

Online Leadership Training in Higher Education Environment

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Abstract: The digitalization of learning, and student-centered and learning outcome-based approaches provide many opportunities for leadership training. This study aims to present a program for the online development of management competencies in a higher education environment by examining aspects of leadership training. It presents the results of the first round of PILOT implementation. A comprehensive overview of the key aspects of leadership development is provided, which lays the foundations for the main directions of online training. The study describes the structure of the online leadership training and the design of its platform. Based on the data from the two-semester program, it examines the feasibility and effectiveness of the courses and the factors that impact them.

Keywords: digitalization; leadership training; leadership competences; online education

1 Introduction

The emergence of online training in the era of information society [1] has been facilitated by the spread of lifelong learning [2], which means that learning becomes a way of life. Pandemic periods in recent years have brought about an explosion in this area, and digital education in the online space has become unavoidable [3]. Global trends in higher education are also increasingly driving towards the rise of online training [4], extending their impact on the transformation of traditional teaching models and practices [5, 6]. The paradigm shift, which replaces teacher-centred education with a student-centred training approach is taking place, and online training are very suitable to facilitate this change. At the same time, traditional educational approaches and methods are no longer exclusive to traditional higher education courses, and their effectiveness can be increased by using digital, e-learning tools or by providing fully online options [7, 8].

On both the supply and demand side, there is a growing demand for digitization and the use of e-learning tools, which has been largely driven by changes in learning, knowledge transfer and acquisition attitudes and skills development at both

individual and group levels [9]. The requirements of e-learning curriculum development must also be strongly met by the faculty. It is important to focus on collaborative learning and to use educational tools effectively [10] by taking advantage of the opportunities offered by modern technologies [11]. Student expectations should be kept in mind, which includes frequent assessment of performance and regular feedback (avoiding an exclusive test- and exam-oriented mentality). In the process of strengthening student-centered education (in contrast to teacher-centered education), the emphasis is shifting from communication to learning and skills development. Online courses are well suited to facilitate this change, as e-learning education is inherently focused on students who are actively involved in an integrated and interactive learning process [12].

In leadership training and in the development of leadership skills, it is especially important to break away from the methods used in traditional, school-based education. This is best achieved through training where the emphasis is on gaining experience and using various tools to create situations that promote the development of leadership skills. Online implementation is also beneficial because it creates a high degree of flexibility and is thus more time-efficient than face-to-face training. In addition, interactivity can be easily ensured and learning materials can be updated more flexibly. Curriculum can be viewed and reviewed any time and any number of times, and feedback can be more frequent and immediate.

In leadership training, we can find several online offers, the number of which has further increased because of the pandemic. There are many examples of this type of training, both domestically and internationally. On the one hand, it is worth browsing at different online educational platforms (e.g., Coursera, Udemy, edX, Fiverr Learn) where they offer plenty of online courses, including developing leadership skills [13, 14]. There are also companies that offer training specifically on a business basis, where online management training is also part of the offer (e.g. Plurasight) [15]. We can also find organizations that focus entirely on leadership and offer training solutions in different areas (e.g. Center for Creative Leadership) [16]. And, of course, higher education institutions are also present in the leadership training market, with a number of online courses (e.g. Stanford University) [17].

The online leadership training developed at the University of Dunaújváros enriches the course offerings organized by higher education institutions. A two-semester course covering special leadership topics was developed and implemented on an online platform dedicated to this purpose, which is available to students in both Hungarian and English. In our study, we present the research evaluating our training that develops leadership competencies in an online, higher education environment, focusing on course completion and results of the training.

2 Development of Online Leadership Training on a Higher Education Platform

In order to become a successful leader, it is necessary to develop basic leadership skills and abilities. Based on the managerial functions and tasks, the most common development needs from managers – summarizing the experiences of three internationally recognized training companies – can be grouped around the following topics and issues:

- 1) leadership roles
- 2) setting priorities
- 3) delegation process
- 4) giving / receiving feedback, evaluation
- 5) managing groups, leading discussions. [18]

1) To a certain extent, every manager must also be a professional, which decreases with the level of hierarchy and the number of subordinates. In order for a leader to be recognized, he or she must also have the expertise to intervene in supportive or decisive situations that may arise from time to time. A successful leader is also a coach. A coach is characterized by personal qualities such as charisma and social competence, as well as theoretical and practical knowledge in his or her field. In addition, certain administrative tasks also need to be performed. No manager can avoid reporting and budgeting, personnel administration, and future planning. A well-functioning administration is an essential prerequisite for effective corporate work.

2) A leader faces many tasks on a daily basis. For an organization to be dynamically sustainable and profitable, it is important for a leader to make appropriate decisions in various areas, like which tasks are urgent or important, and prioritizing among the tasks and problems that arise. For this, the trainings typically use the Eisenhower principle (eisenhower.me), which helps organize the tasks that arise in the matrix of importance/urgency.

3) When delegating, the most difficult questions for the leader are what and to whom. That is: What is the task that you can responsibly delegate to the right person? Who is the right person? Prioritizing helps to delegate tasks. The urgent and important task is performed by the manager (or a specialist with the direct assistance of the manager). Non-urgent or non-important tasks can be delegated, while non-urgent-non-important tasks can be at the bottom of the list. Another difficult question is who to delegate to. We are not only talking about the task, but also about the development of the subordinates. The manager must find the right management style to fit the subordinate during delegation in order to complete the task in the right way [19]. The leadership style chosen then depends on the maturity (motivation, confidence, personal commitment) and level of development (professional competence) of the employee.

4) When giving and receiving feedback, it is especially important for the leader to be able to be “here and now” in the interaction. This type of interaction accompanies the day-to-day work of the leader from assigning tasks to evaluations. There are a number of rules for feedback that we do not disclose now, but there is a well-applied model called Nonviolent Communication [20]. This model supports the leader in being able to share his perceptions clearly with his environment, providing a basis for formulating clear feedback (observation, feeling, demand, request).

5) Based on their motivation and performance, members of a team can be divided into three types: average/medium, above-average, and below average. It should be added that new members in the team tend to adjust to the average or worse, to the least working colleagues, depending on what they consider to be the norm within the group. The steps for managing a group can be summarized as follows:

1. Introduction of an "OK" - "not OK" performance evaluation
2. Clear and transparent information about the team's goals and expectations for the team
3. Clear and transparent information on specific expectations for each employee
4. Regular feedback to the team (both positive and negative feedback)
5. Regular individual feedback (both positive and negative feedback)
6. Managing the personal development of each employee through structured discussions
7. Accurate goal tracking and management of each employee's activities through structured discussions
8. Ongoing conflict resolution and problem-solving competence with structured discussions. [21]

When conducting discussions, the leader must ensure that they create the right atmosphere, are factual, and constantly make sure that they are moving towards a mutually acceptable solution.

There is a positive relationship between managerial success, efficiency, and organizational success [22, 23]. Leadership success is inconceivable without identifying and developing the competencies required for it, which is supported by numerous theoretical and empirical studies [24, 25]. The development of leadership competencies within a traditional training framework can only be achieved to a limited extent, focusing on certain elements. At the same time, digital, online training interfaces provide an effective solution to leadership development through the application of a learning outcomes-based approach.

2.1 Programs for Online Leadership Training

The online leadership training was developed at the University of Dunaújváros in two phases after reviewing the literature background and evaluating domestic and international good practices. Between 2018 and 2019, we focused on developing the first part of the training and creating an online platform. In addition to the development, several other extracurricular elements were implemented during this phase with the support of the Pallas Athena Domus Educationis (PADE) Foundation, which ensured the quality control of the developed curricula and the reward of the instructors and researchers involved in the development. During these two years, in addition to the development of the curriculum structure and the development of the first online learning material package, the online platform got also developed.

The second phase took place in 2021-2022. The “University Network for Sustainable Development” tender announced within the framework of the Horizontal Program of the National Bank of Hungary supported the second and final phase of the development: new online learning materials were developed, and we presented our new and relevant developments at conferences and workshops organized by research groups. This project, similarly to the PADE project, supported the process with a number of other activities, notably high-volume library development, which focused on our leadership training program in addition to general business administration and management courses.

The content developed during the two phases was subject to continuous testing. In addition to proofreading the professional materials and testing the online interface, we ran a PILOT program with the involvement of our students to see how the curriculum and platform work and to eliminate any problems. Our long-term goal is to accredit a specialized continuous education program that uses online content and that provides future leaders a professional training targeting the concept of sustainable economics.

2.2 Training Structure and Content

The planned specialized training will be based on 2/3 online/digital and 1/3 traditional face-to-face education. The present study primarily aims to present the structure of the online content, as well as to summarize the results from preliminary testing and to draw conclusions. The first semester of the specialized training offers courses on the individual and social aspects of economic development and sustainability. The second semester focuses on sustainable economics and on the future challenges of leaders. The learning materials are available in both English and Hungarian. The structure of the online part of the training is as follows.

Semester 1	Semester 2
1. Development of professional competences	1. Platform Economy and Sharing Economy
2. Mastering leadership skills	2. Globalization, knowledge management, information management
3. Time management	3. Cryptocurrency and the virtual world
4. Presentation technique	4. HR in the world of robots
5. Smart solutions and technologies in the local sphere	5. Health economics
6. Project management techniques	6. Consumer protection, consumer awareness, rights and obligations – in the 21 st Century, where information is the "new oil"
7. Economic modelling, world of business processes	
8. The role of virtual economy and digital technologies in the economy	

3 Research and Methodology

The aim of the PILOT program is to examine the completion and effectiveness of the courses and to detect any problems in the digitized content by testing the online interface of the training. In the testing of the curricula, we involved students of the University of Dunaújváros, primarily students in the majors supervised by the Institute of Social Sciences.

The two-semester extracurricular leadership training program was supported by curriculum development instructors. We provided consultation opportunity for all registered students. In addition, in each of the two semesters, we organized special workshops and conferences. At the conferences, curriculum developers were given the opportunity to present the content elements of the courses and to explain the scientific contexts of the curriculum development. Reviewers of the learning materials also participated in the conferences and drew attention to the further development possibilities of the leadership training.

A total of 188 students and 14 curriculum development instructors participated in our study. The study was based on specific analyses of the data stored in the university's online training platform, in the Moodle system database. Our research is exploratory and open-ended, as it does not test predetermined hypotheses. By analyzing the data related to course completions and their results using statistical methods, we sought to find out which factors might affect the effectiveness of our online leadership training.

4 Results and Discussion

Regarding the testing of the curricula of the first semester, we found that 50 registered students completed 198 courses, while in the second semester 133 students achieved 221 course completions. Based on the data, it can be stated that each student generally took several courses and completed them online. The distribution of course completions is illustrated in Figure 1.

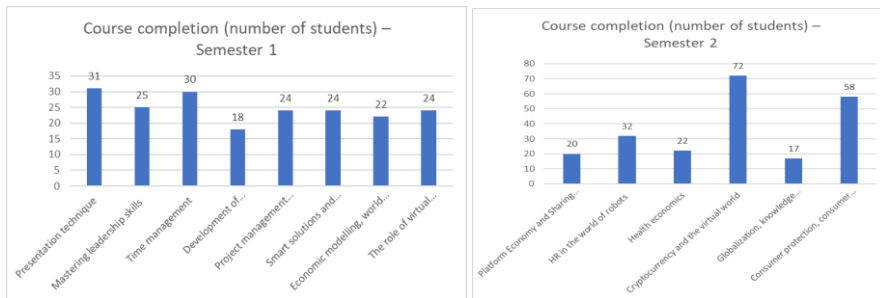


Figure 1
Distribution of course completions by course, per semester

While the distribution of course completion can be considered even in the first semester, we can see that in the second semester the courses related to Cryptocurrency and Consumer protection ended the semester with an extremely high number of completions. In addition, it should be mentioned that the system documented an additional 150 students who enrolled in the system, used the learning materials only once, but did not complete a single course. Moreover, there are a number of students who tried to complete the courses but were unsuccessful. The distribution of unsuccessful completions is illustrated in Figure 2.

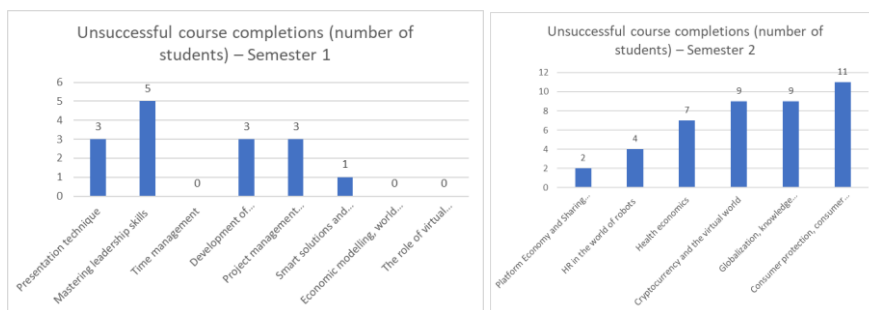


Figure 2
Distribution of unsuccessful course completions by course, per semester

It can be seen that the distribution of unsuccessful attempts is in line with the proportion of students enrolled and successfully completed, with an even distribution. However, the failure rate of one course is much higher than the others.

In the course entitled Globalization, knowledge management, information management, there were only 17 successful course completions and 9 unsuccessful attempts.

Students who successfully completed the courses generally achieved high scores. The structure of the courses is standardized in the whole online leadership training program. There are short quizzes and assignments in the chapters and assessment tests at the end of each chapter, which prepare students for the final test at the end of the course. Figure 6 illustrates the average scores for each course (evaluating all tasks in the entire course) in a percentage form.

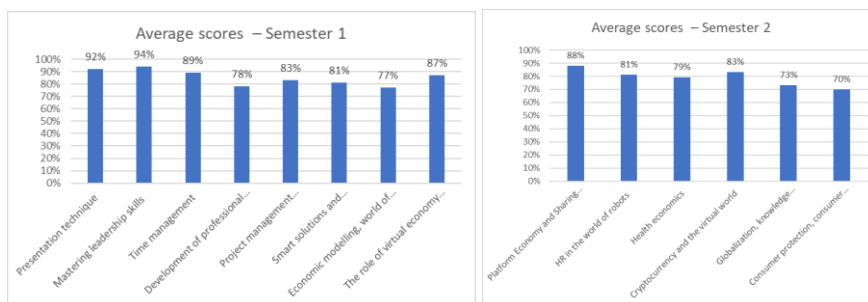


Figure 3

Average scores of course completions, per semester

Based on the results obtained in the first semester (see Figure 3), it can be stated that the students managed to complete the course Mastering leadership skills with the highest score, with a very high 94% grading. The completion of the Presentation technique course was not much lower than this, with a result of 92%. These two course scores, which are above 90% on average, are presumably due to the fact that in the traditional university curriculum of the students we can find subjects with similar topics, even if they have different content, so the participants already had some kind of pre-qualification.

Most of the first semester courses ended with an average score of between 80 and 90 percent, which can be classified as good in the traditional evaluation scheme. These, i.e. Time management, Project management techniques, Smart solutions and technologies in the local sphere, and The role of virtual economy and digital technologies in the economy, aim to transfer focused knowledge, making them presumably easier to accomplish. While the Development of professional competences and the Economic modelling, world of business processes courses, which have average scores of between 70 and 80%, are rather multidisciplinary and professional courses, which presumably require more preparation from students.

Looking at the scores of the courses of the second semester, it can be said that an excellent (above 90%) average score was not obtained in any of the courses. Half of the courses (Platform Economy and Sharing Economy; Cryptocurrency and the

virtual world; HR in the world of robots) got completed with average scores between 80 and 90%. The other half (Globalization, knowledge management, information management; Health economics; Consumer protection, consumer awareness, rights and obligations – in the 21st Century, where information is the "new oil"), had course completion scores between 70% and 80%. The courses of the second semester focused on more specialized topics related to sustainable economics and economic megatrends, the acquisition of which would probably have required more attention and more time on the part of the students.

We also looked at how educational material usage within each course affects the effectiveness of completing the final tests. The impact of educational material usage on the average test completion results is illustrated in Figure 4.

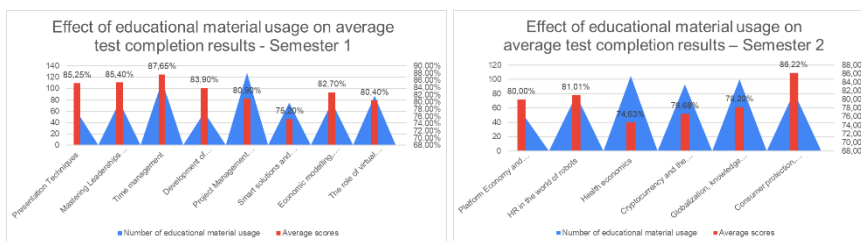


Figure 4

Effect of educational material usage on average test completion results, per semester

Regarding the courses in the first semester, it can be said that in the case of courses where the educational material was used several times, the results were generally better. This is particularly the case for the courses in Presentation techniques, Mastering leadership skills, Time management and Development of professional competences, all of which had an educational material usage over 25, resulting in nearly 85% or more in average test completion results. The lowest educational material usage (less than 15) was for the course Smart solutions and technologies in the local sphere and it also had the lowest test completion results (75.20%).

Regarding the courses in the second semester, this kind of correlation could no longer be experienced. However, it can also be stated here that in the case of the two highest test completion results – Consumer protection, consumer awareness, rights and obligations – in the 21st Century, where information is the "new oil" and HR in the world of robots courses – in both cases the number of educational material usage was over 40, resulting in an average test completion score above 80%.

We also looked at whether the time spent completing the final tests affected the results achieved. That is, for courses where more time is spent completing the tests, the results improved, or vice versa, are results lower for tests that require more time and are presumably more difficult? The effect of the time spent completing the tests on the average scores is illustrated in Figure 5.

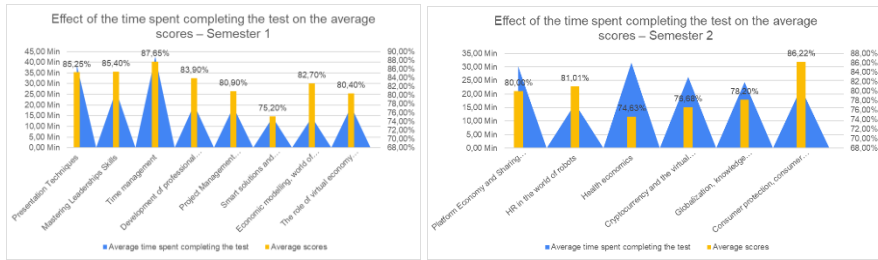


Figure 5

Effect of the time spent completing tests on the average scores, per semester

Based on the statistics of the courses of the first semester, it can be said that the average scores of the final tests were the highest in those three courses (Presentation techniques, Mastering leadership skills, Time management) (87.65%, 85.40%, 85.25% respectively), where students spent the highest time completing the tests on average. In the case of the Smart solutions and technologies in the local sphere course, where students spent the lowest time – less than 15 minutes on average – completing the final test, had the lowest average test score (75.20%).

Based on the statistics of the second semester courses, no such type of correlation was observed. In addition, we examined the relationship between the time spent completing the final tests in these courses and their scores with respect to course-completing students. Figure 6 shows the relevant statistics for the Cryptocurrency and the virtual world course, which had the highest student number. Based on the data, it can be said that students who took more time to complete the final test generally completed it with good results.

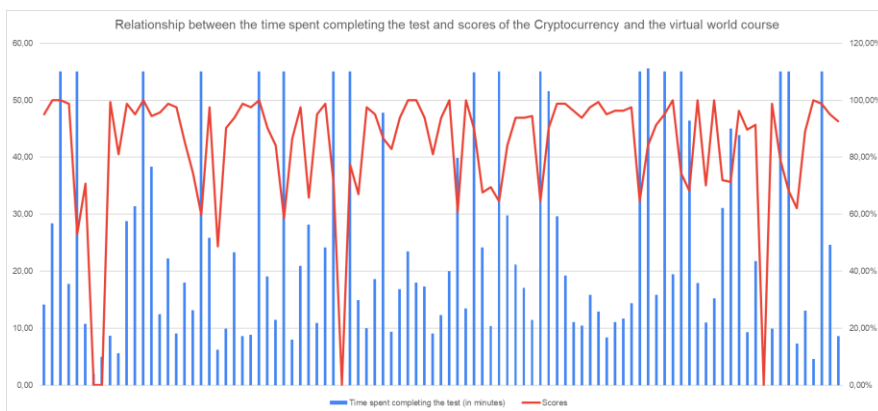


Figure 6

Effect of time spent completing the final test on the average scores, for the Cryptocurrency and the virtual world course

In addition to the results achieved, the course statistics also illustrate well that those students who were committed to mastering each course material and completed the courses were able to achieve very high results with sufficient practice. The data of the short quizzes and assessment tests related to each chapter of the courses show that these students kept retaking these tests until they achieved the optimal score – typically 100%, and this helped them to prepare for the final test, which could only be taken once.

Conclusions

The redesign of the courses according to the opinions of the reviewers, the consistency of the tests and the large number of interactive elements greatly contributed to the achievements and success of the online leadership training program presented in our study. Our research highlighted two issues. On the one hand, we have to deal with students who register for the training but do not complete any courses. We need to find a way to retain those who have registered for the training. One solution is to provide consultation opportunities (preferably online) or to further develop the online platform and rethink the interactive elements of the courses, by applying gamification for instance.

Moreover, the online training program has courses where the registered / completed / unsuccessful ratio is exceptionally high in favor of unsuccessful course completion. In these cases, it is important to re-validate the course completion criteria based on the requirements of the other courses in the program. It is essential to revise the content elements of the courses and to comply with the accreditation requirements to be able to authorize the projected specialized continuous education program.

The student-centered education implemented on the online platform is particularly suitable for developing competencies that participants will actually need in their work. Of course, this requires learning materials and content that provide up-to-date knowledge, and that the focus should be on problem-solving, collaborative learning (see collaborative methods). The digitization of learning, with its audiovisual and interactive tools, increases the acceptance and retention rates of information available through traditional teaching methods (see the learning pyramid) [26] and exploits the potential of experiential learning [27] [28].

In addition to the traditional course offerings of higher education institutions, there is a growing demand for the development of extracurricular, short-term educational programs. These training programs require a specific approach compared to traditional higher education methods, both in terms of the courses offered and the learning materials provided, as well as developing an interactive and knowledge-sharing learning environment. As we have presented in our study through the examination of an online leadership training program, digital and e-learning solutions provide adequate flexibility and educational learning efficiencies for these training services.

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