

RELATIONSHIP BETWEEN LEARNING TIME AND DIMENSIONS OF A LEARNING ORGANISATION

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ABSTRACT

The introduction of a learning organisation model brings many benefits to organisations. To evaluate whether it is a learning organisation, the Marsick and Watkins Dimensions of a Learning Organisation Questionnaire can be used. In the Czech Republic, only a few studies have been conducted using this questionnaire. The aim of this paper is to compare the IT sector and the education sector in terms of learning time and assessment of the individual dimensions of the learning organisation by Marsick and Watkins. In 2018 and 2019, studies with the Dimensions of a Learning Organisation Questionnaire focusing on the IT sector and the education sector (secondary schools) were conducted in the Czech Republic. In total, 201 respondents from the IT sector and 121 respondents from secondary schools participated in the study. When comparing the time spent on self-education in both sectors, it is clear that the employees spend 1 to 20 hours per month with self-education, while in the IT sector common employees dedicate more to self-education, executives dedicate more to self-education in the education system. When comparing the average values of the dimensions of a learning organisation in relation to the time spent on self-education, the results in both sectors are very similar. It can be argued that the assessment of individual dimensions increases with the time spent on self-education up to 20 hours per month. The biggest difference in average values can be seen in Dimension 4, while the smallest difference on average dimension can be seen in Dimension 7.

KEYWORDS

Learning Organisation, Learning Time, Dimensions of a Learning Organisation

1. INTRODUCTION

According to Senge, a learning organisation can be defined as: “... *an organisation where people constantly improve their skills and achieve the results that they really desire, where they find support, new and dynamic models of thinking, where collective thinking and inspiration are welcome and where people still learn how to learn together.*” (Senge, 2016). A learning organisation is made up of basic components: organisation, people, knowledge, and technology. Individual components support each other in learning, which is the essence of a learning organisation (Serrat, 2017). Learning becomes an integral part of the whole work process, work and learning are interconnected in the process of continuous improvement. A key aspect of organisational learning is interaction between individuals (Yadav, Agarwal, 2016). Organisational learning is a process where the meaning of information is created, information is collected, interpreted and distributed. Considering the learning support level of the learning organisation, several learning organisation action requirements can be identified, such as: providing strategic guidance for learning, supporting employees in sharing visions, building systems to capture and share learning, fostering collaboration and team learning and to support dialogue and create opportunities for continuous learning (Jamali et al., 2009). Organisational learning has a positive impact on gaining a long-term competitive advantage, improving performance, strengthening human resources, creativity and innovation, and accelerating the process of change to a learning organisation (Saadat, Saadat, 2016).

After 2010, the concept of a learning organisation has become the subject of many studies around the world (Zubr, 2019). In all these studies, the Dimensions of a Learning Organisation Questionnaire (DLOQ) is used to evaluate the learning organisation created by Watkins and Marsick (Watkins, Marsick, 1993). Most often, studies are focused on the education sector and the banking sector (which is close to IT) (Zubr, 2019). Therefore, this study is focused on the IT sector and the education sector in the Czech Republic.

1.1 Dimensions of a Learning Organisation Questionnaire

According to Marsick and Watkins (Marsick, Watkins, 2003), there are seven dimensions of learning organisations that represent organisations' efforts to create learning opportunities for all employees, to create a platform that supports dialogues, responses and experiments among members, as well as team learning, vision sharing or strategic leadership (Norashikin et al., 2016). These seven dimensions include: Create Continuous Learning Opportunities, Promote Inquiry and Dialogue, Encourage Collaboration and Team Learning, Create Systems to Capture and Share Learning, Empower People toward a Collective Vision, Connect the Organization to its Environment and Provide Strategic Leadership for Learning. Based on some studies, it was discovered that only two dimensions of a learning organisation led to higher organisational performance - namely, Promote Inquiry and Dialogue and System Connection. The remaining dimensions have no effect on organisational performance (Norashikin et al., 2016). DLOQ is developed on the basis of a theoretical framework combining four articles: organisational learning, workplace learning, learning climate and learning structure perspective (Kim et al., 2015). For example, this questionnaire can be used to evaluate an organisation as a learning organisation.

In the basic version, the questionnaire contains 42 questions, according to the authors' recommendation, it can be shortened to 21 questions to maintain the validity of the data obtained. To maintain the questionnaire's validity, a reverse translation, expert review and Cronbach's alpha coefficient should be performed to ensure that dimensional reliability is not significantly lower than the actual work validation reliability (Watkins, O'Neil, 2013).

1.2 Small and Medium Enterprises in the Czech Republic

Small and medium-sized enterprises are defined by the number of employees, up to 250 people. Looking closer, they can be divided into tiny enterprises (1-9 employees), small enterprises (10-49 employees) and medium-sized enterprises (50-249 employees) (Czech Statistical Office, 2005) (Czech Statistical Office, 2013). These enterprises are of relatively high importance within the Czech economy, e.g. in 2017 the share of small and medium-sized enterprises in the total number of active business entities was 99.8%. In 2017, the share of employees in small and medium-sized enterprises in the total number of employees in the business sphere was 58.0%. Small and medium-sized enterprises in the Czech Republic represent more than 1 million economic entities as a whole, they are significant employers', a driving force for the business sector, growth, innovation and competitiveness. These enterprises are actively supported by the state, e.g. in the form of projects and various programmes (Ministry of Industry and Trade, 2017). Total IT accounts for 3.6% of the business sector, in IT the tiny enterprises (40,232) and small enterprises (1,463) are the most represented (Czech Statistical Office, 2017).

1.3 Schools as Learning Organisations

Education is an important sector in all countries, producing professionals in various fields. However, the quality of schools across countries varies. The culture of a learning organisation in a secondary school environment is not defined anywhere, but the definition of a learning organisation culture at universities can be applied. Schools characterised by a learning organisation culture support continuous learning for the sustainable improvement of teaching and learning. The knowledge gained leads to the education and support of individual development, teamwork and leadership in order to fulfil the institution's mission (Ponnuswamy, Manohar, 2016). Schools then have the ability to adapt to new environments and, through learning, find their way to carry out their visions. According to OECD-UNICEF paper, the school as a learning organisation, focuses on *"developing and sharing a vision centred on the learning of all students, creating and supporting continuous learning opportunities for all staff, promoting team learning and collaboration among all staff, establishing a culture of inquiry, innovation and exploration, embedding systems for collecting and exchanging knowledge and learning, learning with and from the external environment and the larger learning system and modelling and growing learning leadership."* (OECD, 2016).

2. METHODOLOGY

In total, two studies were conducted in the Czech Republic in 2018 and 2019 using a shortened 21 questionnaire version of the DLOQ, including 7 dimensions in Czech language. To maintain the questionnaire's validity, the questionnaire was translated by two independent translators from English to Czech and then back to English. At the same time, the preservation of the questionnaire's meaning was assessed. The Cronbach reliability coefficient was calculated for each dimension using IBM SPSS Statistics version 24. Total reliability was 0.933 in 2018, in 2019 total reliability was 0.941. Respondents evaluated the individual dimensions on a 6-point Likert scale. The final version of the questionnaire was created using "docs.google.com". The reference to the questionnaire was then sent to respondents' e-mail addresses.

In 2018, a cross-sectional questionnaire was conducted focusing on small and medium-sized enterprises in the IT sector in the Czech Republic, contacts to small and medium-sized enterprises were obtained from the Albertina database for trade and marketing (Albertina for Trade and Marketing, 2019). A total of 2,884 respondents from small and medium-sized enterprises from the Czech Republic were addressed with a focus on IT activities. Approximately 250 e-mails sent were returned as undeliverable after sending due to the absence of the e-mail address, 25 respondents responded to the e-mail with the response that they no longer operate the business.

In 2019, a cross-sectional questionnaire was conducted focusing on secondary schools across the Czech Republic. Altogether 1,304 representatives of secondary schools were addressed, 91 emails were returned due to the absence of the given email address, 1 respondent directly to the survey.

The data obtained was analysed using Microsoft Excel 2016 and IBM SPSS Statistics Version 24 using descriptive statistics, parametric and non-parametric assays at confidence levels $\alpha = 0.01$ and $\alpha = 0.05$.

The main research question of this survey was to determine whether there is a relationship between learning time and the dimensions of the learning organization score.

3. RESULTS

In 2018, 201 respondents from small and medium-sized enterprises in the IT sector in the Czech Republic participated in the study (questionnaire returns were 6.97%). The respondents consisted of 137 men and 64 women. The respondents most frequently reported employment in the organisation within five years (32.8%), followed by 11 - 15 years (21.4%).

In 2019, 121 respondents from secondary schools in the Czech Republic participated in the study (9.28% return). The respondents consisted of 45 men and 76 women. The most frequently reported employment periods were less than 10 years (32.2%), followed by 11-20 years (27.27%). The respondents' demographic profile is showed in Table 1.

Table 1. The respondents' demographic profile. (own processing)

	Number of respondents	
	2018 (n = 201) n (%)	2019 (n = 121) n (%)
Age		
21 – 30 years	30 (14.9)	4 (3.3)
31 – 40 years	76 (37.8)	17 (14.0)
41 – 50 years	57 (28.4)	29 (24.0)
51 – 60 years	32 (15.9)	57 (47.1)
Over 61 years	6 (3.0)	14 (11.6)
Organisation size		
Up to 10 employees	65 (32.3)	0
Up to 50 employees	91 (45.3)	73 (60.3)
Up to 250 employees	45 (22.4)	47 (38.9)
More than 250 employees	0	1 (0.8)

Position in employment		
Staff member	72 (35.8)	34 (28.1)
Executive member	129 (64.2)	87 (71.9)
Learning time		
0 hours per month	9 (4.5)	1 (0.8)
1-10 hours per month	109 (54.2)	40 (33.1)
11-20 hours per month	48 (23.8)	54 (44.6)
21-35 hours per month	15 (7.5)	20 (16.5)
More than 36 hours per month	20 (10.0)	6 (5.0)

When comparing the demographic profile of respondents, it is clear that respondents from organisations employing up to 50 employees were dominantly represented in the survey in both years, similarly to the representation of common employees and executives. From this viewpoint, both surveys can be compared, although they were conducted in different sectors. The respondents' profile in terms of learning time per month is also similar. While the IT sector has the highest number of employees dedicated to learning 1-10 hours per month, teachers spend usually 11-20 hours a month self-educating. Self-education is mostly applied by e-learning focused on current topics related to a particular job.

Table 2. Comparison of respondents' responses with different education intensity (own processing)

Hours a month	Average of D1		Average of D2		Average of D3		Average of D4		Average of D5		Average of D6		Average of D7	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
0	2.74	2.67	3.46	1.67	3.78	3.00	3.15	3.33	3.11	4.33	3.37	3.33	3.29	3.00
1 - 10	4.48	4.46	4.35	4.11	4.13	4.18	3.56	3.95	4.34	4.63	3.89	4.19	4.28	4.50
11 - 20	4.39	4.50	4.44	4.32	4.35	4.40	3.49	4.16	4.40	4.79	3.95	4.60	4.46	4.83
21 - 35	4.60	4.18	4.58	3.67	4.44	4.09	3.62	3.72	4.62	4.60	4.08	4.35	4.38	4.22
36 or more	5.10	4.83	4.73	4.50	4.17	4.50	3.55	4.28	3.55	4.50	4.40	4.72	4.67	4.44

When comparing the average values of the two dimensions, it is clear that the results are very similar and there is no statistically significant difference in the t-test at the significance level $\alpha = 0.05$ ($p = 0.06 - 0.96$). The lowest $p = 0.06$ can be seen for dimension 4, while the highest $p = 0.96$ can be seen for dimension 7. Generally speaking, with education up to 20 hours a month, the assessment of dimensions in both sectors is increasing in both years.

When comparing the time spent on learning for IT sector staff and executive members, it is clear that common staff in the IT sector is dedicated to learning for 1-20 hours per month compared to teachers as staff members. However, teachers self-educate for at least an hour a month. For education of executives in the education sector we can see more respondents who spend 11-20 and 21-35 hours per month, while IT sector executives most often devote 1-10 hours per month to learning.

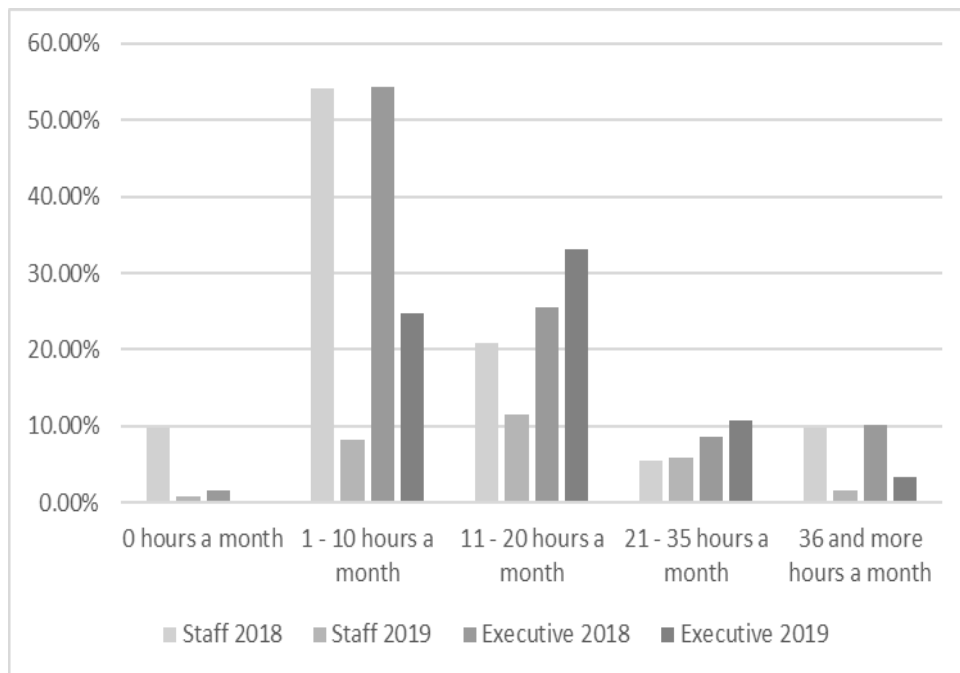


Figure 1. Learning time (per month) by worker's position (own processing)

4. DISCUSSION

In the Czech Republic, only a few studies of a learning organisation have been performed using DLOQ. (Zubr, 2019) The IT sector and the education sector were selected for this study. The IT sector in the Czech Republic represents an important employer within small and middle-sized enterprises (Ministry of Industry and Trade, 2017), the education sector keeps its significance in all countries thanks to its function of producing quality workers.

A total of 201 respondents participated in the survey in 2018, 121 respondents in 2019. Due to the percentage of the questionnaire return (2018: 6.97% vs. 2019: 9.28%), these surveys can be compared for the number of respondents. Looking at the composition of respondents, the individual years are quite different. In 2018 137 men and 64 women were included in the survey, while in 2019, 45 men and 76 women participated in the survey. Therefore, the gender ratio is reversed in the two years. This is determined by the sectors in which the survey was conducted. While in 2018, there was approximately 3 women for every 10 men in the Czech Republic's the IT sector, in the area of education this ratio is reversed, i.e. for every ten women there is approximately 2.7 men (Czech Statistical Office, 2018).

In both surveys, organisations with less than 50 employees are the most represented, with 45.3% of these enterprises being represented in 2018 and 60.3% of enterprises in 2019. Small and medium-sized enterprises in 2018 are the second most represented group of small firms with less than 10 employees. No school with less than 10 employees participated in the survey and only 1 school said it had more than 250 employees. Given the nature of the schools addressed, it can be assumed that the response from "more than 250 employees" was wrong. Based on available data, a total of 44,993 teachers worked in Czech secondary schools in the 2017/2018 school year and there are currently around 1,400 secondary schools in the Czech Republic (Czech News Agency, 2019) (Ministry of Education, Youth and Sport, 2014) (List of Schools, 2019). Therefore, there is an average of around 32 teachers per school, which is in line with the study's outcome (the dominant representation of schools with less than 50 employees).

Both surveys show that approximately 78% of employees in both sectors spend 1-20 hours a month on self-education. In the education sector, only one respondent stated that they did not spend one hour per month with education. This result is expected in the education sector - in order to ensure the quality of teaching students, it is necessary that educators continue to educate themselves and monitor current changes in the subjects taught. Therefore, it is not surprising that 16.5% of teachers say they spend 21-35 hours a month on self-education. When comparing the time of self-education among ordinary and senior executives, it is clear that ordinary workers in the IT sector educate more often than ordinary staff in the education sector. By contrast, education managers educate more than IT sector workers. This result is surprising in view of the above-mentioned assertion of maintaining a certain quality of student education, which is being looked after by ordinary staff in education.

If we compare the different dimensions of the learning organisation in relation to the time devoted to learning, it is clear that the results are very similar for both years. The biggest difference between the average dimension rating is for Dimension 4: Create Systems to Capture and Share Learning, where p is approaching 0.05 ($p = 0.06$). Dimension 4 is generally assessed by the higher education staff as a higher average score than in the IT sector. This result is expected due to the need for teachers to be constantly educated, a number of training events for teachers and hence systems that make learning easier to share. It should also be noted that non-teaching topics and seminars can also be included in teacher education for secondary school teachers, e.g. in healthcare, a relatively sophisticated network of learning sharing systems can be recorded. It can be argued that the average rating of individual dimensions increases with learning times up to 11-20 hours per month, while in the IT sector, for most dimensions, the average rating for 21-35 hours per month may increase further. The smallest difference between learning time and dimensional assessment for each sector was noted for Dimension 7: Provide Strategic Leadership for Learning. This result indicates that there is an effort to establish a learning organisation in both sectors.

When comparing the average rating of individual dimensions of this study with similar studies abroad from the banking sector, the average rating in IT sector in the Czech Republic in 2018 is higher for employees who are engaged in self-education at least an hour a month (Berberoğlu, Emine, 2011) (Soahib et al., 2014). Compared to other studies abroad, the same result was also achieved in the education sector (Abo Al Ola, 2017). According to Voolaid data, the average score of dimensions of the study from Czech Republic is higher than international average in 2013 (Voolaid, 2013).

5. CONCLUSION

Based on a comparison of the results from individual studies conducted in 2018 and 2019, it can be argued that the introduction of the concept of a learning organisation in both sectors in the Czech Republic is on the right track. The assessment of individual dimensions implies that the time devoted to self-education is directly related to the assessment of individual dimensions, and there is leadership-supporting learning in organisations. Based on the results of this study, we can say that the relationship between learning time and the dimensions of the learning organization score exist. Comparing two different sectors brings the possibility to learn from mistakes and weaknesses in one sector or to use the positive functional approach of the other sector. Sectors could also join together and work together on common weaknesses (e. g. Dimension 4). A change in the approach to evaluating employee education (e. g. setting up systems to measure the difference between actual and expected performance, publishing the evaluation to all employees or balancing the time and resources spent on education) would contribute to improving Dimension 4 evaluation in both sectors. Improving the evaluation of individual dimensions in both sectors would bring many benefits of a learning organization concept (e. g. improving the competitive advantage by engaging with the external community and recognizing employee initiative; improving job satisfaction of employees and thus increasing their performance).

The relatively low number of respondents who participated in both surveys can be considered as a limitation of this study. The low response rate is attributed to a number of other questionnaire surveys that are addressed to respondents by various students and statistical firms. Due to reluctance to respond to another questionnaire survey, respondents in several cases directly refused to participate in the survey and did not complete the questionnaire even after repeatedly addressed. Unfortunately, it is not possible to address each respondent personally due to the inclusion of respondents from the whole Czech Republic.

Although these studies have been carried out in two sectors, it is necessary to map other employment sectors in the Czech Republic in the future, or to compare them to those abroad.

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