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EVALUATION OF THE SIGNIFICANCE OF TRANSVERSAL SKILLS IN EDUCATION FOR TEXTILES AND LEATHER SECTOR

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Abstract

Beside engineering skills related to textile, clothing, leather and footwear (TCLF) technology all recent reports from European organizations highlight the importance of introduction of transversal skills into educational programs. This research comprises the opinions of 66 Croatian employers from TCLF sector related to ranking of importance of transversal skills. Social and civic skills, cultural awareness and creative expression, ability to respect diversity and communication skills are more sought after in design related jobs. Psychomotor skills, reaction time, precision of machine and equipment control are highly rated for engineering jobs. Engineers also need skills in the field of human resources management, empathy, analytical and organizational skills, resource management; customer needs targeting and focus on results.

Keywords

Transversal Skills, Textiles Sector, Leather Sector, Social and Civic Skills, Lifelong Learning Skills, Psychomotor Skills, Education

1. Introduction

Along with engineering skills related to textile, clothing, leather and footwear (TCLF) technology all recent reports from European organizations highlight the importance of transversal skills and expect them to be introduced into educational programs. Number of studies (Hadiyanto & Moehamin, 2017; Ramlan & Ngah, 2015) confirmed that soft skills are vital for students competences and are needed for gaining hard skills which are necessary for the job market. This research includes the opinions of 66 Croatian employers from TCLF sector related to significance of transversal skills. Evaluation serves as a basis for developing curriculum which would include the required skills in higher education programs.

Blueprint for Sectoral Cooperation on Skills for TCLF sector (European Union, 2017) emphasize that TCLF sector is one of most promising and most creative in Europe. However, in spite of innovation and creativity, TCLF industry faces increasing gaps due to a mismatch between education and industry's needs. Emerging skills should include digital skills, environmental skills and skills in technical textiles innovation. The development of sector-specific skills should be complemented with transversal skills, notably entrepreneurial and business skills. Transversal knowledge, skills and competences are relevant to broad range of ocupations and are the building blocks for development of sector and occupation specific skills and competences.

TECLO report (TECLO, 2015) highlights technical production competences which will remain central, then supply chain management, business, sales and marketing skills, then skills on technology, innovation and sustainability. Special focus was given on transversal enterpreneurship skills, communication and collaboration skills.

Annual report of EURATEX (EURATEX, 2016) mention that the textile and leather productions in the European Union are under influence of strong international competition. Qualifications require constant changes, due not only to strong competition but changes of lifestyle and concern for environmental guidelines. Report emphasizes the need to overcome the skill gap between export and marketing employees of textile companies and position creativity skills as core strength of EU competitiveness.

European Sector Skills Council TCLF report (European Sector Skills Council, 2014) concludes that production related technical competences stay central. Transversal skills are among priority areas of competences for TCLF industries. Employers find important psychosocial elements, motivation, willingness to learn and accuracy. In TCLF sector in EU

workforce is particularly diverse. That means that communication skills and knowledge of national language have become indispensable. Flexibility and adaptability are necessary. Most important transversal skills for footwear product development manager are communication and collaboration skills with other cross functional teams and professionals. Textile product developer needs to have skill of translating client's wishes into a textile solution and again communication and collaboration skills with client, designer and market specialist. Clothing product designer needs to possess the creativity skills and collaboration skills with manufacture.

2. Method of Research

For the purposes of examining the needs of employers, a survey has been constructed which allows the collection of data from a large number of employers. Key competences for lifelong learning relate to the 2006 European Union Recommendation (European Union, 2006) about the competences needed by all people for their inclusion in society, employment and development and further lifelong learning. Eight such competences are defined and examined in this survey. The other transversal skills that are being considered in this survey are selected based on primarily Bartram's competence model (Bartram, 2005) and on the basis of the Piloting a European Employer Survey on Skill Needs conducted by CEDEFOP in nine EU countries (CEDEFOP, 2013). The importance of skills was evaluated on a scale from 1 (low) to 5 (high).

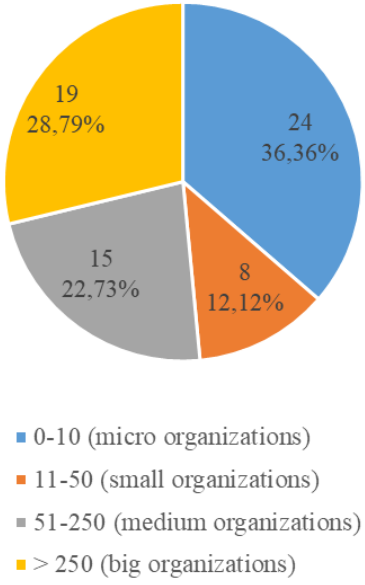

Figure 1: *The shares of surveyed organizations by size*

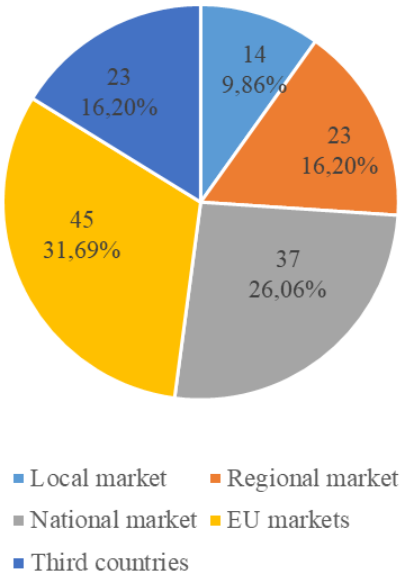

Figure 2: *The shares of surveyed organizations by market*

The survey was conducted by Faculty of Textile Technology, University of Zagreb, on a sample of 66 TCLF organizations from the Republic of Croatia, 24 micro organizations, 23 small and medium organizations and 19 big organizations (Fig.1). 31.69% of organizations sell their products mostly on EU markets; 16.2% sell their products mostly outside EU, and 52.11% sell their products mostly on a national or regional level (Fig.2).

3. Experimental

3.1 Social and civic competences

Social and civic competences are most sought after in design related jobs (average rating 4,4), while for engineering jobs they are only third in importance from four groups of examined generic skills (average grade 3,7) (Fig.3). From the Fig. 4 graph it is evident that generic skills of cultural awareness and creative expression have contributed most to the high rating for design related jobs and a low grade for engineering jobs. Respect for diversity is also more expected in design professions (average 4.3) than in engineering (average 2.9). Successful communication and cooperation with others in the workplace is highly evaluated for all workplaces (4,5). The highest expectations regarding social and civic competences are on industrial textile and clothing designers with a high average rating of 4.7.

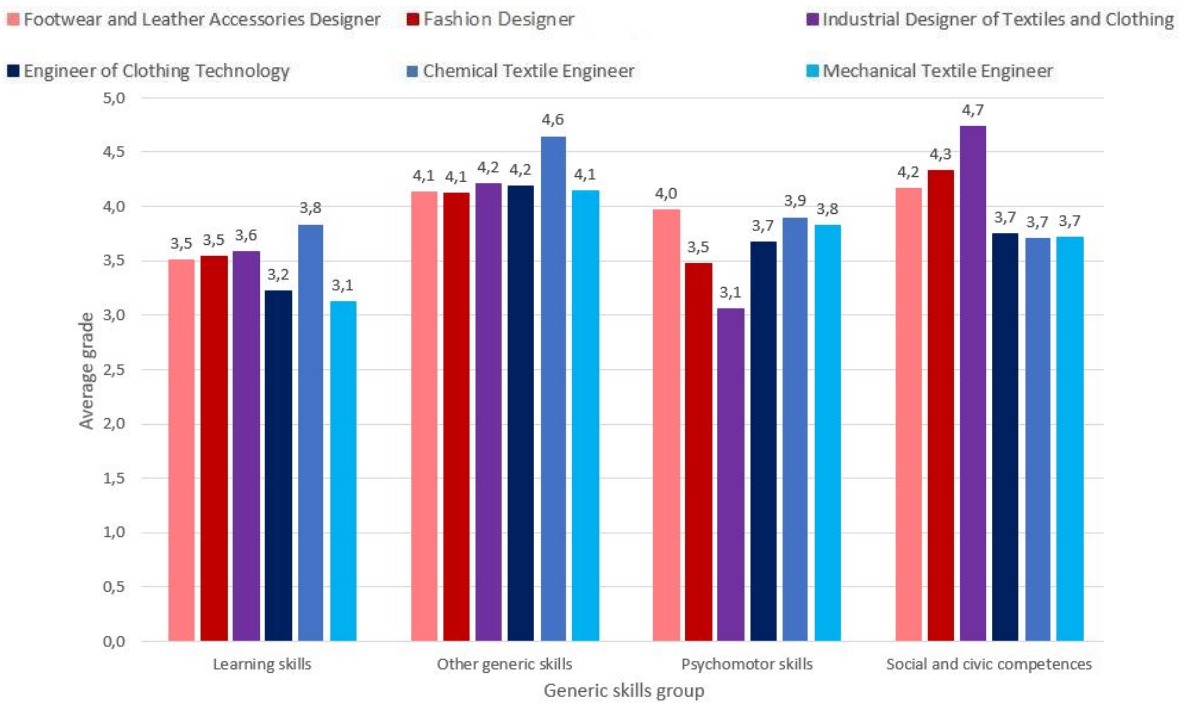

Figure 3: *Evaluation of the significance of transversal skills by occupation*

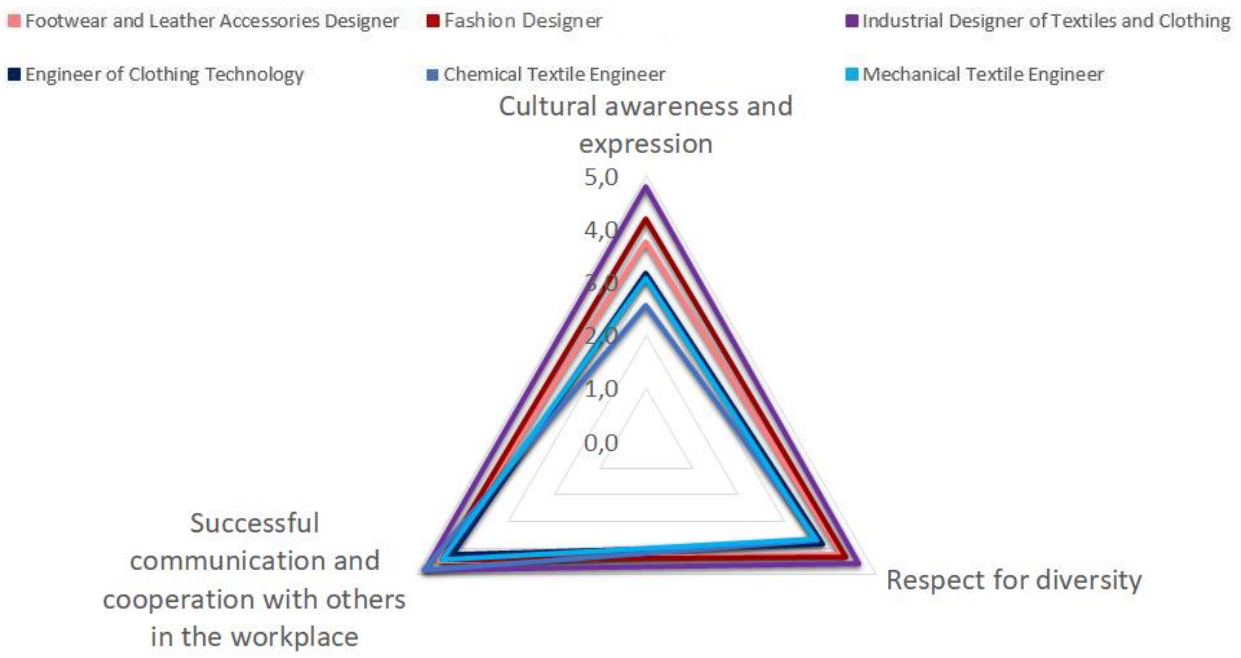

Figure 4: *Average rating for social and civic competences*

The reason for this is that industrial designers are expected, apart from designing the product, to engage in marketing, branding and product placement on the market activities.

For engineers, in spite of high expectations of successful communication and cooperation with other people, cultural awareness and respect for diversity are not highly anticipated skills (Fig. 4). The reason for this could be the specific working environment which is very noisy and unsuitable for deeper social communication.

3.2 Lifelong learning skills

Lifelong learning skills are the lowest rated group of skill of examined employers (Fig.3). Actually, skill of learning self-management have highest grade (Fig. 5). Mathematical competences and basic competences in science are the least sought-after skills for designers (2.0) and not much better rated skills for engineering jobs (2.7). Yet, university programs educate engineers in basic sciences about 3 semesters. This is a well-known gap between employer and university opinion. Lifelong learning digital competence is most expected from industrial designers (rating 3.8) and the least from textile-mechanical engineers (grade 2.6) which is associated with the nature of work and work tools in those workplaces.

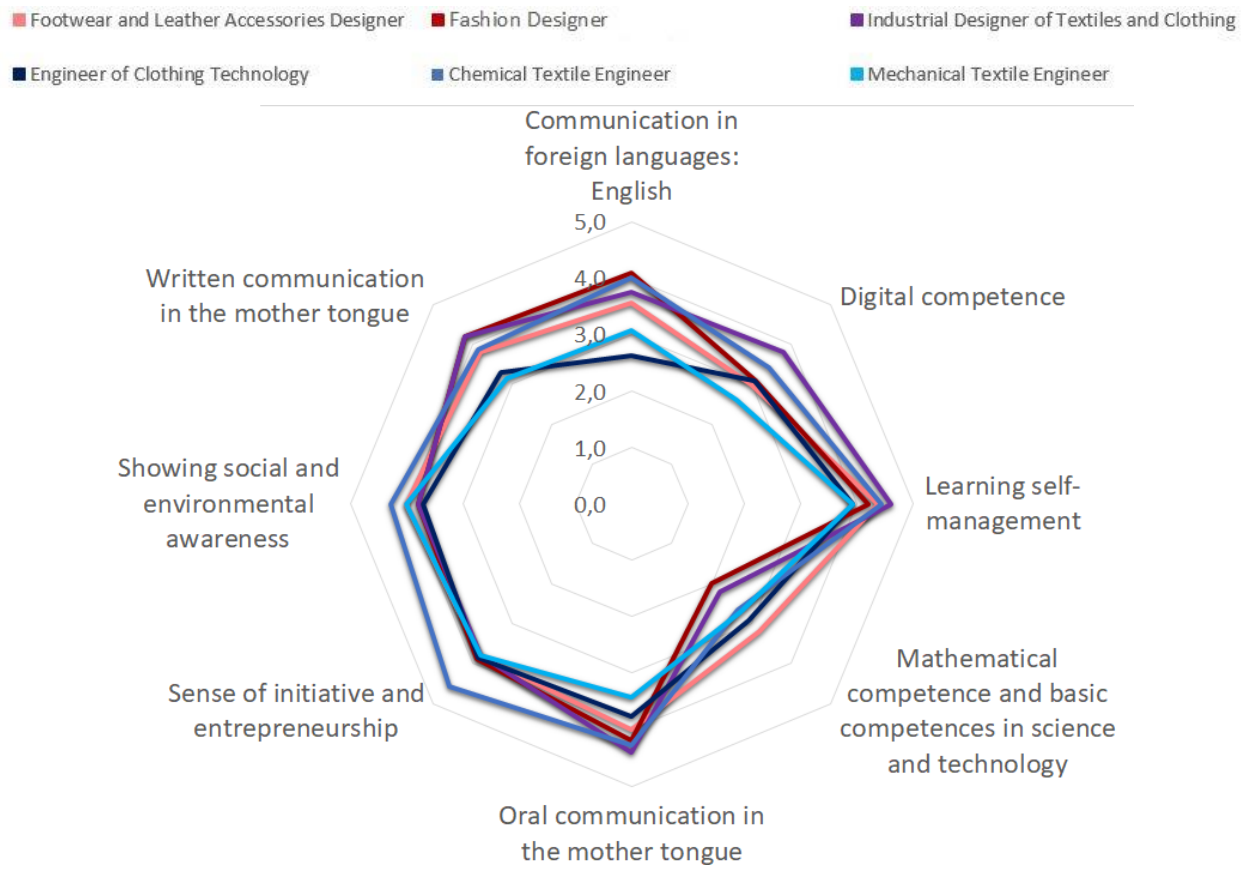

Figure 5: *Average rating for lifelong learning skills*

Very high expectations regarding the sense of initiative and entrepreneurship are set on textile - chemical engineers (grade 4.6). The reason for this is the job descriptions that require such qualifications, which include activities related to process development, organization and quality assurance. The high expectations for textile-chemical engineers are regarding the environmental awareness (grade 4.3) since the pollution is mostly associated with the chemical byproducts in production of textiles. Good communication skills in Croatian and English language are more expected from the design professions (average grade 4.0), while for engineering professions expectations are lower (average grade 3.5) (Fig. 5).

3.3 Psychomotor skills

From Fig. 6 it is apparent that psychomotor skills are least sought after by the industrial designer of textiles and clothing (3.1). The reason for this is the need for a very narrow specialization of industrial designers whose workplace is mostly related to the computer. Finger dexterity and hand dexterity are the sought-after for fashion designers and footwear and leather accessories designers, which more often work in smaller crafts.

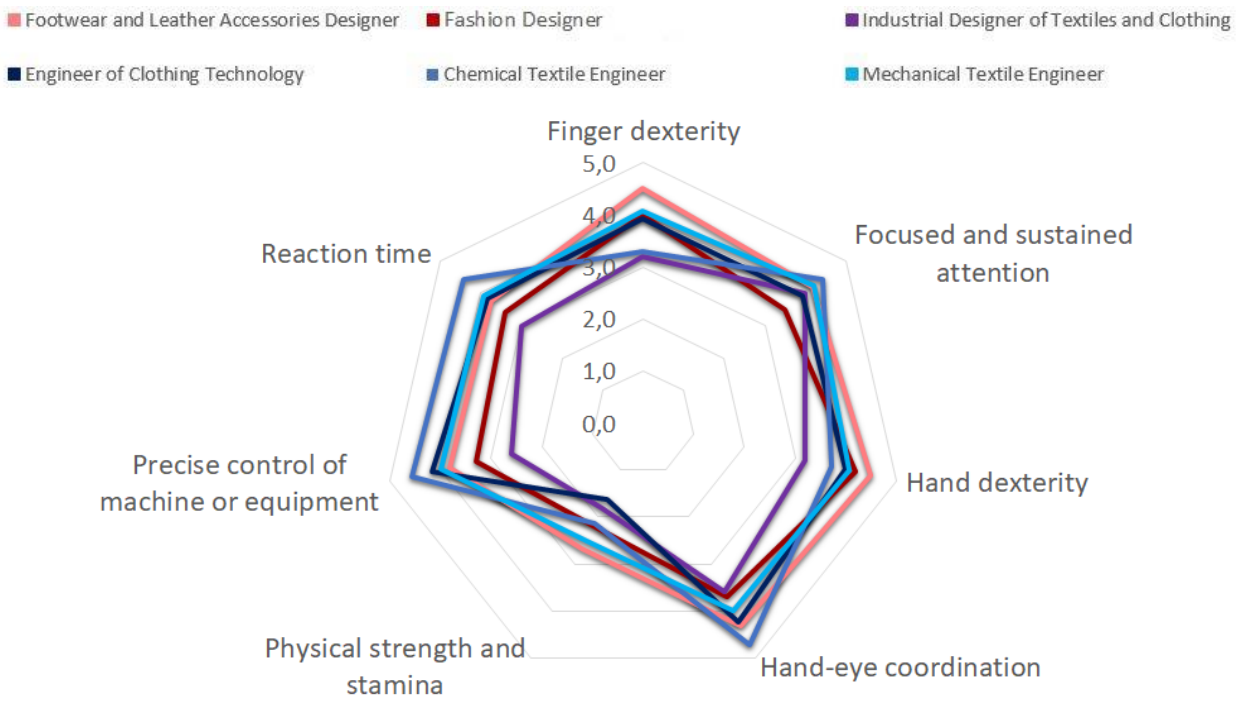

Figure 6: *Average rating for psychomotor skills*

Precise control of machine equipment was highly evaluated for the engineering group of occupations (average grade 4.2). Also, in the engineering group of occupations, the reaction time was rated with an average of 4.1, while in the design group of professions was low rated (3.4). Physical strength and stamina are unimportant for any examined job (Fig. 6).

3.4 Other transversal skills

From Fig.3 it is evident that other transversal skills are highly appreciated for all TCLF professions. Team work, responsibility, meeting customer expectations and creativity and innovation are skills sought after in all examined jobs (Fig 7). For engineering occupations good skills are required in the field of managing people (average score 4.1) and at the same time showing empathy (average score 3.9). In engineering related jobs highly rated are analytical skills, planning and organising, managing resources, meeting customer expectations and results oriented thinking.

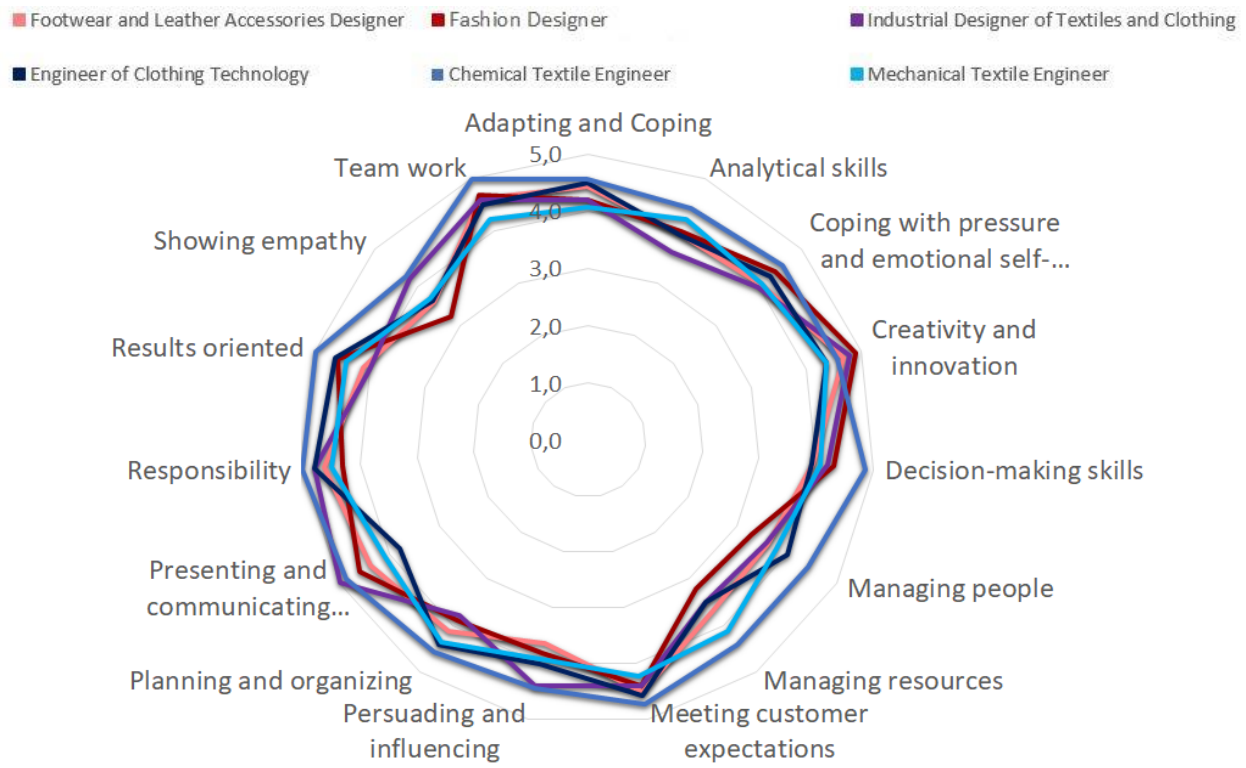

Figure 7: *Average rating for other transversal skills*

For design related jobs highly rated are presenting and communicating skills (for industrial designers grade is 5.0). Teamwork abilities (average grade 4.6) are expected at all workplaces, which includes understanding, respecting difference in opinion, listening and consulting. At the same time for fashion designers empathy is considered less important (grade 3.2). Managing and decision making skills are not expected at design related jobs (average grade 3,6) because managing are only to a lesser extent in the descriptions of their jobs.

3.5 Scope for Future Research

It will be a big challenge to include required transversal skills into the study program, not only because it is necessary to develop lectures and exercises to strengthen the required transversal skills, but also because Croatian employers are demanding a wide range of specific TCLF sector knowledge and skills, Potočić (Matković, Čubrić, & Čubrić, 2016). Employers specified the total of 286 key tasks, or an average of 4,3 key tasks by the workplace in above mentioned occupations. A total of 799 of required knowledge and skills, or an average of 12,1 citations per employer and 2,8 on key task were mentioned. Qualitative analysis is necessary to join together similar answers (statements) on key tasks or the necessary knowledge and skills. They will be the foundation for the development of qualification standards which defines the

content and structure of a given qualification. It includes all the data required for assuring and promoting high quality of the qualifications of Faculty of Textile Technology.

4. Conclusion

The analysis of the survey results has been shown that responsibility, creativity, innovation and teamwork skills are most wanted in all occupations in the production of textiles. Successful communication and cooperation with others in the work workplace is highly evaluated for all workplaces.

For a design related group of professions, the most sought after are skills from a group of social and civic competencies while lifelong learning skills and psychomotor skills are less important.

For the engineering group of professions the most sought after are transversal skills with accent on responsibility, focus on work results and client needs, teamwork, organization and planning, and creativity and innovation. Social and civic competencies are for engineers only in the third place in importance from four transversal skills groups.

The importance of lifelong learning is poorly recognized as an important factor for the professional development of employees by employers.

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