ASSESSMENT OF SOCIAL MEDIA SKILLS AMONG VOCATIONAL TEACHERS IN FINLAND

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Abstract

Information technology penetration in the automotive industry has forced education in upper secondary vocational teaching to radically change. In car mechanic training this has an influence on traditional teaching methods as well as upon the substance of the education. At the same time education is generally changing to use social media (SOME) tools in various novel pedagogical settings. SOME may be seen as one solution to the challenges to the automotive sector. However, teachers need to be motivated to enter into a new era of education. In this case study we explore the upper secondary vocational teachers' ability to utilize SOME in teaching. We planned, tested and verified an assessment tool for evaluating SOME skills among vocational teachers. We also planned and provided training for vocational teachers in the use of SOME tools. Our findings were that the ability to utilize SOME tools among vocational teachers was not good and teachers were surprisingly conservative towards new educational technology. We discovered that utilizing an assessment survey questionnaire before and feedback questionnaire afterwards, greatly benefited a training course by plugging existing knowledge gaps and planning the training accordingly.

Keywords: Social Media, assessment inquiry, vocational teachers, automotive

1 INTRODUCTION

In this explorative case study we planned, tested and verified an assessment tool for evaluating Social Media (SOME) skills among vocational teachers. We also planned and trained vocational teachers in the use of SOME tools. The case study was an automotive and transport engineering upper secondary vocational teacher training course. We searched and developed methods for implementing SOME tools for vocational teaching and studied practical ways to implement these tools for the case study. Vocational upper secondary qualifications and study programmes in Finland are defined in a Ministry of Education decree. A vocational upper secondary qualification can be obtained through attending a vocational school, through apprenticeship training, or through a competence test. In the apprenticeship system, training is not based on age group. The minimum age is 15 and there is no maximum age. Therefore the classroom is very heterogeneous with students having no work experience mixed with highly experienced persons. Also SOME skills of students are heterogeneous too. There are young course members whose skills are far more developed than older students and vocational teachers. This creates special challenges for teaching SOME skills. Vocational studies primarily aims to provide the vocational skills needed in working life (youths) or expanding skills already learned (adults and businesses) [1].

According to Huhtala [2], based on a large national inquiry of the automotive sector, the need has arisen to develop the skills of students in many ways, for example, the need for better networking and collaboration skills, and an international perspective. These skills cannot be effectively taught by lecturing traditionally or by learning from a book. They require paying attention to the coming trends of teaching methods and technology [3]. This means changes to the teacher's role, towards becoming a collaborator and to enable the student as a content provider in some course material.

Information technology penetration in the automotive industry has been forced to make radical changes in car mechanic training. The Finnish ministry of education has set year 2016 to be the year that information technology tools should be a part of primary and secondary school as an everyday

routine. This trend will also affect teaching in vocational schools. In vocational schools, these routines should continue. New techniques are welcomed, if both teachers and students find a way to use them efficiently.

SOME provides new forms of competitive edge for automotive and transport businesses. Information technology has penetrated the car industry during the last few decades and this information technology revolution in cars has also influenced the teaching traditions of the automotive vocational teachers. Young students are very familiar with new information technology devices and services. Hence 'old-school' teachers must update their professional skills, to include information technology in cars but also SOME services in teaching. Information technology and SOME knowledge among vocational teachers are based mainly on their own personal learning activity. Therefore it is important to introduce (in theory and practice) new possibilities with SOME services to teach, collaborate, communicate with and supervise students.

Keeping this in mind, we explored an answer to the following research question: How to assess utilization of social media tools in teaching among vocational teachers?

The structure of this paper is as follows. Chapter two shows the assessment inquiry structure and objectives. The inquiry was carried out with vocational teachers before the course. In chapter three the results of the inquiry are dealt with. On the basis of these results, we analysed the theory of SOME to meet educational needs and estimated the potential need of practical SOME training. The usefulness the questionnaire has been analyzed. Chapter four describes the SOME results that have been carried out during the education. On the basis of these results the suitability of the SOME tools to the automotive sector has been estimated. The last chapter is a summary and conclusion of this study.

2   STRUCTURE OF ASSESSMENT INQUIRY

This preliminary study examines the assessment inquiry structure and its objectives. We utilized a small part of an earlier SOME inquiry developed for other purposes. This inquiry was voluntary and its objective was to give information on the teachers' SOME knowledge, consisting of the use and knowledge of different areas of SOME. The response was quite good, as nearly 50 of them answered 39. In addition to the below questions, were also asked about respondents' basic information such as age. The aim was also to mirror responses across different industries in Finland [4].

The inquiry consisted of following three open questions:

1) Describe with your own words what the social media means to you

2) What are the risks associated with social media?

3) What Social Media services you have used in your lessons?

The inquiry consisted of following multiple choice questions: select the most appropriate multiple choice option from the following (I don't know, I use, I have tried, I have abandoned, I know - I don't use).

SOME knowledge areas included: Wiki (e.g. Confluence, Mediawiki), Social networking services (e.g. Facebook, LinkedIn, Google+), Documents (e.g. Google Docs, Dropbox), Content control (e.g. Drupal), Content control in business use (e.g. SharePoint, Lotus Notes), Social bookmarks (e.g. Delicious, Diigo), Instant messengers (e.g. Skype), Virtual worlds (e.g. Second Life), Presentation (e.g. SlideShare), Image sharing (e.g. Flickr) and Video-sharing (e.g. YouTube).

3   RESULTS AND ANALYSES OF INQUIRY

In this chapter we discuss the required content of the SOME theory lectures and exercises. Finally, have been estimated inquiry benefits.

In the next section, five best and three worst SOME knowledge areas are introduced which were obtained from the inquiry. A few potential exercises which could fit best on the education set in question and automotive sector were estimated from the inquiry result. Respondents had a total of 39 and responding was voluntary.

The best five SOME knowledge areas among vocational teachers:

1. Video-sharing was the most used (22) and most experimented (10). The estimation from these results was that the teachers utilize mainly YouTube videos in their teaching. That is why the training in the use of video-sharing services is not needed. The attention of lectures should be paid to video-sharing copyright issues. In the lectures it could be achieved through a short training episode in which good automotive sector video sources are collected and used.

2. Instant messengers were used by 9 teachers and 14 experimented with it a few times. Also there were two abandoned trials noticed. The preliminary assumption was that the result would mainly mean the large use of Skype or WhatsApp services which are very common instant messengers. In the lectures could to show examples of the use WhatsApp, for example using WhatsApp supervision in work training.

3. Networking services were in third place. 16 had used it, 6 had experimented and three had given it up. The speculation was that the most used networking services might be Facebook and LinkedIn. Teachers could try these services to arrange with students to make groups. Furthermore, these networking services can be used as an active platform to share knowledge, how to find automotive sector experts and specialist knowledge from established networks.

4. Document services were used by 8 teachers and 11 had experimented with it. The speculation was that Google's services like Google Docs are probably the most used in this SOME area. That is why, in training lectures, teachers could utilize Google Docs as a platform for other training.

5. Wiki services were the fifth and last listed SOME area that had been used (6) and experimented with (4). The hypothesis was that the most used service in this SOME area could be Wikipedia. In their training material, teachers could try wiki services with the educational platform Moodle. Theory lectures could demonstrate the use of a wiki in companies (enterprise wiki) as a quality or instruction manual.

The worst three SOME knowledge areas among vocational teachers:

1. Bookmark services were the worst known SOME sector, none of 39 respondents knew of this service area. Bookmark services could be used in teaching but because this was unknown to everybody, this is omitted in theory and trainings lectures. Also based on weak preliminary answers, there are more important matters to teach to these groups than bookmark services.

2. Content management services had been known nearly as poorly as the Bookmark services (38). This sector would be good to know because these students will move some day to companies where content management is a significant matter. A couple of progressive companies are using SOME based content management services like Confluence or social intranet tools like JIVE. Also older commercial products are including more and more SOME features. The lectures could introduce the basics of contents management services and maybe some practical examples of Confluence.

3. The virtual world service was used by 8 people and for the rest (31) it was unknown. The importance of this subject may be relatively high in the near future. Currently virtual worlds and augmented reality are connected to entertainment although there are some examples of using this technology in high-tech design processes such as in construction engineering. However, these technologies seem to be developing strongly as can be see in examples such as Google Glass and Microsoft' HoloLens. It would be good to show this in lectures.
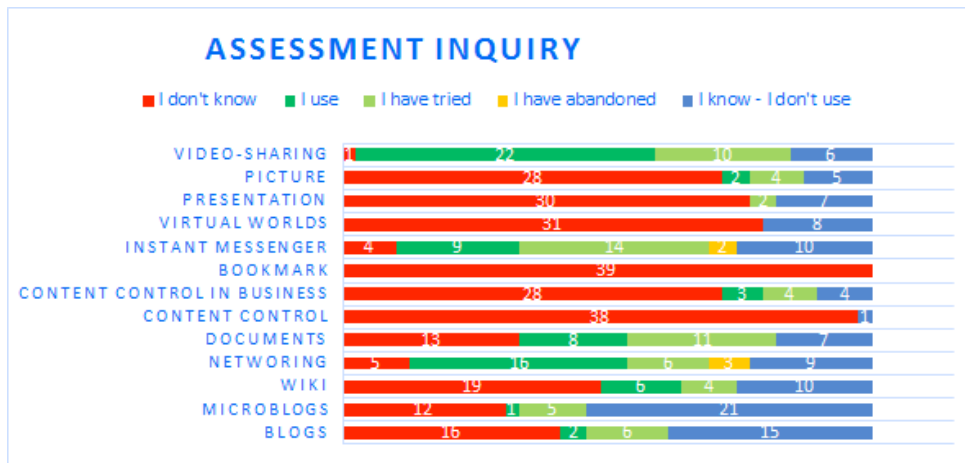
Picture 1. Results of assessment inquiry.

The results of the open question, what are the challenges of SOME¸ are as follows. Many saw challenges in security, reliability of information, bullying, face-to-face conversation skills deterioration and the privacy. The content of the answers highlight the theoretical part of the training, including controlling content, security and bullying prevention among young students, at least at the level of the debate.

The results of the open question, describe SOME with your own words, are as follows. Many described SOME as a communicational and networking tool, referring to Facebook or LinkedIn. It seems that SOME has been understood to be one part of networking tools that are available. On the basis of this result there is a need to bring theory of all different sectors of SOME to teachers, for example referencing the 7 C's theory of SOME [5, p. 3-7] including community, collaboration, communication, constraints, connectivity, channels and content. This is also all associated with cloud services in the Internet.

A summary of the assessment inquiry results was that the use SOME services was extremely low and limited only to certain well known services. That is why, in theory lectures, there should be a grounding of SOME theory and to try draw out the benefits and real ideology in the education before practical applications are shown. It would be good to show as many possible practical level examples and to make many practical training and dialogues so that resistance to the SOME services would decrease.

After the courses, it was estimated query usefulness. On the basis of the inquiry there was able to authenticate the participants' knowledge of SOME. Despite low knowledge results, it is assumed that actual skills are at a higher level than the survey results shown. That is why in the first lecture there was slightly too much SOME theory, but was easily fixed in the following lectures. A number of tools that could be used in teaching the automotive sector were presented during the training. Exercises that were determined by utilizing the results of the survey were mainly successful. Without the inquiry it would also have been difficult to discern the level of competence in teachers.

4   SOME TRAINING

We introduce SOME tools, exercises and experiences of vocational school teachers in this chapter. In addition, assessment is presented for each tool, respectively and how well they fit in to automotive education.

Mind Map training, influencing possibilities

In Mind map training was discussed issues related to students, which pertain to or affect the study. Purpose of the exercise was to find things that teachers can influence and, at best, social media tools. One good example is the accessibility of the student. If an attempt to quickly clarify why a student has

not appeared in the practical training, an answer can be obtained through SOME services, for example the schools' own WhatsApp or Facebook group, instead of a traditional telephone call. It is essential to learn to use those tools which younger students also use. Mind Map training was not directly SOME service training, but it helped to find issues to influence to the student or issue to collaborate with them. The training was successfully carried out with all the groups.

WordPress blog

WordPress is globally very well-known and used blog service. In relation to pedagogy, blogging would be rewarding for students, when other students can comment and see each other's work. In addition, it would increase the ability to add a variety of outputs, such as text, pictures, and videos. In maintaining the Blog the student should improve their informal learning, adding formal to non-formal learning. For example, this could reduce the internship instruction on site and at the same time intensify the teachers use of resources related to students' control. Student blogging can also be considered important when searching for a job, in which the student could display their own blog to verify certain job skills. It is a kind of portfolio of competencies, assuming that the blog pages are very well done and also the yields are good.

Results of WordPress use

There was a high expectation in relation to the first group, because it was known that a part of the group belonged to the school, which had recently developed SOME in their education. In practice, however, it turned out that the introduction of WordPress reserved for one hour was too short. In addition, some students were challenges to use the service. All had a chance to make blogging sites, but content production remained homework. The task proved to be surprisingly difficult. The conclusion after the first group was that this WordPress training could not take in the next groups, because too many students had not completed it from the first training group. The second group carried out an automotive blogging case and had a presentation that was a success. The practical case clarified how this blogging SOME can actually act in relation to the automotive sector. That case was based on one of the pioneer teacher's work from the second group, using Google's Blogger. The second and third group was also introduced websites where they found exact guidance with theory and step by step YouTube-videos to take SOME-tools to education including the WordPress-service.

Etherpad

The Etherpad is an online collaborative text editor which enables an easy way to do teamwork [6.] The use of this application in the training course had been designed because it offered extremely easy and quick service for the team. The Etherpad service does not need the user to sign up and there is no need for prior preparation by the teacher. Tieke was chosen as a service provider [7] as it offers the Etherpad service platform in Finland. The threshold to the introduction of the application is extremely small. Etherpad can be used on several different kinds of devices, such as a tablet or smartphone so the service could be utilized easily on the different student devices.

Results of Etherpad

The use of Etherpad succeeded very well, despite that the Etherpad was an unknown service nearly to all. With the first group several group tasks were made utilizing this application. With the second group the training stayed on the level of theory, because during the day in question the wireless network connection of the education establishment failed. The help of some secondary connections was obtained but only to a few machines so the training was changed. In the first group there was a lot of training tasks with Etherpad, there was some of different writing styles, although some of the texts appeared on incorrect lines. This would be repaired with more exact instructions and would also improve when the use of the service is already familiar. The use of Etherpad for teaching in the automotive sector is extremely recommended. It will be interesting to use the application when one sees results immediately and is able to comment at once to the class or if necessary, is able to guide. It is easy to use the service on several different devices, including mobiles.

WhatsApp

WhatsApp is a globally used application for the sending of text messages, pictures and videos. Furthermore, it is able to make network calls with other WhatsApp installed devices. The application offers a handy way to establish big communication groups. Except for a very small annual payment, the service is free. The use of the WhatsApp application had been designed for the training course because the service is probably installed on nearly all mobiles of automotive students. With this application students could thus utilize their mobile in their studies. The application could be used for example for the documentation of the practical training. The application could be used for normal informational exchange, for example cancelling classes.

Results of WhatsApp

The challenge in the teaching course is that WhatsApp requires a smart telephone which is installed beforehand. The group function requires that the group manager knows every mobile numbers so that he can establish the group. To the first group an application was presented in theory and its use was discussed. Very many teachers did not know the WhatsApp application and theirs mobile model was too old for WhatsApp application, so it was not possible to test this service in practice. WhatsApp was stated as a potential way to encourage dialogues in each group. In using WhatsApp the group requires everyone's numbers beforehand and the main user to add the numbers to the group so the introduction of the application is more difficult. Therefore on a bigger group it is not suitable for quickly applying its use. Its use is recommended for the automotive field but in the administration of the group there are challenges to which attention has to be paid beforehand. For example the student affairs office could liaise with teachers to create different groups if necessary. The groups should establish a longer period of time such as a semester or for a longer lasting course.

Inserted Wiki in the learning environment of Moodle

Wiki is a basic online tool for collaborative work especially for the production of text. Wikipedia is maybe the most known example of a wiki-tool. The learning environment Moodle offers different communal technologies inserted into its learning platform. The Wiki service is one of those which make teamwork possible. Inserting a Wiki into Moodle offers several advantages, such as the division functions of groups, the functions which are related to the visibility of the information and the fact that new external applications are not needed. It is also possible to keep the information inside the group.

Results of Wiki in the Moodle

The Wiki trainings in Moodle did not succeed. To the student groups using this, the learning environment Moodle was foreign and there were difficulties in using it. The inserted Wiki can be recommended only the ones to which the learning environment and its group of properties are familiar. The implementation of the course should also be partly built with other technologies such as Moodle, so that the wiki service would be a natural addition to other aspects of the teaching course.

EBook by Google Apps

The transition to eBooks has been talked about for a long time but it seems that the transition is slow. In the training there was a desire to have an alternative to the old style paper textbook and there was also an opportunity for the carrying of books on mobile devices. EBooks are electric books which can be narrowly understood only as the electric version of the book, but more widely understood as an interactive textbook that offers book notes, inserted videos, activation tasks and multi choice tests to test learning. Through a series of coincidences, there was an idea to use Google Docs for developing an eBook. There were several documents made, of which one was a head page and other documents were chapters. To the head page was put a directory of which were links to other chapters. The result was an eBook which spans organizational boundaries. This was able to give different rights to each document. For the training eBook which was already created, everybody had free writing rights. Furthermore, a short link was made for the head page using this service: http://bit.ly-service, because, the addresses of Google Docs pages are long.

Results of eBook by Google Apps

The training of Google eBooks was carried out with the second and third group. At the beginning of the lecture, the structure of an eBook was presented. After small introduction and eBook test, then this platform was used ground for other trainings. This eBook platform would be an excellent tool to teacher to collaborate over organisations boundaries. Example they could make a joint eBook. This eBook platform seems very interesting but it would require an advanced user who would govern the development of the book. Furthermore, an eBook would require the educational institution to have a very active group membership which would make the book from its connections. If necessary, the interactive eBook in a network could be made from eBook software and then it would become more interactive to the students and would offer possibly different interactive methods. EBooks could also be carried out with Google's presentation application in which there would have been a better design property. Perhaps the most important result of the training was that all the teachers were made to try Google apps in use. With the help of Google Docs eBook, wider cooperation in the making of textbooks and in the common planning of the contents of studies could be obtained for the automotive field. With Google apps, it would be easy to cooperate over the organizational boundaries. Google apps are also used extensively and Google's usernames probably found from all students.

Summary of trainings

The most important result of all their training was probably the fact that all the teachers were made to try different applications and were not ignorant of some tools and its potential. Hopefully the threshold into their use in teaching is much smaller as a consequence. Set by the Finnish Ministry of Education SOME targets are a challenge to be realized rate for automotive education, although some very positive pioneers in the field can be seen. Assessment inquiry had the importance of the qualitative success of the lectures and trainings.

5   SUMMARY AND CONCLUSIONS

With this training we wanted to provide teachers a better knowledge of SOME and to realize its pedagogical possibilities and benefits. In the case study training we introduced theories and examples about SOME services and its potential to solve future challenges in the automotive sector. During the training, teachers were taught how to use a selection of SOME tools. We utilized partly different SOME tools in three training groups, thus enabling the better assessment of the tools' suitability for the automotive sector and their teachers. The training was organized in three locations: Pori, Jyväskylä and Vantaa. There are multiple barriers in utilizing social software as indicated in [8]. Those known barriers and automotive sector challenges was taken into account during the development of the training material.

The feedback was collected in two phases in each training location. First feedback was collected after every training sessions (pedagogical, SOME, programming and telematics) and the second feedback was collected after the whole course in each location. The results of these surveys are presented in [9]. The overall results were good and the participants were pleased with the training, especially implementation and introduction of SOME technologies in teaching.

We discovered that utilizing an assessment survey questionnaire before a training course was very beneficial. With the help of this questionnaire we could deliver appropriate substance knowledge during the training. Feedback from students was collected after every training day and after the whole training course. Different types of SOME tools were introduced and exercises were done during the training especially with WordPress, Etherpad, eBook with Google Docs, and a Wiki-tool in Moodle.

In this case study we found out that the ability to use SOME tools among automotive vocational teachers was poor. Our earlier studies among adult SOME users support these findings [10-15]. Overall, it was found that during the training most of the participating vocational teachers had poor SOME expertise and a couple of students seemed to be challenged in using the web-browser. Only about one younger teacher from each training group had implemented social media tools to everyday teaching and changed their pedagogical methods. Some teachers before the inquiry and dialogue did

not accept at all the idea of using social media tools as a part of their teaching. In the feedback inquiries negative comments about SOME did not appear.

During the training, it was manifested that the quick development for instance electronics and telematics, and diversification of the car field require a deeper specialization by the teachers. In the future it is not possible to be a teacher who maintains the knowledge of the technologies of the whole car. SOME tools would provide an excellent opportunity to cooperate nationally and to distribute resources.

This research was limited to automotive and transport engineering upper secondary vocational teachers. This research could be repeated with other fields of studies in order to have comparative results. Our notion was that the automotive and transport engineering genre was very traditional and surprisingly conservative towards new technology such as SOME. Limitations in the research process were typical for the case study [16-17]. The assessment tool that was introduced was found to be viable but the assessment results are not generalizable due to the limited number of survey respondents. However, we found the results to be in line with our earlier findings among adult SOME users.

In practice, the introduction of a before training assessment method is useful especially for planning and fine tuning the training sessions. One of the biggest challenges is to break the resistance against new technology among an older generation of teacher. Also information technology knowledge, its usefulness and sharing information using additional training is important for vocational teachers. It was noted during the training that the best way to introduce and adapt new tools is to make practical exercises with them.

Utilization of SOME in upper secondary education is not a new phenomenon. SOME has become institutionalized among private and public services during the last decade. However, the paradigm change among vocational teachers has not yet been actualized and therefore special attention to this matter is vital. In this paper we introduced an assessment inquiry and discuss the experience gained from case study experimentation. In the conceptual part of the paper we discuss how to utilize SOME in training and what are the motives to introduce SOME among automotive and transport engineering

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