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Center for International Higher  
Education Studies



## Central European Higher Education Cooperation Conference Proceedings

Proceedings of the 4th and 5th CEHEC  
conference

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Corvinus University of Budapest,  
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## Table of Content

<b>Éva KARCSICS – Ágnes SOMOSI .....</b>	<b>7</b>
Competence-based management model in higher education: cognitive abilities and Big Five personality traits in relation of academic performance .....	7
<b>Feifei WANG – Éva BÍRO.....</b>	<b>21</b>
The relationship between sleep belief, stress and sleep quality among college students.....	21
<b>Zsuzsanna E. TÓTH – Vivien SURMAN .....</b>	<b>31</b>
Developing a Service Quality Framework for a Special Type of Course .....	31
<b>Zsuzsanna E. TÓTH – György ANDOR – Gábor ÁRVA.....</b>	<b>47</b>
Experiences of a university peer review of teaching program .....	47
<b>Éva PÁLINKÓ .....</b>	<b>71</b>
Academy - Industry Relationships in Hungary .....	71
<b>Ayelet GILADI – Hannen MAGALH.....</b>	<b>81</b>
Training Bedouin Women for the Workforce as Educators in the Pre-School Sector.....	81
<b>Publication of other papers presented at CEHEC 2018 and CEHEC 2019 .....</b>	<b>97</b>
<b>Conference organizers .....</b>	<b>99</b>



## Authors

ANDOR György, associate professor, Eötvös Loránd University

ÁRVA Gábor, PhD student, Budapest University of Technology and Economics, Hungary

BÍRÓ Éva, assistant professor, University of Debrecen

E. TÓTH Zsuzsanna, associate professor, Eötvös Loránd University

GILADI Ayelet, NCJW Research Institute for Innovation in Education, the Hebrew University of Jerusalem

KARCSICS Éva, college professor, John von Neumann University

KOVÁTS, Gergely, director, Center for International Higher Education Studies

MAGALH Hannen, NCJW Research Institute for Innovation in Education, the Hebrew University of Jerusalem

PÁLINKÓ Éva, Pallasz Athéné University and Hungarian Academy of Sciences

SOMOSI Ágnes, assistant lecturer, John von Neumann University, and external lecturer, Corvinus University of Budapest

SURMAN Vivien, PhD student, Budapest University of Technology and Economics

SZABÓ Mátyás, senior manager, Central European University

WANG Feifei, PhD Student, Eötvös Loránd University



Éva KARCSICS – Ágnes SOMOSI

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## **Competence-based management model in higher education: cognitive abilities and Big Five personality traits in relation of academic performance**

### **Abstract**

Competence-based human resources management is one of the key tools for implementing an organizational strategy. Our goal is to link labor force, development, career planning and performance management. This paper presents the first results of a competence-based measurement in higher education, focusing on the relationship between cognitive abilities, personality and academic performance.

### **1 Introduction**

It is a strongly emphasized thesis in the special literature on management that human resources themselves are the main factor of competitiveness that have the potential of ensuring sustainable competitive advantage (Wright–Dunford–Snell, 2001).

At John von Neumann University we introduced a subject-specific competence assessment (Karcsics-Somosi, 2019), which we consider to be an important tool for accomplishing our strategic goals in terms of linking higher education competence development with market labor requirements of companies in the urban ecosystem.

The aim of our paper is to assess the relationship between academic performance, creativity and the Big Five personality traits (Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness) (Costa Jr & McCrae, 1995).

After the college was promoted to the rank of a university, a new training program, a BA in business administration and management was launched in the autumn of 2016, where we introduced subject-specific competence assessment, which we see as an

important tool for accomplishing our strategic goals. It promotes our diagnostic goal, the assessment of the inputs of a particular year and getting information on their level of knowledge; it helps us define the starting point of training in the most important subject areas. On the basis of our competence assessment, the difference between the input and output results will provide feedback on the direction and amount of added value. Our method makes a significant contribution to the accomplishment of our development goals: based on the results of the competence assessment, we can identify specific dimensions for bridging any possible gaps at both the group and the individual level. It provides a basis for working out a talent management program and a tutor system, assisting a conscious student career path and orientation. In addition, it supports other strategic goals of the institution, the shaping of the training program's future, curriculum development; the evolution and strengthening of student-teacher relationship relying on trust, feedback and mutual cooperation.

When defining the competences to be assessed, the starting points included the new training and output requirements, labor market surveys and international research referred to previously. Among the latter, we pay special attention to the results of the TUNING project. We examined the relevant competencies one after the other and then grouped them according to possible assessment methods. Next, we identified the professional criteria for the assessment tools and then conducted comprehensive research on the applicable assessment tools by including renowned scholars working in several areas (psychology, human resources management, sociology, education, and information technology), experts working in the corporate sector as well as, of course, the teachers involved in the relevant training programs. We devoted special attention to the proposals made by the HR experts of companies that are the potential employers of our graduates on their procedures for selecting their employees and the methods they use. On the basis of all this, after considering all the professional expectations, criteria and possibilities, we selected an advisory firm – which is a market leader not only on Hungary – that has been engaged in competence assessment for over 30 years and purchased 5 paper-based assessment tools along with their standard requirements. In addition, we were able to purchase a test developed by the leaders of the Testing Committee of the Hungarian Psychological Association that assesses personal efficiency and leadership capabilities. We organized a “Train the Trainers” program for administering and evaluating competence tests in a professional manner lead by the license owners. We managed to test all the students on their competence in the first semester of the 2016-17 academic year, when the degree program was first offered.

The relationship between cognitive abilities and academic performance is well documented (Chamorro-Premuzic & Furnham, 2008), however there is a doubt in general about the validity of intelligence tests. IQ tests account only for 50% of the

variance in academic performance, suggesting that factors other than ability contribute to individual differences.

What regards creativity and academic performance, students with higher academic achievement are more creative (Sen & Hagtvet, 1993), and scores on fluency, flexibility, and originality are related to academic achievement (Bal, 1988). It was also found that Graduate Record Examination (GRE) test scores, widely employed for post-graduate selection in the U.S. and an accurate predictor of future academic performance, were significantly correlated with creativity (Powers & Kaufman, 2004).

One problem that the literature highlights is the objective measurement of creativity. It is usually assessed using self-report inventories or checklists. They also raise the question of self-reported creativity as an accurate tool for measuring creative thinking processes (Clapham, 2004). To ensure the validity of business creativity measurement, the Test of Creative Thinking was used that is applied by human resource management companies.

Based on the literature describing the relationship between cognitive abilities and academic performance, we expected the following:

*Hypothesis 1: Cognitive abilities (intelligence, logical thinking and creativity) positively relate to academic performance.*

Among the Big Five personality traits Openness to Experience will be positively and significantly associated with academic performance, and it is interpreted in terms of significant correlation between Openness and intellectual ability, particularly vocabulary and general knowledge (Ashton, Lee, Vernon, & Jang, 2000 (Goff & Ackerman, 1992).

*Hypothesis 2 a.: Openness to experience positively relates to academic performance.*

Agreeableness was found to be the only predictor with SAT scores (John & Srivastava, 1999), and there is a positive relationship between agreeableness and grades in general (Hair & Graziano, 2003).

*Hypothesis 2 b.: Agreeableness positively relates to academic performance.*

Extraversion will be negatively and significantly associated with academic performance (Chamorro-Premuzic, 2006). This is also consistent with studies reporting a negative relation between Extraversion and knowledge tests (e.g., Rolfhus & Ackerman, 1999). Hypothesis 2 c.: Extraversion negatively relates to academic performance.

Neuroticism will be negatively and significantly related to academic performance, as stable individuals tend to perform better in university classes (Lathey, 1991).

*Hypothesis 2 d.: Neuroticism positively relates to academic performance.*

Conscientiousness will be positively and significantly related to academic performance, not only in academic, but also in occupational, settings (Chamorro-Premuzic, 2006, Goff & Ackerman, 1992).

*Hypothesis 2 e.: Conscientiousness positively relates to academic performance.*

## **2 Research questions**

In our empirical research we aim to investigate the following research questions:

1. What is the relationship between academic performance and cognitive abilities?
2. What is the relationship between academic performance and Big Five personality traits?

## **3 Method**

We managed to test all the students on their competence in the first, second and third semester of students starting in the 2016-17 and 2017-18 academic years, when the degree program was first offered. We have carried out analysis of 112 students in the following areas: GPAs and subject area analysis. The current sample contains the GPAs of the first three semester, as the results of the fourth semester will be available at the

end of June 2019. As this is an ongoing research, we continuously broaden the sample with new data.

We used the classification of subjects based on the Qualification and Output Requirements (KKK), and used the following categories:

- Business administration and management
- Economics, methodology and business
- Social sciences
- Sports
- Facultative courses

We also managed to identify some improvement areas for the classification, with altogether 33 misplaced courses from the 118 in total. The following table shows some improvement suggestions:

**Table 1.** Improvement suggestions

<b>Courses</b>	<b>Qualification and Output Requirements (KKK) Category</b>	<b>Suggested Category</b>
Decision methods and methodology	Business administration and management	Economics, methodology and business
Business ethics	Business administration and management	Social sciences
Marketing	Economics, methodology and business	Business administration and management
Business language	Economics, methodology and business	Business administration and management
Business communication	Economics, methodology and business	Business administration and management
Business economics	Economics, methodology and business	Business administration and management

In our paper we use correlation analysis to investigate the relationship between creativity, Big Five personality traits and academic performance. Further on, we expect to find

positive deviation between the results of input and output assessment for the benefit of the output, which can be first assessed in February 2020.

## **4 Results**

Regarding our hypotheses we find that there is a significant positive relationship between the first semester GPA and extraversion (0,175\*), thus we reject H2 c. Further, there is a significant positive relationship between the second semester GPA and business creativity-fluency (0,877\*\*\*), business creativity- originality (0,868\*\*\*) and business creativity-dimensionality (0,392\*\*\*), so we accept H1. There is also a positive relationship between second semester GPA and extraversion (0,335\*\*) and conscientiousness (0,229\*\*), thus H2 c. is rejected and H2 e. is accepted. We found no empirical evidence for H2 a., b. and d. The results are summarized in Table 2. below.

**Table 2.** Correlations among creative thinking scores, personality traits and academic performance

	1	2	3	4	5	6	7	8	9	10
1 First semester GPA	-	0.442*	-0.106	0.021	-0.119	-0.048	0.064	0.175*	0.118	0.051
2 Second semester GPA		-	0.284**	0.289**	0.392***	-0.106	-0.008	0.335**	0.03215	0.229**
3 Business creativity- Fluency			-	0.887***	0.868***	0.244**	0.128	-0.073	0.007	-0.112
4 Business creativity- Originality				-	0.770***	0.190*	0.137	0.017	0.059	-0.077
5 Business creativity- Dimensionality					-	0.214**	0.057	-0.068	-0.070	-0.069
6 Openness						-	0.819***	0.226**	0.667***	0.144
7 Agreeableness							-	0.487***	0.822***	0.222**
8 Extraversion								-	0.582***	0.370***
9 Neuroticism									-	0.353***
10 Conscientiousness										-

N=112, \*p<0.1; \*\*p<0.05; \*\*\*p<0.001

The GPA analysis shows that the first semester GPA correlates with the entry points (0,39\*\*), and in terms of the subject areas there is a positive relationship between first semester GPA and economics, methodology and business (0,735\*\*\*), elective courses (0,327\*\*) and social sciences (0,670\*\*\*).

Regarding the subject area analysis we find that the second semester GPA positively correlates with business administration and management (0,566\*\*\*), economics, methodology and business (0,838\*\*\*), elective courses (0,161\*) and social sciences (0,366\*\*\*).

Similarly, we find a positive relationship between first semester ECTS index and the following subject areas: economics, methodology and business (0,683\*\*\*), elective courses (0,410\*\*\*) and social sciences (0,611\*\*\*). Further, the second semester ECTS index positively correlates with business administration and management (0,612\*\*\*), economics, methodology and business (0,870\*\*\*) and social sciences (0,340\*\*\*).

There is a significant positive relationship between the second semester GPA and Raven advanced progressive matrices test (0,203\*\*), process diagram test (0,189\*), business creativity-fluency (0,284\*\*), business creativity- originality (0,289\*\*), business creativity-dimensionality (0,392\*\*\*), responsibility (0,263\*\*), socialization (0,321\*\*), communality (0,198\*), achievement via conformance (0,227\*\*), achievement via independence (0,267\*\*), feminism (0,238\*\*), conventionalism (0,408\*\*\*), leadership scale- responsibility (0,335\*\*), leadership scale- need for performance (0,231\*\*), Big Five- extraversion (0,335\*\*), Big Five- conscientiousness (0,229\*\*).

There is a significant positive correlation between third semester GPA and Raven advanced progressive matrices test (0,238\*\*), process diagram test (0,194\*\*), business creativity- fluency (0,381\*\*\*), business creativity- originality (0,350\*\*\*), business creativity- dimensionality (0,518\*\*\*), socialization (0,237\*\*), tolerance (0,216\*\*), communality (0,184\*), achievement via conformance (0,212\*\*), achievement via independence (0,229\*\*), leadership scale-responsibility (0,212\*\*), and Big Five-extraversion (0,233\*\*).

For the 2016-2017 students we found some additional remarkable correlations: sport positively correlates with self-acceptance (0,252\*), dominance (0,293\*\*), sociability (0,323\*\*), sense of well-being (0,356\*\*), capability for status (0,364\*\*), extrovert factor (0,294\*\*), social effectiveness from the Big Five dimensions (0,313\*\*) and leadership factor (0,333\*), whereas negatively correlates with anxiety (-0,350\*\*) and feminism (-0,386\*\*).

The second semester results show that there is also a positive relationship between sport and first semester ECTS index (0,284\*\*), second semester ECTS index (0,202\*\*), capacity for status (0,217\*\*), empathy (0,173\*), and leadership competences (0,187\*).

## **5 Discussion**

Our first hypothesis was fulfilled, study averages show a positive correlation with the intellectual abilities examined, such as intelligence (Raven's test), logical thinking (Diagram analysis), creativity (Creative Thinking's Test).

Raven (2000) calls his test to measure the ability to observe and to think clearly, to identify the laws of different matrices. We use the high-intelligence adolescents and the Advanced Progressive Matrix developed between 1941-1947 for adults. Identifying relationships that are not necessarily obvious at first glance. It is well suited to measuring abilities that refer to conclusion-based logical thinking. (Eductive thinking: meaning-making.)

The student average of the study also correlated with the results of the 'Diagram Analysis' test. This test measures logical thinking, high level analytical ability: analysis and understanding of a given situation, systematic problem solving, recognition of causal relationships, foresight.

The development of logical thinking and analytical ability largely determines the effectiveness of understanding and learning the curriculum, so these indicators are important indicators of student performance.

We also found a positive correlation between the study average and creativity. The origin of the word "creativity" is the Latin word "creare", which means: to give birth, to be born, to create. Creativity is therefore a process that "creates" itself, creates, unfolds itself, carrying its origin and purpose in itself. Creativity is the ability to create something new, such as a new problem solving, a new method, and so on.

The basic concept of creative abilities was created by Guilford and Hoepfner (1971). Based on their research, they have identified the following elements in the concept of creativity: the results provide information on originality, flexibility and fluency.

Originality (originality) shows that "a thought, a solution is unique, rare, unconventional, not" ordinary "(Herskovits-Gefferth 2000, 25.) The high score of originality suggests the novelty and unusualness of the answers; how the student can structure the situation in the new association relationship.

"Fluency indicates the ease and frequency with which different thoughts, ideas, solutions, associations come to the fore." (Herskovits – Gefferth 2000, p. 26.). Fluidity is measured by the number of responsive responses.

"Flexibility, intellectual flexibility, and ability to change aspects help you to switch from one subject, element to another, use knowledge in a different context, leave the

beaten way of thinking, break away from what you already know." (Herskovits-Gefferth 2000, p. 26.).

Its high value suggests that the student approached the answer from several sides. Its low value suggests that responses have been made for a particular schema. (Davis-Rimm 2000; Herskovits-Gefferth 2000; Field-Field 2003).

The correlation of all three dimensions of creativity with the average of studies indicates that creative abilities are needed to achieve higher education success. During the learning process, the student encounters a number of tasks, problems to be solved, unknown to him or her, as well as a measure of the success of their solution.

Our analysis of the intellectual abilities of students has also resulted in convergent and divergent thinking. Intelligence tests primarily measure convergent thinking, while creativity is related to divergent thinking (Mező-Mező 2003).

The positive relationship between study averages and intellectual abilities means that the educational and accounting requirements are appropriate to the intellectual abilities of students who are able to mobilize these competences to achieve learning performance.

We should mention that we did not expect or correlate the study average with our "Analysis of figures" test. The reason for this is that the test is not just a matter of counting skills, but expecting an interpretation of business data and statements from the respondent. Therefore, we need professional (economic, financial, accounting) knowledge that will be acquired by the students in the next semester of the training, for the same reason we did not include the so-called "filing practice" in this analysis.

Our second hypothesis was partly fulfilled.

Two of the five dimensions of the Big Five, the Extraversion and the Conscientiousness dimensions, found a positive correlation with the study average. This means that the students are interested in intellectual activity, the mental strength is highly valued and intellectually effective. Performance-motivated individuals who achieve performance or conformism (job performance) or independence (job seekers) but reach.

Scientists, responsible young people who are responsible for their tasks and trust in their social relationships. They are capable of adapting, regulating their behavior effectively, tension regulation leading to adaptation and community-friendly solutions.

However, there was no correlation between the other three dimensions of the Big Five (Openness to Experience, Agreeableness, Neuroticism), and the scales of each dimension were examined in detail. In our view, research did not show any correlation between these factors, because our surveys were conducted at the beginning of the student studies, in the first semester, and at the beginning of the second semester, when

young people are filled with uncertainty about how they will meet the new requirements; they are looking for their place and role in the new community, the rules of which are also evolving, so the alignment points are vague.

One of the dimensions of the Openness to Experience dimension is self-acceptance, whether a person is aware of his or her personal values and abilities, where he / she is at the level of self-knowledge and self-esteem. Successful social action would require a high degree of self-confidence and all these would lead to the individual becoming a leader in social communities. This statement coincides with the summary of the Hungarian Youth Research study book that self-confidence is a general feature of Hungarian youth: based on our research results, our prospective economist and manager students are no exception at the beginning of their studies.

The "storks" (freshmen) obviously strive to give a good impression, but they do not yet have the level of empathy (especially not psychological sensation) and social maturity that would be needed for a positive correlation between the study average and the Agreeableness dimension. At the beginning of their studies, students, uncertain in themselves, in the expectations of the environment, find it difficult to set real goals, or even worry about being afraid of failure. Thus, the comparative result of the study average and the Neuroticism dimension is acceptable.

According to our assumption and expectations, these dimensions will have a positive correlation with student performance in the output measurement.

The results on sport and anxiety are well described in the literature. Gill (1986) points out that sport has positive effects on mild to moderate depression, reduces anxiety and stress, increases self-confidence and improves self-image. Further, perceived health status is influenced by anxiety, depression and psychophysiological symptoms; and sport participation influences also perceived health indirectly through anxiety, depression and psychophysiological symptoms (Thorlindsson, et al., 1990). "Adolescents who are active participants in sports tend to experience less anxiety, be less depressed and have fewer psychophysiological symptoms such as aches and pains and dizziness." (Thorlindsson, et al., 1990, p. 554.).

Our current study clearly has some limitations: the sample should be broader to ensure the robustness of results, so the correlations presented can only be interpreted as the first results of an ongoing research. Thus, further analysis includes the correlations on a broader sample, and if the output results are available, the comparison between in- and -output results. A further goal is the assessment of competence-based results with labor market wages.

## **6 Conclusion**

The study average is a measure of a student's learning performance. The starting point for performance is the prior and acquired knowledge, the abilities and skills that are activated by the behavior (environment) certified in the teaching-learning process.

The first part of our results shows that intellectual abilities such as intelligence, logical thinking, and creativity are the key indicators of student success.

Another dimension of our results reveals students' performance-influencing qualities along which intellectual abilities are mobilized: performance motivation, sense of responsibility, self-control, communality, flexibility.

In order to increase student performance, efficiency and / or achieve it sooner, we can help students with different services, programs, teacher-contemporary relationships, etc., so that their socialization into higher education can happen faster and easier at the beginning of their studies.

## **References**

- Ashton, M. C., Lee, K., Vernon, P. A., & Jang, K. L. (2000). Fluid intelligence, crystallized intelligence, and the openness/intellect factor. *Journal of Research in Personality*, 34(2), 198-207.
- Bal, S. (1988). Creativity, cognitive style and academic achievement amongst university students. *Psychological Studies*.
- Chamorro-Premuzic, T. (2006). Creativity versus conscientiousness: Which is a better predictor of student performance? *Applied Cognitive Psychology: The Official Journal of the Society for Applied Research in Memory and Cognition*, 20(4), 521-531.
- Chamorro-Premuzic, T., & Furnham, A. (2008). Personality, intelligence and approaches to learning as predictors of academic performance. *Personality and individual differences*, 44(7), 1596-1603.
- Clapham, M. M. (2004). The convergent validity of the torrance tests of creative thinking and creativity interest inventories. *Educational and Psychological Measurement*, 64, 828-841.

- Costa Jr, P. T., & McCrae, R. R. (1995). Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of personality assessment*, 64(1), 21-50.
- Davis, G. A. – Rimm, S. B. (2000): A kreatív diákok jellemzői. In Balogh L. – Herskovits M. – Tóth L. (szerk.): *A tehetségfejlesztés pszichológiája*. Debreceni Egyetem, Kossuth Egyetemi Kiadó, Debrecen, 49–56.
- Goff, M., & Ackerman, P. L. (1992). Personality-intelligence relations: Assessment of typical intellectual engagement. *Journal of Educational Psychology*, 84(4).
- Guilford, J. P., & Hoepfner, R. (1971). *The Analysis of intelligence*. New York, NY: McGraw-Hill Book Co.
- Hair, E. C., & Graziano, W. G. (2003). Self-esteem, personality and achievement in high school: A prospective longitudinal study in Texas. *Journal of Personality*, 71(6), 971-994.
- Herskovits Mária – Gefferth Éva (2000): A tehetség meghatározásai és összetevői. In Balogh L. – Herskovits M. – Tóth L. (szerk.): *A tehetségfejlesztés pszichológiája*. Debreceni Egyetem, Kossuth Egyetemi Kiadó, Debrecen, 23–28.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of personality. Theory and research*, 2(1999), 102-138.
- Karcsics, É- Somosi, Á (2019): Competence-management modell design in higher education, III. Gazdálkodás és Menedzsment Tudományos Konferencia, p. 472-478.
- Lathey, J. W. (1991). Temperament style as a predictor of academic achievement in early adolescence. *Journal of Psychological Type*.
- Mező Ferenc – Mező Katalin (2003): *Kreatív és iskolába jár. Tehetségvadász Stúdió – Kocka Kör Tehetséggondozó Kulturális Egyesület*, Debrecen.
- Raven, J. (2000): *The Raven's Progressive Matrices*. Academic Press, Edinburgh.
- Rolfhus, E. L., & Ackerman, P. L. (1999). Assessing individual differences in knowledge: Knowledge, intelligence, and related traits. *Journal of educational psychology*, 91(3).
- Sen, A. K., & Hagtvet, K. A. (1993). Correlations among creativity, intelligence, personality, and academic achievement. *Perceptual and motor skills*, 77(2), 497-498.

Székely Levente (szerk.) Magyar fiatalok a Kárpát-medencében- Magyar Ifjúságtudatás  
2016. Kutatópont kft.; Enigma 2001 Kiadó és Médiaszolgáltató Kft. Budapest, 2018

Wright, P. – Dunford, B. – Snell, S., (2001): Human resources and the resource based  
view of the firm. Journal of Management. 27 (6), p. 703.

Feifei WANG – Éva BÍRÓ

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## **The relationship between sleep belief, stress and sleep quality among college students**

### **Abstract**

Poor sleep quality has become a public health problem, and it is important to know whether it is also present among college students. Objective: This study aimed to describe the sleep quality of college students and examine the relationship between sleep belief, stress and sleep quality. Methods: A cross-sectional study was conducted in June 2016 to assess sleep quality and its risk factors among university students at the Faculty of Public Health of the University of Debrecen, Hungary. Results: 83 public health and physiotherapy bachelor students filled out the questionnaire (response rate: 72.2%). The result showed that more than half of the students reported poor sleep quality. The quality of sleep was better among males than females, and the level of stress was higher among women than men. There was no association between academic year and sleep quality. Furthermore, stress was significantly related to poor sleep quality, while no statistical association was found between sleep belief and sleep quality. Conclusion: Raising awareness about the importance of good sleep quality may help students make better choices during college life and after graduation.

### **1 Introduction**

Data from the National Sleep Foundation poll showed that up to 27% of Americans slept less than 6 hours in 2011 (Carskadon, 2011). Recently, surveys conducted in Australia showed that the average sleep time was 7 hours in 2010 compared to 8 hours in 2000 (Olds et al., 2010). There is a tendency among university students to stay up late at night and wake up later in the morning. The number of sleep hours per night has dropped among young adults in the United States over the last two decades. Medical students

carry a heavy academic load, which could lead to poor sleep quality as it was already experienced by modern society (Azad et al., 2015). Medical students can be characterized with irregular sleep pattern, i.e. changing start and end times of sleep, which tend to be later at weekends and also sleep duration is usually shorter during the week, and these can cause sleep deprivation on workdays.

Sleep has several different functions in learning and memory consolidation (Benington, Frank, 2003; Tononi, Cirelli, 2014; Wolfson, Carskadon, 2003). The relationship between sleep, learning and memory processes has been highlighted, and the investigation of the effects of sleep deprivation on student learning ability and academic performance is needed. Students with poor academic performance have a higher risk of sleep less and have irregular sleep/wake habits (Wolfson, Carskadon, 1998). Another study also confirmed the hypothesis that decreased sleep time has a negative association with academic performance in medical students (BaHammam, et al., 2012; Ahrberg, et al., 2012). Even though there was a research which showed that sleep problems were frequent among Palestinian undergraduates and there was no significant association between sleep quality and academic achievement (Sweileh et al., 2011), it will not change the common point of view - supported by many other researches - that sleep problems can affect academic performance (Gilbert, Weaver, 2010; Gaultney, 2010; Lemma et al., 2013) i13.

Self-awareness and general knowledge about sleep appeared to be insufficient among university students. Therefore, educational strategies with the purpose to improve knowledge and awareness regarding sleep disorders and help to develop proper sleep practices are needed (Bosie et al., 2012). There are some interventions which were able to promote sleep knowledge and sleep habits among college students. For instance, a pilot study of sleep health promotion conducted among college students achieved great success (Levenson et al., 2016).

Given that sleep belief is essential to cope with daytime sleep loss in those who had insomnia (Morin et al., 1993), it is strongly suggested examining sleep belief in order to improve sleep quality. Previous cognitive-behavioural approaches presumed that problematic beliefs about sleep play a significant role in sustaining insomnia (Edinger, Wohlgemuth, 2001). Stress was indicated as a risk factor of students' mental health. A college students-based study revealed that the key sources of campus stress were the academic performance, the pressure to succeed, and post-graduation plans (Beiter et al., 2015). The role of stress on sleep beliefs in college students is, up to now, under investigation.

In our study, we hypothesised that sleep belief and stress are correlated with sleep quality. It is of great importance to discover the sleep belief, stress and sleep quality

among college students and explore the association between them, through which, methods to promote sleep quality can be expected. The objectives of this study were double, firstly, to describe the sleep quality status from first to fourth academic year students; secondly, to investigate the relationship between sleep belief, perceived stress and sleep quality among college students.

## **2 Methods**

### **2.1 Study population**

The target population of this study was the international Bachelor students from 1st grade to 4th grade at Faculty of Public Health, University of Debrecen. Out of 115, the total number of participated students was 83 (response rate: 72.6%). Data collection was taken place in the first two weeks of June 2016.

### **2.2 Questionnaire**

A self-administered questionnaire was designed based on previously published survey instruments to investigate demographic data, lifestyle, sleep quality with the Pittsburgh Sleep Quality Index (PSQI), stress with the Perceived Stress Scale (PSS), and sleep belief with the Sleep Beliefs Scale (SBS).

Pittsburgh Sleep Quality Index (PSQI) can be used to measure the quality and patterns of sleep (Buysse, et al., 1989). It distinguishes between poor and good sleep quality based upon seven components regarding sleep, such as latency, duration, habitual sleep efficiency, subjective sleep quality, sleep disturbances, use of sleeping medications, and daytime dysfunction during the past month. PSQI score greater than five indicated poor sleep quality, while PSQI score less than six means good sleep quality. The global sleep quality score ranges from 0 to 21.

Perceived Stress Scale (PSS) known as one of the most widely used instruments to measure the perception of stress (Cohen et al., 1983). It determines the degree to which situations in one's life are appraised as stressful, namely how unpredictable, uncontrollable, and overloaded is the life of the respondents. We used the short version of PSS, which is a four-item scale. Each item can be scored between 0-4, PSS scores

are calculated by reversing the scores of the second and third items, and then calculate the total score of the four items.

Sleep Beliefs Scale (SBS) investigate what the respondents think about the effects of selected behaviours upon sleep. It contains 20 questions on sleep knowledge through daily life (Adan et al., 2006). The SBS score ranges from 20 to 60, where higher score means better knowledge.

### **2.3 Procedure**

A pilot study with 10 colleagues, including MSc/BSc students, was conducted to pre-test the reliability and legibility of the questionnaire. The pilot panel was asked to complete the questionnaire individually and record the time duration of completing it. Necessary modifications of the questionnaire were made after receiving the suggestions from the pilot panel.

We asked all of the BSc students who were present at the time of the data collection to take part in the survey. One of the researchers met the students before or after class. Students were informed about the research background and ethical considerations before completing the questionnaire. Filling out the questionnaire took approximately 15 minutes, during when, if any of the student asking questions about the questionnaire, the researcher answered it individually.

### **2.4 Statistical analysis**

When all the questionnaires were collected, we coded and recorded the data in an Excel file. We used SPSS 21.0 (Chicago, USA) to do the statistical analysis. The level of significance was set at 0.05. Descriptive statistics were used to describe PSQI, PSS and SBS scale results. Kruskal-Wallis Test was used to compare the sleep components in different academic years. Independent t-test was utilized to compare the difference of sleep belief, perceived stress and sleep quality between females and males. In addition, linear regression adjusted for gender was used to investigate the relationship between sleep belief, stress and sleep quality.

### 3 Results

Thirty-two (38.5%) male students and 51 (71.5%) female students answered the questionnaire. More male students (56.25%) reported good sleep quality than females (41.2%).

By comparing the sleep components between different academic years, the non-significant result was found in all of the sleep components, which indicated that there is no difference between academic years regarding sleep components (sleep duration, sleep disturbance, sleep latency, day function due to sleepiness, subjective sleep quality and sleep medications). As showed in Table 1, all the significance levels were far from 0.05.

**Table 1.** Mean scores of sleep components in different academic years<sup>a,b</sup>

PSQI components	1st year	2nd year	3rd year	4th year	p-value
C1	0.86 ± 0.94	1.13 ± 0.74	0.96 ± 0.82	1.10 ± 0.83	0.73
C2	1.27 ± 1.03	1.29 ± 1.04	1.31 ± 0.88	1.46 ± 1.04	0.96
C3	0.77 ± 0.81	0.63 ± 0.88	0.77 ± 0.76	0.91 ± 1.14	0.83
C4	0.50 ± 0.91	0.57 ± 0.95	0.64 ± 1.04	0.73 ± 1.27	0.93
C5	1.23 ± 0.53	1.17 ± 0.38	1.19 ± 0.57	1.36 ± 0.50	0.74
C6	0.27 ± 0.77	0.25 ± 0.68	0.04 ± 0.20	0.27 ± 0.90	0.53
C7	1.14 ± 1.04	0.88 ± 0.68	1.08 ± 0.93	0.82 ± 0.75	0.64

C1: Subjective sleep quality, C2: Sleep latency, C3: Sleep duration, C4: Sleep efficiency, C5: Sleep disturbance, C6: Sleep medication, C7: Day function due to sleepiness

a. Kruskal-Wallis Test

b. Grouping Variable: grade

Descriptive analysis of sleep belief perceived stress and sleep quality were performed. The mean score of sleep belief was 43.0 (min. 30.0, max. 60.0; SD: 5.23). Perceived stress score ranged from 0.0 to 13.0, with a mean score of 6.30 (SD=2.61). The mean sleep quality score was 6.1 (min. 1.0, max. 14.0; SD=3.07).

The difference in sleep belief, perceived stress and sleep quality between males and females were assessed. Perceived stress was statistically significant between males and females ( $p=0.04$ ); however no difference was found in sleep belief ( $p=0.12$ ) and sleep quality ( $p=0.15$ ). Table 2 shows the result of the comparison of sleep belief, stress and sleep quality between genders.

**Table 2.** Comparison of sleep belief, stress and sleep quality between males and females

	Male		Female		p-value
	Mean	SD	Mean	SD	
Sleep belief	42.2	4.5	43.7	5.6	0.12
Perceived stress	5.5	2.7	6.7	2.5	0.04
Sleep quality	5.4	2.9	6.4	3.2	0.15

Linear regression was used to test the association between sleep belief, perceived stress and sleep quality. Sleep quality was the dependent variable. No significant result was found between sleep belief and sleep quality ( $p>0.05$ ). The stress showed a statistically significant correlation with sleep quality ( $p<0.05$ ). Table 3 shows the results in detail.

**Table 3.** The association between sleep belief, perceived stress and sleep quality<sup>a</sup>

	Unstandardized Coefficients		t	p-value	95% Confidence Interval for B	
	B	Std. Error			Lower Bound	Upper Bound
Sleep belief	-0.00	0.06	-0.00	0.99	-0.13	0.13
Perceived stress	0.28	0.13	2.20	0.03	0.03	0.54

a. Dependent Variable: Sleep Quality Score

## **4 Discussion**

### **4.1 Sleep quality and college students**

There was a big difference between the sleep quality of male and female students. The result was supported by Tsai's research, which showed that gender differences in sleep patterns and sleep difficulties were remarkable in the group of young college students (Tsai, Li, 2004). A recent study also reported a high prevalence of sleep disorders in female students (Abdulghani et al., 2012). It is suggested to explore the reasons why female students experience more sleep problem. The academic year did not influence sleep quality components in our study, for which the reason can be the credit system.

### **4.2 Sleep belief and sleep quality**

Sleep hygiene means all of those behaviours which can improve the quantity and quality of sleep (Stepanski, Wyatt, 2003), and it is based on sleep belief. The association between sleep hygiene and sleep quality has been researched in previous studies, and poor sleep quality was predicted by weak sleep hygiene variables (Brick et al., 2010). Thus, the relationship between sleep belief and sleep quality is supposed to make sense in scientific research. Our results were in line with that where better sleep hygiene awareness does not necessarily guarantee better sleep quality (Voinescu, Szentagotai-Tatar, 2015). However, one sleep program showed that better sleep hygiene indicates less maladaptive beliefs about sleep (Kloss et al., 2015). The risk factors of sleep quality are diverse, such as mental health problems and irregular lifestyle (Lund et al., 2010).

### **4.3 Perceived stress and sleep quality**

Students are exposed to a high amount of stress because of various reasons (e.g. relationships and future concern), and this may have a negative impact on the quality of sleep and health, as our results showed it, too. It has been reported that psychological disorders are key factors responsible for the current sleep disorders among university students (Verlander et al., 1999). To guarantee the academic performance, it is essential to help the students to be physically and mentally healthy.

#### **4.4 Limitation**

Due to the fact that we investigated international students, potential culture habits on sleep may influence the results.

#### **5 Conclusion**

Male students sleep better than female students, and academic year do not seem to be associated with sleep quality in bachelor students. Health promotion program is highly suggested in order to improve sleep quality. However, based on our finding, there is not any association between sleep belief and sleep quality. Stress was closely related to sleep quality, so help students to improve their stress coping skills can help to promote their sleep quality, too.

#### **Acknowledgement**

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#### **References**

- Abdulghani, H., Alrowais, N., Bin-Saad, N., Al-Subaie, N., Haji, A., and Alhaqwi, A. (2012): Sleep disorder among medical students: Relationship to their academic performance. *Medical Teacher*, 34(sup1), pp. S37-S41.
- Adan A, Fabbri M, Natale V, and Prat G. (2006): Sleep Beliefs Scale (SBS) and circadian typology. *Journal of Sleep Research*.15(2), pp.125–132.

- Ahrberg, K., Dresler, M., Niedermaier, S., Steiger, A., and Genzel, L. (2012): The interaction between sleep quality and academic performance. *Journal of Psychiatric Research*, 46(12), pp. 1618-1622.
- Azad, M., Fraser, K., Rumana, N., Abdullah, A., Shahana, N., Hanly, P., and Turin, T. (2015). Sleep Disturbances among Medical Students: A Global Perspective. *Journal of Clinical Sleep Medicine*. 11(01), pp.69-74.
- BaHammam, A., Alaseem, A., Alzakri, A., Almeneessier, A., and Sharif, M. (2012): The relationship between sleep and wake habits and academic performance in medical students: a cross-sectional study. *BMC Medical Education*, 12(1), p.61.
- Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., and Sammut, S. (2015): The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of Affective Disorders*, 173, pp. 90-96.
- Benington, J., and Frank, M. (2003): Cellular and molecular connections between sleep and synaptic plasticity. *Progress in Neurobiology*, 69(2), pp. 71-101.
- Bosie, G., Tefera, T., and Hailu, G. (2012): Knowledge, attitude and practice with respect to sleep among undergraduate medical students of Mekelle University. *Sleep and Biological Rhythms*, 10(4), pp. 264-269.
- Brick, C., Seely, D., and Palermo, T. (2010): Association Between Sleep Hygiene and Sleep Quality in Medical Students. *Behavioral Sleep Medicine*, 8(2), pp. 113-121.
- Buysse, D., Reynolds, C., Monk, T., Berman, S., and Kupfer, D. (1989): The Pittsburgh sleep quality index: A new instrument for psychiatric practice and research. *Psychiatry Research*, 28(2), pp. 193-213.
- Carskadon, M. (2011): Sleep in Adolescents: The Perfect Storm. *Pediatric Clinics of North America*, 58(3), pp. 637-647.
- Cohen, S., Kamarck, T., and Mermelstein, R. (1983): A global measure of perceived stress. *Journal of health and social behavior*, 24, pp. 385-396.
- Edinger, J., and Wohlgemuth, W. (2001): Psychometric comparisons of the standard and abbreviated DBAS-10 versions of the dysfunctional beliefs and attitudes about sleep questionnaire. *Sleep Medicine*, 2(6), pp. 493-500.
- Gaultney, J. (2010): The Prevalence of Sleep Disorders in College Students: Impact on Academic Performance. *Journal of American College Health*, 59(2), pp. 91-97.
- Gilbert, S., and Weaver, C. (2010): Sleep Quality and Academic Performance in University Students: A Wake-Up Call for College Psychologists. *Journal of College Student Psychotherapy*, 24(4), pp. 295-306.
- Kloss, J., Nash, C., Walsh, C., Culnan, E., Horsey, S., and Sexton-Radek, K. (2015): A "Sleep 101" Program for College Students Improves Sleep Hygiene Knowledge and Reduces Maladaptive Beliefs about Sleep. *Behavioral Medicine*, 42(1), pp. 48-56.

- Lemma, S., Berhane, Y., Worku, A., Gelaye, B., and Williams, M. (2013): Good quality sleep is associated with better academic performance among university students in Ethiopia. *Sleep and Breathing*, 18(2), pp. 257-263.
- Levenson, J., Miller, E., Hafer, B., Reidell, M., Buysse, D., and Franzen, P. (2016): Pilot study of a sleep health promotion program for college students. *Sleep Health*, 2(2), pp. 167-174.
- Lund, H., Reider, B., Whiting, A., and Prichard, J. (2010): Sleep Patterns and Predictors of Disturbed Sleep in a Large Population of College Students. *Journal of Adolescent Health*, 46(2), pp. 124-132.
- Morin, C., Stone, J., Trinkle, D., Mercer, J. (1993): Dysfunctional beliefs and attitudes about sleep among older adults with and without insomnia complaints. *Psychology and Aging*, 8(3), pp. 463-467.
- Olds, T., Maher, C., Blunden, S., and Matricciani, L. (2010): Normative Data on the Sleep Habits of Australian Children and Adolescents. *Sleep*, 33(10), pp. 1381-1388.
- Stepanski, E., and Wyatt, J. (2003): Use of sleep hygiene in the treatment of insomnia. *Sleep Medicine Reviews*, 7(3), pp. 215-225.
- Sweileh, W., Ali, I., Sawalha, A., Abu-Taha, A., Zyoud, S., and Al-Jabi, S. (2011): Sleep habits and sleep problems among Palestinian students. *Child and Adolescent Psychiatry and Mental Health*, 5(1), pp. 25.
- Tononi, G., and Cirelli, C. (2014): Sleep and the Price of Plasticity: From Synaptic and Cellular Homeostasis to Memory Consolidation and Integration. *Neuron*, 81(1), pp. 12-34.
- Tsai, L. L., and Li, S. P. (2004): Sleep patterns in college students: Gender and grade differences. *Journal of psychosomatic research*, 56(2), pp. 231-237.
- Verlander, L., Benedict, J., and Hanson, D. (1999): Stress and Sleep Patterns of College Students. *Perceptual and Motor Skills*, 88(3), pp. 893-898.
- Voinescu, B., and Szentagotai-Tatar, A. (2015): Sleep hygiene awareness: its relation to sleep quality and diurnal preference. *Journal of Molecular Psychiatry*, 3(1), pp. 1.
- Wolfson, A., and Carskadon, M. (1998): Sleep Schedules and Daytime Functioning in Adolescents. *Child Development*, 69(4), pp. 875-887.
- Wolfson, A., and Carskadon, M. (2003): Understanding adolescent's sleep patterns and school performance: a critical appraisal. *Sleep Medicine Reviews*, 7(6), pp. 491-506.

Zsuzsanna E. TÓTH – Vivien SURMAN

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## **Developing a Service Quality Framework for a Special Type of Course**

### **Abstract**

The main objective of the paper is the development of a service quality framework for a special course by appraising state of the art related to the measurement and evaluation of higher education service quality, particularly on the course level. By taking into consideration the similarities and differences between the various models put forward in the relevant literature and the features of the investigated courses, 26 statements were developed to measure service quality aspects of project work courses. The applied methodology utilizes the advantages of importance-performance analysis by using a 7-point Likert scale. Based on various statistical analyses in different segmentations of student feedbacks including different levels of study, study programs, project work courses and sub-departments, those statements are highlighted which can be considered as embedding critical to quality issues. The results are to be fed back to the related processes according to the 'voice of students' and combined with other quality management tools in order to better understand students' expectations.

### **1 Introduction**

In recent years, increasing attention has been paid to the education sector and the quality improvement of educational services (Lupo, 2013) due to the sector's significantly strengthening economic impacts (Abdullah, 2006a, 2006b). However, it is a challenging task to find a widely accepted definition of quality in this sector (Khodayari and Khodayari, 2011). Therefore, service quality is also considered as a complex phenomenon (Qureshi et al., 2011) due to the great number of stakeholders including the

academic and non-academic staff, funding bodies, parents, companies, government and primarily students (Tam, 2001; Trivellas and Dargenidou, 2009; Rowley, 1997) and to the multidimensional role of the latter one in educational processes. Taking everything into account, the 'amusement' of direct customers is of the highest importance when defining service quality in higher education (HE) (Tang, 2002).

Many HE studies on service quality aspects have concentrated on effective course delivery mechanisms and the quality of teaching (see, e.g. Cheng and Tam, 1997; Bournier, 1998; Athiyaman, 1997). There is a wide range of instruments in use to collect students' feedbacks (Brennan and Williams, 2004). Course evaluations, completed by students usually at the end of a term, is considered as a feedback mechanism which pinpoints the strengths of courses and identifies areas of improvement. It should also help to reduce the gap between what the lecturers perceive and what the students perceive as the quality of teaching (Venkatraman, 2007).

In this paper, the development and the pilot application of a SERVQUAL-based course evaluation questionnaire are introduced, and the first results are demonstrated. The Likert scale based questionnaire was developed for specific purposes, namely, the measurement and evaluation of service quality aspects in case of project work type courses which are not part of the traditional student evaluation of education (SEE) framework. As they may play an important role in the total student experience (resulting in a successful thesis work), it is of high importance to collect student feedbacks in order to implement the PDCA cycle for the related consultation and supervising processes.

The paper is structured as follows. Section 2 gives an overview of the relevant service quality literature in HE. Section 3 describes the main characteristics of project work type courses compared to traditional courses. Section 4 outlines the applied methodology, while Section 5 interprets the first results of that kind of survey application. Section 6 summarizes the research implications and managerial conclusions. Finally, research limitations and possible future research directions are discussed.

## **2 Service quality issues in higher education**

The definition and measurement of service quality (SQ) has been the subject of much debate over the last two decades (Dale, 2003) with particular attention to the development of valid, reliable and replicable measures of service quality (Dale, 2003; Oldfield and Baron, 2000; Rowley, 1997; Kember and Leong, 2008). Therefore, it is a challenging and complex task to establish an appropriate model to measure the level of higher education service quality (Ramaiyah et al., 2007; Chong and Ahmed, 2012). Universities employ a mix of qualitative (e.g. interviews, focus groups) and quantitative

(questionnaires) methods to collect students' feedbacks (O'Neill and Palmer, 2004). According to Clewes (2003), there are three major approaches: methods adapting the SERVQUAL instrument; methods applied for the assessment of teaching and learning quality and methods assessing total student experience.

The SERVQUAL model originating from the gap theory (Parasuraman et al., 1985) measures service quality initially with 97 statements in 10 dimensions which was later reduced to 22 statements with 5 dimensions in the final model (Parasuraman et al., 1988) which include the followings:

- Tangibles: physical facilities, equipment, appearance of personnel;
- Reliability: the ability to perform the desired service dependably, accurately, and consistently;
- Responsiveness: the willingness to provide prompt service and help customers;
- Assurance: employees' knowledge, courtesy, and ability to convey trust and confidence; and
- Empathy: the provision of caring, individualized attention to customers.

Owlia and Aspinwall (1996) were the first to offer an adaptation of service quality dimensions in higher education. Currently, there is still no general agreement on the measurement of SQ, or on the dimensions and their importance in the higher education context. Perceived service quality is undoubtedly of paramount strategic importance (Peters, 1992; Bemowski, 1991) in order to recruit and retain students and to enhance student satisfaction. As a result, the number of studies on the development and application of a HE specific SQ model is increasing. Most of the models use SERVQUAL as a basis, others utilize the methodology of SERVPERF based on the critics of the former one (see, e.g. Kincsesné et al., 2015; Teeroovengadum et al., 2016; Lupo, 2013, Abdullah, 2006a, 2006b). The model of HEdPERF (Abdullah, 2006a, 2006b), EDUQUAL (Mahapatra and Khan, 2007), HESQUAL (Teeroovengadum et al., 2016), COURSEQUAL (Kincsesné et al., 2015) and TEdPERF (Rodríguez-González and Segarra, 2016) are to be highlighted when discussing recent research on service quality in higher education.

A typical form of assessing service quality in this sector is focusing on course quality based on student feedbacks providing auditable evidence that students have the opportunity to comment on their courses and that such information is used to bring about improvements and encourage student reflection on their learning (Rowley, 2003; Grebennikov and Shah, 2013). The studies with different cohorts of students conducted by Douglas et al. (2006), Grebennikov and Shah (2012), Gruber et al., (2010), Shah and Widin (2010) and Shah et al. (2010) confirm that student judgement of university experience is based on what happens within and beyond the classroom. Satisfied

students are likely to attend another lecture delivered by the same lecturer or opt for another module or course taught by her/him (Banwet and Datta, 2003). They also found that students' intentions to re-attend or recommend lectures depended on their perceptions of quality and the satisfaction they felt after attending previous lectures.

The research on the measurement and evaluation of service quality in HE combined with course evaluations is still extensive. Studies are focusing merely on the application of SERVQUAL- or SERVPERF-based methodologies for course evaluation purposes. Stodnick and Rogers (2008) apply the SERVQUAL scale in the classroom by considering it as a narrower service encounter based on the premise that student perceptions of the overall university may not capture all the considerable variance. They claim that 'if a student has one excellent instructor and one poor instructor and is asked about the quality of instruction at the university, they might answer 'average'. While technically this is correct, it would be hard to use their response to make specific changes and improve service quality'. Kincsesné et al. (2015) established a SERVQUAL-based COURSEQUAL model including 24 statements in 5 dimensions evaluating each on a 5-point Likert scale. Four items were used to measure student satisfaction (1) perceived importance of the course content for the career of the student, (2) the course worth the need to pay tuition fee for the education, (3) the teacher's education method increased the student's interest towards the topic, and (4) overall satisfaction with the course. Udo et al. (2011) propose a modified SERVQUAL instrument to determine what factors influence their e-learning expectations of quality based on the fact that students and teachers play different roles than in traditional settings. Foroapon et al. (2013) examine service quality provided in the classroom by applying the SERVQUAL instrument in two operation management courses. Adedamola et al. (2013) measure students' satisfaction with classroom facilities using the SERVPERF scale in case of Nigerian private universities.

Harvey (2011) acknowledges that it is important for universities to have effective mechanisms for collecting feedback data; however, it is even more inevitable for them to ensure they have in place an appropriate action cycle, in which the focus is not on the results but on using them for improvement purposes and for sustaining change.

### **3 Characteristics of project work courses**

Fulfilling different levels of project works is an obligatory part of the curricula for hundreds of BA and MA students at the Faculty of Economic and Social Sciences. Project works are complex courses; the fulfilment of the detailed tasks is based on the execution of practice-oriented problems utilizing the students' professional knowledge in mathematics, business economics, finance, management and marketing. Project works are

accomplished either individually or in small teams. The primary aim of these courses is to solve real-life problems, carry out complex solutions utilizing the knowledge of previous studies by taking part in relevant organizational projects. During the semester students are to accomplish the different tasks set for that period by regularly consulting about the progress with assigned lecturers as consultants and presenting their milestones in the form of oral reports during or at the end of the semester. The output of each semester is a written paper which is evaluated according to specific aspects.

In case of BA or BSc programs, there are two or three levels of these courses depending on the type of the program, while in case of MA and MSc programs one semester of project works are to be accomplished before writing the final thesis. The goals of the different levels of project works vary as these courses are successive steps of the process which coach students how to write a thesis. During both fulfilling the project works and the thesis, students have to demonstrate that they can apply specific methodologies, tools and methods in a professional way when solving a real-life problem.

During these semesters, students work under the guidance of a consulting supervisor employed at the department to which the topic of the project work is professionally related. The consultant's role is to offer a partnership by assisting the student through the flow of project works and thesis with suggestions and recommendations by regularly discussing the different steps. After the students completed and uploaded the written results of their project work, they prepare an oral presentation where their semester-long work processes and results are presented.

In case of these courses, there are many differences compared to traditional courses. Students work on the accomplishment of different tasks with their consultants. They deal with various topics and real-life organizational problems with different lecturers from different departments. Students are provided individual attention during the semesters as they work together in a close partnership. Moreover, these courses are significant parts of the curriculum in a given program, and a thesis for students can serve as a basis of choosing a specific career and finding a job. During project works, students can master the necessary professional knowledge and those inevitable soft skills which are needed to be successful in the labour market. Based on the aforementioned, in case of project works most of the existing and widely used course evaluation methods are not working due to their unique characteristics.

#### **4 Survey development**

Our primary aim was to develop a SERVQUAL-based methodology to collect and analyse student feedbacks in case of project work courses. The following questions have

naturally arisen when analysing the requirements and perceptions of students: Is there any difference between lecturers? Is there any difference between the subgroups of the department embodying different professional knowledge and project work topics? Is there a significant difference between the requirements of students studying in different programs or at different levels?

The survey applied for the measurement and evaluation of the service quality of project work consultation consists of 26 statements which are listed in Table I. In this paper the importance of the statements and the consultant's semester-long performance level is analysed with importance-performance analysis. Therefore, students were asked to express their opinion in two dimensions, namely, scoring the importance and the performance related to each statement using a Likert scale from 1 through 7, where score 1 stands for the lowest, and score 7 for the highest value in both dimensions. The performance dimension of a statement reflects how much the students are satisfied with the performance in the particular field addressed by the statement, while the important dimension is used to proclaim how much they consider important the addressed topic.

Cronbach-alphas were used to estimate the degree of reliability. Overall reliabilities were  $\alpha=0.932$  and  $0.95$  respectively for the importance and performance scales.  $\alpha=0.95$  was the overall reliability for both the importance-performance difference scores and importance \* performance scores. These reliability measures exceeded the usual recommendation of  $\alpha=0.70$  for establishing internal consistency of the scale; therefore, the reliability of the scale was confirmed.

**Table 1.** Survey questionnaire

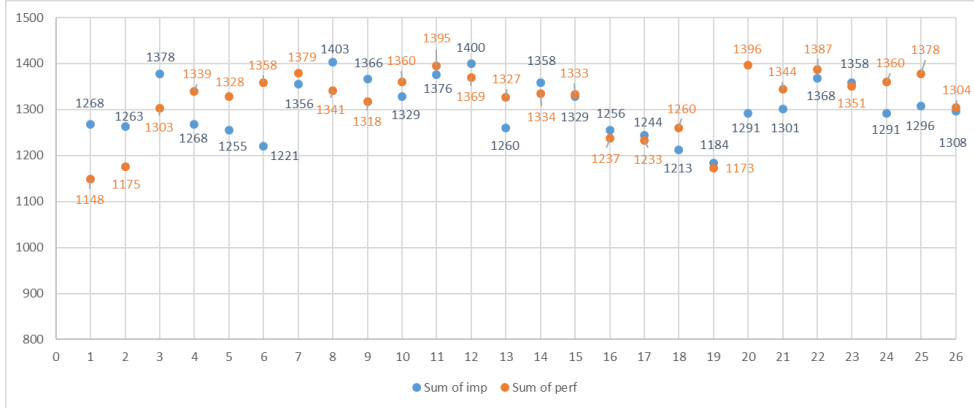
1	-	7	S1 - The guidelines related to the content requirements of the project work are clear and can be well used.	1	-	7
1	-	7	S2 - The guidelines related to the formatting requirements are clear and can be well used.	1	-	7
1	-	7	S3 - Consultant feedbacks on the different phases of the project work are provided both in an interpretable way and form.	1	-	7
1	-	7	S4 - The consultant offers appropriate, suitable consultation opportunities.	1	-	7
1	-	7	S5 - The consultant uses up-to-date tools and methods during consultations and when giving feedbacks.	1	-	7
1	-	7	S6 - Consultations take place in a calm environment with appropriate conditions.	1	-	7
1	-	7	S7 - The consultant keeps the jointly agreed deadlines, which supports the continuous progress of the project work.	1	-	7
1	-	7	S8 - The consultant is ready to help with the problems arising from the student.	1	--	7
1	-	7	S9 - During the consultations, the consultant shows his/her willingness to	1	-	7

			share his knowledge in an appropriate and understandable way.			
1	-	7	S10 - The consultant pays attention to the student's interest related to the topic of the project work.	1	-	7
1	-	7	S11 - The consultant is available at the agreed dates.	1	-	7
1	-	7	S12 - The consultant is willing to answer emerging questions and requests during consultation opportunities.	1	-	7
1	-	7	S13 - The number and the frequency of consultations during the semester are sufficient.	1	-	7
1	-	7	S14 - The consultant's response time to requests is appropriate.	1	-	7
1	-	7	S15 - The consultant's recommendations and expectations are consistent with the guidelines related to the content of the project work.	1	-	7
1	-	7	S16 - The student is given enough help when researching the relevant literature.	1	-	7
1	-	7	S17 - The student is given enough help related to the appropriateness of the form and content of references.	1	-	7
1	-	7	S18 - The student is given enough help related to the style and professional language.	1	-	7
1	-	7	S19 - The consultant professionally supports the preparation for the oral presentation of the project work.	1	-	7
1	-	7	S20 - The consultant is polite, responsive, attentive.	1	-	7
1	-	7	S21 - The consultant is familiar with the administration process of project works.	1	-	7
1	-	7	S22 - The student trusts the consultant and relies on his/her professional knowledge.	1	-	7
1	-	7	S23 - The content requirements of the project work are fulfilled due to the continuous cooperation between the student and the consultant.	1	-	7
1	-	7	S24 - There is clear communication between the consultant and the student.	1	-	7
1	-	7	S25 - There is a partnership between the student and the consultant.	1	-	7
1	-	7	S26 - During the semester, the student is given personal attention.	1	-	7

## 5 Results

The two-dimensional survey approach is built on the consideration that issues having higher importance scores should have higher performance values as students rightly may expect higher service level in the areas which they consider to be more important. The sum of importance and performance scores were calculated for each statement with the purpose of analysing how the importance and performance categories relate to each other. Figure 1 shows the total sum of importance scores and the total sum of performance scores for each statement. This figure also demonstrates that in the case of

about half of the statements, the sum of performance scores exceeds the sum of importance scores, which was quite surprising.



**Figure 1** Differences between the sum of importance and sum of performance scores

The importance and performance scores can be considered as random variables, and so their averages can be taken as point estimates of their expected values. Wilcoxon signed-rank tests (with related samples,  $\alpha=5\%$ ) were run to evaluate in case of which statements the median of differences between importance and performance scores differ significantly from zero. When the importance score differs significantly from the corresponding performance score in case of a particular statement, this is reflective of the existence of a quality performance gap. This, in turn, may be used to identify specific quality improvement efforts. Similarly, where performance scores do not differ significantly from the corresponding importance scores for a given statement, this may also strengthen exceptional performance and/or misdirected quality effort (see Table 2). Table 2 highlights those statements (S1-S6, S8-S10, S12-13, S18, S20-21, S24-25) where p-values are lower than 0.05, which means that in these cases the null hypotheses are rejected, therefore, the differences between performance and importance score pairs do not follow symmetric distribution around zero.

**Table 2** Results of Wilcoxon signed-rank tests ( $\alpha=5\%$ )

Statement	t-value	p-value	Statement	t-value	p-value
S1	5.912	0.000	S14	1.331	0.183
S2	4.718	0.000	S15	-0.686	0.493

Statement	t-value	p-value	Statement	t-value	p-value
S3	4.793	0.000	S16	0.507	0.612
S4	-4.093	0.000	S17	0.061	0.951
S5	-4.367	0.000	S18	-2.821	0.005
S6	-6.148	0.000	S19	0.266	0.790
S7	-1.580	0.114	S20	-5.612	0.000
S8	4.670	0.000	S21	-2.385	0.017
S9	2.986	0.003	S22	-1.228	0.220
S10	-2.142	0.032	S23	-0.154	0.877
S11	-1.378	0.168	S24	-4.584	0.000
S12	2.200	0.028	S25	-4.534	0.000
S13	-3.503	0.000	S26	-0.452	0.652

Secondly, data was segmented according to the type of the program, namely, Engineering Management BSc, International Business Economics BA, Management and Business Administration BA and Marketing MA. The results of similarly conducted Wilcoxon signed-rank tests ( $\alpha=5\%$ ) are summarized in Table 3 where those statements are highlighted again where the null hypotheses are rejected, that is, the differences between performance and importance score pairs do not follow a symmetric distribution around zero. Taking the types of programs into account, S6, S8 and S20 are the statements in case of which all null hypotheses were rejected; therefore significant differences between importance and performance scores were revealed. Similarly to the previously detailed conclusions, Table 3 also summarizes the results of same tests when data is segmented according to the level of study (see 'BA/Bsc level of study' and 'Marketing (MA)' labelled columns of Table 3, note that only students of Marketing MA program were involved in this semester from our MA students. If we take a look at the segmentation according to the levels of study, more statements (compared to the previously applied segmentation) show differences between importance-performance score pairs (see S1-S4, S6, S8, S15, S20).

**Table 3** Results of Wilcoxon signed-rank tests ( $\alpha=5\%$ ) – Data segmentation based on study programs and levels of study

# state ment	Engineering Management (BSc)		International Business Economics (BA)		Management and Business Administration (BA)		BA/Bsc level of study		Marketing (MA)	
	t-value	p-value	t-value	p-value	t-value	p-value	t-value	p-value	t-value	p-value
S1	3.751	0.000	2.215	0.027	1.819	0.069	4.480	0.000	3.853	0.000
S2	3.196	0.001	2.076	0.038	1.695	0.090	4.038	0.000	2.415	0.016
S3	1.842	0.066	2.790	0.005	1.615	0.106	3.580	0.000	3.388	0.001
S4	-2.805	0.005	-0.526	0.599	-2.130	0.033	-3.347	0.001	-2.391	0.017
S5	-3.214	0.001	-1.148	0.251	-3.347	0.001	-4.508	0.000	-0.981	0.326
S6	-3.950	0.000	-2.360	0.018	-2.000	0.045	-5.058	0.000	-3.463	0.001
S7	-1.850	0.064	1.427	0.154	-1.186	0.236	-1.322	0.186	-0.908	0.364
S8	2.552	0.011	2.275	0.023	2.222	0.026	4.044	0.000	2.304	0.021
S9	0.793	0.428	1.986	0.047	1.495	0.135	2.426	0.015	1.718	0.086
S10	-2.362	0.018	-1.462	0.144	-0.256	0.798	-2.345	0.019	-0.085	0.933
S11	-1.774	0.076	1.153	0.249	-0.575	0.565	-0.981	0.327	-1.035	0.301
S12	0.730	0.465	0.120	0.904	1.852	0.064	1.505	0.132	1.745	0.081
S13	-1.389	0.165	-3.108	0.002	-1.990	0.047	-3.604	0.000	-0.704	0.481
S14	0.663	0.507	1.320	0.187	-0.941	0.347	0.732	0.464	1.515	0.130
S15	-1.379	0.168	-1.453	0.146	-1.294	0.196	-2.343	0.019	2.058	0.040
S16	0.015	0.988	-1.166	0.244	2.025	0.043	0.007	0.994	1.045	0.296
S17	-1.724	0.085	0.280	0.780	1.702	0.089	0.065	0.948	0.050	0.960
S18	-2.483	0.013	-1.442	0.149	0.085	0.933	-2.540	0.011	-1.266	0.205
S19	0.368	0.713	-0.568	0.570	-0.049	0.961	-0.116	0.907	0.671	0.502
S20	-3.147	0.002	-2.865	0.004	-2.857	0.004	-5.082	0.000	-2.409	0.016
S21	-2.281	0.023	-1.395	0.163	-2.080	0.037	-3.355	0.001	0.806	0.420
S22	-1.389	0.165	0.714	0.475	-1.186	0.236	-1.089	0.276	-0.560	0.576
S23	-1.252	0.210	-0.601	0.548	0.625	0.532	-0.855	0.392	1.220	0.223
S24	-2.675	0.007	-2.543	0.011	-2.368	0.018	-4.344	0.000	-1.793	0.073
S25	-2.480	0.013	-2.790	0.005	-2.568	0.010	-4.456	0.000	-1.435	0.151
S26	-0.416	0.678	-1.231	0.218	-0.295	0.768	-0.973	0.330	0.463	0.643

By applying Mann-Whitney U tests ( $\alpha=5\%$ ) whether the distributions of importance and that of performance scores are the same across categories given separately by BA/BSc and MA students we found that the null hypotheses were rejected in case of importance

scores of S5, S12 and S16, while for performance scores the distributions were found to be the same for all statements.

Kruskal Wallis tests ( $\alpha=5\%$ ) were also run whether the distribution of performance and importance scores is the same across categories segmented according to the different subgroups of the department. S1 and S25 show significant differences between the performance scores based on this type of segmentation. The same tests were carried out when evaluations were segmented according to the type of project work course, namely Project work I. BA/BSc, Project work II. BA/BSc, Project work III. BA and Project work I. MA. According to the test results, significant differences were found between the distribution of importance scores for S3, S4, S12, S15 and S16, and for the distribution of performance scores for S7, S12 and S15. When data is segmented based on the study programs, the results of Kruskal Wallis tests ( $\alpha=5\%$ ) revealed significant differences between the distribution of importance scores across categories for S4, S14 and S16, while performance distributions are proved to be the same for all statements.

If we take all the aforementioned statistical analysis and the comparison of importance and performance scores into consideration, the statements which require more in-depth analysis are S1-S4, S6, S8 and S20 at this moment of the research. The results of importance score comparisons call attention primarily for statements S4, S12 and S16, and that of performance score comparisons for statements S7, S12, S15 and S25.

**Table 4** Statements requiring more attention based on first empirical results

S1 - The guidelines related to the content requirements of the project work are clear and can be well used.
S2 - The guidelines related to the formatting requirements are clear and can be well used.
S3 - Consultant feedbacks on the different phases of the project work are provided both in an interpretable way and form.
S4 - The consultant offers appropriate, suitable consultation opportunities.
S6 - Consultations take place in an undisturbed environment with appropriate conditions.
S7 - The consultant keeps the jointly agreed deadlines, which supports the continuous progress of the project work.
S8 - The consultant is ready to help with the problems arising from the student.
S12 - The consultant is willing to answer emerging questions and requests during consultation opportunities.
S15 - The consultant's recommendations and expectations are consistent with the guidelines related to the content of the project work.
S16 - The student is given enough help when researching the relevant literature.
S20 - The consultant is polite, responsive, attentive.
S25 - There is a partnership between the student and the consultant.

## **6 Conclusions**

In this paper, the application of a questionnaire including 26 statements and the first results of statistical analyses were presented in order to measure and evaluate the service quality dimensions of courses with consultation processes and via that the voice of students. The novelty of the paper may be interpreted from two aspects. Firstly, a modified and more sophisticated questionnaire was applied compared to the one in use at the university to get a more profound knowledge of student satisfaction related to consultation processes by extending the aspects with particular viewpoints. Secondly, the traditional survey was extended with the measurement of the importance of quality related issues from the students' viewpoint.

The main limitation of the research is that the statistical analyses presented in this paper are based on a one semester-long data collection. The primary aim of future research directions is to extend the presented measurement and evaluation process to the next semester as e.g. BA students usually have at least two or three consequent project work courses. Taking the specialities of the fall and spring semesters into account, the analysed fall semester results were formulated mainly on students completing the Project work II. BA course and Project work I. MA course as most of the students follow the sample curriculum. By extending the analysis to the spring semester as well, the reliability of statistical analyses may be enhanced, and more reliable samples may be taken from the different segments utilized for classification in this paper.

By following up with this questionnaire and these methods, the results of two semesters would provide the opportunity to adopt specific quality management methods to decrease the gap between the importance and performance scores in those cases where performance scores were lower than the average. After the second semester involved in the analysis brainstorming sessions with the involvement of different groups of students are to be organized in order to offer students the opportunity to give narrative comments related to the critical to quality (CTQ) statements. After the brainstorming session, ideas may be grouped into an affinity diagram, the results of which could be utilized as inputs for constructing cause and effect diagrams to investigate the root causes of lower performance. In the light of the continuous improvement philosophy and following the PDCA cycle of course evaluation (see, e.g. Venkatraman, 2007), improving actions could be identified in order to further enhance the performance of consultation processes.

## References

- Abdullah, F. (2006a): Measuring service quality in higher education: HEdPERF versus SERVPERF, *Marketing Intelligence & Planning*, 24(1), pp. 31-47.
- Abdullah, F. (2006b): The development of HEdPERF: a new measuring instrument of service quality for the higher education sector, *International Journal of Consumer Studies*, 30(6), pp. 569-581.
- Adedamola, O., Modupe, O. and Ayodele, A. (2016): Measuring Students' Perception of Classroom Quality in Private Universities in Ogun State, Nigeria Using SERVPERF, *Mediterranean Journal of Social Sciences*, 7(2), pp. 318-323-
- Athiyaman, A. (1997): Linking student satisfaction and service quality perceptions: the case of university education, *European Journal of Marketing*, 31(7), pp. 528-540.
- Banwet, D.K. and Datta, B. (2003): A study of the effect of perceived lecture quality on post-lecture intentions, *Work Study*, 52(5), pp.234-243.
- Bemowski, K. (1991): Restoring the pillars of higher education, *Quality Progress*, 27(10), pp. 37-42.
- Bourner, T. (1998): More knowledge, new knowledge: the impact on education and training, *Education + Training*, 40(1), pp. 11-14.
- Brennan, J. and Williams, R. (2004): *Collecting and using student feedback. A guide to good practice*. Learning and Teaching support network (LTSN), The Network Centre, Innovation Close, York Science Park. York, YO10 5ZF, 17
- Cheng, Y. C. and Tam, W. M. (1997): Multi-models of quality in education, *Quality Assurance in Education*, 5(1), pp. 22-31.
- Chong, Y. S. and Ahmed, P. K. (2012): An empirical investigation of students' motivational impact upon university service quality perception: a self-determination perspective, *Quality in Higher Education*, 18(1), pp. 37-41.
- Clewes, D. (2003): A Student-centred Conceptual Model of Service Quality in Higher Education, *Quality in Higher Education*, 9(1), pp. 69-85.
- Dale, B. G. (2003): *Managing Quality*. (4th ed.), Blackwell Publishing, Oxford.
- Foropon, C., Seiple, R. and Kerbache, L. (2013): Using SERVQUAL to examine service quality in the classroom: analyses of undergraduate and executive education operations management courses, *International Journal of Business and Management*, 8(20), pp. 115-134.

- Grebennikov, L. and Shah, M. (2013): Monitoring Trends in Student Satisfaction, *Tertiary Education and Management*, 19(4), pp. 301-322.
- Gruber, T., Fuß, S., Voss, R. and Gläser-Zikuda, M. (2010): Examining student satisfaction with higher education services: Using a new measurement tool, *International Journal of Public Sector Management*, 23(2), pp.105-123.
- Harvey, L. (2011): The nexus of feedback and improvement, In *Student Feedback, The Cornerstone to an Effective Quality Assurance System in Higher Education*, Chandos Publishing, Cambridge, UK, pp. 3-26.
- Kember, D. and Leung, D.Y. (2008): Establishing the validity and reliability of course evaluation questionnaires, *Assessment & Evaluation in Higher Education*, 33(4), pp. 341-353.
- Khodayari, F. and Khodayari, B. (2011): Service Quality in Higher Education, Case study: Measuring service quality of Islamic Azad University, Firoozkooh branch, *Interdisciplinary Journal of Research in Business*, 1(9), pp. 38-46.
- Kincsesné, V. B., Farkas, G. and Málovics, É. (2015): Student evaluations of training and lecture courses: development of the COURSEQUAL method, *International Review on Public and Nonprofit Marketing*, 12, pp. 79-88.
- Lupo, T. (2013): A fuzzy ServQual based method for reliable measurements of education quality in Italian higher education, *Expert Systems with Applications*, 40(17), pp. 7096-7110.
- Mahapatra, S. S. and Khan, M. S. (2007): A framework for analysing quality in education settings, *European Journal of Engineering Education*, 32(2), pp. 205-217.
- O'Neill, M. A. and Palmer, A. (2004): Importance-performance analysis: a useful tool for directing continuous quality improvement in higher education, *Quality Assurance in Education*, 12(1), pp. 39-52.
- Oldfield, B. and Baron, S. (2000): Student perceptions of service quality in a UK university business and management faculty, *Quality Assurance in Education*, 8(2), pp. 85-95.
- Owlia, M. S. and Aspinwall, E. M. (1996): A framework for the dimensions of quality in higher education, *Quality Assurance in Education*, 4(2), pp. 12-20.
- Parasuraman, A., Zeithaml V. A. and Berry L. L. (1985): A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(3), pp. 41-50.

- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988): SERVQUAL: a multi-item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 64(1), pp. 12-40.
- Peters, M. (1992): Performance indicators in New Zealand higher education: accountability or control?. *Journal of Education Policy*, 7(3), pp. 267-83.
- Qureshi, M.I., Khan, K., Bhatti, M.N., Khan, A. and Zaman, K. (2012): Quality Function Deployment in Higher Education Institutes of Pakistan, *Middle-East Journal of Scientific Research*, 12(8), pp. 1111-1118.
- Ramayah, A., Zain, A. N. and Ahmad, H. B. (2007): Exploring the dimensions of service quality in higher education research. Available at: <http://eprints.um.edu.my/16/1/arivalan.pdf>
- Rodríguez-González, F. G. and Segarra, P. (2016): Measuring academic service performance for competitive advantage in tertiary education institutions: the development of the TEDPERF scale, *International Review on Public and Nonprofit Marketing*, 13(2), pp. 171–183.
- Rowley, J. (1997): Beyond service quality dimensions in higher education and towards a service contract, *Quality Assurance in Education*, 5(1), pp. 7-14.
- Rowley, J. (2003): Designing student feedback questionnaires, *Quality Assurance in Education*, 11(3), pp. 142–149.
- Shah, M. and Widin, J. (2010): Indigenous Students' Voices: Monitoring Indigenous Student Satisfaction and Retention in a Large Australian University, *Journal of Institutional Research*, 15(1), pp.28-41.
- Shah, M., Hasan, S., Malik, S. and Sreeramareddy, C.T. (2010): Perceived stress, sources and severity of stress among medical undergraduates in a Pakistani medical school, *BMC Medical Education*, 10(2), p. 8.
- Stodnick, M. and Rogers, P. (2008): Using SERVQUAL to measure the quality of the classroom experience, *Decision Sciences Journal of Innovative Education*, 6(1), pp.115-133.
- Tam, M. (2001): Measuring quality and performance in higher education, *Quality in Higher Education*, 7(1), pp. 47-54.
- Tang, Y. (2002): Higher education funding strategy analysis, use internal apartment quality system and external standard system as example for establishment, *Edu. Res. Inf.*, 10(5), pp. 1–27.

- Teeroovengadum, V., Kamalanabhan, T. J. and Seebaluck, A. K. (2016): Measuring service quality in higher education: Development of a hierarchical model (HESQUAL), *Quality Assurance in Education*, 24(2), pp. 244-258.
- Trivellas, P. and Dargenidou, D. (2009). Leadership and service quality in higher education: the case of the Technological Educational Institute of Larissa, *International Journal of Quality and Service Sciences*, 1(3), pp. 294-310.
- Venkatraman, S. (2007). A framework for implementing TQM in higher education programs, *Quality Assurance in Education*, 15(1), 92-112.

Zsuzsanna E. TÓTH – György ANDOR – Gábor ÁRVA

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## **Experiences of a university peer review of teaching program**

### **Abstract**

In this paper, the methodology and first experience arose from a two-year-long peer review of teaching program conducted at a Hungarian university is introduced and discussed. After the pilot semester, the program included 30 reviewed courses, 36 lecturers and also involved altogether more than 80 lecturers taking part as peer reviewers. The program is based on diversified questionnaires assessing several important aspects of the semester-long teaching process since not only classroom performance was evaluated, but the review of course outlines, teaching materials, consultations, processes and methods of student performance evaluations were also included. Most observed and identified mistakes and failures are not purely connected to classroom teaching activities but other supplementary elements of the teaching process. The outcomes are integrated with end-of-semester course evaluations carried out by students, which together with the results of the peer review program provide balanced feedback both personally to lecturers on their teaching strengths and weaknesses and to the academic staff and management as a whole on best practices and general problems.

### **1 Introduction**

Since the change of the political system, the Hungarian higher education has been undergoing fundamental structural changes along with mass marketization. Institutions are enforced to undertake competitive strategies due to the acknowledgement that higher education is a kind of market and university education is a commercial service (Sultan – Wong 2010). The many competitive pressures, the growing number of institutions and the increasing costs together with demographic shifts in the population force institutions

to put greater emphasis on quality issues. As a result, students are now generally recognized as the principal stakeholders of higher education and institutions consider student feedback as the key component of quality improvements. Such a trend is due to the recognition that successful learning depends upon lecturers and students considering themselves as partners in a 'shared enterprise'.

Although teaching has long been recognized as an essential part of every faculty member's job, rigorous and structured evaluation by those who are not students has largely been ignored in our tertiary education system. However, several complex performance evaluation systems are available at many institutions taking more aspects of lecturers' performance into consideration, according to the best of our knowledge, no similar peer review of teaching program has existed before in Hungary. Some kinds and forms of peer reviewing with different sophistication have also appeared at our different departments, but they have mainly remained isolated actions.

After summarizing the relevant issues of the literature on the topic of peer review of teaching, our paper introduces the established framework and the peer review process applied at the Faculty of Economic and Social Sciences, Budapest University of Technology and Economics in the academic year of 2015/2016 and 2016/2017. Finally, the paper presents the preliminary results of the peer review of the teaching program.

## **2 Literature review – Peer review of teaching**

Lecturers can be regarded as pillars of excellence in a higher education institution where their role has a high impact on the quality of teaching and learning (Ihsan et al 2012). Peer observation of teaching is a well-researched area (Crosser 1998; Shortland 2004). According to Cohen and McKeachie (1980), there are ten aspects of teaching, where peers are the most competent to evaluate. These include the mastery and selection, of course, course organization through the semester, appropriateness of course objectives, instructional materials, devices used for evaluation, appropriateness of methodology utilized in teaching specific content areas, commitment to teaching and concern for student learning, student achievement and support of departmental instructional efforts. Peer review of teaching includes a variety of practices which may include discussions between reviewer and reviewee, evaluation of teaching portfolios, review of student evaluations, interviews with the students of the reviewer and peer observation of teaching (Cobb et al 2001; Kay 2004; Svinicki – Lewis 2002).

Washer (2006) offers an extensive and excellent review of the literature on the peer review of teaching in higher education. He concludes that *'at its best, the process can foster and disseminate best practice and lead to closer academic links and more general*

*team-building within and without academic departments'. Blackmore (2005) provides a best practice framework for peer review via teaching observation and claims that a reshaping of teaching norms would require, 'a change in faculty members' beliefs and values, and a culture that is prepared to accept constructive criticism and one that sees such criticism as an opportunity for improvement rather than a threat'.*

Early work by Adams (1994) focuses on the evaluation of classroom teaching in higher education for quality assurance purposes. The primary goal of introducing such a system is to make faculty members understand that teaching is their prime responsibility and the most important job that they do. Ward Griffin and Brown (1992) and Beckman et al. (2004) particularly deal with the available evaluative instruments used in peer observation of teaching. Brent and Felder (2004) present a protocol for peer review of teaching, which was implemented at North Carolina State University. Perlman and McCann (1998) introduce a particular 'handbook' for the peer review of teaching. Bingham and Ottewill (2001) report a pilot project at Sheffield Hallam University, where the aim is to create a balanced picture between student feedbacks and professional judgments of academic staff. Samson and McCrea (2008) introduce the implementation of a peer review of teaching instructional improvement program at the University of Montana. A prior study by Hodgkinson (1994) underlines the different set of criteria for seminar or lecture theatre style teaching activity and draws attention to the amount of time for such assessment activities. Klimova (2014) emphasises the significant role of self-reflection in the course evaluation process. Marlowe et al. (2012) focus on the peer review of the curriculum.

A number of quality criteria are also mentioned in the literature when designing a peer review process (Baartman et al. 2006; Baartman 2008; Ryan et al 2007; Tillema et al. 2011) including authenticity, transparency, fairness, generalizability and educational consequences. In line with these, an assessment process should include the following steps (Freeman – Lewis 1998):

- Determining the assessment goals,
- Selecting assessment tasks (the composition of assessment assignments covering content to be mastered),
- Establishing the scoring methodology,
- Administrating or implementing the assessment (execution of the actual assessment),
- Appraising (the actual scoring),
- Interpreting and valuing scores,
- Giving feedback

While it is broadly acknowledged that peer observation of teaching is of high importance, nonetheless, it can be provoking as peers are both colleagues and competitors (Ciesla – Lovejoy 1997). Costello et al. (2001) add that lecturers perceive peer review positively when good relations exist between reviewer and reviewee. Branningen and Burson (1983) observe that evaluation is mainly based on personal traits. Quinlan (2002) reports that lecturers who see themselves as good teachers routinely compare their peers' teaching strategies to their practice or experience. The results of Courneya et al. (2008) support the contention that *'colleagues do enter a peer observation with preconceived notions of what constitutes good teaching and such notions are generally constructed around the observer's teaching approach.'*

The issue of peer vs student observation has also been discussed in the relevant literature. Ward Griffin and Brown (1992) and Leamon and Fields (2005) highlight that peers are a more reliable source of information on the lecturer's knowledge of content, selection of instructional materials and the teaching strategies used in the delivery of that knowledge. In contrary, Abedin et al. (2014) find no significant differences between students' and lecturers' perceptions on the course evaluation process.

### **3 Establishing a framework for peer reviewing**

#### **3.1 Motivation**

The motivation for establishing a framework for peer review of teaching has been manifold. First, most lecturers often feel that while student feedback is a necessary condition for effective course evaluation, it is not sufficient. Inputs from other sources, not least the lecturers themselves are required. Second, a new faculty strategy was developed, which indicated new goals on the side of the staff as well. Furthermore, the pressure of increased competition for students has put up for a greater need to ensure effective teaching, internal quality control issues, personal and professional development. After all, 'peer support review' has been identified as an essential process for reviewing teaching processes, ideas and 'catching mistakes' and improving the quality of our teaching service.

Based on these motivations international approaches have been sought (e.g. Brent – Felder 2004; Perlman – McCann 1998; Bingham – Ottewill 2001; Samson – McCrea 2008) in order to study the objectives, related processes and how review results are fed back to the teaching and other supplementary processes. The questionnaires used in the review program cover the whole teaching process. These have been developed with the involvement of colleagues with a professional background in quality management,

pedagogy and psychology. The professional judgement of the academic staff could supplement the view of students as primary stakeholders when it comes to the evaluation of study programs.

The professional judgements of the academic staff may include:

- student evaluations at the end of the semester for each and every course;
- feedbacks from mentors, supervisors;
- feedbacks from peer reviewing lecturers (working not necessarily in the same institution and department);
- self-reflection of lecturers.

These four inputs of the staff's teaching performance can provide balanced feedback concerning teaching performance. The latter two kinds of professional judgements have been missing at our Faculty, which provided challenging opportunities.

### **3.2. Evaluation purposes**

Prior to the implementation of peer support review, a range of issues have to be addressed, namely, the focus of the review processes, the training of participants, the timing and scheduling of the related processes, the organization of review meetings, the nature of outcomes and in what forms and how they are utilized in the processes in order to utilize them for quality improvements.

- **Focus:** The focus of the review process is on knowledge delivery and sharing methods since this is the dimension where the most could be gained in terms of sharing expertise.
- **Preparation:** The reviewers have to be familiarized with the courses and lecturers being observed and evaluated. To put the procedure simple, existing resources were used for this purpose, namely, the documents that guide students through the course objectives and requirements, including information with regards to students' work as well. Information from these sources are supplemented in the next semesters by a short introductory presentation given by the reviewed lecturer at the beginning highlighting the aims and goals of the course, instructional materials used during the semester, forms of student performance evaluations, lessons learned and experiences, strengths and improvement areas of the course (evidenced from student feedbacks). Particular attention is given to the learning outcomes and the effectiveness of the learning and teaching strategies.

- There is a consensus that an evaluation should include both formative and summative components since it is essential to give both types of feedbacks. Head of departments would need summative evaluations regarding the courses for the teaching of which their departments are responsible, and such global assessment is also necessary for faculty management purposes. Therefore, the questionnaires consist of two main parts: the first part utilizes traditional Likert scales for measuring and evaluating specific skills and aspects, as most of the behaviours could be assessed quantitatively using a rating scale. The second part stands for narrative comments within each dimension, allowing more profound and more nuanced assessments.
- Timing and scheduling: Taking the academic calendar and the schedules of each participant into consideration the opportunities for peer review support are organized. It is important to recognize the amount of time that involvement in this activity requires taking into consideration the level of preparation needed, particularly in giving useful feedback.
- Review meetings: The focal points of the whole review process are the 90-minute-long meetings per course at the end of the semester. These open discussions create an atmosphere of informality for sharing and discussing particular viewpoints and experiences.
- Outcomes: Throughout the semester-long process, brief documentations are prepared to record experiences from observations. In this way, it is intended to give everyone a sense of ownership of the process. Participants are highly encouraged to discuss outcomes and any staff development needs.

### 3.3 Stages

The phases of the assessment process are identified, according to Freeman, and Lewis (1998) specifically adapted to the faculty.

*Planning stage:* In this planning phase, the following questions should be answered. Which courses and lecturers are to be peer-reviewed? What constitutes a 'peer' and who should do the evaluation? When and how frequently peer evaluations will be done, and what will be analyzed? How and where to store the evaluation data, and who should have access to it and how to maintain confidentiality? What kind of form to use to gather and record data?

A lecturer is peer-reviewed by at least 4-5 colleagues who belong to another department and therefore, to a different professional field. The peer reviewing team include lecturers with more and less teaching experience as well. Each of the observers visits at least 3 lectures of the same lecturer in the same course and at least 1 occasion

when student performances are evaluated. A variety of specialists and professionals are involved in the 'pairing'. Initial training for both observer and observed participants is of utmost importance before they participate in order to understand the whole reviewing process, their role in each step and the documentation and administration belonging to each step in which they are involved. The evaluation framework is built upon the following pillars:

- course outlines, schedule of the semester
- classroom observations
- instructional materials
- communication with students
- observation of student evaluations (midterm tests and exams)
- students are involved in giving immediate feedback concerning their midterm test and exam experiences
- self-evaluation and self-reflection of reviewed lecturers.

*Observation stage:* The peer review of the full range of teaching and learning activities taken place during the semester that is not focused solely on classroom activities (communication with students, consultations, midterm tests, exams etc. above during the semester).

*Initial feedback stage:* In this phase, the questionnaires addressing generic issues utilized for the different parts of peer reviewing are applied. The observed lecturer is provided with written feedback that is discussed at the closing meeting at the end of the semester.

*Final feedback stage:* End-of-semester feedbacks are based on the peer evaluations given during the semester on behalf of all reviewers. As a result, relevant issues are discussed, strengths and improvement opportunities are summarized both for the lecturer and for the course itself at the final meetings organized at the end of the semester.

*Dissemination stage:* The vice dean responsible for the peer review program informs various committees about the results of the semester. The peer review results are also completed and compared with student feedbacks. The outcomes of the peer review process are used as a basis for the dissemination of effective practices across faculties and within faculties.

*Action:* The involved committees take the necessary actions, initiate any training or awareness training necessary. The loop is closed according to the PDCA logic by

implementing improvement actions the success of which is also measured and evaluated.

### 3 Results

As the introduced peer review program focuses on courses with the highest numbers of students, traditional lecture theatre courses are primarily involved in the evaluation process. After a semester-long pilot program, altogether 30 courses, 36 peer-reviewed lecturers, 85 peer reviewers, 401 observed lectures, 707 peer review evaluations are involved. Both peer reviewers and students are offered the opportunity to evaluate the ways and methods of student performance evaluations in case of which more than 90 midterm tests and/or exams are peer-reviewed and more than 8700 student evaluations are collected [33].

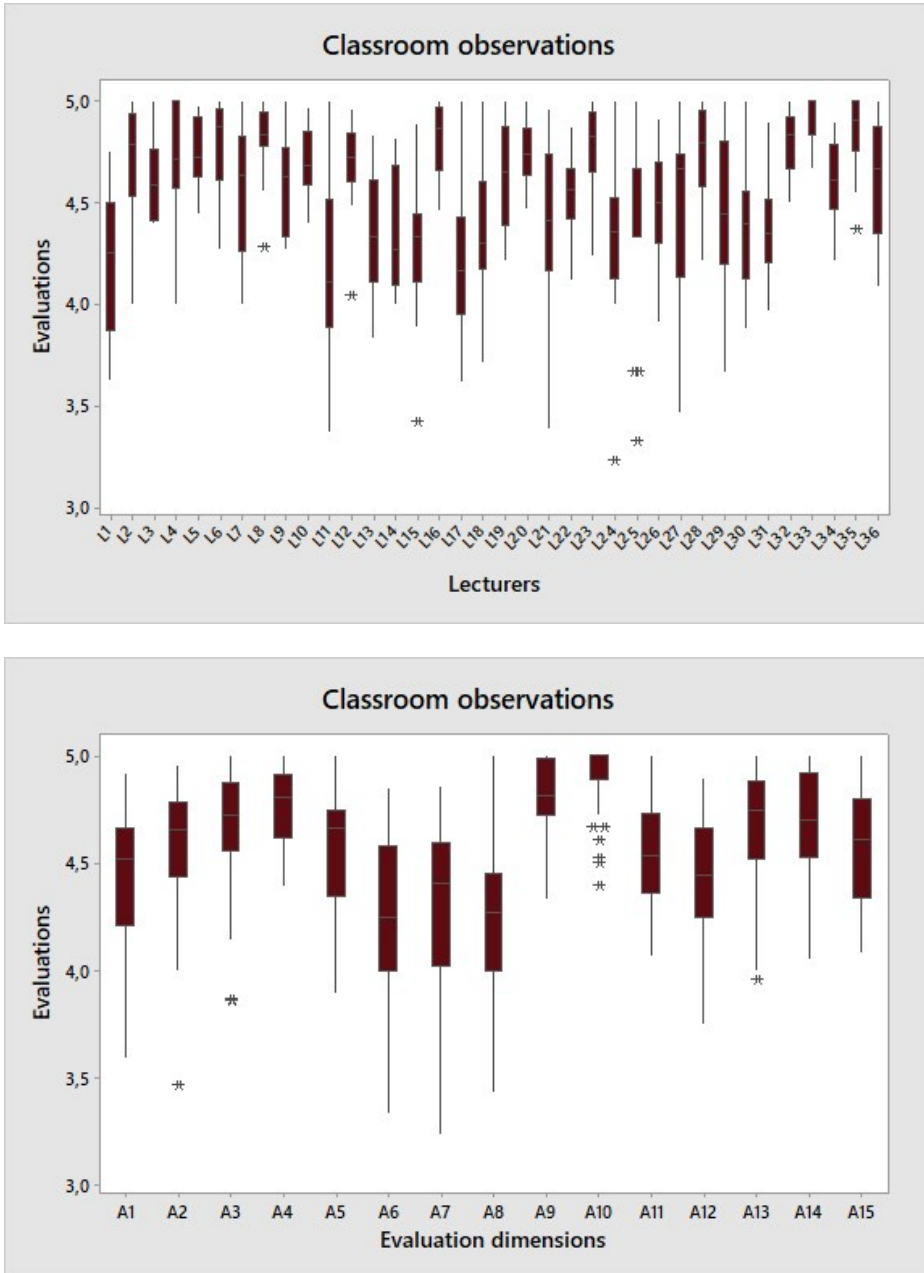
**Table 1** Summary of evaluations given by both peer reviewers and students

Number of peer-reviewed courses	30
Number of peer-reviewed lecturers	36
Number of peer reviewers	85
Number of peer-reviewed lectures	401
Number of peer evaluations (lectures)	708
Number of peer-reviewed midterms tests/ exams	92
Number of peer evaluations (midterm tests/exams)	183
Number of midterm test/exams evaluated by students	88
Number of student evaluations (midterm tests/exams)	8764

Firstly, dimensions of different questionnaires applied for teaching performance measurement and evaluation are worked out. These dimensions are grouped into four categories. Peer review dimensions labelled as A1-A15 are applied to evaluate the classroom performance of the peer-reviewed lecturer during the semester; B1-B11 dimensions stand for the end-of-semester peer evaluations expressing the overall picture of peer reviewers related to a given lecturer; while reviewers also evaluate the process and circumstances of midterm tests and exams along C1-C4 dimensions. Finally, student

evaluations judging midterm tests and exams during the semester close the loop using the student-focused D1-D8 dimensions. Every dimension is assessed quantitatively by using a 5-point Likert scale, where 1 stands for the lowest, while 5 for the highest performance in the issues addressed by the various evaluation dimensions.

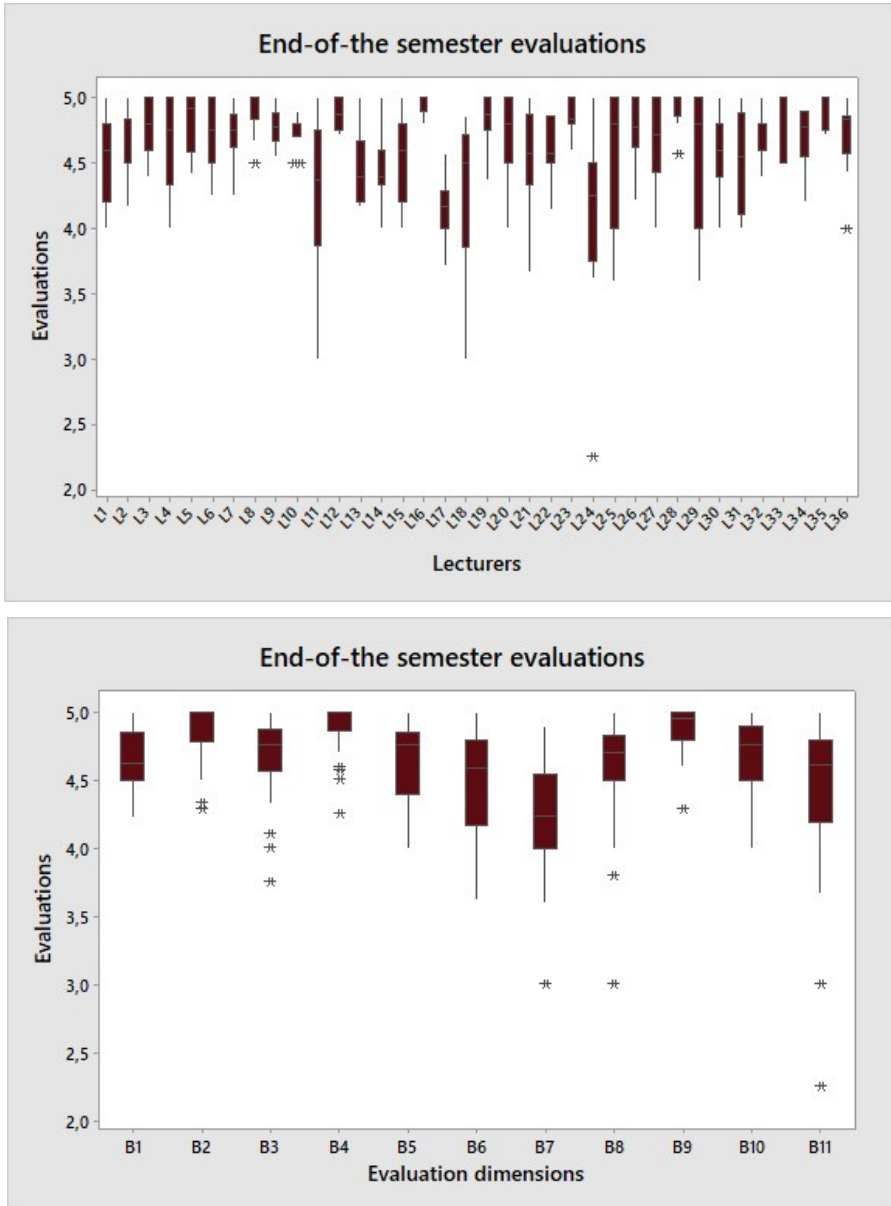
The following figures summarise the results of evaluations based on the different questionnaires (applying the A, B, C and D types dimensions) both by lecturers and by dimensions. The diagram on the left in Figure 1 illustrates the average evaluation scores (1-5) given for each reviewed lecturer (L) in the evaluation dimensions of A1-A15 (A1 Quality of the introduction part; A2 Volume, intonation; A3 Grammar, intelligibility, speech rate; A4 Transferring the terminology; A5 Explanatory capability; A6 Maintaining student attention; A7 Applying suitable presentation techniques fitting the topic; A8 Quality of the applied slide show; A9 Consonance of the slide show with verbal communication; A10 Applying non-professional value judgement during the lecture; A11 Following the syllabus of the course; A12 Fulfilling the objectives of the lecture set by the lecturer at the beginning; A13 Positioning the actual topic of the lecture in accordance with the course objectives; A14 To what extent the actual lecture supports the acquirement of related knowledge, explicitness of the actual topic's utility and relevance; A15 Logical structure of the lecture. In each dimension a 1-5 Likert scale has been applied, where, stands for the weakest, 5 for the best performance.)



**Figure 1** Bloxplot diagrams of peer evaluations by lecturers (upper), and by evaluation A-type dimensions (lower) based on classroom observations

The horizontal lines in the box plots demonstrate the median of average evaluation scores. The left diagram in Fig. 1 illustrates that average evaluations do not differ more than a half unit for most of the lecturers; however, some lecturers were more divisive (see, e.g. L1, L11). The diagram on the right depicts similar results in terms of the dimensions applied for classroom performance evaluation showing that in case of A6 (Maintaining student attention), and A8 (Quality of the applied slide show) the medians of average evaluations are lower. In case of e.g. A6 (Maintaining student attention) and A7 (Applying suitable presentation techniques fitting the topic) box plots are relatively tall suggesting that peer reviewers hold quite different opinions about this aspect. Where the box plots are comparatively short (see, e.g. A10 - Applying non-professional value judgement during the lecture) those cases illustrate that peer reviewers overall have a high level of agreement with each other.

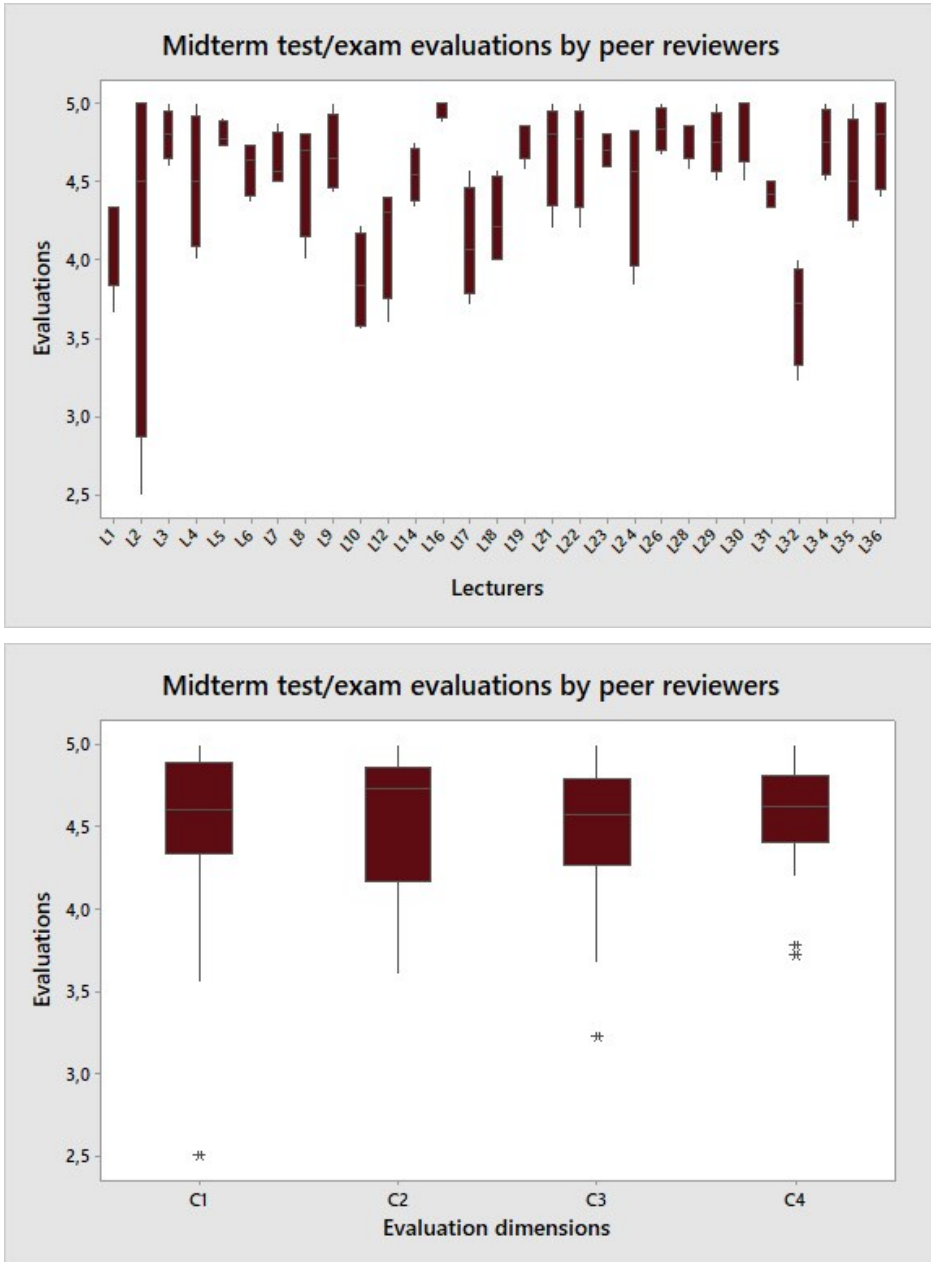
Similar analyses are conducted in case of end-of-semester evaluations related to the semester-long observation of lecturer performance, including all steps of the evaluation process. These evaluation dimensions cover course schedule, outline, teaching materials, handouts, interactions with students, skills and competencies of the lecturer (B1 Following the course syllabus, keeping the original course objectives, time management; B2 Consonance of the student performance evaluation system with course objectives; B3 Communicating course objectives and requirements towards students; B4 Professional background of the lecturer; B5 Verbal competencies; B6 Nonverbal competencies; B7 Motivating students and maintaining their attention; B8 Maintaining lecturer-student interactions; B9 Consonance of lecture structuring, professional content, slide shows, course materials with course objectives; B10 Structuring course materials and the slideshow; B11 Usefulness of course materials and supporting techniques in the fulfilment of course requirements set for students). The box plot diagrams in Fig. 2 demonstrate the variability of average evaluation scores given by peer reviewers at the end of the semester exemplified both by lecturers (on the left) and by dimensions (on the right).



**Figure 2** Box plot diagrams of peer review evaluations given by peer reviewers at the end of the semester (B-type dimensions)

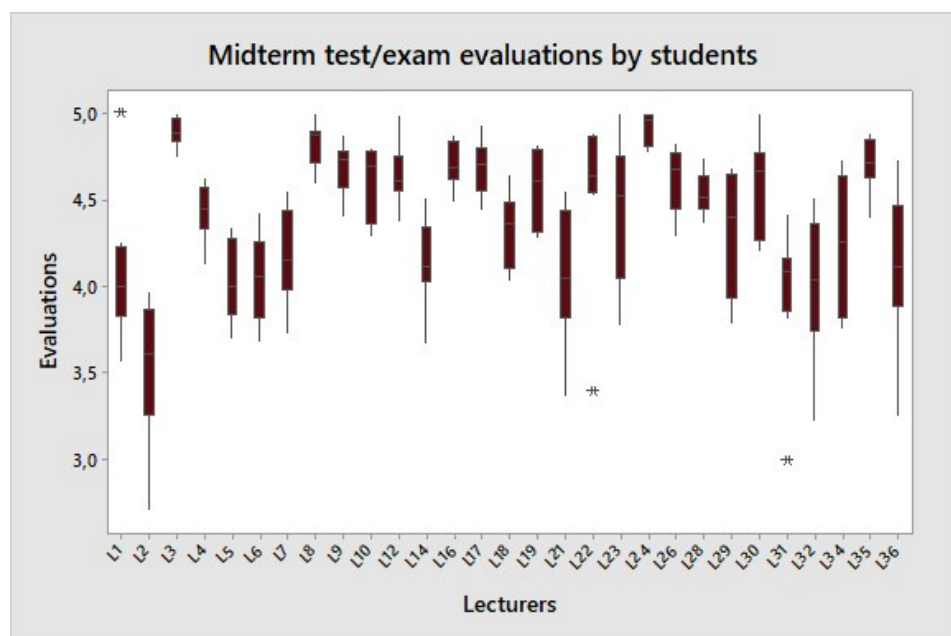
The diagram on the left, illustrating the segmentation of peer evaluations by peer-reviewed lecturers provides similar patterns compared to the same diagram in Fig. 1. Box plots are uneven in size demonstrating that many peer reviewers have similar views in case of certain lecturers (see, e.g. L16), while, e.g. in case of L11, L18 or L29 peer reviewers are more variable in their views. If we take a look at L13, L14 and L15, medians (which will be generally close to the average) are all at the same level. However, the box plots in these examples show different distributions of views. Similarly, the diagram on the right in Fig. 2 depicts that e.g. the box plot of B9 (Consonance of lecture structuring, professional content, slide shows, course materials with course objectives) shows a higher level of agreement between peer reviewers, while, e.g. B6 (Nonverbal competencies) suggest more different judgements in this specific issue.

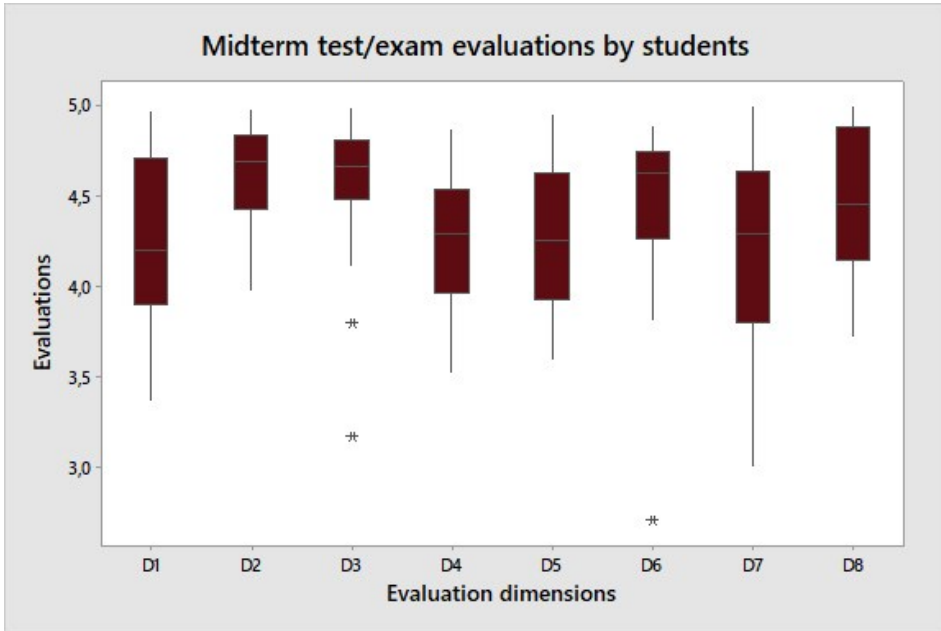
Peer reviewers also give feedbacks by expressing their judgements on a 1-5 scale in 4 aspects related to the execution of midterm test and exams (C1 Review the course of tests/ exams; C2 Midterm test/ exam circumstances, atmosphere; C3 Efforts providing fair circumstances; C4 Structuring and clarity of the worksheet.) The box plot diagrams in Fig. 3 highlights the important issues between evaluations given by peer reviewers. The diagram on the left depicts that there are obvious differences between lecturer performances in terms of midterm tests and exams. A good example is L2 with a relatively big box plot, while L16's box plot is comparatively short. There are lecturers where the inter-quartile range of evaluations are well below the average (see. e.g. L32). The diagram on the right (Fig. 3) demonstrates a more balanced picture of the midterm test and exam evaluations based on the segmentation of dimensions.



**Figure 3** Box plot diagram based on evaluations given by peer reviewers (C-type dimensions)

Students also provide immediate feedback after the occasions of student performance evaluations by expressing their judgement similarly on 1-5 scale in 8 aspects (D1 Availability of instructional materials applied for preparation; D2 Midterm test / exam circumstances and atmosphere; D3 Reviewing the course of tests / exams; D4 Clarity of exam questions; D5 Consonance of tests/ exams with course requirements; D6 Clarity of student result calculation; D7 Standard of consultations; D8 Circumstances, standard, atmosphere of midterm test/ exam viewing opportunities). Results with the same segmentations can be seen in Fig. 4.

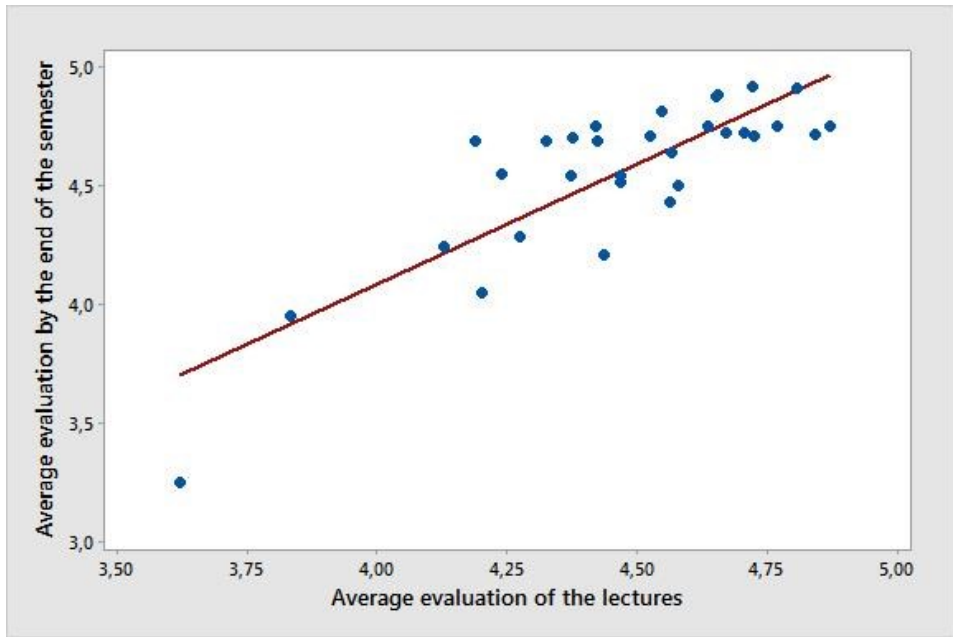




**Figure 4** Box plot diagram based on midterm test and exam evaluations given by students (D-type dimensions)

The box plot diagram on the left (Figure 4) depicts a great variety of box plots both in their heights, medians and distributions. The box plot of L2 is situated below the average with a lower median and moderate variability of average evaluations. According to the evaluation of peer reviewers, L2 has the tallest box plot demonstrating quite different opinions of peers. Taking a similar comparison of students' and peer reviewers' evaluation into consideration, demonstrative examples may be the case of e.g. L3, L16 and L24 where the two groups evaluate these lecturers similarly embodying in comparatively short box plots and high average evaluations, while the case of L5 shows that students give lower average evaluations compared to peer reviewers. On the contrary, L32 is given higher average evaluations by peers compared to student average evaluations.

Correlations are also studied between the different aspects of evaluation. A relatively strong correlation ( $R^2=67,61\%$ ) has also been found between the average evaluations of lectures and the average final evaluations (see Figure 5)



**Figure 5** Fitted line plot demonstrating the relationship between average evaluations of lectures and average final evaluations

The results of a paired t-test are presented in Table 2, including the comparison of average students' and peer reviewers' ratings in the same aspects. These tests show that there is no difference between average students' and observers' ratings in these two identical evaluation dimensions.

**Table 2** Results of paired t-tests

Evaluation of midterm test and exams by peer reviewers	Evaluation of midterm test and exams by students	t-value	p-value
C1	D3	-0,7	0,493
C2	D2	0,26	0,795

As a result of student course evaluations given at the end of the semester, two indicators are generated, namely, OHV-OMI and OHV-TMI. The former one reflects the evaluation of a given lecturer's performance; the latter one indicates the evaluation of the course itself. The measurement of both indicators is based on 7 evaluation dimensions using a

Likert scale 1-5. Table 3 illustrates the stochastic relationship between the value of student evaluation indicators and the average evaluation scores given in each dimension in the review process.

In order to determine which evaluation dimensions of the review process have the greatest impact on students' average evaluations, a regression analysis has been applied. Table 4 presents the strongest stochastic relationships between the aforementioned indicators and the average evaluation scores of the best fitting evaluation dimension originating from the different stages of the peer review process.

Table 5 demonstrates those subsets of variables of each evaluation category that can best predict the value of relevant student evaluation indicators.

Paired t-tests have been conducted to determine whether the mean value of student evaluation indicators and that of the peer reviewers in each evaluation category differ significantly. Table 6 demonstrates the results of t- and p-values showing that there are significant differences between the evaluation of students and peer reviewers, which is partly due to the different focus of the different evaluations.

**Table 3** Stochastic relationship between the value of student evaluation indicators and average evaluation scores in each category

Response	Category	R <sup>2</sup>
OHV-OMI	Evaluations of lectures	6,8
	Semester-long evaluations	6,6
	Evaluation of midterm test and exams by peer reviewers	1,8
	Evaluation of midterm test and exams by students	18,8
OHV-TMI	Evaluations of lectures	4,0
	Semester-long evaluations	3,7
	Evaluation of midterm test and exams by peer reviewers	12,7
	Evaluation of midterm test and exams by students	4,1

**Table 4** Best predictors for the values of student evaluation indicators (OHV-OMI and OHV-TMI)

Response	Category	Best predictor	
		Variable	R <sup>2</sup>
OHV-OMI	Evaluations of lectures	A6	13,1
	Semester-long evaluations	B7	35,2
	Evaluation of midterm tests and exams by peer reviewers	C1	10,2
	Evaluation of midterm tests and exams by students	D6	23,7
OHV-TMI	Evaluations of lectures	A10	23,37
	Semester-long evaluations	B7	24,2
	Evaluation of midterm tests and exams by peer reviewers	C3	0
	Evaluation of midterm tests and exams by students	D2	18,8

**Table 5** Best subset regression in each category to predict the value of student evaluation indicators

Response	Category	Best subset	
		Variables	R <sup>2</sup>
OHV-OMI	Evaluations of lectures	A2, A4, A5, A6, A10	42,8
	Semester-long evaluations	B4, B5, B6, B7	38,69
	Evaluation of midterm test and exams by peer reviewers	C1	10,2
	Evaluation of midterm test and exams by students	D3, D4, D8	24,6
OHV-TMI	Evaluations of lectures	A10	23,37
	Semester-long evaluations	B4, B7	22,7
	Evaluation of midterm test and exams by peer reviewers	-	0
	Evaluation of midterm test and exams by students	D1, D2, D4, D5	21,3

**Table 6** Results of paired t-tests

Student evaluation	Category	t-value	p-value
OHV-OMI	Evaluations of lectures	5,77	0,000
	Semester-long evaluations	5,65	0,000
	Evaluation of midterm test and exams by peer reviewers	5,15	0,000
	Evaluation of midterm test and exams by students	5,07	0,000
OHV-TMI	Evaluations of lectures	9,36	0,000
	Semester-long evaluations	8,73	0,000
	Evaluation of midterm test and exams by peer reviewers	7,34	0,000
	Evaluation of midterm test and exams by students	7,41	0,000

## 4 Conclusions

### 4.1 Managerial implications

When analysing the outcomes of the peer support review itself, the comments and recommendations given by participants are primarily taken into consideration. It is clear that the experiment with peer review has been considered as a beneficial exercise, and it also provides great value from a professional point of view. Besides, the process enables peer reviewers to explore learning and teaching in a professional and focused manner with colleagues from different institutions and provides them with a relatively rare opportunity to share ideas and practice. At the same time, the whole process increases their knowledge and understanding of each other's course and offers participants greater insight into the applied methodologies.

The positive feedback might be owing to several factors. First, participants find it inevitable that the focus is on lecturers resulting in an engagement in professional discussion and debate. Second, professional input is regained into course evaluation and improvement based on experience and expertise. Third, due to the pedagogic focus of interest, lecturers are motivated and prepared to commit to the process. Fourth, there are essential benefits to the reviewers both as part of a team and as an individual which they can utilize in their courses. Those arise partly from a greater understanding of other fields and problems that cut across faculty boundaries. Fifth, lecturers can identify their areas on which to focus. Finally, the structure of the process is clear, straightforward and transparent, with all involved aware of what is happening and why.

The experiences gained let us conclude the weaknesses as well. More attention should have been given to clarifying what is expected of reviewers rather than leaving it

up to them. Some participants feel that the clarity of the evidence on which reviewers base their evaluations and the selection of course strengths and weaknesses should be enhanced. It is still not clear how and in what forms departments should be motivated to implement actions based on the recommendations originating from peer reviewers.

## **4.2 Improving the review process**

In considering the improvement opportunities for the peer support review, various lessons, including organizational cultural and procedural requirements, have been learnt. There are areas in the process which need to be refined with a broader participation level.

As with most developments in an educational context, cultural factors are of more significant consequence than procedural. One of the most important weaknesses is the lack of well-established self-reflective practice, which stems from cultural aspects. In that sense, improvements related to the process need to be addressed. In terms of mutuality and reciprocity, we need to deal with the appreciation of the benefits that can origin from cross-department collaborations. A kind of culture should be strengthened where lecturers' willingness to engage in an evaluative exercise voluntarily is strong. In the long run, the involvement of other university colleagues is expected as well. A 'culture of peer reviewing' is argued for to be an important ingredient and a critical factor in order that a quality improvement culture could thrive.

Another positive spin-off from such a practice is that best practices can be identified and shared both on the individual level and the level of the faculty. The primary aim is to bring about changes in teaching practice and introduce new teaching methods. It can be reassuring for the lecturers that they are doing a reasonable job and can identify areas for improvement. Besides that, it is also vital to ensure the compliance to generally accepted standards and to facilitate management decision making in such areas as establishing and improving teaching standards at the faculty level and can be utilized as inputs for promotion, awards etc.

From a procedural point of view, the success of peer support review largely depends on the professional background and foundation. More attention needs to be devoted to the selection of reviewers. The reviewers must prepare for the review meetings by reading the necessary documentation, participating fully and contributing to the set of recommendations. Written guidelines are also needed and possibly even a half-day development to assist those without prior experience.

In the beginning, this program concentrates mainly on the observations of performance in the lecture theatre, which is a very different activity compared to seminar groups. Later on, seminar observations are to be included, and the differences should be

reflected in a different set of criteria. A lecturer may perform well in a seminar setting but need considerable support in lecturing to a large number of students.

## References

- Abedin, N.F.Z., Taib, J.M., Jamil, H.M.T. (2014): Comparative Study on Course Evaluation Process: Students' and Lecturers' Perceptions. *Procedia - Social and Behavioral Sciences*, 123, pp. 380–388
- Adams, J.C. (1994): Appraising Classroom Teaching in Higher Education. *Quality Assurance in Education*, Vol. 2, Iss. 2, pp. 15-17
- Baartman, L. K. J. (2008): Assessing the assessment: development and use of quality criteria for competence assessment programmes. Doctoral dissertation, Utrecht, The Netherlands: University of Utrecht
- Baartman, L. K. J., Bastiaens, T. J., Kirschner, P. A., Van der Vleuten, C. P. M. (2006): The wheel of competency assessment: Presenting quality criteria for competency assessment programmes. *Studies in Educational Evaluation*, 32, pp. 153-170
- Beckmann, T., Ghosch, A., Cook, D., Erwin, P., Mandrekar, J. (2004): How reliable are assessments of clinical teaching? *Journal of General Internal Medicine*, 19, pp. 971-977
- Bingham, R. and Ottewill, R. (2001): Whatever happened to peer review? Revitalising the contribution of tutors to course evaluation. *Quality Assurance in Education*, Vol. 9, Iss. 1, pp. 32–39
- Blackmore, J.A. (2005): A critical evaluation of peer review via teaching observation within higher education. *International Journal of Educational Management* Vol. 19, Iss. 3, pp. 218–232
- Brannigen, C. N., Burson, J. (1983): Revamping the peer review process. *Journal of Nursing Education*, 22(7): pp. 287-289
- Brent, R., Felder, R.M. (2004): A protocol for peer review of teaching. *Education Designs*, North Carolina State University, Session 3530
- Ciesla, J., Lovejoy, N. (1997): Peer review: A method for developing faculty leaders. *Nurse Educator*, 22(6): pp. 41-47
- Cobb, K., Billings, D., Mays R., Canty-Mitchell, J. (2001): Peer review of teaching in web-based courses in nursing. *Nurse Educator*, 26(6): pp. 274-279

- Cohen, P. S. McKeachie, W. J. (1980): The role of colleagues in the evaluation of college teaching. *Improving College and University Teaching*, 28, pp. 147-154
- Costello, J., Pateman, B., Pusey, H., Longshaw, K. (2001): Peer review of classroom teaching: An interim report. *Nurse Education Today*, 21, pp. 444-454
- Courneya, C.A., Pratt, D.D., Collins, J. (2008): Through what perspective do we judge the teaching of peers?" *Teaching and Teacher Education*, 24, pp. 69–79
- Crosser, M. (1998): Towards the design of a system of peer review of teaching for the advancement of the individual within the university. *Higher Education*, 35, pp. 143-162
- Freeman, R., Lewis, R. (1998): *Planning and implementing assessment*. London: Kogan Page
- Hodgkinson, M. (1994): Peer Observation of Teaching Performance by Action Enquiry. *Quality Assurance in Education*, Vol. 2, Iss 2, pp. 26–31
- Ihsan, A. K. A. M., Taib, K. A., Talib, M. Z. M., Abdullah, S., Husain, H., Wahab, D. A., Idrus, R. M., Abdul, N. A. (2012): Measurement of course evaluation for lecturers if the Faculty of Engineering and Built Environment. *Procedia – Social and Behavioral Sciences*, 60, pp. 358-364
- Kay, J. (2004): *Teaching Quality Assurance Manual*, Exeter, UK: University of Exeter
- Klimova, B.F. (2014): Self-reflection in the Course Evaluation. *Procedia - Social and Behavioral Sciences*, 141, pp. 119-123
- Leamon, M., Fields, L. (2005): Measuring teaching effectiveness on a pre-clinical multi instructor course. *Teaching and Learning in Medicine*, 17(2): pp. 119-129
- Marlowe, K.F., Wargo, K.A., Kelley, K.W. (2012): Peer review of the curriculum as a continuous process of improvement. *Currents in Pharmacy Teaching and Learning*, 4, pp. 157–164
- Perlman, B., McCann, L.I. (1998): *Peer Review of Teaching*. University of Wisconsin Oshkosh
- Quinlan, K. M. (2002): Inside the peer review process: How academics review a colleague's teaching portfolio. *Teaching and Teacher Education*, 18, pp. 1035-1049
- Ryan, G. J., Marshall, L. L., Porter, K., Jia, H. (2007): Peer, professor and self-evaluation of class participation. *Active Learning in Higher Education*, 8, pp. 49-61
- Samson, S., McCrea, D.E. (2008): Using peer review to foster good teaching. *Reference Services Review*, Vol.36, Iss. 1, pp. 61 – 70

- Shortland, S. (2004): Peer observation: A tool for staff development or compliance? *Journal of Further and Higher Education*, 28, pp. 219-227
- Sultan, P. and Wong, H. Y. (2010), Service quality in higher education – a review and research agenda. *International Journal of Quality and Service Sciences*, Vol. 2, Iss: 2, pp. 259 – 272
- Svinicki, M., Lewis, K. (2002): *Gathering feedback on teaching and learning*. Austin: University of Texas
- Tillema H., Leenknecht M., Segers M. (2011): Assessing assessment quality: Criteria for quality assurance in design of (peer) assessment for learning – A review of research studies. *Studies in Educational Evaluation*, 37, pp. 25-34
- Toth Zs E, Andor, Gy., Arva, G. (2017): Peer review of teaching at Budapest University of Technology and Economics - Faculty of Economic and Social Sciences", In: Jonathan Batten, Ender Demir (ed.) 21st Eurasia Business and Economics Society (EBES) Conference Program and abstract book, ISBN:978-605-84468-8-5, Budapest, Hungary, pp. 244-255, 2017.
- Ward Griffin, C., Brown, B. (1992): Evaluation of teaching: A review of the literature. *Journal of Advanced Nursing*, 17, pp. 1408-1414
- Washer, P. (2006): Designing a system for observation of teaching. *Quality Assurance in Education* Vol.14, Iss. 3, pp. 243–250

## **Abstract**

This study aims to analyse the types of academy–industry relationships in Hungary, that are in the centre of the recent science policy aims. The study is based on in-depth interviews conducted with academic researchers in engineering.

The paper examines the recent forms of academy-industry relationships according to the typology of Perkman (2007) and collects evaluative interpretations on these forms of collaboration among scholars regarding their careers.

Results show that the third mission in the academic sector is quite heterogeneous, however, mostly those relationship types are frequented and evaluated positively by the researchers, which are attached to high relational involvement (e.g., research services). However, those types which are resulted in direct innovation (e.g. commercialisation of property rights, academic entrepreneurship) are very rare, evaluated as inefficient, and not preferred by researchers.

## **1 Innovation system**

### **1.1 RDI policy aims**

The most dominant RDI policy goal nowadays in Hungary is to accelerate the collaboration between the academic and the business sector. The relevant new RDI strategy is currently being developed. In the recent planning period, our RDI strategy (National Research Development and Innovation Strategy 2013-2020) has a dual focus:

- to improve the monetary, infrastructural, and HR basis of basic research and
- to intensify academy–industry innovation linkages in multiple ways.

In the centre of the strategy stands the innovation in forms of cooperation between state-funded research institutions and the business sector, and its aspects in terms of economic exploitation.

Based on all relevant EU and Hungarian science policy-related strategies for the same period, the following aims are depicted by a comprehensive policy analysis (Csire et al. 2013: p.42.):

- Increase basic research expenditures
- Strengthen research infrastructure
- Provide new researcher supplies
- Intensify collaboration between academy (basic research and higher education) and business sector in many ways (e.g., in the smart specialisation/regional economy; dual education; technology – transfer; strategic partnerships, etc.),
- Extend the highly qualified human resources according to the needs of enterprises or with entrepreneurial abilities,
- admit more enterprises into the RD infrastructure of the academy

These goals also gather around the above mentioned dual focus, mostly the aim of better cooperation for innovations.

## **1.2 Innovation performance**

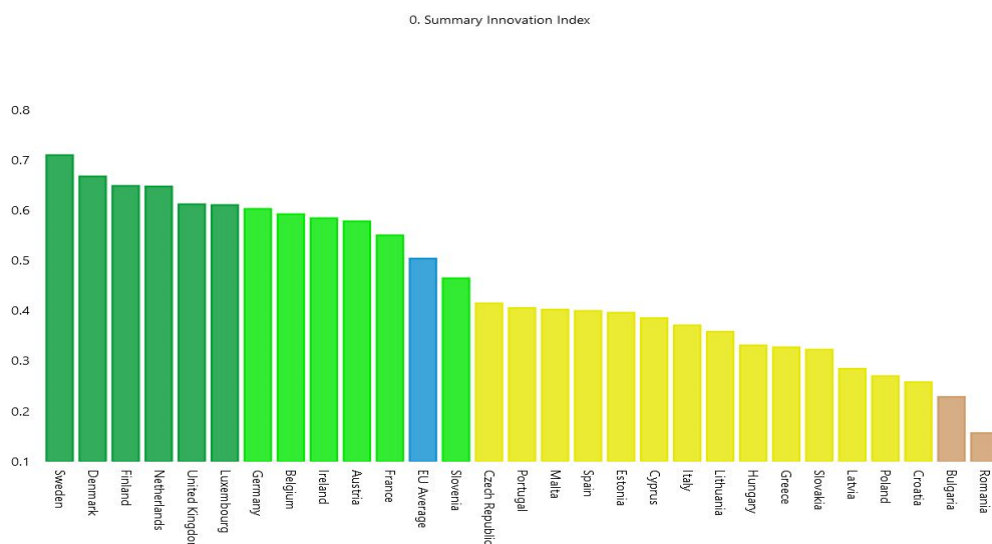
In 2013 the R&D expenditures of the state and enterprises reached 1.3% of the gross domestic product; however, Hungary is still far from the 2% average of the European Union and even of its own 1.8% target. Corporate R&D expenditures are growing rapidly and continuously and exceeded state resources. Large companies' R&D expenditures are significantly higher than that of small and medium-sized companies (KSH, 2019).

In comparison with the European Union, Hungary's performance is lagging behind the EU average in terms of indicators of innovation cooperation, especially between state-funded research institutions and companies. The cooperation of small and medium-sized enterprises with large companies and knowledge bases in Hungary and abroad is extremely weak. The environment for knowledge-intensive and technology-intensive start-ups (e.g., incubation) is still very underdeveloped (National Research Development and Innovation Strategy 2013-2020).

The following major difficulties of the state-funded research and development sector are identified by the above-mentioned strategy (National Research Development and Innovation Strategy 2013-2020):

- There is a growing problem in the supply of researchers.
- The quality of research infrastructure is lagging behind the EU countries.
- There are only a few internationally competitive knowledge-centers in the country.
- Stability in the funding of basic and applied research is only partially ensured.

On the European Innovation Scoreboard Hungary belongs to the lower part of the moderate innovators group (Figure 1).



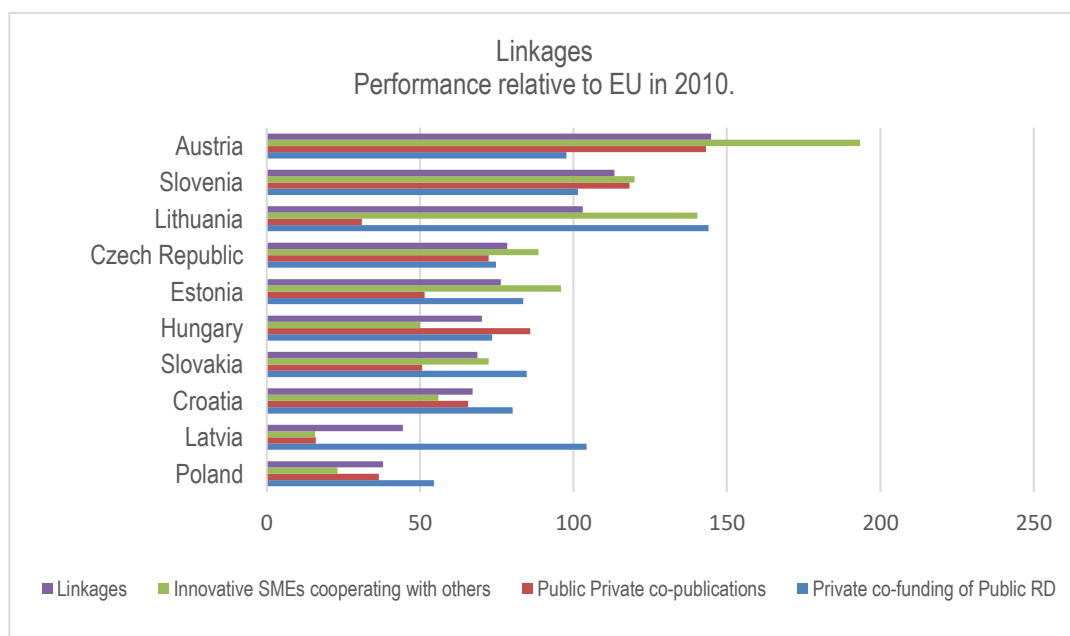
**Figure 1** Summary Innovation Index

Source: EIS 2018.

Hungary is lagging behind the other countries mostly because of its HR resources, including indicators of new doctorate graduates, the population aged 25-34 having completed tertiary education, and lifelong learning (European Innovation Scoreboard 2018. p.21.).

### 1.3 Innovation linkages

Regarding the linkages between the state-funded research institutions and companies including the indicators of innovative SMEs collaborating with others, public-private co-publications, private co-funding of public R&D Hungary's performance is under the 2010 EU average in all dimensions (Figure 2). Being placed ahead of most countries of the region, lagging behind Austria and Slovenia only, Hungary's performance in public-private co-publications is considerably positive. On the other hand, the private co-funding of public RD in Hungary is the second-worst in the region (Figure 2).



**Figure 2** Linkages

Source: EIS 2018.

## **2 Aims and Methodology**

### **2.1 Aims**

Science policy goals defined in the relevant policy and strategy documents due to the acceleration of the academy-business innovation partnership have not been or only been weakly accomplished by the end of the planning period.

Complementing a previous policy analysis and a survey on the attitudes of Ph.D. holders towards the business sector, this study is to analyse the academy – industry relationships in Hungary from the researchers' point of view. As the HR resources were the worst among the innovation indicators in Hungary, this approach can highlight important aspects of such collaborations in connection with researchers' career paths.

The study aims to give an insight into researchers' experience regarding these kinds of academy-industry linkages.

### **2.2 Methodology**

Findings are based on qualitative data derived from in-depth interviews with academic researchers in engineering. A total of 23 interviews were conducted in 2017 and 2018.

The frames and depth of the study are limited, as only one small block of interview questions were connected directly to this topic. The focus of the conversations was on the researchers' carrier path. Further interviews are planned for a more detailed analysis.

### **2.3 Typology of academy-industry links**

If one tries to examine the academy-industry linkages systematically via qualitative data, a standard typology is needed.

In the analysis, Perkman's typology of university-industry links has been used (Perkman, 2007). Perkman uses the general category of university-industry links instead of the sociologically imprecise 'channels' or 'mechanisms' terms for being able to designate the various ways "in which publicly funded research potentially benefits industry and economy" (Perkman, 2007. pp 8)

This typology categorizes the linkage types by the extent of the relational involvement of the participants (Table 1). Links with high relational involvement are those in which participants work together producing common outputs (e.g., research partnerships, or contract research). Links with intermediate relational involvement are of mobility type where individuals move between academic and industrial contexts for permanent or temporary positions (e.g. academic entrepreneurship, HR transfer). Those

forms of links which not necessarily require real relationships between the partners are the transfer type links (e.g. IP licensing, publication) (Perkman, 2007).

**Table 1.** University-industry links

University-industry links		
The extent of relational involvement	Typology of university-industry links	
High: Relationship	Research partnerships	Inter-organisational arrangements for pursuing collaborative R&D
	Research services	Activities commissioned by industrial clients (e.g., contract research, consulting)
Medium: Mobility	Academic entrepreneurship	Development and commercial exploitation of technologies pursued by academic inventors through a company they (partly) own
	Human resource transfer	Multi-context learning mechanisms such as training of industry employees, postgrad training in the industry, graduate trainees and secondments to industry, adjunct faculty
Low: Transfer	The commercialisation of property rights	Transfer of university-generated intellectual property (such as patents) to firms, e.g., via licensing
	Scientific publications	Use of codified scientific knowledge within the industry
	Informal interaction	Formation of social relationships and networks at conferences, etc.

Source: Perkman, (2007, pp. 52-53.)

## 4 Findings

The most common and most positively mentioned academy-industry link among the engineering researchers is a relationship: labelled as the '**research service**.' This category represents contract research or consulting. Both of these are industry-pull collaborations with well-defined tasks for small groups of people, or units at research institutions, or, in case of consulting, for individuals. Researchers mostly welcome these collaboration types:

*„We are happy to be asked for [such kind of services] as these tasks are intellectually interesting”*

but sometimes these types of collaborations are evaluated negatively as the tasks they require are out of researchers' professional scope:

*„Sometimes we sell our souls for money.”*

This pattern is in line with the literature on different sectors' preferred links. Sectors emphasizing incremental improvement rather than scientific breakthroughs (e.g., mechanical engineering, software development) show a preference for research services (Schartinger et al. 2002; Perkman 2007) while science-based sectors (e.g. biotech, pharma) prefer contract research.

The '**informal interaction**' was mentioned by nearly everybody in the sample. These links not only derive from conferences but more often based on previous informal connections (e.g., former university mates) and can lead to formal links, too.

The second most frequently mentioned type of collaboration is from the mobility type: it is the '**human resource transfer**.' In Opposite to Perkman's descriptions, its forms in nowadays Hungary are not tied to those multi-context learning mechanisms which were mentioned in his work (Perkman, 2007). On the contrary, it is mostly the dual-type education of graduate students with some other insignificant types of education for the industry or supported by the industry. Interestingly, this kind of partnership is partly welcome as it can be the catalyst of other types of collaborations, but it is also said to be dangerous for the universities as industrial partners often attract the best students offering them good positions before graduation.

'**Research partnerships**' in the form of inter-organisational arrangements for pursuing collaborative R&D (e.g., collaborative/shared research groups) are rare and are usually not clearly positively mentioned by the respondents. These types of partnerships are said to be good for some Ph.D. students but only moderately good for outstanding postdocs who might be interested to some extent but also concerned with conducting not real cutting-edge research.

*These topics are “with which the parent companies don’t want to be concerned, but they neither want to totally reject them. The researchers are working on these topics, but real breakthrough or great innovation is not expected”.*

This can derive from the phenomena that in Hungary, mostly big (often international) enterprises have such collaborations with institutions in the academic sector, SMEs are nearly absent from this field.

The two transfer-type links with low relational involvement from the typology are mentioned rarely, too. **‘Commercialisation of property rights’** generated at the universities had very rare mentioning and was described as an extremely difficult process in Hungary, with no real positive outcomes, as the legislation is very strict and detrimental for the companies. Even in those cases, when the funding for the research or innovation is coming from an enterprise, it cannot have an advantage on the intellectual property coming out from the research processes compared to other companies.

**‘Scientific publication’** was mentioned very rarely, contrary to the statistics in the EIS data. Public-private co-publication was described as a neutral type of linkage regarding the low level of relational involvement of the partners.

**‘Academic entrepreneurship’**, which would mean medium level involvement by the partners, was only mentioned once among the 23 interviews. In this interview, the commercial exploitation of technologies pursued by academic inventors through a company was described as a difficult way for academic researchers.

In conclusion: engineering researchers are historically open for academy-industry relationships, but they are not satisfied with all the cooperation forms regarding their scientific careers.

Nowadays, many academy-industry links are present in Hungary, but only some are frequent and clearly positively evaluated by the interviewed researchers: Relationships, requiring high relational involvement are present: research services (e.g., contract research, consulting) are the most common and welcomed type of linkages.

Large enterprises’ collaborative research groups – ‘research partnerships’- are rare and evaluated differently in different stages of the career path.

Opposite to the international trends (MacPherson, 1998), SMEs are not significant in the academy-industry relationships in Hungary. Mostly large companies have research service or some research partnership collaborations with academic research institutions or universities.

Mobility type links with medium level involvement (e.g., multi-context learning, academic entrepreneurship) are nearly missing in Hungary. Only one form is frequent: dual-type learning.

Transfers (links with the lowest relational involvement) are present and evaluated neutrally (e.g., co-publication) or negatively (e.g., IP commercialisation).

Links with the strongest commercial features (e.g., academic entrepreneurship, commercialisation of property rights), which are preferred by the recent policymakers in science policy, are very rare and evaluated as the most problematic type.

## **Acknowledgement**

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## **References**

- Befektetés a Jövőbe. National Research Development and Innovation Strategy, 2013-2020
- Csite, A et al. (2013): Stratégiai irányok meghatározása, javaslat a tudománypolitikai stratégiára, Budapest: Hétfa Kutatóintézet 2013.
- European Innovation Scoreboard 2018.
- KSH (CSO) data: [https://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_ohk001.html](https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_ohk001.html)
- MacPherson, A (1998): Academic-industry linkages and small firm innovation: evidence from the scientific instruments sector, *Entrepreneurship & Regional Development*. Volume 10, 1998
- Perkmann, M., (2007): University-industry relationships and open innovation: towards a research agenda, *International Journal of Management Reviews*, 9 (4), pp 259-280.
- Schartinger, D; Rammer, C; Fischer, M; Frölich, J (2002): Knowledge interactions between universities and industry in Austria: Sectoral patterns and determinants. *Research Policy*, 31.(3), 303-328.



Ayelet GILADI – Hannen MAGALH

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## **Training Bedouin Women for the Workforce as Educators in the Pre-School Sector**

### **Abstract**

This paper looks at Bedouin women at Higher Education (HE) and explores the circumstances of the Bedouin women as a unique status among the rest of the Arab women in Israel and the direct impact of higher education on their lives. It also seeks to find out the Bedouin women's, as a society "in transition," point of view about higher education as a platform to find a place to work. The findings show that the course has a turning point impact on their lives and wellbeing. The findings also show that the position of Bedouin women in Israel needs a deep social change regarding their public sphere.

### **1 Introduction**

These days, despite many changes, Arab women in Israel are placed at the bottom of the list in their workforce participation, earnings, and graduation from higher education. Their unusual position derives from their status as Palestinian minority as well as their status as women. The Arab Bedouin woman has a unique status among the rest of the Arab women, and she is considered to be highly disadvantaged. In 2012 the gap between the level of poverty of Arab and Jewish families in Israel amounted to almost 4 times to the detriment of the Arab population. One of the main factors explaining their poverty is the low workforce participation rates of Arab Bedouin men and women.

Nowadays, many projects aim to help the Bedouin community and Bedouin women. In 2016, the "Training Bedouin Women for the Workforce as Educators in the Pre-School Sector" program was conducted by The NCJW Institute.

## **2 Bedouin Society and Bedouin women in Higher education**

“Arab Bedouin” is the generic name of all tribes in the Middle East and North Africa that originate from the Arabian Peninsula. Their name evolved from the word “badia” which means desert in Arabic (Key, 1978).

Bedouin society is a traditional- patriarchal society. Women’s status derives from the fact that the Bedouin society is divided into many tribes that are made up of “Hamulot,” a number of families. In every “Hamula,” the father is the authority figure that controls all aspects of family life (Lotan, 2006).

In addition, Polygamy is highly common among Bedouin men, another manifestation of the patriarchy in the Bedouin society. Polygamy is a common phenomenon among traditional societies, Muslims, and non-Muslims that derives from the patriarchal social structure. (El Karinawi and Slonim, 2005)

The birth rate among the Bedouin population is one of the highest in the world, and in Israel, Bedouin constitute approximately 3% of the population. In addition, The Bedouin population in Israel is very young, more than 63% of the Bedouin population in Israel is under the age of 19 (Israel Central Bureau of Statistics, 2016)

### **2.1 Bedouin women**

As previously stated, Arab women in Israel are placed at the bottom of the list in their workforce participation, earnings, and graduation from higher education. Their unusual position derives from their status as Palestinian minority as well as their status as women. The Arab Bedouin woman has a unique status among the rest of the Arab women, and she is considered to be highly disadvantaged.

The patriarchalism in the Bedouin society is manifested in different ways, one of them is polygamy. However, due to the fact that Polygamy is considered a criminal offence in Israel, there are no accurate statistics regarding the rate of the phenomenon among Bedouin in Israel. Some people estimate that polygamy is common in about 35% of Bedouin families.

Other manifestations of the patriarchalism are the traditional gender roles in the Bedouin society. The Bedouin man usually provides for his family while the Bedouin woman usually takes care of the house and children and rarely goes to work.

These manifestations are gradually changing, as about half of the Bedouin population is moving to permanent settlements. The improvement in their quality of life helps improve Bedouin women’s status. (Al Sana, 2001).

Nowadays, some women even leave their homes to study and work. As time progresses, the Bedouin community ceases to treat women's desire to study and work as social and cultural deviancy and has started to view this phenomenon as a collective effort towards social mobility.

Nonetheless, these changes don't occur in all tribes and especially not in remote villages.

## **2.2 Women's education in Bedouin and Arab society**

The main change in Arab women's education occurred due to the mandatory education law that enabled women to go to school and receive education. In 1948, only 18% of Arab women studied in elementary school and in 1950, 24%. In 1994, 51% of Arab women studied in elementary school and 48% in middle and high school. In higher education, 35% of Arab students were women. In 2009, 64% of Arab university and college students were women. (Israel Central Bureau of Statistics, 2011).

According to Israel's Central Bureau of Statistics (2012) in 2011, the percentage of female Arab high school dropouts was 2.8%, which is lower than male Arabs high school students but higher by 1.5% than Jewish female high school students. The data shows that 24.1% of Arab women study in higher education in comparison to 50% of Jewish women.

Za'atara and Halila (2013), stated that Arabs in Israel and especially Arab women face many obstacles in Higher education that result in the lack of Arab students in academia. Some of the obstacles that were noted were Arab student's financial state, Language, culture, and accessibility. Nonetheless, The Bedouin women's state in Higher education and in education, in general, is much harder.

Bedouin women's education is still a topic that is needed to be researched. To this day, there is still no accurate data regarding Bedouin women's education. Pesta-Shuvert (2000) claimed that there is a lack of discussion about Educated Bedouin women in literature and offered three explanations:

1. The status of the Bedouin women is considered insignificant compared to "bigger" issues in the Bedouin society.
2. When documenting processes of change in the Bedouin society, the emphasis is on the Bedouin community.
3. The Bedouin society is considered traditional and differentiates between the public sphere and the private sphere (that is usually associated with women).

Despite these issues, it is clear to see that the field of women's education, both High school education and higher education, in the Bedouin society is changing and progressing.

**High School Education-** Nowadays, all Bedouin schools in the Negev are mixed gender schools. However, there is a big percentage of Bedouin women that can't read and write or haven't even visited a school. Likewise, there is a high percentage of school dropouts among women.

**Higher Education-** There is a gradual improvement in the participation of Bedouin women in higher education. In 1995, there were only 12 female Bedouin higher education graduates, while in 2010, there were 303 female graduates, and the numbers are steadily increasing.

Monique (2005) claimed that despite these changes, Bedouin women's journey to higher education is yet to be easy. For instance, young women that succeed against all the odds to be accepted to university, are often forced to give up on their dream in favor of their brothers. Other women are left to deal with a completely different set of concepts that makes their integration in academia highly challenging, and some women don't manage to finish their degree. Most of the women that do manage to graduate successfully end up working in the education system but usually don't fill in professional positions in their community. These positions are usually taken by people from outside of the Bedouin community that are normally unfamiliar with Bedouin culture and heritage and unaware of the issues and difficulties that the Bedouin community is facing.

## **2.3 Bedouin women's participation in the workforce**

Throughout history, Arab women worked without payment in agriculture and as domestic workers. Gradually they started to work in "feminine" fields of occupation, such as education and nursing, where they worked strictly with other women. This changed occurred due to a movement of modernization that brought about a change in Bedouin society in general, and in education and employment rate specifically.

Arab women's participation rate in the workforce is significantly lower than the same rate among Jewish women and Arab men. Although the participation rate among Arab women doubled over the past few years, it is still low. According to the Israel Central Bureau of Statistics (2015), 59% of Jewish women were employed in 2013 in comparison to only 28% of Arab women, i.e., one in three women.

Despite these significant gaps, the data regarding Bedouin women's integration in workforce indicates that there is a steady rise in the percentage of working Arab women

and that their integration helped to improve Bedouin women's status in the family due to the fact that she became an active household provider

The lowest participation rate in the Israeli workforce is among Bedouin women (Israel Central Bureau of Statistics, 2015). In the southern district of Israel, the percentage of working Bedouin women was 25% in 2014, in comparison to 59% among Jewish women (Israel Central Bureau of Statistics, 2015).

Despite the rise in the number of Bedouin working women, the fact that women work outside of their household is still considered a big change that Bedouins need to adapt to. This new phenomenon is considered a crucial factor that can improve the future of Bedouin society and help Bedouins reach their full social potential.

According to Abu Rabia (2006), the workforce potential of Bedouin women is far from being fully reached. She claims that the fact the Bedouin society is still considered highly traditional plays an important role in the absence of Bedouin women in the workforce. Many tribes that strongly oppose the integration of women in the Israeli workforce and even the idea of them leaving their homes to work or study. The lack of day care services that can enable women to work and study and also, the lack of adequate public transportation, especially in remote villages, and the lack of professional training makes it extremely hard for Bedouin women to work and provide for their families. Despite these obstacles, more and more Bedouin women join the workforce in the Negev area (El Huhud Foundation, 2010).

### **3 A description of the course**

The course operated for three months on a weekly basis in the mornings in the city Rahat in southern Israel. The main goal of the program was to empower Bedouin women that are unemployed yet wish to work, by training them and preparing them to work in the pre-school sector in their community

The program included 19 women between the ages of 19-47 most of them are married with children. The majority of the women in the program never enrolled in higher education, and some of them didn't even graduate high school.

The course had a coordinator from the Bedouin society with a master's degree in early education. The course discussed early childhood attributes; emotional and social development, motorial development, literacy development, preparation for first grade, nutrition in early childhood, sexual abuse, parental authority, and boundaries, etc. At the end of the course, each woman received organizational consulting and assistance in

finding a job. The women who finished the course received a certificate from The Hebrew University of Jerusalem.

The project had two main steps, at first the women receive professional training and secondly, they were provided with guidance and assistance in finding a job in their community.

#### Description of the women in the course

- 19 women completed the course
- The ages of the women ranged between 19-47, most were 30-44.
- 90% of the women are mothers, most of them have more than 4 children.
- 32% of the women have a husband that has another wife.
- 3 women are divorced
- 2 have no children
- One woman has an only child
- 2 women are not married
- 80% of the women are unemployed and don't have work experience
- 80% are currently completing their high school diploma.
- Most women are considered to have a low economic status.

## 4 Description of the women empowerment program

The women empowerment program that was researched in this paper aims to provide an answer to the needs of Bedouin women, in light of the many changes that the Bedouin society is experiencing. The program is founded upon the belief that women are a substantial factor in changing the face of the Bedouin community towards a better future.

### 4.1 Method of research

The research was conducted by interviewing all 19 women who participated in the program and was conducted in two parts; during the first part, the interviewers interviewed the women before the program started and focused on their expectations from the program. During the second part, the interviewers interviewed the women after the program ended and focused on the influence of the program on their lives. To analyze research findings, the evaluation team categorized the women responses to the

interview questions into categories such as; reasons to participate in the course, the expectation of the program, and satisfaction with the program.

Some of the questions that were asked by the interviewers included; how did the program affect the women? What influence did the program have on the women? Do the women think that they can find a job after the program? Are the women willing to find job after the project? In addition they were requested to evaluate the potential of the program in integrating Bedouin women in Israeli workforce.

Likewise, the evaluation aimed to provide feedback on the way the program was operated, in order to propose new methods and ideas that can help the program reach its ultimate goal and develop it in the future.

## **5 Pre-evaluation findings**

### **5.1 Reasons for participation in the course**

According to the women, one of the reasons to participate in the course was the opportunity to find a job in the workforce as educators in the pre-school sector. 60% of the women said that the course will help them find an appropriate job in the field of education, which is considered a feminine field of employment.

*"This program broadens my horizons... It is a bridge to employment... I will receive my certificate, and I will start working, for me, it is a dream come true."* (a 21-year-old participant)

Some of the women consider a job as a refuge from their **economic hardship**. They stated that their desire to find a job is due to the fact that they want to improve their financial and economic state.

*"The economic state nowadays affects our families, one person cannot provide for a family"* (A 43-year-old participant)

80% of the women claimed that the **Bedouin community is changing** and especially in Rahat. This change affects their family's attitude towards their education and participation in the labor force. Many women felt that they have their family's support in joining the course.

*"When I got married- I didn't continue going to school, but now when I have 3 children, I started to study. My partner encouraged me... I come from a supporting family, and in general, in our neighborhood, people encourage women to study, my partner supports me and also the neighbors who are my family, support me."* (A 30-year-old participant)

About 70% of the women saw the training program as a place to **meet other women** that share common interests and experiences. In addition they wanted to meet other women that don't live in their neighborhood or that are not related to them.

*"The women I met during the course became my friends, they called me to make sure I arrive, we studied together, and it is an opportunity to stick together... to be a part of the same group."* (A 43-year-old participant)

50% of the women stated that they want to feel meaningful in their family life with their husband and children and in their community.

*"I am missing the part of self-value, to do something for myself..."* (A 40-year-old participant)

*"The kids are growing up, I'll stay alone, this is the time to change, for me to do something for myself"* (a 40-year-old participant)

30% of the women said that they would like to **learn new things** and even defined that will as a dream.

*"I like learning, it is very challenging, I wanted to be in a framework that can help me learn new things"* (a 40-year-old participant)

In addition, 50% of the women expressed a **will to get out of their house and broaden their horizons**.

*"I wanted to get out, meet new people, every woman has a story, something to teach me, and I wanted to have a different life."* (A 35-year-old participant)

## 5.2 Expectations from the course

The women in the course expected the program to help them find a job within the pre-school education sector. Additionally, some saw the course as a place to study and as a way to get out of the house.

*"I have many skills, I never worked... my family will let me work only, if I work somewhere professional and respectful, suddenly the women are looking at me, waiting for me to say something, that I will share my experiences and what I went through in life..."* (A 34-year-old participant)

*"I have a strong desire to study, I feel like I want to learn in every way..."* (a 40-year-old participant)

## 5.3 Concerns from participation in the course

Most of the women didn't report deep concerns regarding participation in the course. However, they did address various coping strategies when dealing with some issues.

*"My concerns or my family's concerns can effect dealing with stress in the family. I always hide the fact that I study from my partner... I am always worried that he will tell me that I am not going anymore" (A 40-year-old participant)*

#### **5.4 Families approach towards the women's participation in the course**

Most of the families, especially the men in the families, objected the participation of the women in the programs.

*"My partner and my family objected, they tried to scare me. They threatened me for six years of marriage and said that I don't need to study, that I need to take care of the children until I broke down and left. I told my partner that I am going to study or else I am leaving, I even gave him my two children and left. I only wanted to study, my only condition was that I am going to study and then I'll return" (a 33-year-old participant)*

However, some women claimed that the men in the family enabled them to participate in the course and even encouraged them. They attribute their attitude to the change in Bedouin society.

*"My partner does not object, no matter what. I know my boundaries. He trusts me, so I get out, even our daughters study..." (a 47-year-old participant)*

Along with concerns regarding their families, a couple of women also expressed some professional concerns and were worried that they won't be able to find a job after they finish the course.

*"It is very important for me to find a job, if I don't find a job I will not feel good about... No one promised me I'll find a job, but I am banking on it" (a 42-year-old participant)*

#### **5.5 Coping strategies with concerns**

Some of the coping strategies were the support of the family and children, perseverance and hiding their studies from the family.

*"If you know you that have a dream, you need to believe in yourself and to follow that dream. That's want's important, you determine your life, and in the end, he will accept it." (a 42-year-old participant)*

*"I took care of everything at home, I organized everything...food, cleaning up, every time I went to study... That really helped because I've done what I needed to do as a woman" (a 42-year-old participant)*

## 6 Post evaluation finding

### 6.1 Satisfaction from the course

Overall, the course fulfilled most of the women's expectations. According to the interviews, 90% of the women stated that they would most likely recommend the course to other women.

*"I feel like I gained a lot. I feel like I was lucky to be a part of the course, I am very satisfied with the course, It is a shame that it has to end now...I told my mother, and she wants to participate in the course next year."* (a 19-year-old participant)

*"I am very satisfied, I am actually sad that this course is ending and that I need to leave, honestly, from the bottom of my heart... (starts crying) it starts fast and ends fast..."* (a 34-year-old participant)

Nonetheless, 80% of the women claimed that the number of meetings in the course was not enough. Some of them stated that it took them time to open up to the rest of the group and to get used to group discussions and studies. They suggested to add more meetings and to conduct them twice a week.

*"I am really glad that I was blessed with this course, I feel lucky. Even when I had financial issues, they didn't give up on me, that's a lot for me, I learned a lot, I highly recommend more courses, and I hope they will have more meetings"* (42-year-old participant)

### 6.2 The course's contribution

Most of the women thought that the course contributed their lives in many ways. They described the course as a bridge to an internal and external change. Half of the women stated that the course changed them as women and as mothers.

**Perception of womanhood** - most women, viewed the course as a turning point in their lives.

*"Every subject that was discussed, every conversation, every person, and every lecturer that came to the course affected me, made me feel something, gave me something... never-ending learning, it made me feel like a different person full of strength"* (a 42-year-old participant)

**Perception of motherhood** - most women claimed that a change occurred in the way they view a mother's role in the family.

*"This course is good for me, really good, the most important thing is that I am becoming a better mother."* (a 36-year-old participant)

70% of the interviews expressed a profound progress of self-**empowerment** and an increase in the women's self-worth and capability.

*"The course empowered us, I feel much more relaxed, more confident..." (a 40-year-old participant)*

*"I feel like I have a lot of knowledge that I am strong, that I am more confident, that I dare to say what I think, that I can say things, and dare..." (a 47-year-old participant)*

60% of the women reported that the course increased their **awareness** of their needs as women, to their abilities and desires. The women expressed a sense of pride, acknowledgment of women's uniqueness, and the gap between women and men.

*"I always come, it is really important to me even if I won't work later on... studying is really important to me... fulfilling a dream after so many years" (a 42-year-old participant)*

30% of the women stated that they gained **skills that will help them enter the workforce** either to work or to look for a job.

*"Nowadays, after I finished the course, I really want to work, I know how to write a CV, someone came and explained it all to us, but I understand that I need to study. The course helped me gain many skills, especially in the area of early childhood, how to schedule an interview and etc. but for me, it is not the most important thing." (a 35-year-old participant)*

70% of the women claimed that during the course, they formed a **social group**. Most of the women mentioned a sense of sisterhood and friendship, and even a renewal of their confidence in friendship due to the group that became a source of support and an inspiration to them.

*"I made friends... I learned from every story I heard, I heard difficult things, stories that made me think, when I heard them I realised that I am in a different state, a better state. And I felt that I can support other people, and help them by sharing" (37-year-old participant)*

*"It gave me the ability to think differently. A group has power, you hear other women, and you don't feel alone, you get support and can ask for advice" (a 40-year-old participant)*

80% of the women expressed a sense of belonging and contribution to their community and to education. They said that they believe that now they have the knowledge and the skills that can help change their community and that they can be- an **agent of change** in their communities.

*"I started to view myself as a source of change for other people, I know more, I have skills, everyone asks for my advice, my family, my neighbors..." (a 32-year-old participant)*

*"I am not currently working, and maybe I'll never work, but I don't know, today I feel as though I have a lot to say, that I can educate a generation...."* (a 36-year-old participant)

## **7 Participants recommendations**

Most of the women did not have many critiques towards the way the course was conducted. However, there were a few recommendations.

*"We didn't dedicate enough time for some of the subjects- a meeting about sexual abuse among children, it is important to add more time."* (a 37-year-old participant)

*"I wish there were meeting outside of the community center, to experience how it is to be a part of the workforce."* (a 40-year-old participant)

*"I think the course is really short, it is necessary to add more meetings, it is a shame it ended so quickly."* (a 42-year-old participant)

*"It all starts with what you tell yourself, your faith in yourself. I would want this course to develop my abilities- myself as a person that the course will relate to me, not be only about different subjects."* (a 42-year-old participant)

### **7.1 The attitude towards the age gap within the group**

The group was diverse, age-wise, and family status wise. Nevertheless, the women did not see the diversity among the group as a challenge but a source for positive things, such as inspiration, meaning, learning, etc. The younger women, for instance, stated the fact that they learned a lot from the experienced women in the group, while the older ones expressed a sense of meaning and strength when they help and guide the younger participants.

*"To be an older, more experienced women is not bad at all, you even feel how important it is to teach other women from your own experience."* (a 36-year-old participant)

### **7.2 Obstructions facing the application of the content of the program from the participant's point of view**

Despite the many advantages of the program, some of the participants claimed that there is a limited ability to apply the content of the program in their community due to the challenging environment, family issues and etc. Notwithstanding, most of the women felt optimistic about their future and the change that can occur in their lives.

*"Despite everything that I have learned, the Bedouin society is still hard and strict, there is a need to maintain the fine line between our culture and modernization." (a 40-year-old participant).*

*"Things need to change... a change will come, but it takes time, nowadays some girls in Rahat study abroad, in the past it wasn't accepted to go to University." (a 40-year-old participant)*

## **8 Discussion and Recommendations**

The position of Bedouin women in Israel in social research is limited. Thus, it is hard to reach any conclusions regarding the group when the data about Bedouins is derived mainly from the Bedouin men's point of view. Therefore, it is crucial to value this program that emphasizes the importance of Bedouin women.

In light of this evaluation, we can identify several important principles that make this program successful and that reflect on the understanding of the Bedouin society and can even assist in developing future programs.

According to the women's interviews, we can conclude that the Bedouin society is a society "in transition," from a traditional society to a more modern one, as most of the women stated that they sense a transition in the community and in their personal lives. Based on the findings, each woman experiences the transition in a different way according to her family and social environment.

The women claimed that nowadays, Bedouin women are freer to work and study than in the past. This finding correlates with different researches, that show that as times goes by the Bedouin community ceases to treat women's will to study and work as social and cultural deviance, and started to treat this phenomenon as a collective effort to obtain social mobility. Furthermore, the women expressed a will to participate in the Israeli workforce and change Bedouin women's status in the Bedouin community. The women stated that their motivation in studying and working is their desire to live a more "modern" life and to improve their economic status.

Nonetheless, based on the evaluation, it is impossible to reach such a shift in the status of Bedouin women without a great social change that includes the Bedouin men. The women stated that there it is mandatory to work towards the change in their personal and social spheres. In the private sphere, women need to take care of themselves and develop their skills as women and as mothers. They also mentioned the fact that women self-empowerment programs should take into consideration the fact that many women are mothers and wives that need to take care of their household. Regarding the public

sphere, the women mentioned the fact that it is necessary to improve the Bedouin education system and Bedouin workplaces.

Moreover, the women claimed that it is not enough to come to the course's meetings, there is a need to support the women beyond that. In their opinion, it is vital to integrate theory with practice and to give the women the opportunity to work in the field of preschool education during the course. Most of the women are lacking any job experience; hence, it is important to incorporate some practical meetings that address that matter thought out the course.

In general, according to the interviews, the women stated that the program is highly unique and is sensitive to women's cultural and personal needs. Therefore, it is important that the recruitment process will be conducted by a woman from the Bedouin community.

In addition, the women claimed that the program empowered their sense of capability. The academic studies were described as a powerful and meaningful experience. Their exposure to education and to an external educational system raised their awareness of their status as Bedouin women and helped develop a desire to change their social status in Israeli and Bedouin society. Bedouin women describe many changes in their personal and professional life due to the course. One of the changes that occurred by virtue of education, is the fact that now the women view themselves as agents of change in their community. The rise in each woman's self-esteem and self-worth resulted in her sense of capability in changing and affecting her community.

However, some of the women expressed concerns regarding their family's and community's responses towards their desire to study and work. Another concern regarding their lack of work experience was the fact that the women were worried that they wouldn't be able to translate their knowledge into actual work. Thus, they emphasized the fact that there is a need to incorporate different coping strategies that can help women in the workforce. Withal, on the whole, most of the women expressed a high-level satisfaction with the program.

In conclusion, it is safe to say that the program's goals to empower Bedouin women were achieved. Most of the women developed their sense of capability as women and mother and gained important professional skills. However, it is important to remember that there is still much to change in the Bedouin community regarding their approach towards women's participation in the workforce and in higher education.

## References

- Abu Rabia Queder, Sarab (2006). Between tradition and modernization: understanding the problem of female Bedouin dropouts In *British Journal of Sociology of Education*. 27,1 3-17
- Israel Central Bureau of Statistics (2012) Annual Israeli statistic report 2012: Population by population groups, religion, sex and age. (Hebrew version).
- Israel Central Bureau of Statistics (2015) Annual Israeli statistic report 2015. Jerusalem: Israel Central Bureau of Statistics (Hebrew version).
- M. Halila, Za'atara R., (2013). 14 accessibility blocks in the Arab-Palestinian society in higher education and 10 recommendation to remove them. Hiraq- The follow up committee on Arab education- Israel. (Hebrew version)
- Monique M. (2005). Empowering Bedouin women in the Negev. Social security: Jerusalem. (Hebrew version).
- Pesta Shuvert A. (2005). "I am going out and fulfilling the world, I see think clearer". Women, Higher education and the Bedouin society. *Megamot* vol. (4) 659 – 681 (Hebrew version)



## **Publication of other papers presented at CEHEC 2018 and CEHEC 2019**

The following papers presented at one of the conferences is planned to be published in the 4/2020 issue of the Journal of Hungarian Educational Research Journal (HERJ).

- Judit Lannert – András Derényi: Internationalization in Hungarian higher education. Recent developments and factors of reaching better global visibility
- Aleš Vlk – Jiří Stanzel – Otakar Fojt: Research & Development policy in Visegrad countries with a focus on the Czech Republic
- Jakub Dostál – Anita Kéri: International students' volunteering
- Giulio Marini: The effect of joining the European Union in comparison to be only part of the European Research Area. Memberships is an advantage
- Adam Hamori: Factors of Vulnerability of Hungarian STEM Students: Identifying some key dropout factors in social background and study conditions
- Linh Tong: Higher Education internationalization and diplomacy: Success mixed with challenges. A case study of Hungary's Stipendium Hungaricum scholarship program
- Simona Torotcoi: Bachelor's and Master's Degrees: One and the same thing? A case study of implementing the degree system in Romania
- Aleš Vlk – Jiří Mudrák – Šimon Stiburek: What makes students drop out



## Conference organizers



### About Corvinus University of Budapest

Corvinus University of Budapest defines itself as a research university oriented towards education, where the scientific performance of the academic staff measures up to the international standard and the students can obtain a competitive degree having a standard and knowledge content identical to similar-profile universities and acknowledged on the European Union's labour market and on a global scale. The University admitting more than 14,000 students offers educational programmes in agricultural sciences, business administration, economics, and social sciences, and most these disciplines assure it a leading position in Hungarian higher education. At the same time, its key ambition is to display the institution's uniqueness and to exploit the synergies resulting from professional diversity and from studying multiple disciplines.

### About Higher Education Research at Corvinus University of Budapest (CIHES)

The Center for International Higher Education Studies (CIHES) was established in May 2008. The Center is an umbrella organization for those researches who are teaching and pursuing research in various fields of higher education at different faculties of CUB. One of the goals of the Center is to join European research consortia and to contribute to their results in the analysis of the educational processes with suggestions and proposals. Research topics include: analysis of the three-cycle system and the introduction of Bologna-type study programs, internationalization of higher education, mobility in higher education, funding reforms in higher education, social dimension of higher education, pedagogical methods, quality assurance, institutional management.



### About CEU

Central European University is a graduate-level university where faculty and students from more than 100 countries come to engage in interdisciplinary education, pursue advanced scholarship, and address some of society's most vexing problems. It is accredited in both the United States and Hungary, and offers English-language Master's and doctoral programs in the social sciences, the humanities, law, management and public policy. Located in the heart of Central Europe -- Budapest, Hungary -- CEU has developed a distinct academic and intellectual focus, combining the

comparative study of the region's historical, cultural, and social diversity with a global perspective on good governance, sustainable development and social transformation. With approximately 1,400 students and 370 faculty members from more than 130 countries, CEU is one of the most densely international universities in the world. Its rare mix of nationalities, ethnicities, and cultures creates an ideal environment for examining such “open society” subjects as emerging democracies, transitional economies, media freedom, nationalism, human rights, and the rule of law. It also brings multifaceted perspective to all aspects of community life.

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