

Improving the Quality of Technical and Vocational Education in Slovakia for European Labour Market Needs

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Abstract—Technical and vocational education and training (TVET) makes a significant contribution to economic competitiveness and welfare in a global knowledge-based economy. The main challenge for vocational education and training is to meet the changing skills needs of individuals and the world of work in accordance with the principle of lifelong learning. Since the demand for new skilled workers is increasing, and the TVET customer base is constantly diversifying, it is necessary to increase awareness of the key role played by education and training in economic competitiveness and social inclusion. As in other EU countries, quality assurance in Slovakia plays a decisive role in modernising education and training systems and in improving their performance and attractiveness. These objectives are widely shared by the Ministry of Education of the Slovak Republic. Education and training systems are being modernised and transformed in terms of more effective management systems and quality assurance. The paper responds to current situation and deficiencies in the educational system of technical and vocational secondary schools in Slovakia in training of qualified workforce for the local and global labour markets. Authors introduces the project "Model for improving the quality of graduates and job applicants in the European labour market" elaborated and submitted by the two Slovak institutions of higher education - Dubnica Institute of Technology in Dubnica nad Váhom and the University of SS. Cyril and Methodius in Trnava, Slovakia. Both institutions are characterized by an experienced staff in the field of educational research. The project aims to the development of a model for improving the quality of graduates and job applicants in European labour market. It focuses on graduates of secondary vocational schools in Slovakia and the acquisition and improvement of their key competences. The pilot stage of the Project deals with theoretical background of quality assurance and specifics of its application in the area of technical and vocational education. In further stage, the project deals with a model for improving the quality of graduates and job applicants, in particular by the application of the elements of the foreign language communication skills improvement, increasing the computer literacy and enhancing the quality of teaching technical and vocational subjects of the target group. The importance of clear concise communication is often overlooked by the typical engineer and scientist. Based on the research findings, the paper emphasises the importance of communication skills in training students for technical and engineering professions. The author provides research findings in analysis of the most common mistakes in preparing PowerPoint slides, and in giving oral presentations. He shows practical outcomes and methodology for proper communication training. The pub-

lished findings would help teachers of engineering and science subjects to find the way to implement communication and presentation skills into technical subjects, as well as to increase efficiency of their technical presentations in educational process.

Index Terms—European labour market, key competences, quality system, technical and vocational education, training.

I. INTRODUCTION

Quality education is very timely in private sector. However, today it is very important in education and in other areas of the public sector, too. In today's competitive environment, it is the technical and vocational school environment that puts an exceptional importance on the quality assurance.

Technical and vocational education and training (TVET) makes a significant contribution to economic competitiveness and welfare in a global knowledge-based economy. The main challenge for vocational education and training is to meet the changing skills needs of individuals and the world of work in accordance with the principle of lifelong learning. Since the demand for new skilled workers is increasing, and the TVET customer base is also constantly diversifying, it is necessary to increase awareness of the key role played by education and training in economic competitiveness and social inclusion. As in other EU countries, quality assurance in Slovakia plays a decisive role in modernising education and training systems and in improving their performance and attractiveness. These objectives are widely shared by the Ministry of Education of the Slovak Republic. Education and training systems are being modernised and transformed in terms of more effective management systems and quality assurance. The paper responds to current situation and deficiencies in the educational system of technical and vocational secondary schools in Slovakia in training of qualified workforce for the local and global labour markets.

The world today is characterized by rapid changes, the explosion of information and the rapid pace of innovation, particularly those concerning the information flow, and this trend is accelerating [6]. Lifelong occupations are disappearing. The competences that are focused only on one specific situation are rapidly becoming obsolete, they become useless. Therefore, in all developed countries is an effort to find, define and develop such competences that are useful in most (even in non-existent yet) profes-

sions, which enable individuals to occupy a range of job positions and functions to perform various jobs, and which are appropriate to address a wide range of mostly unforeseen problems that allow an individual to successfully cope with rapid changes in work, personal and social life. These competences are called key competences. They are intended to address the multiple problems in different contexts, for achieving multiple objectives, they are to be applied not only in different professions, but also in various areas of human activity, in school, at work, in social and personal life. Acquisition and improvement of key competences is considered to be a lifelong process of learning, not only in school but also at work, family, cultural, social and political life, etc. Mastering the key competences is not just a matter of personal effort of an individual, but requires a favourable social and ecological environment [6]. The greatest pressure to address the key competences is made by economic sphere (trade, services, industry), because the key competences contribute from an economic perspective to:

- labour productivity growth and increasing the competitiveness,
- development of adaptive, skilled and qualified workforce,
- creating innovative environment, which is particularly important in the global market economy.

In a broader context, the key competences contribute to:

- increase of understanding of political affairs by individuals and their commitment to the democratic processes,
- social cohesion and justice,
- strengthening of human rights and the autonomy of an individual as opposed to growing global inequality opportunities and marginalization an individual [10].

II. PROJECT AIMS

The project aims to improve the quality of teaching of English through professionally oriented language portfolio built based on the needs analysis of target groups and the creation of modern, content-compatible and effective set of teaching materials (textbook, workbook, dictionary, multimedia device, teacher book) for selected types of secondary technical and vocational schools.

Next, we focus on enhancing the quality of teaching technical and vocational subjects by improving computer literacy. The main objective of the project is to create a model for improving the quality of graduates and job seekers in the field of the European labour market. From the main objective are resulting the following sub-objectives:

- Through the development of linguistic communication competencies improve the quality of graduates and job seekers in the field of the European labour market.
- Prepare methodology courses for language teachers in selected schools.
- To design and develop a set of educational materials.
- Through the development of computer literacy to enhance the quality of graduates and job seekers in the field of the European labour market.

- Prepare methodology courses for vocational teachers in selected schools.
- Create a multimedia tool as part of the teaching materials of selected study program (Electrical Engineering).
- Measure the impact of the use of multimedia tools for teaching quality and the performance and satisfaction of students with a focus on psychomotor skills.

III. PROFESSIONAL COMMUNICATION COMPETENCES

In recent years, employers have increasingly acknowledged that graduates of traditional technical and vocational education and training lack the wide range of written and spoken communication skills required to engage with members of other professional groups and with the broader community. The need for TVET students to acquire soft skills, in addition to technical skills, so as to enhance both professional community engagement and career success has been increasingly articulated by educators and industry professionals likewise. The fact that communicative competence plays critical role in both educational and professional environment has been recognised nationally and internationally by a number of authors involved in technical education [4] [5] [13] [15].

Engineering is often seen as a hard-skill profession where there is no place for soft skills. Yet the importance of soft skills for engineering professionals should not be underrated; they underlie all behaviours and interactions. Both technical and non-technical professionals need to work together and learn from each other for effective professional performance. All professionals, be they in engineering or elsewhere, need to understand how their actions and reactions affect their behaviour and working relationships. All the research activities we did in order to facilitate more effective and co-operative working practices.

Necessary intellectual basis for study at secondary technical and vocational schools, students acquire in science subjects, especially in mathematics and physics, and (depending on curricular needs) in specialized technical subjects. Subjects based on humanities and social sciences contribute to the overall development of students. Foreign languages are to be assigned to this group. To increase the chance of assertion the jobseeker in a professional practice, it is necessary to acquire not only the language skills but also the professional communication competence. Foreign language as a means of communication has its own characteristics, in particular arising from its use as a means of mutual communication of individual members of the socio-occupational groups, in our case, students/graduates of vocational - technically oriented schools. Participants of thus oriented communication have common knowledge in the field of non-linguistic, i.e. in their own sphere of specialization, and they bring to their communication multilateral personal professional experience. In this process, they involve certain customs and norms of behaviour, and the use of specific means of communicating - verbal and non-verbal. The use of a foreign language "at work and for work" therefore relates to quite specific communication context that is not significantly different from normal everyday situations in which the language is used.

III. CURRENT STATUS REPORT

Secondary technical and vocational school graduates achieve the knowledge base in mathematics, physics, chemistry and in professionally oriented subjects. Courses in humanities and social sciences, including foreign languages, contribute to the general basis for their intellectual momentum and professional development. To increase the chances of in professional practice, it is necessary to acquire not only language but also professional communication competence. Professional communication language skills along with other key competences play an important role in professional career.

English as the international language of professional communication has been so thoroughly acknowledged (e.g. [2] [3] [17]) and its dominance is barely doubtful. Teaching English in the environment of secondary technical and vocational schools should not be limited to only textbook and classroom activities, and certainly not to teaching General English. "Language acquisition would be most effectively facilitated if it could be embedded with the learners' field of study or work. Through appropriate pedagogy for learning, the more the learners are exposed to real world tasks, the better language users they will become" [1]. Real world tasks as defined by Nunan (1989) are those, which "require learners to approximate, in class, the sorts of behaviours required of them in the world beyond the classroom" (p. 40). With the development of teaching English, it has become necessary to define and distinguish the types of courses in order to elaborate the methodology and specify the content. Besides general English, the term English for Specific Purposes (ESP) has been used in a broad sense to refer to a wide range of very different "occupationally-oriented" courses. ESP courses are characterized by:

- being narrower in focus than ELT courses,
- tasks set by occupational orientation or study situation,
- narrower range of topics,
- being based on the learner needs analysis [10].

A survey done by the project team among the subject-area teachers within years 2013-2014 showed that they are aware of how important for students the professional communication skills in English are. However, the needs analysis indicated that students obtained mostly General English and a methodology that emphasizes reading and listening skills. It also showed, that students demanded activities that are more challenging. They expressed their interest in using the language in real tasks. Faced with this situation, we decided to implement project based teaching as one of the solutions that had been verified six years ago in a project focused on improving technical education in institutions of higher education. In today's dynamic and fast-changing world, students need to learn how to engage with issues, and how to process information that is presented in a manner that is less structured, not subject-specific and open-ended. Students need to learn fulfil tasks that require a range of skills and competences to apply what they have learned to complete a project. Project work as one of the components of the ESP programme is not as a replacement for other teaching methods, since it is not a method itself. It is a purposefully planned and controlled teaching/learning process, which can involve a various scale of teaching methods and

forms, as well as the forms of project outputs. It provides students with the opportunity to synthesise knowledge from various topical areas, and critically and creatively apply it to real life situations. On top of all this, project work is popular among students today especially since it allows practical application of information and communication technologies at work on project outputs.

In the pilot phase of the project, we addressed management of the Secondary Technical School of Electrical Engineering in Trnava, Slovakia to make an experiment in two classes of 3rd and 4th grades with a sample of 40 students 17-18 years old students in two groups (experimental and control). Students have three compulsory lessons and one optional (conversation) of English per week, and at the end of the fourth grade they pass school leaving exam in English having a possibility to select the level according to the Common European Framework. It was due to the small number of contact hours (lessons), that the experiment expected increasing English language activities beyond classroom with an aim to raise language skills and communication competences, motivation of students to learn English and their awareness of its usefulness towards their future professional life. The experiment expected the development of teaching materials, methodology and preparatory training process with teachers of English. As an outcome of the former pilot research, we implemented project work into the teaching process and tested its efficiency in two school semesters in 2013-2014. The whole process was facilitated within the purposefully planned time schedule. In spring 2013, we tested viability of the project work and range of its application. The next school year was to verify and precise the process of planning, elaborating and presenting the outputs of the project work, as well as to measure its efficiency in various areas. For example, we evaluated the increasing of ICT skills and competences, the time spent on working on project tasks outside the classroom, as well as particular activities related to the language development. The selected experimental groups and the control group were consistent and comparable groups, 20 students in each group. Since this type of experiment cannot be conducted in large groups because of the quality of teaching process, the verification of research results will be valid after collecting data from longer period. This was the reason, why we focused not only on quantitative, but also on qualitative aspects of the research, considering opinions and value attitudes of students obtained from controlled interview, pedagogical diary, etc. The results from the first two years have proved the vitality of the project-based teaching as an issue for application of such an effective tool as the project work is. Students in both groups gave considerable efforts to the activities related to elaborating of the topically and skill-oriented project outputs (see Fig. 1). They have to develop several outputs on "History of Technology" in purposefully planned, discussed and facilitated steps. Even the partial steps were evaluated, each student got feedback. Besides the partial activities like an e-mail communication, there were the three major outputs. A poster designed in a pre-defined style, PowerPoint and oral presentation in a professional style. We compared the activities of project group with the activities of control group working in a traditional style with printed materials and tasks solution at the lessons.

The results confirmed our expectation showing great differences in a range of activities of the experimental and

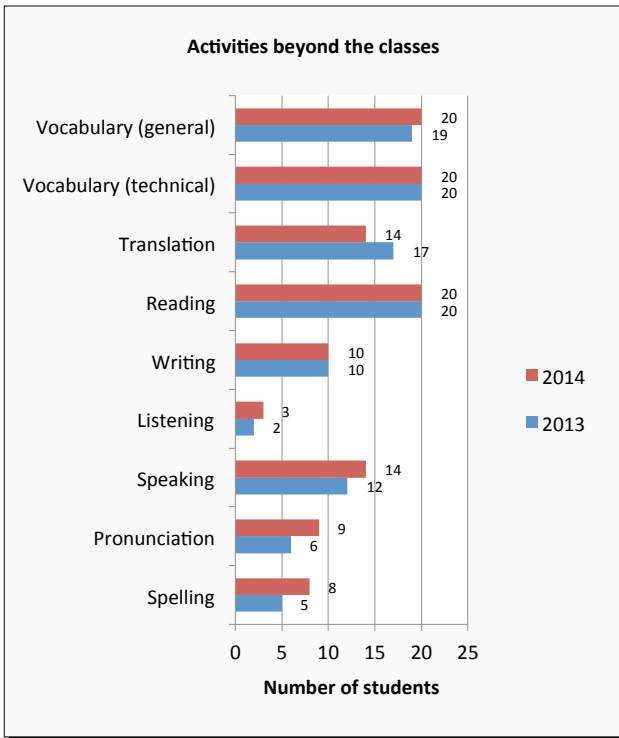


Figure 1. Activities related to the course content carried out beyond the class time (comparison of experimental group in different academic years).

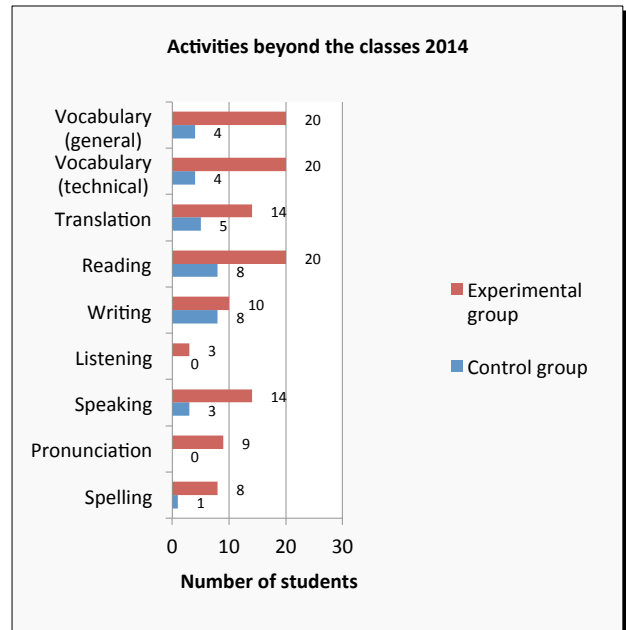


Figure 2. Activities related to the course content carried out beyond the class time in 2014 (comparison of experimental and control groups).

control groups (Fig. 2), as well as in the average time spent in carrying out the project tasks beyond the classroom per week (Fig. 3). To measure and evaluate data, we used a questionnaire and a recorded interview with respondents of the experiment.

Project work differs from the structured thematic approach. It applies the principles of problem-based learning. Students get to do active investigations of a topic. Rather than solving the problem for the students or providing and explaining the answers, they are encouraged to find out the answers on their own through investigations and experimenting. During projects, students inquire, study, plan, evaluate, compare, collaborate, manage, create, and present. They try new tools. They organize their work over time and reshape work products into more polished forms. They give constructive feedback and respond to feedback from others. Sometimes they work independently, and at other times, in groups. They ask questions and present what they know. They evaluate the success of their efforts, change direction, and persist as they overcome obstacles. Through the project and all of its cognitive demands, they become more experienced, and they are more competent at the end. Project work gives an opportunity to experiment for both the teacher and students. Finally yet importantly, it is not limited in a form of outputs. Once it is an oral presentation, the other time a video clip or 3D model, etc. What is important is that students develop their language skills (reading, writing, speaking, listening) and communication competence. The added value is if it develops some other skills and competences, e.g. ICT skills.

IV. COMPUTER LITERACY IMPROVEMENT

The former research showed that multimedia involvement into teaching/learning process contributes to the

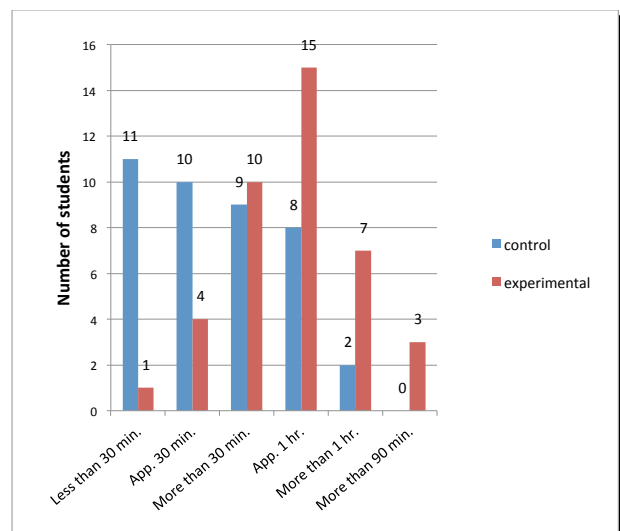


Figure 3. Time spent by weekly activities related to the course content carried out beyond the class time in 2013/2014 (comparison of experimental and control groups).

clearness, greater activity and concentration of students in learning as well as to better results (using digital technology, students perform better in communication, collaboration and problem solving, are more computer literate). Technologies combined with multimedia educational materials can greatly facilitate and streamline the learning process (creating wider opportunities for teaching preparation, revising the subject matter and testing of pupils). They also contribute to the development of thinking and creative activities of pupils. The teachers themselves reported that thanks to modern technologies, preparation for teaching is more effective and they can better focus on the didactic aspects and methodology in the preparation for teaching. They can apply different methods and innovative ways of working with ICT, with more space and opportunities for individualization of work in class, etc. Using of digital technologies, however, does not necessarily lead to improved results. The technology itself and

the access to information do not have a direct impact on students' knowledge. It is very important that the means of ICT in the teaching process teaching would be properly applied and their potential utilized [7].

We implemented the computer literacy and ICT skills and competences in the Project in a multidisciplinary way. Firstly, we are developing multimedia teaching tools on the e-learning basis, secondly, applying the project-based teaching, we are experimenting the possibility to improve both computer literacy and ICT skills and competences. Since the range of the paper does not allow expressing all the performed steps, here we focus on experimental part of the pilot phase of the Project with the above mentioned experimental and control groups of students of the Secondary Technical School of Electrical Engineering in Trnava, Slovakia.

In a simple questionnaire, we verified how students evaluate their level of surveyed computer skills. The self-assessment was scaled within the range of three closed items:

- a) by myself with no help;
- b) with a help;
- c) I do not handle it.

Fig. 4 refers only to students who indicated the response a) "without help".

High self-assessment in the majority skills attributes to the third and fourth years of study at secondary technical school and to an overestimation of their skills. This was confirmed by the analysis of the frequency of errors and deficiencies at individual skills (Fig. 5).

Evaluation was based on the analysis of e-mail communication in the framework of the ongoing project teaching. Students sent project outputs, consulted on the steps, informed about ongoing work, etc. We evaluated more than 140 e-mail messages. After analysis, we organized a seminar where students discussed, solved tasks and learned the rules of "netiquette". In a subsequent e-mail communication, the extent of errors decreased significantly (Fig. 6). The figures involved in this graph comes from the analysis of 87 e-mail messages. The subject matter of the seminar was completely new for most of the students. In the follow up questionnaire, they stated usefulness of this activity and declared interest in more detailed information from this field.

Another phenomenon we investigated in terms of acquiring was the program MS Word. From the questionnaire survey as well as from interviews high rate of self-satisfaction with the level of mastering the program became apparent. Results of the analysis showed significant lacks in its adoption and use. We analyzed two documents - the original form of text formatted according to instructions and electronic poster. We focused on technical rather than aesthetic aspect of the documents design. The results are illustrated in Fig. 7.

The analysis clearly disclosed the reserves. In this type of analysis, it is difficult to objectively verify whether the student elaborated the document alone, or someone helped him. Thus, some of the characteristics may be even worse. In addition to the analysis carried out, each student received feedback in the form of an analysis of a particular document. Level of error correction and acquisition of missing skills in working with MS Word we did not investigated further.

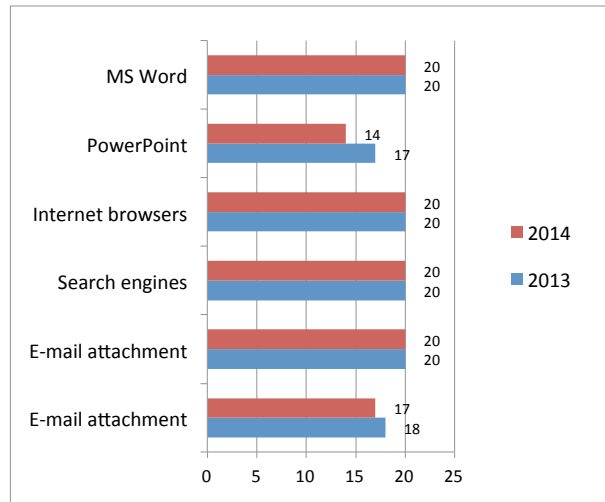


Figure 4. Self-assessment of selected computer skills.

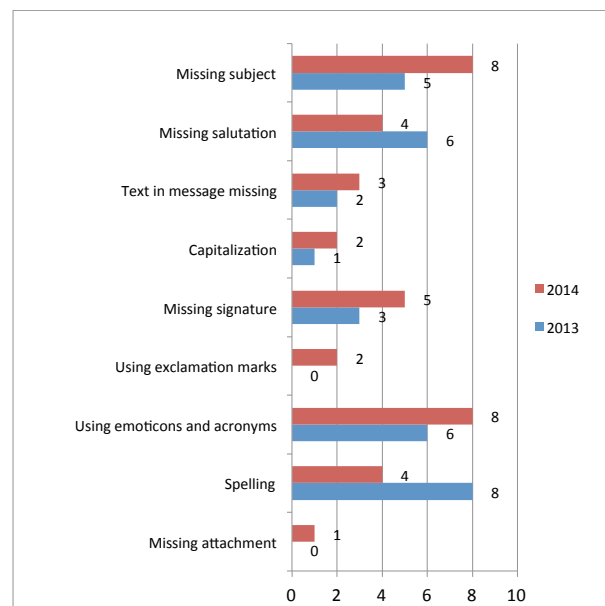


Figure 5. Lacks in e-mail communication.

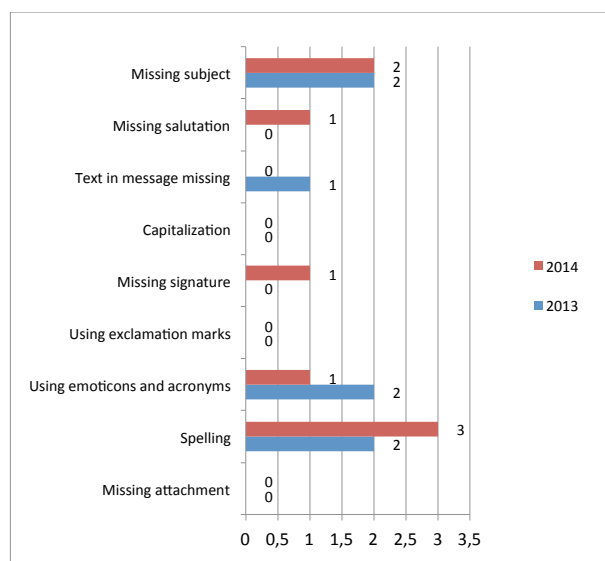


Figure 6. Lacks in e-mail communication after the analysis and workshop aimed at e-mail skills improvement.

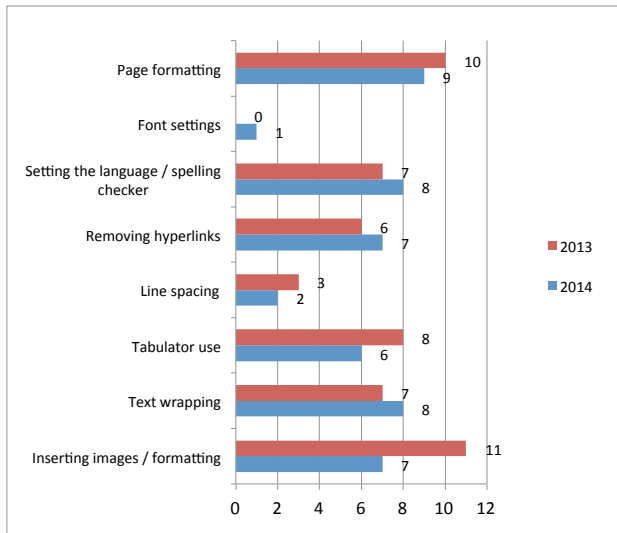


Figure 7. Lacks in the use of MS Word.

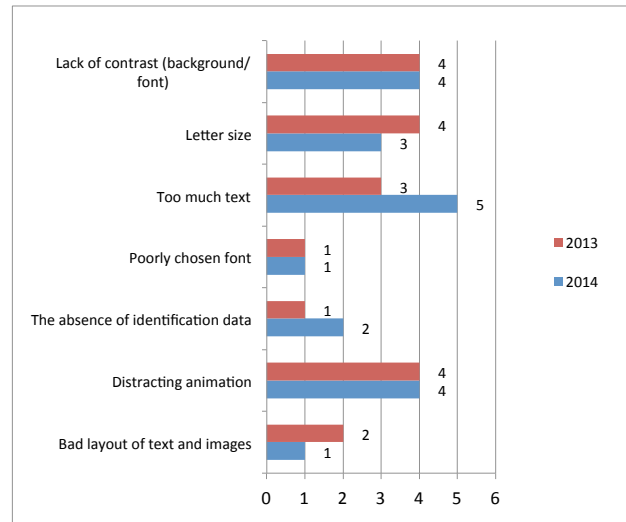


Figure 8. Lacks in the use of MS PowerPoint.

Specifically, we analyzed the level of work in MS PowerPoint. Since we cannot influence the interference of a third party in the development of PPT presentations, we did not focus so much on the technical aspects of PPT slides (setting presentations, background style, design, ...) as to the effectiveness of communication elements correlated with oral presentations. Students work in creating "effective communicative" PowerPoint slides preceded creative seminar on "Effective presentation", which consisted of preparing the most effective oral presentation PPT support to highly professional audience. Analysis was performed by observing students at presentation (Fig. 8).

Oral presentation was preceded by theoretical and practical training for this activity in three workshops. The students worked with materials specifically designed for this purpose, they did role-playing games, solved case studies. Therefore, we focused on the following details (Fig. 9).

In general, it can be concluded that students mastered the presentation well.

The panel discussion at the final evaluation seminar confirmed positive indicators, suggested by the analysis during the project investigation. Up to 18 of the 20 students said they would welcome similar activities in the next semester. Evaluation of activities were positive, students describe them as follows: ...were interesting, ...I was not bored, ...I'd welcome this type of activities was also at other subjects, ...I was looking forward to English lessons, ...I was afraid of presentation, but then I had a fantastic feeling, ...I was delighted by the praise of the teacher and positive assessment of classmates. In light of the above verbal evaluations were the majority of the contributions. We wrote on the board activities that we did during the semester, and outcomes that resulted from them. Students expressed what the activity (output) evaluated as:

- useful,
- difficult,
- unnecessary,
- challenging.

We were interested in qualitative assessment. At usefulness, students in both experimental groups oscillated

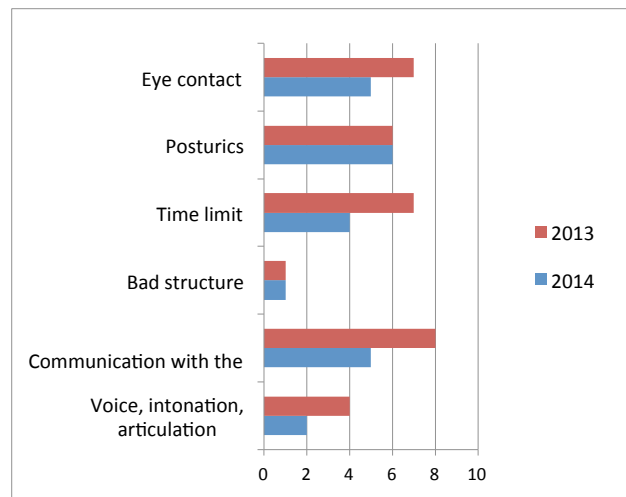


Figure 9. Lacks in presentation skills.

between presentations and electronic netiquette. Finally, the majority of both groups agreed that the presentation, including the preparation of the creation of PowerPoint slides was the most useful activity for them. They appreciated that the information was new to them, and that they were given it in the context explained. They expressed the assumption that they will use this experience in professional practice. On the direct question how many of them knew principles of e-mail etiquette prior to this project, only one student from the first group and three in the second declared the knowledge. Students in the first group considered work on the poster as too difficult. Two students identified it as unnecessary. To the question "why?", they answered superficially: "What good will in life the "poster" be for?" After discussion, and explaining that it was not a poster itself, but work with technical foreign language text, while poster was just a form that defined limits, and that while working on the poster they had to train more computer skills, they eased their arguments, but insisting that this activity was difficult. While so far both groups agreed in all tested parameters, in assessing demandingness, any of the students in second group did not indicate poster as difficult. This interesting phenomenon can be explained that in verification of the activity in the pre-research and then in the experimental

group, we improved methodology so that the task was clearly articulated and clearly indicated. The difficult one was designated the task in identifying sources, materials selection and processing of primarily reduced text. Activity was marked as time-consuming, some students said that the most difficult was the choice of subject itself. The second group did not think that any activity was unnecessary. On the contrary, they appreciated their applicability.

V. CONTINUOUS RESEARCH – TVET AND PRESENTATION SKILLS

In an age when so much communication depends on technology, delivering messages face-to-face has paradoxically become even more vital to professional success. We all have ready access to more information than any of our ancestors did. At the click of a few keys, we can locate reams of facts on any topic under the sun. Nevertheless, although the amount of data available to us has grown, the number of hours in a day has not. Amidst this flood of information, technology can make getting to the significant bits of data much more challenging. That is where a good presenter becomes a priceless commodity. Listening to a clear and concise speaker is still the most time-efficient way to comprehend new information. In addition to the concerns that all speakers have, they must present specialized and complex data. Some of the fear is also because the craft of public speaking is not taught properly. For most of us, it was never taught at all.

Some technical professionals are excellent speakers. Whether through training, feedback, experience, or an intuitive grasp of how to do it, they are good at it. As a population, however, technical professionals are not known for having the greatest presentation skills. Nevertheless, the ability to give a presentation to customers at a project review meeting, to co-workers in a webinar, or to an audience of managers and technicians at a conference can significantly boost their credibility, clout, and professional status. Delivering a presentation at work, or at professional events, is an opportunity to share insights, convey important information, and gain a reputation as an expert in the topic. Being known as an accomplished presenter is an unbeatable career credential. Whether the career follows a technical, business, or management track, or something else altogether, presentation skills will help professionals accomplish more – and be more valued for what they accomplish. Whether or not they are interested in giving formal presentations, the ability to present will boost their communication, persuasion, and leadership skills.

Nearly all professionals in technical and engineering jobs must make presentations from time-to-time. If a person attends any meeting on technical issues, the person will see that many presenters have room for significant improvement. Simply making a presentation once or twice a year is not sufficient practice for becoming an effective presenter. Usually presenters receive little critical feedback on their presentations, so improvements come quite slowly. People truly do not know how they come across or what they are doing wrong. Unlike traditional manuscripts, oral presentations allow a direct interaction with the audience. When delivered properly, they can be powerful and informative. An effective presentation can help secure a job or seal a deal with a client. On the other hand, a poorly executed presentation can keep an individual in the job-search market or lose the person a potential client.

Having developed a great presentation is merely the first hurdle though; one must be able to deliver the presentation effectively. This skill is also learned and needs to be developed, so there is a need for training when preparing for professional career. Many of the ideas on presentations are common-sense suggestions, but if we look around, we will find that many professionals do not follow these basic rules.

The ability to present a case clearly, cogently and confidently is enormously valuable at every stage of students' lives, whatever the subjects they study; it will bring them success at job interviews and their future working life – it is the most transferable of all their skills, and a critical part of their professional development.

Current educational reform is aimed at changing the traditional and encyclopaedic school system into creative and humane education, providing knowledge-based education with focus on action, personality freedom as well as the design of progressive and creative education. Together with classic presentation methods, innovated forms of study materials presentation are utilized more and more frequently. The most frequent ones are PowerPoint presentations via data projector [9].

The cost of a poor PowerPoint presentation is staggering. Ian Parker in *The New Yorker* magazine states that according to Microsoft estimates, there are more than 30 million PowerPoint presentations made each day. If we assume some relatively conservative meeting parameters of four people per presentation, a half-hour presentation on average and the wasted time due to a poor presentation is one-quarter of the presentation time, we arrive at a waste of 15 million person hours per day. At an average salary of \$35,000 per year for those attending the meeting, the cost of that wasted time is a staggering \$252 million and change each day.

Therefore, there is no doubt that oral presentation skills combined with technological support of presentation software are transferable competences that have to be included into technical and vocational education and training of those students being prepared for technical and engineering professions, all the more that the technical professional environment requires high degree of efficiency. This was the reason we aimed our research to analysis of the target environment and at the spring term we analyzed 112 oral presentations supported by PowerPoint slides at seven secondary technical and vocational schools in Western part of Slovakia in regions of Trnava, Trenčín, Dubnica nad Váhom, Stará Turá, Hlohovec, Nitra. As can be seen from the Fig. 10, the lacks in some crucial skill features are significant. More than a half of presenters suffered from insufficient eye contact and the interaction with the audience. We have to say, that a part of these students (at two of those seven schools) were previously trained for presentations.

The other aspect we focused on was the quality and efficiency of PowerPoint slides. Here we expected better results, since working with graphical software programs and experience from using various applications, what is natural for young generation, would make an assumption of more experienced users. Anyway, the results showed statistically significant lacks in various aspects of preparing PowerPoint slides. Findings are displayed in Fig. 11.

As seen from the graph, students suffered mostly from disability to select text, what significantly decreased effi-

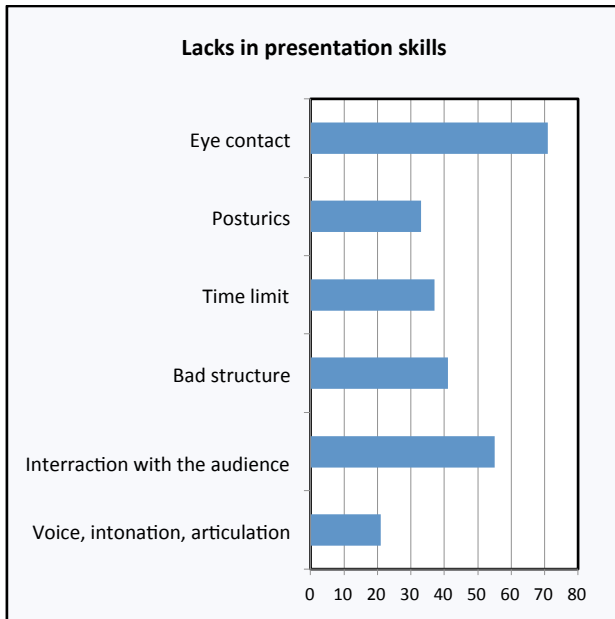


Figure 10. Lacks in oral presentation skills measured at the sample of 112 students of secondary technical and vocational schools from March to May 2015.

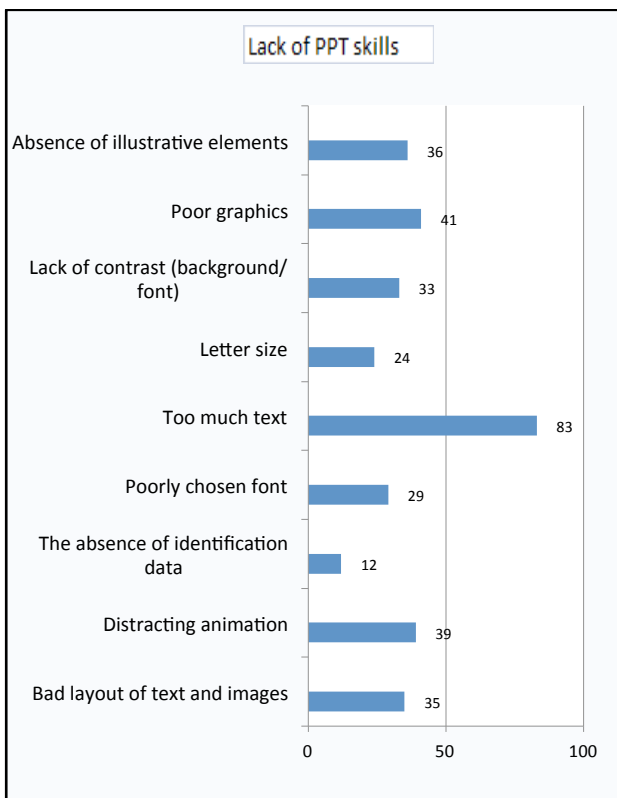


Figure 11. Lacks in designing the PowerPoint slides measured at the same sample of 112 students of secondary technical and vocational schools from March to May 2015.

ciency of this communication tool. Also other, although statistically less significant data show that there have to be a certain time, effort and specific competency devoted to improving the observed skills, what will expect to make both the schedule and curricular changes. The analysis was just the pilot activity towards a series of follow-ups including the development of didactic materials for the target group with the aim to develop both presentation and

English language communication competences. Any tool is useful only if it is used properly. Here are four specific reasons why students did not succeed their PPT slides.

We could not figure out the point of the presentation: When a presentation has not been planned well, there is no identifiable goal to the presentation. The presenter should analyze the audience and plan the message to move the audience from where they are today to the desired goal. Without a clear message, the presentation wastes the audience's time. In a management setting, regularly wasting time with ineffective presentations to decision makers can waste tens of thousands of dollars.

We could not see what was on the screen: If the audience cannot see what is on the screen, they certainly will not be getting the message. Too many presenters choose text and background colors that have little contrast, so the words blend into the background instead of standing out. The font choice is also a problem, from too many fonts used, using hard to read script type fonts or using a font size too small. And if the room is too bright due to sunlight or the projector has a weak bulb, we are hard pressed to see anything on the screen at all. We would like to see colour, font and room choices that result in clear slides that are easy to read.

We could not understand the points: Too many presenters simply put up a page full of text and read it to the audience. This insults the audience and usually is not clear because the full text gives no context or illustration of the points to help us understand the ideas. It looks much more complicated. The audience spend too much time trying to read this paragraph instead of listening to the presenter. For text, we would like to see a presenter build bullet points that take us step by step through a logical progression of ideas. We would like to see graphs or tables to give visual life to concepts and diagrams that can break down and illustrate complex ideas.

We were distracted by what was on the screen: Just because the software has all these wiz-bang features, does not mean that every presenter should be using them. We get so distracted figuring out where the next thing will fly in from or spin around that we have no time or mind energy to focus on what the message is. We would like to see relevant images and a clean presentation of ideas that gives enough visual variety to keep our mind working, but also gives the majority of the mindshare to the message being delivered.

We have outlined a problem the teachers at secondary technical and vocational schools face. Moreover, the long-term marginalization of the problem is projected to the professional practice. The paper covers one form of professional communication. Although this coverage is not comprehensive, there is a discussion of a wide variety of communication mechanisms, and the techniques provided should be extensible to other forms of communication. The incorporation of several components of the fundamentals of oral presentation skills including the effective PowerPoint slides design in education will facilitate advanced communication skills. However, given the traditionalist nature of many engineering curricula, this may take some time before change is evidenced.

VI. CONCLUSION

The basic strategic document of the Slovak Government in the field of education - MILLENNIUM: National

Programme for Education and Training in the Slovak Republic for the next 15-20 years, developing of key competences include the main objectives of education and training. Within the project, we will proceed in accordance with the above strategic documents and competences listed in a given document, and we will focus on the development of:

- communication skills and competences, i.e. oral and writing skills to express, explain, read, search, store and use, communicate and produce information even in foreign languages,
- competence, to work with modern information technology, develop and improve skills to work with ICT, Internet, use different types of information resources for professional purposes.

The main benefit will be the development of model for improving the quality of graduates (secondary technical and vocational schools) and job seekers in the field of the European labour market (mainly focusing on improving language communication competences and computer literacy of the target group). We expect the impact of activities implemented in the project on specific target groups: citizens, employers, public administration, etc., but especially on educational institutions and the learners.

We are aware of the fact that project work is not a cure for everything. It requires a highly professional teacher with advanced methodological competencies. As we mentioned in the introduction, project work is not a method. It is up to the teacher what methodological approach s/he will decide for within this demanding educational process, so that to achieve the efficient and effective results that would satisfy both students and teacher. Ultimately, they are the prospective future employers of graduates, demanding for workers with high language competence, who should be satisfied. Project work is one of the means to attract, challenge and involve students in their professional development.

We described a dominant part of the pilot phase of our project. Currently a demanding task of wide national verification of the so far achieved results is in the state of launching the activities. We addressed 40 secondary technical and vocational schools all over Slovakia, and got positive responses to enter the process. We prepare and design universal modern tools to implement them to improve teaching and learning towards the quality improvement, particularly the quality of the school graduates at the European labour market.

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