orally. So it opens the for more of such activity that today is done little of.  This table indicates the students' experiences with laerers digital provisioning. We see here the same as in the chapter on class management, that teachers is not very active in his role as the driving force for more digital collaboration. Teachers have a special responsibility to facilitate so that pupils can take advantage of each other on the digital arena. Therefore we ask:  **Table 51: What student groups believe that teachers not facilitate digital student cooperation?[[82]](#footnote-82)**   |  |  | | --- | --- | | Girls or boys? | Girls corresponds to 8% more agree than boys in missing provisioning | | School Step? | LF | | The Norwegian- mathematics or social studies students? | The Norwegian and mat live answer 14% more often that learns not facilitate than samfunnsfags-students. | | Motivated and focused students? | LF | | Students with good digital competency? | The lower the craft the more agree that the teachers not provision, the difference is at 31% | | Students with high learning yield? | Students with low learning yield say its very agree that the teachers not facilitate |   Students who do not experience that the teacher facilitator for digital collaboration is especially in the group girls, Norwegian live, mat live, students with low competency or/and low gain.  It is an important findings that students who focused on the Norwegian student in his answering, believes that learning is not enough digital active. The reason that the Norwegian teachers is particularly focused is that digital process-writing where students guides each other and sams printer has a potential that are not being used as much in the day. Mathematics live also says that their teachers not invites to more student collaboration, and here it should also explore how pupils can collaborate more digitally. When multiple student groups after ask more professional digital solutions, so it is important to take such signals on the severity of the doctors it applies.  **The appropriate action:**   * Teachers should facilitate increased use of digital professional feedback between students. Moreover they should teach pupils to guide each other. * Teachers in the Norwegian student should develop skills of samskriving, guidance and other digital collaboration between students as it is a savn according to these pupils. * The Challenge also goes to teachers in mathematics where students responds that there is not much digital student collaboration.   **6.2 Digital medelevdistraksjon[[83]](#footnote-83)**  With distraction we think that some students interferes with other when the driver not-professional activity in the hour, but also in the professional work can be disruptive what eleven at the side of or in front of the driver as the audio noise-can be a problem.  In Section 5.8 we analyzed about the pupils will greater concentration and stationary when they use ICT. The conclusion was that there was a lack of RO. But it can the caused by several conditions and we will now see especially on noise from medelever.  Table 52 shows that approximately 1/3 of students experience interference from medelever as a problem, while the majority do not agree on these claims.  These answers confirms the impression from the previous table. Most disagree in that their own outside the professional PC use in school hours goes out over other how much school pupils learn in the subject when partially or completely disagree is on 65%. So 2/3 of students believe they are not disturbed or interferes with other. It is the last third part as teachers should and must focus on, when they experience digital glitching in the school each day.  **Table 54: What student groups experience that other students creates digital fussing?**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | LF | | The Norwegian- mathematics or social studies students? | Social studies students are much more agree/partially agree that it is a digital student-unrest in hours. Difference of 10% | | Motivated and focused students? | The more motivated the more disturbed by digital unrest, difference of approximately 10% | | Students with good digital competency? | LF | | Students with high learning yield? | LF |   Two student groups experience digital artifacts and fussing from other students (e.g. to play, be on social media or see on the news): Social science students and motivated students. We can see for us classroom situations where many affordable highly motivated students samples as well they can to follow with, while some others have screens up and driver with something completely different that distracts students who are seated at the side of or behind the person. The collective experience of a community of learning will be impaired and in the worst case can one or a few students with missing digital formation disruption of a learning environment. Students who is disturbed, can rightly responsible do teach for poor digital class leadership.  **The appropriate action:**   * Learning should be aware that there is digital elevuro according to 1/3 of the students. This applies especially in the social sciences classes. Motivated students expresses that they vex over the distraction from medelever. Wobbly students should be guided by the teacher to more adequate PC use.   **6.3 Digital bullying[[84]](#footnote-84)**  With digital bullying meant when someone repeatedly plagues a person with unpleasant contact on the mobile, social media, messages or images on the Internet. What is the scope of the digital bullying by KOVS?  In everything meets 14% agreed and thus have experienced to be bullied or even noticed other exposed for such serious nedvurdering over time. Thankfully the response rate somewhat lower when it comes to whether they have even been exposed to digital bullying this school year: 9%. But if the school's goal is 100% bully freedom, so it is still a piece again, specifically 9% again to this goal is achieved.  **Table 56: Students who have experienced digital bullying**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | LF, but at least on VG1, 7% more on VG3 and body. | | The Norwegian- mathematics or social studies students? | Experienced most of the social science students and 10% more than for the Norwegian and 13% more than for the mat-students. | | Motivated and focused students? | LF | | Students with good digital competency? | LF | | Students with high learning yield? | LF | | |   The survey makes us aware that there is something digital bullying for social studies students.  **The appropriate action:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | * School should increase focus toward digital bullying. The students even points out that this applies to most of the social science students. * The project "digital net vett" achieves focus on digital bullying by older   Students talks about this with younger students |  |  |  |  |  |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | | | | | 1. **How much school pupils digital Competency** |   In the previous chapters we have analyzed students answers to some reason variables: digital class leadership, laerers guidance and Assessment Practice, how much school pupils digital behavior and interaction. According to the model in section 2.2 comes students' digital competence as an effect of the aforementioned cause variables. The idea is that his pupil's increasing its digital most ring in the course of further education based on laerers class management and their own digital testing, both alone and in interaction with other students.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | * 1. **General digital practice**   Digital practice is a collective term that consists of his pupil's digital skills, behavior, formation and skills in the use of it's learning. This should we analyze in the coming parts.   * 1. **Digital competency or most ring[[85]](#footnote-85)**   The survey does not include general school skills, but ask about general digital skills, skills in the use of special digital tools and skills in the use of it's. County municipality pay much in the licenses for the use of e.g. Geogebra and for communication platform it's learning, which has been used on KOVS in 10 years. KOVS uses many resources on the training of teachers in it's, but students have knowledge of it's, we ask in section 3.7, and in part 4.4 we ask about the use of it's and in 4.5 about the usefulness of it's.  A majority of students experience that they have good or very good basic digital skills (78%). Students respond further that they have slightly lower ICT skills in the subject they focussed on in the exam (68%). I.e. they acknowledge a need for digital competence.  When we look at the connection between very good digital competence and learning yield so shows the students answer the following:  52.7% of students character 5 and 6  46,7% got character 3 and 4  0.7% got character 2  This can be considered a ready, significant context.  75% say that they can download and install, and search for and update the program without help. This is testimony to the fact that the basic ICT competency is good enough.  Table 57 and 58 shows that there is a difference between the students and the skills drops quickly with more demanding pc tasks. The quantity that answered yes sank to half from the recovery to the removal, experienced harder.  **Table 59: What student groups responds that they have poorer digital competency[[86]](#footnote-86)**   |  |  | | --- | --- | | Girls or boys? | Big difference between the genders vs ability to remove viruses and drive PC maintenance. The lads corresponds approximately 30% more confirmation than the girls. Less difference vs to update program and recover deleted files | | School Step? | Vg3 and body is over 10% more securely on to remove viruses and program addition and do maintenance than students of VG2. | | The Norwegian- mathematics or social studies students? | Security on to remove viruses and make maintenance is higher in mat liver compared with the two other student groups. Approx. 7% difference. | | Motivated and focused students? [[87]](#footnote-87) | Motivated students are a little more competent than less motivated students, approx. 10% difference | | Students with good digital competency? | Students respond in a consistent way in multiple questions about skills | | Students with high learning yield? | LF |   The students who answer that they have some limitations in their general digital skills is a group among the girls, VG2 students, some norwegian and social studies students and students who are less motivated.  **The appropriate action:**   * There is a need for training in general ICT skills (such as to remove viruses and program addition and restore files) for part students, but not for everyone. Teacher should give something fast, very specific training as a part of the professional work in the class room. * By using the backward scheduling when the teacher plan under the view, so he/she can pick up the missing the craft, derived skills. On the way you learn give students the necessary ICT skille in learning the work.   **7.3 how much school pupils digital most ring [[88]](#footnote-88)**  Students report that they have good digital learning strategies. 79% printer that: "I ve mastered to search, locate and samstille information from various digital sources". 71% printer that: "I ve mastered to read the screen-based texts with concentration, sustainability, flow and context".    In sum expresses the students reasonably high ICT competency, but work with sources is the skill most students missing.  **Table 62: What are the differences between the how much school pupils digital skills?[[89]](#footnote-89)**   |  |  | | --- | --- | | Girls or boys? | When it comes to general digital skills and the ability to read on the screen, crossing the 10% more boys of. The same applies for the interpretation of sources, Digital judgment and to search and critically evaluate sources on the web | | School Step? | Body students think they are approx. 10% less competent to digital search, criticism, analysis and transformation. Gradually increased skills in working with digital sources from VG1 to VG3, approx. 10% increase | | The Norwegian- mathematics or social studies students? | Mathematics liver responds that they are not so good to read the screen-based texts and reshape the text from sources, approx. 10% less than the other two projects. Otherwise answer the students pretty much the same for the three technical areas | | Motivated and focused students? | There is a certain correlation between highly motivated students and good digital skills. Approx. 10% difference. When it comes to digital judgment as is the difference between 20-30% between high and low motivated students. | | Students with high learning yield? | There is a significant difference between students with high and medium learning yield vs about the mastery to reshape and posting grids information from various digital sources and then analyze and interpret these, approx. 14% difference. Students with character 2[[90]](#footnote-90) corresponds to 20% weaker than those with high character when it comes to the source work. |   Boys apparently has somewhat higher confidence in the professional use of the net than the girls, but it does not apply to all professional web use. When it comes to digital search, criticism, analysis and redesigned, so appoints some groups at that they are experiencing itself as less competent than other students. The students who designates itself here with weaker skills are body, mathematics and those with lower characters.  **The appropriate action:**   * Many student groups should be trained and practice with the source work (fortolking, analysis and criticism) and digital judgment when they experience that they are missing these skills. * It is important that the pupils will exercise in to produce greater digital tasks where the source work is a central part of the working process.   **7.4 Digital Formation[[91]](#footnote-91)**  *Digital formation* gives the expression of a holistic understanding of how children and young people learn and how they develop its identity. In addition to the concept of also include how the skills, qualifications and knowledge is applied in the culture. Digital formation points toward an integrated holistic approach that enables us to reflect around the impact ICT has on different merits that communicative competence, social competence, students' critical attitudes mm.[[92]](#footnote-92) Begrepet is operationalized in the survey to primarily to focus on how much school pupils knowledge and attitudes to correct and legitimate source referrals.  The majority of students are considering that they have a good or very good digital formation (e.g. "cut and paste" with the source reference, legal image use, legal downloads and the like). 64% this corresponds.  When the students will find information on the Internet is 81% partially or completely agree that they check whether the match with information from other sources. On the other hand is 13% partially or completely disagreed in that they are concerned by how the information comes from. When the jobs with school tasks think about 60% of students of:   |  | | --- | | ... That the illustrations and text should fit together | | ... That the information obtained will be processed | | ... That the look of the task answer presentation is important |   The answers shows further that a large majority of 75% is partially or completely agree that: | | "I checks whether the information matches with information from other sources."  Moreover is 79% concerned by how the information comes from and 82% is critical to quality  On the information. So here we can conclude that pupils have good ICT-formation. |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **7.5 skills in the use of it's[[93]](#footnote-93)**  Here map added how much school pupils assessment of it's as tools and their skills. In the del 4.4 was how much school pupils actual use considered.  Most students said that they have good skills in the use of it's. It means that they can find the professional resources can find laerers feedback, participate in discussions, tests, exams, lessons etc.  **Table 64: Students who believe their skills in the use of it's is deficient**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | Body corresponds approximately 20% completely or  Partially agree that they have missing it's skills | | The Norwegian- mathematics or social studies students? | LF | | Motivated and focused students? | Students with lower motivation responds that they have less skills in the use of it's. 20-30% difference vs higher motivated students. | | Students with good digital competency? | LF | | Students with high learning yield? | The higher the character the better it's skills. Approx. 20% difference between high and low gain. | | | The student groups that are considering their skills on it's that weaker, is body students, students who are less motivated and students with less learning yield. |  |  |  | | --- | --- | | **The appropriate action:**   * Consider to increase your skills in the use of it's so that laerers resources and activities will be used appropriately. This applies especially to body students. | | | **7.5 students' digital training needs[[94]](#footnote-94)**  The table below shows which resources that gets the highest score: | |  | | This means that the most students wish to master the better the mathematical tools. As other priority comes presentation and print tool that is very much in use.  **Table 66: Students who want more training in Geogebra and Excel**   |  |  | | --- | --- | | Girls or boys? | LF | | School Step? | Approx. 60% VG1 students will have the training while this increases to 80% on VG3 with the other two steps in between. | | The Norwegian- mathematics or social studies students? | Over twice as many mathematics live want to training: 72% Geogebra and 54% Excel | | Motivated and focused students? | Clear correlation between higher motivation and fewer digital training needs | | Students with good digital competency? | The better the competency the less training needs | | Students with high learning yield? | Many with low learning dividend will teach Geogebra better. Otherwise no clear correlation |   Why sensor VG1 students less training needs than VG3? The demand comes not in VG1, but later. Is it because the aids not used before in VG3 or because it is the first then the pupils will be aware of his lack of competence?  **The appropriate action can be:**   * More training in Geogebra and Excel for maths liveth. Approximately 77 students checked for such a demand. Students can be identified by a study on it 'learning by starting school. There is a need for Geogebra for students with low learning yield. All such training should come right at the leading edge of the specific tasks in the appropriate subjects.   The students were also asked about their need for training in the instruction videos, encyclopaedia on the net, dictionaries, translation program, publishers' web pages, School Arena or Webuntis. Here identifies fewer than 12% of the students that they need to training. This can be explained with that this is considered as simple tools or for the students to not use them so often in the relevant subjects. It is a little worrying that students do not experience the need to master the publishers' web pages better then they are directed toward the learning plan and students needs.  A review of all the mentioned training measures shows that the students who answer most YES to the training is social studies students with 20%, while of mathematics liver and students at VG3 responds only 15% YES. |   About a quarter of the students answer that they have greater limitations in their general digital skills such as restore deleted files, also from the recycle bin or to remove many viruses and program addition. |

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| --- |
| 1. **Learning YIELD AND ICT** |
| |  | | --- | | Chapter 3 to 7 addressed a part background variables. Now we have come forward to a short assessment of his pupil's reporting of learning yield.  *Learning* can be divided in:   * Achieve the learning yield (intenderte learning objectives, Expected student competence in L06), * Subjective learning yield (experienced learning yield among students) and * Objective learning yield (…for example characters).  [[95]](#footnote-95)   The last two goals were included in the survey to students at KOVS, to see if his pupil's subjective and learn's unbiased measure of learning matched.  The focus of this study is aimed at independent explanation variables, **digital input**, while we now see on the dependent variable; his pupil's overall professional **output**measured in candid characters and his pupil's subjective assessment.  **Table 67: student learning yield measured in candid characters and subjective self assessment** | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | High Character, 6.5 | Medium Character, 3.4 | Low Character, 1.2 | Not Answered | | Character at the last stage of the subject you have focused on the | 43,7% | 48.8% | 2.7% | 4.8% | | My own experience of learning in the subject so far | 33.1% | 54.9% | 6.1% | 5.9% | | My average ratings by the last stage | 31.5% | 59.5% | 2.9% | 6.1% | | |
| We see that students with high record of achievement in the selected subject considering that they got a 5 or 6 but that their subjective assessment of the learning only stood to 3 or 4. The difference is at 10% for students with high record of achievement. We may see for us good students who under considers itself or is self-critical. Alternatively the difference can be on 10% are explained by the students think they got too high a character. But this is located outside of this task focus.  It is interesting to connect the students with high, medium and low record of achievement in relation to ICT usage. Is it so that the students with character 5 or 6 has a different "ICT profile" than students with a lower goal?  This question is answered in the conclusion section, ball point 12. |

1. **Conclusions and Actions**
   1. **Conclusions, answers to the 12 problem positions**
2. **How good is the laerers digital class leadership according to students?**

* Half of the students perceive that teachers is ICT-savvy and use ICT in a professional and pedagogical good way. They have a good enough management, including rules for PC use
* But about as many believe teachers is missing required ICT competence and management. It is to use ICT in a professional and pedagogical way, give students clear learning objectives for PC use in the subject, set clear learning objectives and provide clear message about what the students must improve on for increased learning yield.
* About 40% of students responds that there is too much outside the professional activities when the teachers not capabilities good digital class leadership.
* About half of the students says that their non-professional ICT do not use can be explained with poor class management. Teachers have half of the responsibility for the bad hours with a lot of not-faglighet, but other factors have the other half of the Responsibility.
* 40% of students says they have received digital customization from teacher directed toward their digital needs.
* There is a certain correlation between laerers digital class management and student professional and non-professional activities in class room.

1. **What veilednings and Assessment Practice has teachers?**

* Half of the students believe laerers practice is good and that this is to help in the further the learning process
* 30% of students responds that learns only using ICT a few times and the remaining 20% corresponds rarely or never about these activities. 34% of students responds that the guidance and assessment occurs often or very often. This indicates all in all on a reasonably good teaching practice by KOVS in this area.
* Good digital students benefit from good digital guidance for learning.
* For about 20% of students are digital planning and evaluation not in use. Teachers to body students excels with a lot of digital planning and evaluation.

1. **The digital behavior students have at school?**

* Ict usees forholdvis often to professional tasks, approx. 1 ½ hours per day in the subject they chose to respond. This means that the screens are up and used professional or non-Professional as well as the entire time.
* Bruken and usefulness of it's learning is less than assumed, when a daily average is in just 12 minutes. Mathematics Live, lower motivated with less digital competence user it's small. Especially the technical resources and laerers messages will be seen.
* Students use digital search and digital encyclopedia relatively much, with the exception of some student groups. Some digital professional resources that sams print mapping tools, digital fagsider, publishing pages, mind map and Excel is used surprisingly little.
* Ict usees to more and more learning activities and learn the book is used less and experienced by half of the students as less important. The same applies for classrooms and approximately 40% of students says that they can survive without textbook and without having to be physically present at school.
* There is a clear connection between digital efforts and digital competency

1. **What digital uvaner students have at school?**

* Ict use also has some negative consequences such as a lack of tranquility and concentration in the classroom, according to half of the students at study specialisation and body by KOVS.
* The scope of the non-professional ICT use is moderate when approximately 78 % of students said that they use only 1 hour or less per activity per week it means 6 hours in the week, representing 1 hour and 20 min. per day.
* Average time per. week on Facebook, Instagram and Snap Chat is located at approximately 3 hours.
* But on the other side comes da total scope of non-professional activities (including game, movie, Skype, news and other) up to half of school life, i.e. 3 ½ hours per's worrying about 20% of the students.
* The study also shows a forholdvis clear picture of the many school children who wish that it be taken grip to reduce the non-professional ICT usage, but they will even have control and most does not want the school and teachers sets the necessary limits.
* Furthermore older students are the more they are aware of the negative consequences of too much non-professional behavior and is more ready to take the responsibility. The elderly are more on social media and news while the younger is more on the game.
* The assumption that much non-professional activity goes out of learning the dividend could not be verified.

1. **How is the digital interaction between students?**

* Students are generally positive to digital cooperation, but more skeptical about the more tangible and "near-silent" co-operation with the other students should be.
* Most students believe they are not digitally disturbed or interferes with other. But a third of the students are experiencing digital unrest and distraction in school each day.
* As much as 9% of the school pupils have even been exposed to digital bullying in the school year 2014/15.

1. **What digital skills have students at KOVS?**

* A majority of students at study specialisation and body by KOVS experience that they have good digital competence, digital behavior, use of it's learning and formation. The Weakest craft applies fortolking and analysis of digital sources and some mathematics tools.
* About a quarter of the students answer that they have greater limitations in their general digital skills such as restore deleted files, also from the recycle bin or to remove many viruses and program addition.
* There is a certain correlation between digital competence and learning yield.

1. **What challenges are there in digital practices between the school steps?**

* Vg1 is characterized by slightly lower digital skills, especially with the source work. They use digital professional activities less than older students. But many of them would rather use ICT rather than learn the book. They use digital encyclopedia much less than other students. Vg1 students have lower recognition of the negative consequences of much non-faglighet on PC. They want less teacher steering than the older. Vg1-students believe it is much more digital calm and concentration than the older elevenr says. Less use of digital professional customization. These students spend more time on the game than the older students. They do not clear the negative effects of much non-professional activity and will not take the responsibility to the same extent as the older students. They believe that class management is so good that this limits the not-professional activities. They experience digital assessment not so useful.
* Vg2 students have some uncertainty about their own general digital skills. They will enhance their own ICT competency. Here is the most students who is small satisfied with their laereres ICT competency. This is the student group that is most positive to it's. They think laerers Poor ability to class management makes that they spend more time on non-professional activities. They and VG3 uses professional digital search more than other student groups. They are more often digital disturbed by other students. They want much more digital learning management than VG1
* Vg3 has a del students who have increased digital skills, but a part is gratuitous and spend a lot of time on non-professional digital activities. It is done somewhat less digital planning and evaluation than on the other school steps. They and VG2 uses professional search more than other student groups. But they are also more frequently on outside professional activities. They acknowledge more than younger students the negative consequences of the digital non-faglighet. They are experiencing a share digital unrest from medelever.
* Body students are considering that they have a better basic digital skills than the other steps. But they consider themselves as less competent on digital source work: search, criticism, analysis and transformation. They say that they have large missing in skills in the use of it's learning. They use ICT professional most of all students and they are most positive to be without textbook. Body students will have increased the digital control from teachers. Here is the most students who are satisfied with their laereres ICT competence and class management. A part body students are much of the school life on Facebook, Instagram and Snap Chat, film, news etc. but they are also more willing than younger students to take more responsibility to reduce the entertainment activities in the school life. Body stands out when 10% more than in the classes on the study preliminary responds that the PC is not useful in learning. Much less use of digital professional customization. They look much greater advantage than others in the use of digital guidance, assessment, digital planning and evaluation. The students also says that they have good learning yield. But they report about more digital bullying than the other school steps.

1. **What challenges are there in digital practices in the three subjects?**

* Norsk-students: those who chose to focus on the Norwegian student, is characterized by that it is relatively many who believe that the teacher not facilitate enough for digital collaboration. They will enhance their own ICT competency, especially in Word, One note, NDLA, mind map program and professional use of Facebook. Moreover they want higher learning competency, when they report that teaches not to control the ICT usage and is digitally competent enough. The Norwegian lives believe ICT provides more peace and less interference. They will survive without textbook and believe ICT covers all their professional needs. The Applicant often professional and user very often encyclopedia. It is much more digital Teacher guidance and assessment than in the other subjects. Here we find many students who believe they have good learning yield.
* Mathematics-students: They do not use ICT as much as in the other disciplines and ICT do not have as much significance for the motivation. They are more secure than other students on general digital skills. They respond that they are not so good to read the screen-based texts and reshape the text from sources. Mathematics live considers itself as less competent on digital source work: search, criticism, analysis and transformation. They report about the less use of digital resources than the other two subjects. They want more training in Geogebra and Excel. These students are most satisfied with their laereres ICT competency. Many mathematics lives believe it's not a good communication and pedagogical tool and they use it's small. They do not so many professional search and also has less outside the professional behavior. They think ICT leads to less concentration. Much less digital guidance and assessment compared with the other. A part less digital student collaboration.
* Samfunnsfags-students use ICT more than other students to professional activities. Many want to better their own ICT competence in the use of One note, Google docs, Mind Map Program, Powerpoint/Prezi and editing digital images. Furthermore they want raising expertise with his teachers in journalism and faglighet (see also the previous page, problem position 4, ball point 2). Many believe they can survive without learn the book in the subject. Here is definitely the most students who are much on non-professional digital activities. Social studies students applicant very often professional, user encyclopedia and search up news. Many recognizes that non-professional ICT use affects learn is negative. Much more use of digital professional customization in this specialist group. A little more digital planning and evaluation than in the other subjects. More provisioning for digital collaboration between students. But also more digital student-turmoil and more digital bullying in this group compared with the two other subjects.

1. **What relations are there between gender and digital practice?**

* Boys report that they are much better on to remove viruses and drive YOUR PC maintenance and a better to update the program and restore deleted files. They believe that they are better to read on the screen, interpret sources and has a higher digital judgment. They are more tuned to survive without learning the book, only with ICT. The lads are more aware that not-professional ICT use goes out over the picture should emphasize and they want to take more responsibility for this.
* Several of the girls believe that ICT provides more turmoil and interference. They have much more benefit from it's than the boys. They report that teaches the user more digital assessment than the boys. They miss provisioning for student collaboration.
* Otherwise there is little difference between the genders in their digital practice.

1. **What relations are there between his pupil's motivation and digital practice?**

* Motivated students are better at to remove viruses, do PC maintenance, update program and restore deleted files. They have much better digital formation and judgment. Better skills, use and advantage of it's learning. They have many more digital training want. Motivated pupils can to a greater extent ready just with ICT and without learning the book. They participate more on custom digital training. motivated students will be more disturbed by others digital practice.
* Gratuitous students uses much more time on social media, but less on the news. These students believe clearly that the teachers missing digital competence and management, but they also want less steering. Digital Assessment Practice experienced as less to help in further work.
* For misc little difference.

1. **What interrelationships between the digital competence and digital practice?**

* Digital competent students with better digital skills displays these on several areas: they use ICT much more professional, they are more independent of the learn the book and they use it's more. They say that they have more training needs. These pupils will digital feedback much more often. They use digital planning and evaluation much more than the less competent.
* Less ICT competent students spend more time on non-professional activities. But they will also take more responsibility to reduce the use. They believe that clearly the teachers missing digital competence and management, and lack of control fits them good. These students are clear that the teacher not facilitate digital collaboration.

1. **What relations are there between his pupil's digital practice and their learning yield?**

* Students with higher learning yield clearly has a higher digital competence in many areas, they have among other things better skills in the use of it's and see the usefulness of this communication platform. These "Super Users" is characterized by that they spend a lot of time on professional activities, use many digital resources and small on non-professional. The master to use the source information better, they see ICT as very useful in learning the work. They will also have more digital guidance and assessment from teachers. Students are  also participating actively in own digital planning and self assessment. It may seem that there is a self-reinforcing process where the active students setups investigating active teachers and vice versa. Active students should take account of the guidance from teachers and increase its expertise. When this survey is focused on the digital active learning, so it can be reason to believe that there is a positive correlation between digital behavior and learning results.
* Those with medium learning yield has less digital skills, user it's and digital resources much less. They believe that more frequently than others that access to ICT and the use of non-professional ICT does not provide peace of mind. They believe they get a small digital guidance and assessment from teachers. But paradoxically want these students not more digital control of teachers. Students with medium learning results do not have the same professional digital "Close" to their teachers and utilizes not so much of the laerers guidance. Possibly not supplied learns up these students in the same way as those with high goal?
* We unfortunately can not say anything general about how students with low record of achievement relates to the ICT then get students have indicated that they received character 2. This does not provide a basis for generalization.[[96]](#footnote-96)

The most important findings, expressed in average percentage can be found in the Appendix 1. By expressing the school year digital status with such indicators, so can KOVS compare this year's reply with next year reply. So can school check from year to year about the new digital action changes the students' behavior, most ring and learning yield. Hatties research shows that the vast majority of action has a certain effect on learn while we should draw attention to measures that prove to be: "average power size of over 0.40". The question is how the KOVS will choose the most effective actions from the list of 44 action.[[97]](#footnote-97) The easiest answer is to try out some actions that management has most believe on, and so monitoring the effect by next year student and ICT exams.

The next section contains proposals for digital measures aimed at all or groups of students or teachers.

**9.2 summary of the action**

The actions that are proposed in the report some parts are here gathered in a list. Many of the actions is about to increase the competency of teachers. It is through the teachers that school can give the eleven the required competence and strength learn.

1. **Laerers digital class leadership:**

* Learn' ICT competency should be increased in several areas, especially in digital class leadership and guidance of students. It can be to use ICT more pedagogical, set clearer learning objectives or be clearer on his pupil's improvement opportunities.
* Increased ICT management from transportability side, especially in body classes by preparing ready PC rules with students, more ICT management in class room and reduce the digital cheating on samples.
* The access to the non-professional ICT use should be limited in a part hours think a part students especially on VG2 and VG3
* It should be technically easier for learning to turn off and on the web for the students in the course of a school hour.
* Mapping of which methods in the day used to digitally customize learn.
* Map add which students who have special digital needs where there are good digital solutions. Students in the Norwegian, mathematics, on VG1 and body say they do not have an especially fit.
* Students should regularly are invited to anonymously evaluate under the view especially with the focus on digital class leadership and be able to make suggestions to changes.

1. **Digital guidance and assessment:**

* Digital assessment for learning experienced as useful for the students and should be used more under way in the learning process rather than summativ assessment at the end.
* Since this is an important field especially highlighted both in KOVS Report and in the smile report, so should teachers get more training in digital under way assessment through colleague based training at KOVS.
* The Use and usefulness of digital assessment should be increased to VG1-students and mathematics liveth.
* A systemizing of how it's learning is used by teachers to guide and assess the students, could shed light on quantity and quality of this form of digital communication
* Digital planning and evaluation of the learning should be used more when many students believe this is used for small. By adding the digital plans and evaluate continuous so can progress and under the view become more flexible. This applies especially to students at VG3 and mathematics liveth.
* Planning and calendar functions on it's learning can casualty clinics in new contexts, e.g. fully completed for all subjects in a class on VG1. This can help to improve predictability for the students by the use of flexible digital solutions.

1. **How much school pupils digital behavior:**

* More training in Geogebra and Excel for a part mathematics liveth. There is a need for Geogebra for students with low learning yield. All such training should come right at the leading edge of the specific tasks in the appropriate subjects.
* Teachers should increase the scope of professional ICT use, including digital tasks for VG1 students general so that they get more digital experience.
* Consider the reduced use of learn the book and more ICT use in VG1, for body students and Norwegian liveth. It can mean that the NDLA should also be used more in these student groups.
* The school should consider how they can meet students in norwegian and social studies with high motivation and good digital skills, that wants to use multiple digital aids without attendance at school.
* Increased focus on professional ICT use on VG1, especially in the Norwegian student where many students scores low on the use of digital resources.
* Increased focus on more use of it's to pupils with low competency that say its low motivated. They should follow the better with on what happens in the subject and which documents and resources teacher has laid out. It is an unused potential in it's for maths liver so they get more advantage of it's?
* Increase the quality/relevance/currentness of fagsidene on it's so that students and teachers not rather select to use e.g. Facebook as communication channel and to share documents etc.
* Increase the use of it's as pedagogical aid by adding the lectures, organise folders directly related to the teaching and assessments etc.
* Teachers should consider adding out fewer resources on fagsidene on it's learning so that it becomes more affordable for the students to become familiar with and make use of some resources rather than to ignore fagressursene so that often happens in the day.
* Assess Whether The functions on it's used small should get more attention to increase the use so that use of the planner, calendar, folder assessment, lessons, use learning objectives and facilitate the communication between students (which now takes place in other locations). Perhaps teachers can use it's more actively in toward the student learning?
* Do the developers of it's aware that students use is limited and that increased quality for more pedagogical use is required if not it's shall only be a documentation platform.
* Increased training and focus on the important digital educational resources used little in the day that Mindmap, use of fagsider and publishers' web pages.
* NDLA should state is in several subjects facing several students when many not useful make up this large digital resource
* Increased use of digital sams print mapping tools such as Google docs considered important pedagogical training and should be used more in Social studies and Norwegian. So can students immerse the quality of their cooperation and e.g. take some decisions along the way and give each other consecutive corrections and improvements.
* Learn should focus students with low learning yield against the increased use of professional resources such as more and better digital search beyond Google and use of Wikipedia.
* Teacher should guide ICT usage in class room and regulate our screens and time on the web more often than in the day, when continuous availability reduces the concentration of a part students.
* Increasing awareness opposite VG1 students specifically about that there is a negative correlation between learning yield and outside the professional ICT use
* A part social science students will have a good amount of increasing awareness on an adequate ICT use, when they report about a part negative consequences of much non-professional use
* The group of students who are very much on non-professional activities on the net should initially be better than today and earlier. How can the negative effects at low learning results perhaps are muted.
* More focus on VG1 how much school pupils compared to non-professional ICT can help them be more effective learn end
* Map add which students starting on VG1 with deficient ICT skills with the use of digital mapping tools
* Grasp the students with poor ICT skills when many of these will take more responsibility to come across on professional ICT use. But when they need early guidance and increased skills.

1. **Students' digital work environment:**

* Teachers should facilitate increased use of digital professional feedback between students. Moreover they should teach pupils to guide each other.
* Teachers in the Norwegian student should develop skills of samskriving, guidance and other digital collaboration between students as it is a savn according to these pupils.
* The Challenge also goes to teachers in mathematics where students responds that there is not much digital student collaboration.
* Learning should be aware that there is digital elevuro according to 1/3 of the students. This applies especially in the social sciences classes. Motivated students expresses that they vex over the distraction from medelever. Wobbly students should be guided to visualize the PC use of learning.
* School should increase focus toward digital bullying. The students even points out that this applies to most of the social science students.
* The project "digital net vett" achieves focus on digital bullying by older students talks about this with younger students.

1. **How much school pupils digital Competency:**

* For a part pupils can focus more on digital learning strategies may increase the motivation. They need to make the experience that ICT is to help to understand, get up and running more quickly in and/or resolve technical challenges. Digital resources must be seen as relevant, give a plus in relation to non-digital methods, provide increased most ring, better results etc.
* Teacher must clearly do learning objectives for the hour at startup
* There is a need for training in general ICT skills (such as to remove viruses and program addition and restore files) for part students, but not for everyone. Teacher should give something fast, very specific training as a part of the professional work in the class room.
* By using the backward scheduling[[98]](#footnote-98) when the teacher plan under the view, so he/she can pick up the missing the craft, derived skills. On the way you learn give students the necessary ICT skill in learning the work.
* Many student groups should be trained and practice with the source work (fortolking, analysis and criticism) and digital judgment when they experience that they are missing these skills.
* It is important that the pupils will exercise in to produce greater digital tasks where the source work is a central part of the working process.
* Consider to increase your skills in the use of it's so that laerers resources and activities will be used appropriately. This applies especially to body students.

1. **Recommendations**
   1. **Recommendations to KOVS school leadership**

Based on the conclusions of the report and actions suggests that the management takes the following decisions:

1. The proposals for measures to be considered carefully with a focus on those that will have the most effect.
2. The report is added to all Norwegian-, mathematics and social studies teachers at Maurits and body.
3. The management of the KOVS, in consultation with the appropriate teachers, takes a part action with effect from the next academic year 2016/17.
4. The report be submitted to the student Council for their comments.
5. The summary and some selected parts of this ICT report is communicated to the students who took part in the study. This is done in the base group hours before the summer holiday 2016.
6. It through the transferred surveys for the school year 2015/16 in april/May 2016. Changes in the questions are detailed in the section 10.2. Monitoring of the development of ICT the use of students should be done over several years so that the KOVS clearer can become familiar with the educational use of ICT at the students.
7. The report will be presented to the center of ICT in education that gave the initial advice and released also for distribution to other stakeholders.
8. Transportability digital competence, behavior and the formation should also be better understood and it is a time since this was last map added. Therefore it should be completed a smaller survey to teachers in the Norwegian, social studies and mathematics on the Mauritz Hansen and for teachers in these subjects in the body classes. In the first instance it should prepared a proposal to the questions by June 2016. A general elaboration of the content found in part 10.3.
9. It should be done a limited qualitative pilot study in autumn 2016 to certain student groups to deepen a part answer where the quantitative report draws a lack a full picture.
10. To ensure quality Percent Roundup (in Appendix 1) should KOVS contact Conexus AS and request professional guidance.

**With this ICT report as can KOVS take an important step from the opinion based on knowledge-based decisions about digital learning.**

**10.2 future exams**

When a new exam in April 2016, so should the questionnaire changed a part. Here follows the proposal to some improvement in the questionnaire:

* Note field as the last point in the study shows that many students felt that the exam was too long, unclear and cumbersome formulated. It is important to run a good pilot before the next student examination. Much can be improved in the questionnaire which will increase the validity and reliabiliteten of the exam. The questionnaire must therefore be revised on many points and decreased. The study was on 174 questions, there should be a target with a maximum of 100 questions. Although 100 is also much can many questions will be set in the matrices for easier matching.
* A part quite identical question should be reduced. This applies to:
  + 6 questions ask the students specify matematikkfag, P, H, S or R and programfag. This report has not made any analysis of this, and when it is not necessary to have with these questions.
  + A number of questions is not specifically about ICT, e.g. professional resources that textbook, calculator etc. This applies to the variables v13-23
  + A number of questions is not about digital behavior and attitudes and should perhaps be omitted? This applies to the variables v74-77
  + Some questions was referring to ICT office, they can also be cut out. This was the variables V151-153
  + His Pupil's learning results will be requested in the 3 variables, objective and subjective characters, v172 - 174. It keeps the perhaps with one question?
  + Variable v108 ask about the consequences for learning and v109 ask about the consequences for the assessment. It is necessary to have with both these questions when a elevs understanding perhaps is identical on these two variables?
  + Outside the professional PC use are students asked in 6 variables from the v108 empty v113. It might keep with 2 questions about this?
  + Questions about quality assurance of information from the internet came twice, both in v 82-85 and V154-157.
  + The level of detail on some questions about digital assets, training needs etc. where it was very low response rate may be skipped
  + Questions about mobile use sløyes as this was not so relevant for many as it was formulated. Alternatively must mobile use focused more clearly and questions be deepened more.
  + In all 33 questions immediately can be skipped. But there is a point that a revised examination should be able to be used affordable unchanged several years forward to get the most comparable data.
* Some questions may be added to increase the insight on certain areas and remove doubt:
  + The students should be queried for the total non-professional time
  + There must be a question where students can estimate how a normal's worrying are distributed between the time to professional/non-professional, with/without Monitor
  + The relationship between good digital professional class leadership and good learning yield should be demanded clearer
  + After the questions about digital assessment had da been exciting to find out how the assessment takes place and which tools are used.
  + If the school focuses on increased use of NDLA or under the network viewing so could this also examined more
* The number of the answer options were often 5, from *completely, partly agreed* to *partially*and *completely disagree* and know not. Maybe it will keep with *agree, disagree*and*know not*? the reason is that it in data processing fell logical to merge these two values, was to get the clear differences. The Detail level between the fully and partially disagree is not necessary when it is more important to make the exam less extensive and processing of response percentages more focused on the major trends. But on the other side can students feel more comfortable with to have five options when they get answered more precisely.
* Variable record of achievement has only three values: high record of achievement - character 5 and 6, medium - character 4 and 3 and low - character 2. Students perceive enough character 3 as a poor character and then third no miss important information that a five sharing will be able to pick up. It was only 10 of the 363 answers with the grade 2 that makes that it is not possible to conclude whether there is any connection between the low learning yield and digital behavior.

Students in sociology classes and social knowledge can be involved every year when the method their tasks should be based on the data from the ICT exam. This is a way to increase the ownership and understanding of why the students shall be implemented such and other exams in the course of school life on the KOVS. Students may be able to contribute in the disclosure of the results to other pupils at school. Students can also be involved in the small Qualitative studies where certain student groups are invited to structured interview on certain pages of students' digital behavior.

**10.3 Examination of laerers digital attitudes, skills and behavior**

KOVS has previously map added teachers and ICT, but there are some years ago in connection with Kongsberg conferences. It is again of great interest to map the teachers with respect to a part to claims and hypotheses about the contexts that this student survey has uncovered. It applies to both laerers general digital competence and special competency in:

* Digital sams print mapping tools
* Use of fagsider, publishers' web pages, Mindmap mm.
* Guide to students in better professional search and source work
* Mathematics tools that Geogebra, Excel and Microsoft Mathematics

Further is digital class management an area where teachers constant has a potential for improvement when many students the increased skills of learning. Student survey points toward the questions about:

* Digital custom training
* Better use of guidance and assessment of students digital
* Digital artifacts and fussing from medelever
* Digital bullying

How do the doctors even on these claims?

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| <http://www.ituarkiv.no/digital_kompetanse/index_html.html> (Loaded 17.02.16)  <https://no.wikipedia.org/wiki/Digital_kompetanse> (Loaded 17.02.16)  <http://www.ituarkiv.no/digital_kompetanse/index_html.html> (Loaded 17.02.16)  <https://snl.no/uavhengig_variabel> (Loaded 23.03.16) |

<https://www.etikkom.no/FBIB/Introduksjon/Metoder-og-tilnarminger/Kvantitativ-metode/> (Loaded 07.02.16)

<http://www.uio.no/studier/emner/jus/afin/FINF4001/h12/metode---innforing3.ppt> (Loaded 07.02.16)

<https://snl.no/kvantitativ_analyse> (Loaded 07.02.16)

<http://delta.cappelendamm.no/vgsamf/binfil/download2.php?tid=1714577&h=1c3f3d2c9dd4879f06b772756231d32c&kap=1685917> (Loaded 07.02.16)

<https://prezi.com/j6qpi3caerhh/ikt-skole-sant/>  (Loaded 07.02.16)

<https://www.ecampus.no/2013/11/27/med-blikk-pa-digital-vurdering-og-eksamen-i-sokelyset/> (Loaded 17.02.16)

<http://www.digitalferdighet.no/metodikk/laeringsteorier> (Loaded 18.02.16)

1. Smile, p.18 [↑](#footnote-ref-1)
2. Smile, p. 307 [↑](#footnote-ref-2)
3. Smile, p.16 [↑](#footnote-ref-3)
4. Smile, p.16 [↑](#footnote-ref-4)
5. OECD (2009): S5 [↑](#footnote-ref-5)
6. Here you will find the first ITU Monitor from 2003: Http://iktsenteret.no/ressurser/itu-monitor-2003   [↑](#footnote-ref-6)
7. Here you will find these Monitor studies: http://iktsenteret.no/search?search\_api\_views\_fulltext=monitor&=S%C3%B8k   [↑](#footnote-ref-7)
8. Poll carried out by the Center for ICT in education [↑](#footnote-ref-8)
9. According to the Pulse   [↑](#footnote-ref-9)
10. <http://www.skolestatistikk.bfk.no/index.php?pageID=1139&openLevel=3> (Loaded 22.03.16) [↑](#footnote-ref-10)
11. Smile, p. 18 [↑](#footnote-ref-11)
12. Smile, p.23 [↑](#footnote-ref-12)
13. Smile, p. 20 [↑](#footnote-ref-13)
14. <http://www.ituarkiv.no/digital_kompetanse/index_html.html> (Loaded 17.02.16) [↑](#footnote-ref-14)
15. <https://no.wikipedia.org/wiki/Digital_kompetanse> (Loaded 17.02.16) [↑](#footnote-ref-15)
16. <http://www.ituarkiv.no/digital_kompetanse/index_html.html> (Loaded 17.02.16) [↑](#footnote-ref-16)
17. Wendelborg m fl 2012, Page 13 [↑](#footnote-ref-17)
18. *Retrieved from Utdanningsdirektoratets material for comprehensive work with learning environment (www.udir.no)* [↑](#footnote-ref-18)
19. <https://snl.no/uavhengig_variabel> (Loaded 23.03.16) [↑](#footnote-ref-19)
20. Hattie, Visible learning, Page 26 [↑](#footnote-ref-20)
21. Learning Room (2015): analysis of student and Personnel Survey, Conexus, page 5. [↑](#footnote-ref-21)
22. The following responses was canceled: 373,166,182,192,34,104,123,145,177,207 [↑](#footnote-ref-22)
23. There are 56 % girls on KOVS among students who were invited to participate, according to mail from Aril Svinterud 18.03.16. [↑](#footnote-ref-23)
24. Befring, 2015, p. 131-160 [↑](#footnote-ref-24)
25. <https://www.etikkom.no/FBIB/Introduksjon/Metoder-og-tilnarminger/Kvantitativ-metode/> (Loaded 07.02.16) [↑](#footnote-ref-25)
26. <http://www.uio.no/studier/emner/jus/afin/FINF4001/h12/metode---innforing3.ppt> (Loaded 07.02.16) [↑](#footnote-ref-26)
27. <https://snl.no/kvantitativ_analyse> (Loaded 07.02.16) [↑](#footnote-ref-27)
28. Monitors exam, Smile survey, Kong Berggårdens IPad exam and student Exam   [↑](#footnote-ref-28)
29. <http://delta.cappelendamm.no/vgsamf/binfil/download2.php?tid=1714577&h=1c3f3d2c9dd4879f06b772756231d32c&kap=1685917> (Loaded 07.02.16) [↑](#footnote-ref-29)
30. <https://prezi.com/j6qpi3caerhh/ikt-skole-sant/>  (Loaded 07.02.16) [↑](#footnote-ref-30)
31. <http://www.uio.no/studier/emner/jus/afin/FINF4001/h12/metode---innforing3.ppt> (Loaded 07.02.16) [↑](#footnote-ref-31)
32. Smile, p. 28 [↑](#footnote-ref-32)
33. Variable 172-174 ask about the characters in the subject eleven focuses on and in all subjects, and his pupil's own assessment of yield [↑](#footnote-ref-33)
34. Variable 1 [↑](#footnote-ref-34)
35. Variable 2 [↑](#footnote-ref-35)
36. Variable 4 [↑](#footnote-ref-36)
37. Variable 72 and 73 ask about eleven want to learn as much as possible to get the best possible understanding [↑](#footnote-ref-37)
38. Variable 137 and 138 ask about basic digital and professional skills [↑](#footnote-ref-38)
39. Smile report, p. 314 [↑](#footnote-ref-39)
40. School step has the following values: VG1, VG2, VG3 or body. The variable subjects have values: Norwegian Social studies or mathematics. The 14 other variables are not included in the criteria based report to increase the focus of the aforementioned 7 concrete student groups that school clearly can identify and tailor the measures aimed at.   [↑](#footnote-ref-40)
41. Convenient - P, theoretical - T, realfags- R, samfunnsfags - S, or påbyggs PY mathematics. [↑](#footnote-ref-41)
42. Sociology and Social Anthropology, politics and human rights or social knowledge.   [↑](#footnote-ref-42)
43. According to the mail from the center of ICT in education by Gréta Björk Guðmundsdóttir, 8.3.15 [↑](#footnote-ref-43)
44. Brophy, p. 17 [↑](#footnote-ref-44)
45. Krum deceit (2012) s. 16 [↑](#footnote-ref-45)
46. Variable v114 and V115 [↑](#footnote-ref-46)
47. Variable v119 empty v122 [↑](#footnote-ref-47)
48. Variable 121 [↑](#footnote-ref-48)
49. Variable v125 [↑](#footnote-ref-49)
50. Variable 123-125 [↑](#footnote-ref-50)
51. Variable v126 [↑](#footnote-ref-51)
52. <http://www.udir.no/Regelverk/tidlig-innsats/Skole/Begreper-og-prinsipper/Tilpasset-opplaring/> (Loaded 18.02.16) [↑](#footnote-ref-52)
53. <https://www.ecampus.no/2013/11/27/med-blikk-pa-digital-vurdering-og-eksamen-i-sokelyset/> (Loaded 17.02.16) [↑](#footnote-ref-53)
54. Variable v128 empty v134 [↑](#footnote-ref-54)
55. Smile, p. 308 [↑](#footnote-ref-55)
56. Variable v135, V136 [↑](#footnote-ref-56)
57. A superior analysis of how eleven learning  [↑](#footnote-ref-57)
58. Variable 72 to 80 [↑](#footnote-ref-58)
59. Variable v1 [↑](#footnote-ref-59)
60. Variable v2 [↑](#footnote-ref-60)
61. Variable v4 [↑](#footnote-ref-61)
62. Variable v137 and V138 [↑](#footnote-ref-62)
63. Variable v172, V173 and V174 [↑](#footnote-ref-63)
64. Variable v10 and V11  [↑](#footnote-ref-64)
65. Has eleven only focused on one subject or on all subjects? We choose to interpret the answer to all other answer was interpreted: answer applies only to hour use in your chosen subject. But this we can not be fully secure on the hour the number is so high, and when it means that these answers have lower reliabilitet   [↑](#footnote-ref-65)
66. 68% of students uses the less than ½ hours per week for professional use. [↑](#footnote-ref-66)
67. Variable v66 empty v71 and v127 [↑](#footnote-ref-67)
68. Variable 71 [↑](#footnote-ref-68)
69. Variable v71 [↑](#footnote-ref-69)
70. Variable v12 and V98-v100 [↑](#footnote-ref-70)
71. Variable 86-100 [↑](#footnote-ref-71)
72. Variable v13 empty v41 [↑](#footnote-ref-72)
73. Variable 24 and 27 [↑](#footnote-ref-73)
74. Variable v81 [↑](#footnote-ref-74)
75. Variable v102 empty v107 [↑](#footnote-ref-75)
76. Between 1 and 2 session is the set aside 10 minutes, storefri is 35 min, then between 3 and 4 increased, 10 min and between 4 and 5 is 5 minutes [↑](#footnote-ref-76)
77. But it can be beautiful Levante news that has been incorrectly reported and not only in the Entertainment [↑](#footnote-ref-77)
78. Variable 112 [↑](#footnote-ref-78)
79. Variable v163 empty v 166 [↑](#footnote-ref-79)
80. <http://www.digitalferdighet.no/metodikk/laeringsteorier> (Loaded 18.02.16) [↑](#footnote-ref-80)
81. Microsoft 21 Century skills [↑](#footnote-ref-81)
82. Variable 165 [↑](#footnote-ref-82)
83. Variable v167 empty v169 and V81 [↑](#footnote-ref-83)
84. Variable V170-171 [↑](#footnote-ref-84)
85. Variable v147 empty v150, V 137 and 138 [↑](#footnote-ref-85)
86. Variable v148 empty v150 [↑](#footnote-ref-86)
87. Variable v72 and V73 [↑](#footnote-ref-87)
88. Variable v137 empty v146  [↑](#footnote-ref-88)
89. Turn together the answers with the value 4 and 5 (5= can clear me with net in high-grade) [↑](#footnote-ref-89)
90. Only 22 replied that the subjective considered themselves to 2 of the subject, even if they got 3 as reported in the previous question in the exam. [↑](#footnote-ref-90)
91. Variable v154 empty v162 [↑](#footnote-ref-91)
92. <http://www.ituarkiv.no/digital_kompetanse/index_html.html> (Loaded 17.02.16) [↑](#footnote-ref-92)
93. Variable 101 [↑](#footnote-ref-93)
94. Variable v42 empty v65 [↑](#footnote-ref-94)
95. Smile, p. 19 [↑](#footnote-ref-95)
96. On the three questions answered 3.7% that they had character 2 on 2 of questions about the learning yield, but it was 6% on one of the questions where they should consider their own learning yield [↑](#footnote-ref-96)
97. Hattie s. 25 [↑](#footnote-ref-97)
98. Consists of three steps: describe the expected learning yield, Step 2: decide how the students will document the craft and how it should be considered, Step 3: plan under display hours. Source: Wiggen & McTighe, 2005, <http://multimedie.adm.ntnu.no/Mediasite/Play/356654a906d14521952dd37f376d985b1d> (loaded 03.04.16) [↑](#footnote-ref-98)