


Article

Digital Monitoring of Students' Soft Skills Development as an Interactive Method of Foreign Language Learning

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Abstract: Nowadays, the curriculum of higher education is mainly based on hard skills development, although soft skills are of critical importance for successful academic and professional performance. Consequently, the purpose of the article is to describe the possible methods of mastering the second-year students' soft skills within the scope of a foreign language course, using interactive methods. The aim of the research was to elaborate on three types of interactive problem-based tasks and assessment criteria which allow us to monitor the progress of soft skills such as problem solving, teamwork, leadership, time management and technology skills, and analytical and creative thinking. Both tasks and criteria were uploaded onto an online educational platform. The case study method, which was considered to be the main monitoring tool, turned out to be effective in the pedagogical experiment where the students collaborated both online and offline. The experiment demonstrated a positive trend in students' soft skills improvement alongside their foreign language communication skills. Moreover, statistical analyses showed the effectiveness of the system created to master soft skills. The proposed system for digital monitoring of soft skills development can be useful for teaching personnel who want to make the educational process more interactive and productive for advancing students' soft skills.

Keywords: soft skills; digital monitoring; foreign language education; problem-based learning; distance learning; online assessment; engineering students; higher education



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1. Introduction

It is necessary for all engineering specialists to have hard skills, as this measure shows the high quality of the employee's work. Therefore, hard skills usually demonstrate basic or advanced knowledge in a job field and practical skills [1]. Due to rapid global development, having only hard skills is not enough to deal with the most varied tasks, and in this case, soft skills are an essential part of working in different professional areas. Having soft skills is prestigious and helpful for each employee because it means a person displays most of their abilities within creative thinking skills, communication skills, executive function skills, literature search skills, tolerance to stress, and they can handle a different variety of tasks. Soft skills are a complex of personal and supra-professional features that help a person to integrate into society, upgrade their hard skills' level and achieve success in professional areas that include communication skills, management skills and technology skills [2].

A classroom is one the most suitable space for developing communication skills, negotiation and conflict management skills, and solving creative tasks. It has to be acknowledged that, very often, university graduates do not develop their soft skills during their studies and after they get a bachelor's degree. Therefore, there is a range of problems contemporary graduates are faced with. Difficulties in finding necessary information, a

poor level of communication, a lack of motivation, a low level of time management skills and sometimes an inability to cope with the task properly are not all the problems which can be listed [3,4]. Moreover, future workers are not able to handle unexpected conflicts and, therefore, troubles in team management and team building might occur. The problems enumerated above are presumably caused by the lack of concentration on soft skills development during their studies, the lack of curriculum time and the focus on hard skills development. Sometimes, teachers do not know how to implement tasks on soft skills development into the studying process. However, an awareness of the importance of soft skills is increasing and the possibility to involve students in relevant tasks and practice could definitely contribute to students' further communication and interaction with future co-workers and employers [2].

Foreign languages is undoubtedly one of the most effective disciplines to develop and foster soft skills such as oral and written communication skills, presentation skills, critical thinking, problem-solving skills, leadership and teamwork skills using interactive technologies [5–8]. On the other hand, the complicated situation due to COVID-19 and other factors causing a need for urgent usage of digital resources for education and students' development pose new tasks for teachers and educational managers, who must think of new methods and ways of educating and fostering the students using online and interactive technologies. According to the content of soft skills, they cannot be developed exceptionally online, as they require communication and personal interaction with other people. Moreover, how to control and monitor students' progress in soft skills acquisition is still a controversial question. Therefore, the main purpose of the article is to design a system of digital monitoring of students' soft skills development within foreign language education using problem-based learning activities that can be implemented both online and offline.

In relation to soft skills development via foreign language education, scientists admit that interactive methods comprise the use of problem-based tasks as a useful tool for practicing not only communication skills [9,10], but also soft skills. We regard WebQuests, role-playing games and the case study method as some of the most fruitful interactive methods to enhance and refine soft skills, which is also proven by various scientists studying the ways to master soft skills in English lessons [11–19]. For instance, there is a role-playing game which helps to divide the roles in such a way that every student can be equally involved in the activity. Presentation skills are frequently developed as students present their research, product, or project. The drawback of this exercise is a lack of attention among listeners, though this type of activity may be perfected by including some additional terms, such as giving extra points for the best questions or choosing the best project or product. Time management skills are improved as well due to teamwork in the classroom. Group members learn how to plan and carry out a task, how to set goals and organise the work in such a way that every team member can participate [11–15]. The role-playing game improves both linguistic performance and communication skills. Problem-solving skills can be also perfected if the game involves a conflict.

The case study method is widely used in education as an interactive teaching tool. It is considered to be one of the most effective technologies in education in various spheres, for example: law, medicine, economics, engineering, electronics and telecommunication systems, etc. The case study method consists of two elements: the case study itself or the description of the problematic situation and the discussion of the case study or the situation. As a rule, case studies comprise some problems involving certain contradictions or ambiguities and are based on real-life facts. Case studies provide students with an opportunity to put theoretical knowledge into practice and improve problem-solving skills, critical thinking, communication skills, as well as communicative competence [20]. For example, an electrical technician solves problems at all stages of the process flow of electric systems and electric power supply: which equipment to launch, where this equipment can be applied, how to provide uninterrupted service, how to run diagnostics and how to put the equipment into operation. Thus, participants have to consider the problem, analyse it,

discuss the details and peculiarities of the situation and find the best and most appropriate solution [21]. It can be said that the case study method is targeted to develop analytical thinking, practical skills of data processing, skills in constructive feedback, an ability to present personal points of view both orally and in writing and to substantiate this point of view [22,23]. As long as the case study helps master so many aspects of soft skills that can be evaluated using some criteria, we consider this method to be the most effective way of monitoring soft skills development.

Furthermore, analysing and synthesising information, analytical thinking and teamwork skills may be acquired when dealing with WebQuests. WebQuest technology is aimed at developing students' knowledge and skills using problem-based tasks in an authentic interactive digital environment [24]. It combines several features of modern teaching approaches, such as problem-based learning, digital technologies, role-playing situations, teamwork and making a communicative product [25,26]. All these features contribute to mastering students' oral and written foreign language skills, skills of online communication, creativity, critical thinking, decision-making skills, taking initiative, leadership skills, organisational and problem-solving skills, as well as computing and professional skills.

As can be seen from the research under review, there is still a gap between the variety of soft skills development methods and a shortage of the ways in which students' progress in soft skills acquisition is controlled. Consequently, the research questions of the paper include several issues:

RQ1: Can the case study method be used for monitoring students' soft skills development?

RQ2: Can a mix of online and offline interactive learning activities contribute to mastering all soft skills?

RQ3: How should the digital monitoring of soft skills development be organised?

Therefore, the research hypothesis is that the process of monitoring soft skills development is more efficient and interactive if trainers use the case study method and design proper criteria to investigate indicators of soft skills; if the trainers use online technologies to develop and monitor students' soft skills. Following the research questions and the hypothesis, the authors set the following objectives:

1. To analyse scientific papers on the topic of ways of developing and monitoring soft skills in foreign language teaching;
2. To design the content of three case studies, the WebQuest and the role-playing game, as well as the criteria for evaluating soft skills development after performing the interactive problem-based tasks;
3. To organise monitoring of students' soft skills development using an online learning platform (e.g., Moodle);
4. To conduct a pedagogical experiment, critically analyse its results using statistical research methods and check the effectiveness of the system proposed by the authors.

2. Materials and Methods

At the beginning of the study the authors analysed various scientific articles to investigate the soft skills components and the specifics of the case study method, role-playing games and the WebQuest organisation. For the purpose of the research, we designed three case studies for monitoring students' soft skills development while learning a foreign language. To develop soft skills, the content of the role-playing game and the WebQuest was created. The research was conducted among the second-year engineering students of the Institute of Electronics and Telecommunication at Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia, who were studying the English for General Academic Purposes course. The respondents were 42 students, aged 19–21, all of whom were Russian; $n = 21$ (16 male and 5 female) in the experimental group and $n = 21$ (17 male and 4 female) in the control groups, within which all the students worked in small groups of four–five people. The choice was made because of the need for future engineers to have well-developed soft skills and the fact that the second-year students already have some

professional knowledge, due to studying technical disciplines, and their command of the English language is enough to deal with the tasks proposed in our experiment.

Starting the pedagogical experiment, the authors carried out the placement test (B1) among the two groups and proved that there were no statistically significant differences between them as the average score was 3.5 in the experimental group and 3.6 in the control group. Moreover, they were investigated in terms of soft skills development levels, the results of which are presented in the Sections 3 and 4. During the whole experimental training, the experimental group was asked+ to solve three case studies, the WebQuest and the role-playing game, whereas the control group only participated in solving case studies No.1 and No.3 to provide the authors with the data to make a comparative analysis and conclusion.

The initial stage of the experiment involved solving the case study No.1 by both the experimental and control groups of students. The task was to enumerate the problems in using telecoms in the students' department or university and obvious reasons which caused them to search for the information on the internet, discussing it in the group chat and orally, after which they had to prepare a 3-minute presentation on the major issues and problems related to the implementation and usage of the telecommunication devices. Using the case study technology, we found out the level of the students' soft skills development, and the case study and linguistic performance through the trainer's digital evaluation according to the criteria designed for this purpose. The case study and linguistic performance was assessed with the criteria presented in Table 1.

Table 1. The first part of the assessment criteria for digital monitoring of soft skills development.

Skills Evaluated	Criteria	Points
Case study performance	The case is performed fully within the time frame. Clear argumentation is given, and the solution is based on good theoretical knowledge.	5
	The case is performed fully but not within the time frame. The argumentation is mostly clear, and the solution is mostly feasible.	4
	The case is not fully completed. The argumentation is poor, and the solution is partly feasible	3
	The case is not completed. The solution is presented, but there are no arguments given.	2
	The task of the case is not understood. There are no solution and arguments.	1
Linguistic performance	The students demonstrated a high level of speaking and listening skills with 0–3 mistakes.	5
	Speaking and listening skills were good enough, but sometimes there were 4–7 trivial mistakes.	4
	Speaking and listening cause problems in decision making and prevent students from completing the case properly and in time. There were more than seven mistakes.	3
	Low level of speaking and listening skills did not allow learners to fully cope with the case. Students presented the solution and argumentation without fluency.	2
	Speaking and listening skills were not demonstrated. Students did not present anything.	1

The authors aimed to evaluate the overall soft skills level of the participants through the demonstration of 40 abilities within the following soft skills: problem-solving skills, interpersonal and communication skills, negotiation skills, decision-making skills, teamwork skills, leadership skills, management skills, organisational skills, time-management skills, technology skills, and analytical and critical thinking. This choice is substantiated by the ability of the trainer to figure out their exhibition by the observation research method and

Delphi method, which are the most relevant for controlling soft skills development. An example of the survey form with abilities of the students that were evaluated is presented in Table 2.

Table 2. The second part of the assessment criteria for digital monitoring of soft skills development showing which components of soft skills are evaluated.

Soft Skills Components	Exhibited by the Student	
	Yes	No
1. Knows the basics of speech etiquette and is able to apply them.		
2. Knows how and is able to ask questions and provide feedback.		
3. Knows how and is able to accurately express their thoughts and intentions.		
4. Knows how and is not afraid to express their opinion.		
5. Is ready to listen to the interlocutor.		
6. Knows how to read and correctly interpret the non-verbal signals of the interlocutor.		
7. Knows how and is able to build interaction with team members.		
8. Takes into account the opinions of other team members.		
9. Is ready to work actively in a team to achieve results.		
10. Is able to show empathy.		
11. Is able to compromise in order to achieve results.		
12. Works for common goals and needs of the team.		
13. Is able to be friendly and avoid conflicts.		
14. Is able to react quickly to changing situations.		
15. Is able to control their emotions.		
16. Is able to be persuasive.		
17. Is ready to be a leader.		
18. Is able to explain information clearly.		
19. Is able to set goals and plan ways to achieve them.		
20. Is able to distribute roles in the team.		
21. Is ready to help team members.		
22. Is able to carry out constructive criticism.		
23. Is able to offer their own ideas.		
24. Is able to make decisions.		
25. Knows how and is able to prevent and resolve conflicts.		
26. Knows how and is able to ensure timely completion of tasks.		
27. Knows how and is able to identify the problem.		
28. Knows how and is able to describe the desired result.		
29. Knows how and is able to analyse the causes of the problem.		
30. Knows how and is able to reasonably choose the best solution to the problem.		
31. Is able to take responsibility for decision making.		
32. Identifies possible consequences of the proposed solutions.		
33. Is able to compare, identify the general and the particular, and synthesise information.		
34. Knows how and is able to interact with others using digital technologies.		
35. Knows how and is able to exchange data with others using digital technologies.		
36. Knows how and is able to use digital technologies to collaborate online.		
37. Knows the netiquette and uses it competently.		
38. Is critical of information, carefully checks the data.		
39. Is able to visualise information.		
40. Is able to search for the necessary information.		

To evaluate their exhibition, the trainer chose 'yes' for the variables every time they were demonstrated by each student and 'no' if there was no demonstration. Then, the number of the variables exhibited meant giving the student points according to the criteria designed: 0–7 'yes'—1 point, 8–15 'yes'—2 points, 16–23 'yes'—3 points, 24–31 'yes'—4 points, 32–40 'yes'—5 points. The maximum points in the trainer's digital assessment of soft skills development is 5 points; therefore, the low level is presented by 0–1.6 points, the middle level—1.7–3.3 points, and the high level—3.4–5 points. The same scale was used to evaluate completion of the case study and linguistic performance, where the listening and speaking skills are assessed in terms of material understanding, speech organisation and

fluency. The criteria were uploaded onto Moodle and the trainer's assessment was online, which allowed the students to see their results immediately and be able to analyse, control and make conclusions about their soft skills.

The experimental training included usage of the WebQuest technology and the role-playing game. The WebQuest was dedicated to the topic of designing a smart home concept, where the students, in small groups, solved interactive problem-based tasks using professional knowledge of their specialty basics and foreign language communicative competence. The WebQuest was designed using the Google Sites service, and the communication between participants of each group took place in Microsoft Teams and the group chat in the messenger.

The intermediate stage of monitoring consisted in solving case study No.2, where the participants needed to present a solution to the problem with online educational platforms at their university. The task required choosing two or three online educational platforms and listing their pros and cons in terms of providing tools for organising online conferences, quality of software, user interface and safety issues. After comparing the platforms, they had to choose the most suitable platform for online education in their department and present the solution in the form of an oral presentation with their own visual aid.

Next, the role-playing game challenged the students to solve the problem with the Internet, television, and mobile telecommunication while working for a telecom company, where they had to allocate several roles: the first rank engineer, the second rank engineer, the industrial climber, and the software developer. The process of the solution also took place in Microsoft Teams and the group chat, while the solution presentations took place in the classroom. We suppose that the trainer's instructions and the presentation of the solutions could also be performed online using various online educational platforms if such a need exists.

The final stage of monitoring comprised in solving case study No.3, where the students of both the experimental and control groups worked to manage a company which was on the edge of going bankrupt due to the inability to meet customers in the office during the pandemic. The students needed to work out and implement a virtual office, describing and visually illustrating how to manage IP telephony for communication with employees and customers to save their business. This stage provided us with the data concerning the dynamics of soft skills development levels.

During all stages of the experimental training, the authors used methods of observation, analysis, and interpretation of the results. Qualitative methods of the research comprised of using the Delphi method to assess the degree to which components of soft skills were used by the students while dealing with the interactive problem-based tasks. Quantitative methods included conducting statistical analyses (T-statistics for dependent and independent groups) to critically analyse the findings of digital monitoring in the control and experimental groups, received at the initial and final stages of the experiment, as well as the dynamics of the participants of the experimental group.

All the participants volunteered to take part in the experiment; they were informed about the objective of the study and guaranteed anonymity.

3. Results

Having analysed the specifics of the case study method, we designed the content of the case aimed at developing and monitoring levels of soft skills with time limits for its completion. The case study, which is performed in small groups of four–five people, should include the following parts.

1. *Problem description* presenting the current state and conditions of the issue under research and a roles description for students.
2. *Task* stating the main problem that the students need to solve. The solution process is divided into three stages:

(1) *stage 1* describes the exact tasks for the students, comprising of searching for information, analysing and synthesising it, and presenting points they have come up with

to each other. The time limit is ten minutes. Here, time management skills, critical thinking, communication and presentation skills are practiced. As for linguistic performance, speaking, reading and listening skills are improved;

(2) *stage 2* includes summarising all proposals, choosing best options and preparing a 3-minute presentation of the solution found. At this stage, the students are given an opportunity to hone their skills in problem solving, analysing information and developing interpersonal skills. They are limited in time, with only five minutes given, so time management skills are practiced as well;

(3) *stage 3* is dedicated to presenting the solution of the problem to the whole class, where the students work on foreign language speaking skills and public speaking.

An example of the case aimed at monitoring soft skills development at the initial stage of the experiment is presented in Table A1. This case was implemented offline in both experimental and control groups to investigate the levels of soft skills development.

At the initial stage of digital monitoring, we compared the results of the two groups under study after completing case study No.1, using the T-statistic for independent groups in the IBM SPSS Statistics, version 26, which showed that there were no significant differences, with the overall p -value being more than the critical p -value ($p = 0.350$, $\alpha = 0.05$), with the difference in paired samples = 0.381. The reliability analysis is presented in Table A2.

The evaluation of each stage of the experiment was performed using the criteria developed by the authors which are presented in the Section 2. The process of data collection in the experimental group is shown in Figure 1, which demonstrates points given by the trainer using the Delphi method to each participant for all tasks included in the experimental training aimed at soft skills development and monitoring the progress of each student in soft skills (SS), task completion (TC) and linguistic performance (LP).

Participant / Variable	Case study №1			WebQuest			Case study №2			Role Play			Case study №3		
	SS	TC	LP	SS	TC	LP	SS	TC	LP	SS	TC	LP	SS	TC	LP
1	2	5	1	1	0	1	3	3	1	1	1	1	3	3	3
2	3	5	3	1	0	3	4	3	3	1	1	1	3	3	3
3	2	5	1	2	0	3	4	3	1	3	1	1	3	3	3
4	2	5	3	1	0	5	3	3	5	1	1	3	5	3	5
5	2	5	3	2	0	3	3	3	3	4	1	3	3	3	4
6	2	5	3	3	1	3	3	4	3	4	4	3	4	1	4
7	3	5	3	3	1	5	4	4	5	5	4	5	5	1	5
8	2	5	1	1	1	3	3	4	3	4	4	3	4	1	4
9	2	5	5	3	1	4	3	4	5	5	4	5	3	1	5
10	4	5	5	3	1	3	4	4	3	4	4	4	4	1	5
11	2	5	1	1	1	3	3	4	3	3	4	4	4	1	5
12	5	5	5	4	3	5	4	4	5	5	3	5	5	3	5
13	3	5	5	3	3	3	4	4	3	4	3	4	5	3	4
14	2	5	3	1	3	3	4	4	5	1	3	4	4	3	4
15	2	5	5	1	3	5	4	4	5	1	3	5	4	3	4
16	4	5	3	4	3	4	4	4	5	5	3	5	5	3	5
17	4	5	5	4	3	3	4	4	3	4	5	5	5	3	5
18	4	5	5	3	3	5	4	4	5	5	5	5	5	3	5
19	4	5	5	3	3	5	4	4	5	4	5	5	5	3	5
20	5	5	5	3	3	5	4	4	5	5	5	5	5	3	5
21	5	5	5	3	3	4	4	4	5	5	5	5	5	3	5
Average score	3.0	5.0	3.7	2.4	1.7	3.7	3.7	3.8	3.9	3.5	3.3	3.9	4.2	2.4	4.4

Figure 1. The data collection process in the experimental group at all stages of the experiment.

As illustrated, there were four small groups in the experimental group, which are coloured in Figure 1. Each participant was evaluated individually, except for the task completion variable, where all the students within the small group were responsible for the solution of the task proposed; therefore, they received the same points. The same process of data collection was performed with the results of the control group, which dealt only with case studies No.1 and No.3.

The average score received by the students of the experimental group for their soft skills development, as well as case study and linguistic performance, at the initial, intermediate, and final stages of the experiment are presented in Figure 2.

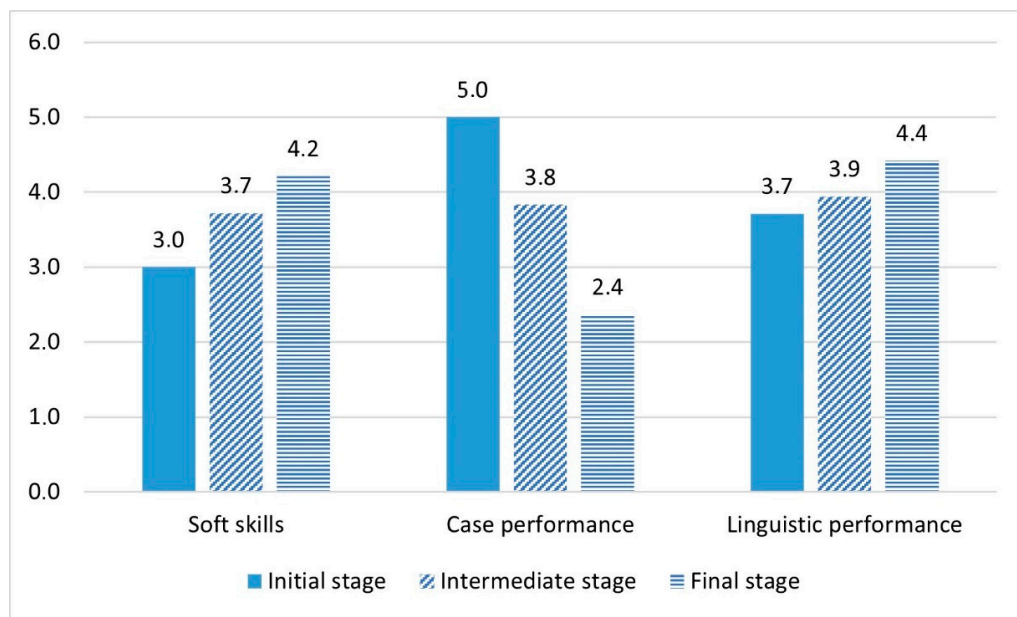


Figure 2. Results of digital monitoring of students' soft skills development, and case study and linguistic performance in the experimental group at all stages of the experiment.

As can be seen, the average score of the participants at all stages differs according to the skills that were examined. As for soft skills development, there is a visible increase in its levels, starting from the middle level (3.0), rising up to 0.7 (3.7), and ending with the high level (4.2) in the group on average. The same tendency can be observed for linguistic performance, showing that the tasks we implemented helped the students master their foreign language communicative competence (3.7 at the initial, 3.9 at the intermediate, and 4.4 at the final stage). In relation to case study performance, there is an opposing trend illustrating that the respondents were highly evaluated at the initial stage (5.0), at the intermediate stage they had trouble with their performance, with only 3.8 points received, and the final stage happened to be failed by them, resulting in 2.4 points on average.

Overall, monitoring completion of all productive tasks, we obtained the following results, which are shown in Table 3 and present the distribution of the students according to levels of soft skills, and task and linguistic performance. Such findings can be briefly explained by the increasing complication of the cases used in the experiment. Further interpretation is presented in the Section 4.

Table 3. Distribution of the students of the experimental group according to the levels of soft skills, and task and linguistic performance.

KERRYPNX	Soft Skills	Task Performance	Linguistic Performance
Case No.1	0%—low level 61.9%—middle level 38.1%—high level	0%—low level 0%—middle level 100%—high level	19.0%—low level 33.5%—middle level 47.5%—high level
WebQuest	33.5%—low level 52.3%—middle level 14.2%—high level	52.5%—low level 47.5%—middle level 0%—high level	5.0%—low level 47.5%—middle level 47.5%—high level
Case No.2	0%—low level 33.3%—middle level 66.7%—high level	0%—low level 23.8%—middle level 76.2%—high level	9.5%—low level 38.0%—middle level 52.5%—high level
Role-playing game	23.8%—low level 9.5%—middle level 66.7%—high level	23.8%—low level 23.8%—middle level 52.4%—high level	14.2%—low level 19.1%—middle level 66.7%—high level
Case No.3	0%—low level 23.8%—middle level 76.2%—high level	28.6%—low level 71.4%—middle level 0%—high level	0%—low level 14.3%—middle level 85.7%—high level

Moreover, the authors monitored the dynamics of the exhibition of 40 soft skills components by the students of the experimental group during case studies No.1, No.2, and No.3, which are presented in Figure 3, and the dynamics of the exhibition of soft skills by the students of the control group who only conducted cases No.1 and No.3 without participating in the experimental training, which is shown in Figure 4. The opportunity to monitor exact components of soft skills that the cases provided us with answered our first research question and showed that the case study method can be useful for monitoring students’ soft skills development.

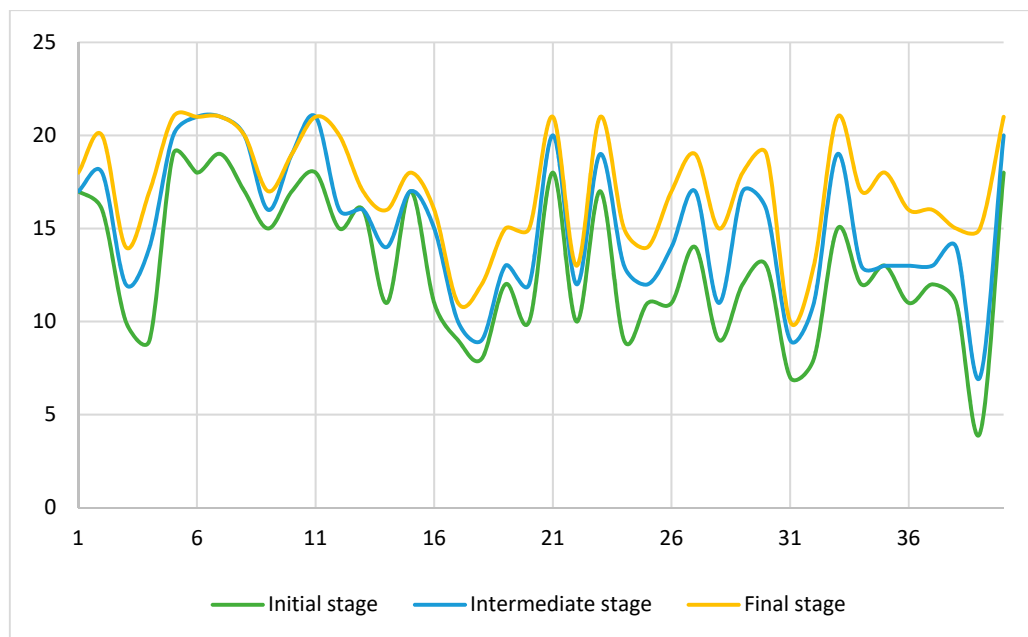


Figure 3. Frequency of exhibition of soft skills components by the students of the experimental group at all stages of the experiment.

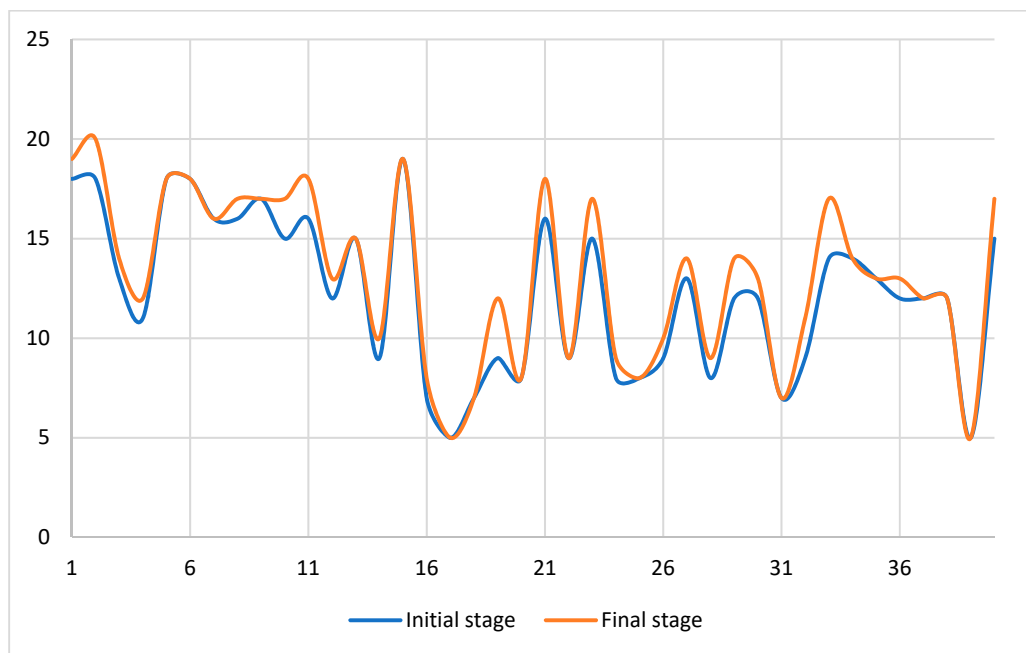


Figure 4. Frequency of exhibition of soft skills components by the students of the control group at the initial and final stages.

To check the effectiveness of the system proposed, the authors compared the results of task performance for the first and the third cases in terms of the exhibition of soft skills by the students of both experimental and control groups, which are shown in Figure 5.

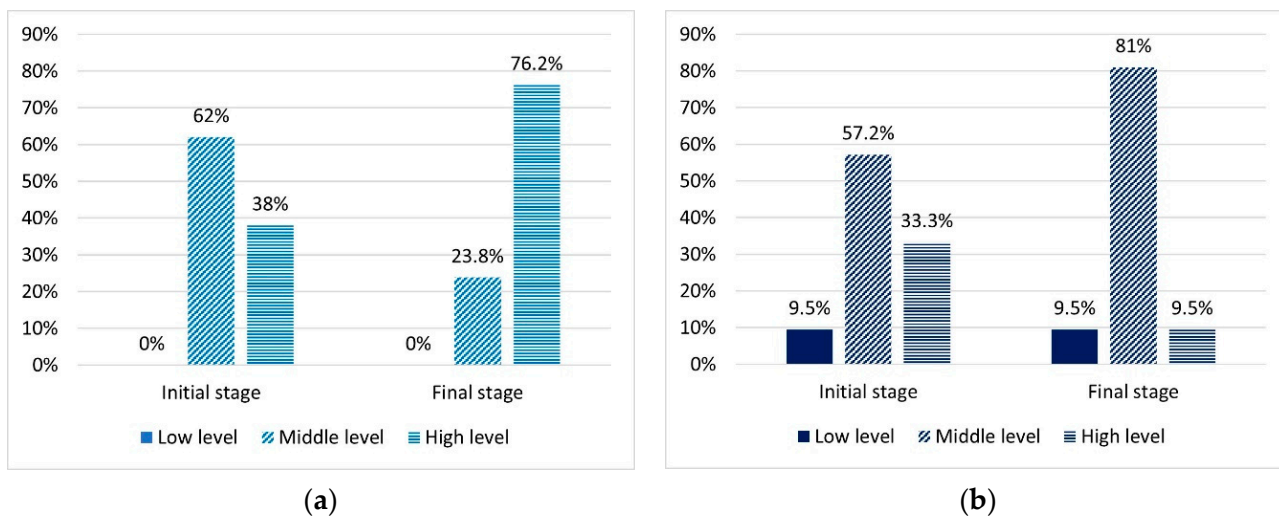


Figure 5. Levels of students' soft skills development at the initial and final stages of the experiment: (a) In the experimental group; (b) In the control group.

To critically analyse the findings received in both experimental and control groups it was necessary to conduct T-statistics using the SPSS program. After implementing our system of problem-based tasks in the experimental group, the authors analysed the data received in both groups at the final stage of the training, which demonstrate the overall p -value was less than the critical p -value ($p = 0.000$, $\alpha = 0.05$), the mean in the experimental group = 4.24, the mean in the control group = 2.43, and the difference in paired samples = 1.810. The reliability analysis is presented in Table A2.

Moreover, the authors conducted the statistical analysis of the results of the experimental group obtained at the initial and final stages using the T-statistics for paired samples. As a result, the overall p -value was less than the critical p -value ($p = 0.000$, $\alpha = 0.05$), the mean at the initial stage = 3.05, the mean at the final stage = 4.24, and the difference in paired samples = 1.190. The reliability analysis is presented in Table A3. Therefore, the system of the problem-based tasks proposed by the authors proved its effectiveness, and the case study method appeared to be of practical importance as a useful tool for the digital monitoring of soft skills development.

4. Discussion

Having conducted the literature analysis, we discovered that soft skills can be developed by the students while learning a foreign language when the trainer correctly organises such a process using problem-based learning, interactive methods, and online technologies. For monitoring soft skills development, researchers need to create the criteria for the evaluation of the demonstration of soft skills. Since there are various components of soft skills, it is challenging for a researcher to design the whole system of monitoring all components, as can be evidenced from the scientific papers the authors reviewed, and there are still no such criteria. Therefore, the authors made an attempt to fulfil this need and proposed to measure the level soft skills development using the case study method and the criteria presented in Table 2.

As Figures 3 and 4 show, at the initial stage, the results in the experimental and control group were almost the same, where the majority of students in both groups demonstrated communication and teamwork skills (components 1–2, 4–11, 13, 21, according to the components presented in Table 2), abilities to control their emotions (15), to offer their own ideas (23), and to search for necessary information (40). The least exhibited abilities in both groups were the components of leadership, decision making and technology skills: components 17–18, 22, 24, 31–32, 38–39. Moreover, the students of the control group demonstrated planning (19–20), adapting (14), conflict management (25) and time management (26) skills less frequently than the experimental group. Such results can be explained by the lack of training aimed at the development of these soft skills components, as currently most academic activities still target knowledge acquisition and hard skills development. Consequently, our task was mainly for students to master abilities divided into groups of management and technology skills.

During the experiment, the students of both groups had to deal with case studies, which were the core of the digital monitoring. The first one reflected the current changes in the higher education system, such as telecoms implemented in universities. Therefore, the students needed to analyse the problems with telecoms at the university and possible reasons for them, using internet sources, sending the information to the group chat, analysing and discussing it orally. The next task was to visualise and present the collected information coherently. The students were given eighteen minutes to handle this task.

The results of the experimental group, shown in Table 3, demonstrate that almost all participants managed to complete the task while working on the first case. A total of 16 learners out of 21 (76.2%) performed the case study fully within the time frame, but four students (23.8%) presented the solution not clearly enough or not in time, which influenced the overall statistics, with 61.9% of the respondents achieving the middle level. All in all, more than a third of the experimental group exhibited soft skills at a high level (38.1%) and all the students managed to complete the task. Moreover, almost half of the students (47.5%) presented the solution coherently and thoroughly, while 33.5% had problems with public speaking skills. We might assume that this case study was completed at a high level due to the general students' awareness of the problem stated. The control group had to work on the first case as well, and the results show that almost 42.8% of the participants revealed a high soft skills performance, though 61.9% of students coped fully with the task. At the same time, the level of linguistic skills seemed to be higher, as 57.1% of the learners performed well enough.

Next, to develop soft skills, the experimental group of the students was given three problem-based tasks: the WebQuest, the role-playing game, and case study No.2, which was also used as a means of digital monitoring. Completing the WebQuest, the participants demonstrated worse results in comparison to the first case. The whole process of solving the quest was done via online interaction in Microsoft Teams and the group chat in the messenger; therefore, we suppose that this happened due to students' not being familiar with this type of task previously and an inability to organise a proper discussion. As for the result, only 47.5% of the students fully completed the task and presented the solution to a satisfying extent, whereas 52.5% had trouble with solving some of the tasks provided in the quest, which is why their solutions were incomplete. Nevertheless, in the presentation, all students showed their good public speaking skills. Here we can conclude that teaching practitioners should design and implement such learning activities for the students to develop their management and technological soft skills in the digital environment.

The second case touched upon the problem of choice of educational platform during the pandemic. The task that the participants worked on was to choose the platform in terms of safety, quality of software, and so on. The students had eighteen minutes to ponder the advantages and disadvantages of each platform and make a reasonable and well-thought choice. In comparison with the results of the first case, those of the second case appeared to be worse, as the topic of the case was complex enough and the students responded that they did not have enough time. However, it should be said that the number of students who exhibited the ability to analyse the information, work in a team, listen to each other critically and come up with a well-thought solution within the time frame increased to 66.7%. We have to pay attention to the fact that, during the work on the second case, linguistic performance improved, with 52.5% demonstrating a high level of speaking and listening skills.

The last learning activity for the participants was the role-playing game. For the last two years of the pandemic, the students and teachers have been facing a large variety of software errors on educational platforms such as Zoom and Microsoft Teams, etc., bad internet connection, the big distance between different cities and an unusual education process [25]. According to the new reality, we have created a role-playing game that is dedicated to new technologies and telecommunication. The aim was to check their initial knowledge of future professions and develop critical and creative thinking within the soft skills. The idea of the game was to solve problematic professional issues with the internet, TV and mobile connection, practicing their possible future professional roles. Each step of the game became gradually more complex, where they needed to allocate the roles, find out their duties, study the issue and present solutions to the supposed problem, as if they worked at the telecom company.

The students showed high concern for the task at the beginning of the game, at the stage of introducing the role-play gaming rules. Most of them were inspired by the advanced level of the given exercise, but gradually their desire to run at full power became less. This was seen by the fact that not all the students took part in the final stages of the game or shared feedback on their solo and collaborative work. One small group of five students (23.8%) refused to present their solution, arguing that the task was too tough. Nevertheless, a majority of the respondents gave their presentations and 52.4% of them gained high results for task competition, soft skills and linguistic performance, while up to 23.8% of them demonstrated a middle level of their soft skills development and task completion. In our view, reducing interest might be connected to the multi-round tasks and gradation of exercises from the simplest to the most complicated. Despite these negative factors, the role-playing game made a contribution to learning and developing soft and hard skills, as well as foreign language communicative competence in the professional situation among the students who could complete the final task.

The core problem of the third case was related to the pandemic as well, though in this case, the students were placed in the management of a company that was about to fold. To survive and be able to carry on meeting clients, the management had to implement a virtual

office. Thus, within 18 min, the students needed to present a visual project of the virtual office, taking into consideration the kind of business the company is in, customers' needs and communication with the employees. The work of the experimental group on the third case showed a gradual increase in both the exhibition of soft skills and linguistic skills. The number of students who revealed high soft skills performance grew to 76.2%, while 85.7% of students demonstrated a good level of the foreign language communicative competence. In comparison, the third case study results of the control group were obviously worse due to the fact that 61.9% of participants did not complete the task fully and the argumentation was poor, while the remaining participants showed zero results. In respect to soft skills, only 52.5% of the students performed well. Therefore, we answered the second research question and concluded that the system of online and offline problem-based tasks paid off for the experimental group participants, as they showed better results. These findings can be seen in Figure 5.

Furthermore, the frequency with which soft skills components were demonstrated by the students of both groups, shown in Figures 3 and 4, proves our notion because there is little development in soft skills components by the students of the control group, as they did not have any training aimed at soft skills development. As for the experimental group, it can be seen that at the final stage of the experiment, all the students mastered communication, teamwork and analytical skills (components 5–7, 11, 21, 23, 33, 40), the majority increased their abilities in management, time management, problem solving and technology skills (components 19–20, 24–27, 29–30, 34–39). Nevertheless, the participants still demonstrated leadership (17–18, 22, 28) and decision-making (31–32) skills the least frequently. This can be explained by the fact that not every person is able to become a leader and be responsible for their decisions at the age of twenty due to their nature and personality types. Accordingly, these students and their trainers need to work hard to advance these components of soft skills.

5. Conclusions

The authors proposed to use the case study method to determine and control the level of soft skills performance and proved its efficiency. To organise the digital monitoring, the authors designed the criteria for assessing students' performance while doing interactive problem-based tasks that can easily be uploaded to some online platform and be used for organising the digital monitoring of not only soft skills development but also task and linguistic performance. This made this process more interactive and led us to answer the third research question. Therefore, we found answers to all research questions and accepted the proposed hypothesis. Though we have to acknowledge that the results depend much on the complexity of the case proposed, as, for example, the third case turned out to be challenging due to its peculiar theme. On the other hand, the cases which presented a familiar context or involved a creative part (such as the first and the second ones) demonstrated better results, especially in the experimental group. Moreover, their better results can be explained by completing the interactive problem-based tasks designed and provided by the authors during the experimental training. Nevertheless, the success of the students in completing such tasks depends on not only their soft skills development, but also the difficulty level of the task. All in all, seeing the positive dynamics in the students' soft skills development, we can conclude that a mix of online and offline interactive problem-based tasks can be effective for advancing all soft skills.

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Appendix A

Table A1. Structure of the case aimed at monitoring soft skills development.

Case 1
Problem description
Nowadays, in the era of rapidly developing technology, we can observe great changes in the system of higher education. A great deal of those changes involve implementing telecoms in universities. It should be said that not many universities manage to catch up with recent technological trends and completely fulfil modern demands in this sphere. A lot of universities in Russia definitely experience a lack of necessary tools or systems or a shortage of practical knowledge in this scope.
You have just finished the first year of education, had lessons in an online format, and more than anybody else are aware of a real situation in your university with respect to telecommunications. Moreover, you have friends from other universities who must have told you about problems they faced studying online.
Task
1. Work in groups of four–five students, enumerate the problems in using telecoms in your or your friends' department/university and the obvious reasons which caused them. Each member of your group has to present at least one problem. You can google if you lack problems. You have ten minutes to do so.
2. Analyse all the information gathered and prepare a 3-minute presentation on the major issues and problems related to the implementation and usage of telecommunication devices. Do not forget about the structure of the presentation: introduction, main body, conclusion. Each member of your group should present some ideas. You have five minutes to do so.
3. Give the 3-minute presentation. You have three minutes to do so.

Appendix B

Table A2. The reliability analysis (*t*-Test for independent samples) of the experimental and control groups' findings at the initial and final stages of the experiment.

Stage	<i>t</i>	df	<i>p</i>	Mean Difference	SE Difference
Initial	0.946	40	0.350	0.381	0.403
Final	3.806	40	0.000	1.810	0.475

Table A3. The reliability analysis (*t*-Test for paired samples) of the experimental group' findings after the experimental training.

<i>t</i>	df	<i>p</i>	Mean Difference	Std. Deviation	SE Mean
6.706	20	0.000	1.190	0.814	0.178

References

1. Almazova, N.; Rubtsova, A.; Odinkaya, M.; Bernavskaya, M. Formation of Professional Competence of the Future Computer Engineer in a Technical University. *Rural. Environ. Educ. Personal.* **2020**, *13*, 25–31. [\[CrossRef\]](#)
2. Medvedeva, O.D.; Rubtsova, A.V. Productive Method as the Basis for Soft Skills Development in Engineering Foreign Language Education. *Educ. Sci.* **2021**, *11*, 276. [\[CrossRef\]](#)
3. Borschenko, G. Streaming of EFL Students: Evaluation of Effectiveness. *EpSBS* **2020**, *98*, 99–108. [\[CrossRef\]](#)
4. Alzghoul, A.; Elrehail, H.; Emeagwali, O.L.; Alshboul, M.K. Knowledge Management, Workplace Climate, Creativity and Performance: The Role of Authentic Leadership. *J. Workplace Learn.* **2018**, *30*, 592–611. [\[CrossRef\]](#)
5. Tikhonova, E.; Raitskaya, L.; Solovova, E. Developing Soft Skills in English for Special Purposes Courses: The Case of Russian Universities. In Proceedings of the 5th International Multidisciplinary Scientific Conference on Social Sciences and Arts SGEM 2018, Vienna, Austria, 19–22 March 2018; pp. 223–232. [\[CrossRef\]](#)
6. Karpovich, I.; Sheredekina, O.; Krepkaia, T.; Voronova, L. The Use of Monologue Speaking Tasks to Improve First-Year Students' English-Speaking Skills. *Educ. Sci.* **2021**, *11*, 298. [\[CrossRef\]](#)
7. Jaafar, S.; Fathil, N.F.; Zambri, M. Classroom Activities Improve Soft Skills. *SSRN Electron. J.* **2021**, 1–8. [\[CrossRef\]](#)
8. Bruno, A.; Dell'Aversana, G. Reflective Practicum in Higher Education: The Influence of the Learning Environment on the Quality of Learning. *Assess. Eval. High. Educ.* **2018**, *43*, 345–358. [\[CrossRef\]](#)
9. Varava, I.P.; Bohinska, A.P.; Vakaliuk, T.A.; Mintii, I.S. Soft Skills in Software Engineering Technicians Education. *J. Phys. Conf. Ser.* **2021**, *1946*, 012012. [\[CrossRef\]](#)
10. Ivanova, P.; Burakova, D.; Tokareva, E. Effective Teaching Techniques for Engineering Students to Mitigate the Second Language Acquisition. *Lect. Notes Netw. Syst.* **2020**, *131*, 149–158. [\[CrossRef\]](#)
11. Wulandari, W.; Dela Octavia, A.; Yana, Y. The Use of Role Play to Improve Students' Speaking Skill. *Proj. Prof. J. Engl. Educ.* **2019**, *2*, 416–420.
12. Cook, A.S.; Dow, S.P.; Hammer, J. Towards Designing Technology for Classroom Role-Play. In Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '17), Amsterdam, The Netherlands, 15–18 October 2017; Association for Computing Machinery: New York, NY, USA, 2017; pp. 241–251. [\[CrossRef\]](#)
13. Krebt, D.M. The Effectiveness of Role Play Techniques in Teaching Speaking for EFL College Students. *J. Lang. Teach. Res.* **2017**, *8*, 863–870. [\[CrossRef\]](#)
14. Sihotang, S.; Zaharani, H. The Effect of Role Play Technique on Students' Speaking Achievement. *J. Mhs. Fak. Ilmu Sos. Dan Kependidikan* **2020**, *1*, 168–180.
15. Tabak, F.; Lebron, M. Learning by Doing in Leadership Education: Experiencing Followership and Effective Leadership Communication Through Role-Play. *J. Leadersh. Educ.* **2017**, *16*, 199–212. [\[CrossRef\]](#)
16. Shutenko, A.; Shutenko, E.; Ryzhkova, I.; Koreneva, A.; Sidorova, M.; Rotaryanu, L. The Use of Web-Quests in Foreign Language Training of Students of Non-Linguistic Specialties. *Rev. Espac.* **2019**, *40*, 7.
17. Brattseva, E.F.; Kovalev, P. The Power of Case Study Method in Developing Academic Skills in Teaching Business English (Time to Play). *Lib. Arts Russ.* **2015**, *4*, 234–242. [\[CrossRef\]](#)
18. Hikmah, Y.S. Application of Problem Based Learning Models in Improving Soft Skills. In *Advances in Social Science, Education and Humanities Research. Proceedings of the 5th UPI International Conference on Technical and Vocational Education and Training (ICTVET 2018)*; Atlantis Press: Amsterdam, The Netherlands, 2019; Volume 299, pp. 567–571. [\[CrossRef\]](#)
19. Sadia, D.; Ahmed, D.; Suleman, N.; Abbas, M.Z.; Nazar, U.; Razzaq, H.S.A. The Problem-Based Learning Approach towards Developing Soft Skills: A Systematic Review Skills. *Qual. Rep.* **2020**, *25*, 4029–4054. [\[CrossRef\]](#)
20. Jadmenova, D.A.; Tsay, E.N. Case Study Method for English Language Teaching. In Proceedings of the LXXVIII International Scientific Review of the Problems and Prospects of Modern Science and Education, Boston, MA, USA, 20 February 2021; pp. 40–43.
21. Taufiq, W. A case study of an ESL Student learning English in an English Speaking Country. *Pedagog. J. Pendidik.* **2016**, *5*, 287–296. [\[CrossRef\]](#)
22. Roell, C. Using a Case Study in the EFL Classroom. *Engl. Teach. Forum.* **2019**, *57*, 24–33.
23. Niculina, N. Teaching English with the Case Method—A Tentative Approach. *Euromentor J.* **2019**, *10*, 25–38.
24. Seitkazy, P.B.; Toleubekova, R.K.; Amanova, A.K.; Tashetov, A.A.; Iskakova, G.; Demissenova, S.S. A Web-Quest as a Teaching and Learning Tool. *Math. Educ.* **2016**, *11*, 3537–3549.
25. Deryabkina, A.V.; Semergey, S.V. Didactic Opportunities and Terms of Use of Web-Quest Technology in Professional Training of Students. *Kant* **2021**, *1*, 217–222. [\[CrossRef\]](#)
26. Kupryaeva, M.; Mamai, O.; Panofenova, L.; Syreskina, S.; Chigina, N. Soft Skills Development in Personnel Training. In *E3S Web of Conferences*; EDP Sciences: Les Ulis, France, 2021; Volume 273, p. 12017. [\[CrossRef\]](#)