



## Self-assessment of psychosocial competencies of academic teachers from technical university

**Abstract:** This article aims to present our own research, diagnosing the level of psychosocial competencies of academic teachers at technical university – the competencies which are particularly important in the mediatised world. The research was done among 141 academic teachers of the Silesian University of Technology with the use of a diagnostic survey in 2019–2021. An expanded statistical analysis allowed the interpretation and assessment of 13 variables describing the investigated competencies.

**Keywords:** psychosocial competencies, academic teacher, technical university, multiculturalism, information civilisation

### Introduction

The dynamically changing reality results in the “*occurrence of new areas of activity and new rules of the economic and educational order. The teacher has to face entirely new challenges of the information civilization and globally understood education and take up the work of penetrating new competencies in the changing reality*” (Gnitecki, 2005, p. 132). In this transforming world, the teacher’s psychosocial competencies are gaining particular importance. For this reason, their running assessment is crucial as such a diagnosis should be the basis of the training programmes for academic teachers.

### Psychosocial competencies

There are numerous definitions of the term “competencies”, but they are most frequently understood as “having knowledge and experience in a discipline

allowing proper performance of obligations and making the right decisions”<sup>1</sup> They can be understood as the ability to react to complex requirements in the area of adequate performance of various tasks, combining practical skills, knowledge, motivation, ethical values, attitudes, emotions and more, taking into account the social component and behaviour, which all combined serve to achieve effective action (New Polish Dictionary, 2002, p. 343).

Those competencies are high when the teacher has an operative interdisciplinary, integrated subject-matter and methodical knowledge concerning the planning and completing of professional tasks, can critically assess their actions and correct them on a running basis, has the skill of perceiving and understanding social situations and the ability to independently use the possessed skills taking into account their internalised value system (Pitula, 2008, pp. 104–105).

### **Academic teacher’s competencies and multiculturality**

The contemporary reality is fluid, non-transparent, multicultural. *“International and intercultural relations between people are more and more common as we observe the phenomenon of dynamic mixing of groups of people of different national, cultural, ethnic and denominational origin, which occurs in urban areas in particular”* (Brotto et al., 2014, p. 14; Badowska, 2018, p. 191). The cultural pluralism and multiculturality are becoming the social standard (Misiejuk, 2016, p. 24). Universities express their openness to the world by offering education, programmes, projects and scholarships to foreign students. This, however, requires equipping the academic staff with, for instance, intercultural competencies, i.e. knowledge of the spiritual and financial situation of Others, the skill of establishing relationships with Others and the sense of identity in a multicultural world (Lewowicki, 2011, p. 34).

Therefore, the academic teacher faces numerous tasks and “the multitude, fragmentation, variability and complexity of organisational forms in social life affect the changes in how career development is perceived and how it leads to overcoming the tension between the experiences of the past and the prospects for the future” (A. Cybal-Michalska, 2017, p. 32), implying a different view on psychosocial competencies, a high level of which – similarly to

---

<sup>1</sup> Nowy słownik języka polskiego (*New Polish Dictionary*), (2002). *Kompetencje (Competencies)*, Polish Scientific Publishers PWN, Warsaw, p. 343.

specialised competencies – determines the quality of professional functioning of the teacher in the multicultural reality (Smółka, 2016).

### **Methodological concept of the own research**

The research was done among 141 academic teachers of the Silesian University of Technology in 2019–2021 – the men accounted for 44.7% of the study group (n=63) and women for 55.3% (n=78).

The method of a diagnostic survey and an purposefully prepared questionnaire were used. The empirical material was partially collected with the paper version of the tool and (due to the COVID-19 pandemic) with its electronic version.

The research was aimed to assess the psychosocial competencies of academic teachers of a technical university and the main research problem was formulated as the following question:

*What is the level of psychosocial competencies of academic teachers according to the respondents?*

Its operationalisation allowed the formulation of detailed problems:

- What is the relationship between the respondents' gender and the level of their adaptation skills?
- What is the relationship between the level of teamwork skills and the respondents' gender?
- To what degree does the level of assertiveness correlate with the respondents' motivation towards their professional activity?
- How do the examined teachers assess their communication competencies and the level of relations with others at university?
- To what degree does the level of the teachers' emotional management skills correlate with the declared skill of conflict solving?
- What is the relationship between the work planning skill declared by the respondents and the pursuit of professional goals?
- What is the relationship between the declared level of the ability to deal with professional failures and the respondents' gender?
- To what extent does the level of the respondents' psychosocial competencies correlate with the achieved level of the skill of setting and achieving professional goals?

The following hypothesis was formulated: *the level of academic teachers' psychosocial competencies is varied and correlates positively with the achieved level of the skill of setting and achieving professional goals.*

The obtained results were subjected to statistical analysis, descriptive statistics, analysis of differences between groups by means of the Mann–Whitney  $U$  test and analysis of correlation by means of Spearman's rank correlation coefficient.

## The own research

The analysis of the research material showed 13 selected psychosocial competencies for which detailed descriptive statistical analysis was conducted in the context of the respondents' gender and the selected variables.

The analysis of the obtained results showed that the distribution of every variable in the female and male groups deviated from the normal distribution. Therefore, the Mann–Whitney  $U$  test was applied to the answers to the research questions 1–3 and 7 as an alternative to Student's  $t$ -test for independent groups applied when the assumption of normal distribution of the variable compared in both groups is not fulfilled. The research questions 3, 5–6 and 9 were subjected to correlation analysis by means of calculating the Spearman's rank correlation coefficient.

The first analysed variable was the level in adaptive skills of university teachers, which was correlated with the respondents' gender to determine the relationship between variables using Mann-Whitney  $U$  tests. The analysis showed no differences between women and men:  $W = 2607.50$ ;  $p = 0.526$ ;  $rbs = 0.06^2$ . This means that no relationship between the gender and the level of adaptation skills, which were at a similar level in both groups (values of median and mean for both groups), was found. The circumstances forcing adaptation are usually faced by young teachers as well as people changing faculties or universities. It is those situations that can also show conservative attitudes in the area of teaching or can directly point out professional uncertainty. This fact is partially confirmed by researchers into this issue who indicate that novice teachers tend to use a gradual approach and manifest a less adaptive and more prescriptive way of teaching (for example: Chizhik and Chizhik, 2018, pp. 67–85). Moreover, from the point of view of the representativeness of the gender and level of adaptation to professional duties and work environment at university, it has been observed “that sex may, but does not have to, affect academic work” (Kośnik and Węglerska, 2021, p. 205) and

---

<sup>2</sup> Rank-biserial coefficient of correlation ( $rbs$ ) was calculated as a measure of the effect size for the Mann–Whitney  $U$  test.

adaptation to such specific conditions as the position of a lecturer at university of technology. When explaining this absence of relation, one should pay attention to the activities at universities aimed to counteract gender stereotypes in science, carried out in the recent years.

As regards the variable “gender”, its relation to the level of teamwork skill was examined. This skill is claimed to be difficult to write down and even more difficult to develop. Driskell et al. underscore the significance of teamwork understood as a process where team members cooperate with each other to achieve the set goals and complete the given tasks. Teamwork refers to the skill through which the commitment of a team translates into the results of its work (Driskell et al., 2018). Sex-mixed teams usually take up diverse activity; nevertheless, Ivanova-Stenzel and Kübler claim that it is men who make greater effort when paired with women. In turn, women achieve better results in homogenous teams and when they compete with male teams. The worst results are achieved in mixed teams (Ivanova-Stenzel and Kübler, 2005, p. 3). Therefore, it was found reasonable to determine the relationship between the level of the teamwork skills and the gender of the respondents. A detailed statistical analysis showed no differences between women and men:  $W = 2179.50$ ;  $p = 0.240$ ;  $rbs = -0.11$ . This means that no relationship between the gender and the level of teamwork skills, which were at a similar level in both groups (values of median and mean for both groups), was found.

In addition to the performance of teamwork-based tasks, professional work requires motivation and assertiveness, regardless of gender. When determining to what degree and extent the level of assertiveness correlates with the motivation of the respondents towards their professional activity, no differences between women and men were found:  $W = 2553.50$ ;  $p = 0.687$ ;  $rbs = 0.04$ . This means that no relationship between the gender and the level of assertiveness, which was at a similar level in both groups (values of median and mean for both groups), was found. Therefore, a relationship between the level of assertiveness and the level of motivation to professional activity was tested for the entire group, not divided into female and male subgroups. The analysis of correlation showed no link between the level of assertiveness and the level of motivation to professional activity:  $\rho = 0.12$ ;  $p = 0.144$ .

Another area under assessment involved communication competencies and the level of relations with others. The analysis of descriptive statistics showed that both women and men declared a similar level of communication skills (for women:  $M = 7.21$ ;  $SD = 1.52$ ; for men:  $M = 6.98$ ;  $SD =$

1.48). Moreover, the in-depth statistical analysis showed absence of statistically significant differences between those groups.  $W = 2241.50$ ;  $p = 0.361$ ;  $rbs = -0.09$ . The mean results obtained in both groups show that they assess the communication skills as above average. In order to assess the investigated variables precisely, an additional analysis of descriptive statistics was carried out, which showed that women and men declared a very similar level of relations with others at university (for women:  $M = 7.31$ ;  $SD = 1.70$ ; for men:  $M = 6.95$ ;  $SD = 1.85$ ) and absence of statistically significant differences between those groups:  $W = 2182.00$ ;  $p = 0.248$ ;  $rbs = -0.11$ . The mean results obtained in both groups indicate that the level of relations with others at the university was graded as above average.

The results proved that there were no differences between women and men in terms of those skills (for emotional management skills:  $W = 2432.50$ ;  $p = 0.919$ ;  $rbs = -0.01$ ; for conflict resolution:  $W = 2326.00$ ;  $p = 0.579$ ;  $rbs = -0.05$ ). Therefore, a link between those variables was tested for the entire group, not divided into female and male subgroups. The applied correlation showed that there is a relation between emotional management skills and conflict solving skills:  $\rho = 0.37$ ;  $p < 0.001$ . A higher level of emotional management skills correlated with a higher level of conflict resolution skills.

The self-assessment also covered the skill of work planning and achievement of professional goals, regarded as the key in the process of recruitment of graduates (Raitskaya and Tichonova, 2019).

The obtained results, however, indicate no differences between women and men in terms of those skills – for the skill of work planning:  $W = 2339.00$ ;  $p = 0.712$ ;  $rbs = -0.04$ ; for achievement of professional goals:  $W = 2349.00$ ;  $p = 0.743$ ;  $rbs = -0.03$ . Therefore, a link between those variables was tested for the entire group, not divided into female and male subgroups. The analysis of correlation showed a link between the level of the skills of work planning and the level of achievement of professional goals:  $\rho = 0.56$ ;  $p < 0.001$ . A higher level of the skills of work planning correlated with a higher level of achieving professional goals.

The self-assessment of the psychosocial competencies of academic teachers would not be exhaustive if it failed to refer to the skill of dealing with professional failure. Therefore, the Mann–Whitney U test was used to compare the female and male groups in terms of the skill of dealing with professional failure. The analysis of the results show no differences between women and men:  $W = 2449.00$ ;  $p = 0.975$ ;  $rbs = -0.01$ . This means that no relationship between the gender and the level of the skill of dealing with professional fail-

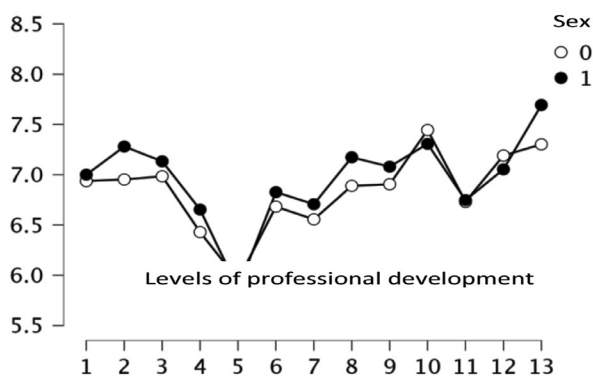
ures, which was at a similar level in both groups (values of median and mean for both groups), was found.

When investigating the competencies of academic teachers, it seemed worthwhile to relate them to the self-assessment of the declared level of professional development. Referring to the described context, the obtained results have been shown in Figure 1.

The global results indicate that the highest level of professional development was declared by the respondents in relation to the skills of teamwork and making independent decisions and the lowest level of professional development in the area of assertiveness.

The last assessed area covered issues related to the achievement of professional goals. According to the normative approach, signalled by Malik et al., the organisational involvement of academic teachers is significant, which means the acceptance of the goals and values of their university, readiness to make effort for its benefits and maintain the affiliation to it. Combining the above factors with the psychosocial competencies leads to the emergence of the “complete”, qualified teacher, who will have – apart from their expert knowledge – many other skills affecting their professional effectiveness and satisfaction (Malik et al., 2010, p. 19).

Figure 1. Levels of professional development of the examined teachers – the analysis of results of women and men



**Legend:** The following variables were mapped on the horizontal axis: §1 – Level of motivation to professional activity; 2 – Level of relations with other individuals at university; 3 – Assessment of the level of communication skills (verbal and nonverbal); 4 – Skill of personal branding at the university; 5 – Level of assertiveness; 6 – Level of emotional management skills; 7 – Level of skills of conflict resolution; 8 – Level of



skill of setting and achieving professional goals; 9 – Level of skill of professional work planning; 10 – Level of skill of making independent decisions; 11 – Level of skill of dealing with failures; 12 – Level of skills of adaptation to a new environment; 13 – Level of teamwork skills.

On the basis of the obtained results, it can be said there are no significant differences between women and men in terms of the level of communication competencies and the level of setting and achieving professional goals – for the former variable:  $W = 2241.50$ ;  $p = 0.361$ ;  $r_{bs} = -0.09$ ; for the latter variable:  $W = 2349.00$ ;  $p = 0.743$ ;  $r_{bs} = -0.03$ . Therefore, the relation between those variables was tested for the entire group. The analysis of correlation showed a link between the level of psychosocial competencies and the level of the skill of setting and achieving professional goals:  $\rho = 0.28$ ;  $p < 0.001$ . A higher level of psychosocial competencies was correlated with a higher level of the skills of setting and achieving professional goals.

## Summary

The research results show that gender does not differentiate the levels of psychosocial competencies as specified in the assessment. Moreover, they are even convergent in some areas.

Therefore, the exploration was expanded with an analysis without division into genders, which allowed to determine some differences in the self-assessment of psychosocial competencies of academic teachers. The first indicators showed that a markedly higher level of emotional management skills correlated with a higher level of conflict solving skills. Therefore, it seems worthwhile to include those issues in the process of professional training offered to academic teachers at universities (Lutovac, 2017). It was also found that the teachers with a higher level of work planning demonstrated a higher self-assessment in achievement of professional goals. Therefore, these issues should also find their place in professional training programmes for academic teachers (Aithal and Kumar, 2016, p. 701),

While verifying the formulated hypothesis, it must be said that the level of psychosocial competencies of academic teachers at technical university *is diversified by their self-assessment as a higher level of psychosocial competencies was correlated with a higher level of the skill of setting and achieving professional goals ( $\rho = 0.28$ ;  $p < 0.001$ ), which are the cornerstone of the development of professional career in that environment.*



The psychosocial competencies of academic teachers at technical universities play a special role as the science created by them is directed first and foremost to human beings. For this reason, a dynamically changing university needs a teacher with high interpersonal and communication competencies, who is creative and open to new experiences and who is a specialist in the and uses modern technologies in the teaching process. There is a need for a teacher with broad mind, not for one with a narrow specialisation following the traditional teaching methods (Kucharska-Konieczna, 2015, p. 239).

Therefore, the investigation and reflection into the process of the professional development should be constant elements in the strategic goals of a particular university.

## Bibliography

- Aithal, P.S. and Kumar, P.M. 2016. Maintaining Teacher Quality in Higher Education Institutions. *International Journal of Current Research and Modern Education*. **1** (1), pp. 701–711.
- Badowska, M. 2018. Kompetencje społeczne i międzykulturowe nauczycieli i pedagogów w świetle badań własnych [Social and intercultural competencies of teachers and educators in the light of own research]. *Kultura i Edukacja [Culture and Education]*. **3** (121), pp. 184–200.
- Brotto, F., Huber, J., Karwacka-Vögele, K., Neuner, G., Ruffino, R. and Teutsch, R. 2014. *Kompetencje międzykulturowe dla wszystkich, Przygotowanie do życia w różnorodnym świecie* [Intercultural competencies for all. Preparation for life in a diverse world]. Warsaw: Council of Europe, Education Development Centre.
- Driskell, J.E., Salas, E. and Driskell, T. 2018. Foundations of teamwork and collaboration. *American Psychologist*. **73** (4), pp. 334–348.
- Gnitecki, J. 2005. Kompetencje nauczyciela w cywilizacji informacyjnej [Teacher's competencies in information civilisation]. In: Moroz, H. ed. *Rozwój zawodowy nauczyciela [Teacher's professional development]*. Kraków: Impuls Publishing House, pp. 119–137.
- Gołek, B. 2014. Kompetencje współczesnego nauczyciela (wybrane obszary) [Contemporary teacher's competencies (selected areas)]. *Rocznik Komisji Nauk Pedagogicznych [Committee of Pedagogical Sciences]*. **LXVII**, pp. 87–103.
- Ivanova-Stenzel, R. and Kübler, D. 2005. Courtesy and Idleness: Gender Differences in Team Work and Team Competition. *ECONSTOR. Discussion Paper*. **91**, pp. 3–20.

- Konieczna-Kucharska, M. 2015. Miękkie i twarde kompetencje nauczycieli [Soft and hard skills of teachers]. *Research Papers of the Czestochowa University of Technology*. **19**, pp. 229–241.
- Kośnik, K. and Węglerska, O. 2021. Czy naukowiec ma płeć? Rozważania na temat relacji w świecie nauki przez pryzmat stereotypów płciowych [Does the scientist have a sex? Thoughts on relations in the world of science through the prism of gender stereotypes]. *Człowiek i Społeczeństwo [Human Being and Society]*. **LI**, pp. 205–220.
- Lewowicki, T. 2011. Cztery spojrzenia na wielokulturowość i edukację międzykulturową [Four views on the multiculturalism and intercultural education]. In: Nikitorowicz, J., Sadowski, A. and Misiejuk, D. eds. *Edukacja międzykulturowa. Cz. 1. Pogranicze. Studia Społeczne [Borderline. Social Studies]*. **17**, pp. 28–38.
- Lutovac, S., Kaasila, R., Komulainen, J. and Maikkola, M. 2017. University lecturers' emotional responses to and coping with student feedback: a Finnish case study. *European Journal Psychology of Education*. **32**, pp. 235–250.
- Malik, M.E., Nawab, S., Naeem, B. and Danish, R.Q. 2010. Job Satisfaction and Organizational Commitment of University Teachers in Public Sector of Pakistan. *International Journal of Business and Management*. **5** (6), pp. 17–26.
- Misiejuk, D. 2016. Mały poradnik międzykulturowości [Small guide through interculturality]. In: Rafalska, M. ed. *Kompetencje międzykulturowe. Materiały edukacyjne dla rad pedagogicznych [Intercultural competencies. Educational materials for pedagogical boards]*. Warsaw: Education Development Centre, pp. 17–26.
- Nowy słownik języka polskiego [New Polish Dictionary]. 2002. *Kompetencje [Competencies]*. Warsaw: Polish Scientific Publishers PWN, p. 343.
- OECD. 2005. Definition and Selection Key Competencies: Executive Summary. Available online: <https://www.oecd.org/pisa/35070367.pdf> (27.08.2021).
- Raitskaya, L. and Tikhonova, E. 2019. Skills and Competencies in Higher Education and Beyond. *Journal of Language and Education*. **5** (4), pp. 4–8.
- Smółka, P. 2008. *Kompetencje społeczne. Metody pomiaru i doskonalenia umiejętności interpersonalnych [Social skills. Methods of measurement and training of interpersonal skills]*. Warsaw: Wolters Kluwer Publishing House.