МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ
РОССИЙСКОЙ ФЕДЕРАЦИИ
Федеральное государственное автономное образовательное учреждение
высшего образования
«ТЮМЕНСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ»

ШКОЛА ПЕРСПЕКТИВНЫХ ИССЛЕДОВАНИЙ (SAS)

РЕКОМЕНДОВАНО К ЗАЩИТЕ В ГЭК
Директор школы
(Ph.D., кандидат филологических наук)
_____ А.В. Щербенок
___26 мая___ 2022 г.

ВЫПУСКНАЯ КВАЛИФИКАЦИОННАЯ РАБОТА
магистерская диссертация

DEVELOPMENT OF SOFT SKILLS IN A TECHNICAL UNIVERSITY /
РАЗВИТИЕ SOFT SKILLS В ТЕХНИЧЕСКОМ УНИВЕРСИТЕТЕ
44.04.01 Педагогическое образование:
Магистерская программа «Экспериментальное высшее образование»

Выполнила работу
студентка 2 курса
очной формы обучения

Корепина Наталья
Алексеевна

Научный руководитель
доктор наук в научной области
общественных наук научного направления
педагогических наук

Турк Маркс

Рецензент
кандидат химических наук,
доцент
проректор по учебной работе ИРНИТУ

Смирнов Владимир
Владимирович

Тюмень
2022

MINISTRY OF SCIENCE AND HIGHER EDUCATION
OF RUSSIAN FEDERATION
Federal Autonomous Educational Institution of Higher Professional Education
«UNIVERSITY OF TYUMEN»

SCHOOL OF ADVANCED STUDIES

GRADUATE THESIS

DEVELOPMENT OF SOFT SKILLS IN A TECHNICAL UNIVERSITY /
РАЗВИТИЕ SOFT SKILLS В ТЕХНИЧЕСКОМ УНИВЕРСИТЕТЕ

44.04.01 Pedagogical education
Master degree program «Experimental Higher Education»

Completed by the
*student of year 2
of full enrollment*   Korepina Natalia
                                                                    Alexeevna

Supervisor
*PhD., Professor of
higher education
pedagogy*   Turk Marko

Reviewer
*Candidate of Chemical
Sciences, Associate
Professor,
Vice Rector for
Academic Affairs of
INRTU*   Smirnov Vladimir
                                                                Vladimirovich

Tyumen
2022

TABLE OF CONTENTS

LIST OF ABBREVIATIONS AND NOTATIONAL CONVENTIONS

1. ARWU - Academic Ranking of World Universities

2. CDIO - Conceive – Design – Implement – Operate

3. e.g. - the Latin phrase *exempli gratia*, meaning *for example*

4. EFL - English as a Foreign Language

5. ELT - English Language Teaching

6. ESL - English as a Second Language

7. ESP - English for Specific/Special Purposes

8. et al. - the Latin term *et alia* which means *and others*

9. etc. - the Latin abbreviation for *et cetera* that means *and other similar things*

10. FGBOU VO - Federal State Budget Educational Institution of Higher Education

11. FSES HE - Federal State Educational Standard of Higher Education HCD - human-centered design

12. HE - Higher Education

13. HSE - Higher School of Economics (University name)

14. i.e. - stands for *id est*, which is Latin for *that is*

15. ibid. - Latin, short for *ibidem,* meaning *the same place*

16. ICT - Information and Communication Technology

17. IEP - Integrated Engineering Program (at UCL)

18. IT - Information Technology

19. ITC - Information Technology Competency

20. INRTU - Irkutsk National Research Technical University

21. MC-21/MS-21 - a medium-range aircraft, Russian civil airliner

22. MIT - Massachusetts Institute of Technology

23. n.d. - no date; not determined

24. NEET - New Engineering Education Transformation (the program at MIT)

25.   OECD - Organization for Economic Co-operation and Development

26.   PBL - Problem-based learning

27.   pcs. - pieces

28.   PjBL - project-based learning

29.   PJSC - public joint-stock company

30.   PPL - project-oriented problem learning

31.   QS - world university ranking by Quacquarelli Symonds

32.   R&D - Research and development

33.   RF - Russian Federation

34.   SCL - student-centered learning

35.   SDG - Sustainable Development Goal

36.   THE - Times Higher Education

37.   UCL - University College London

38.   UK - United Kingdom

39.   UNESCO - United Nations Educational, Scientific and Cultural Organization

40.   USE - Unified State Exam

INTRODUCTION

For 20 years in a row, *soft skills* have become important for the global employment market in various fields. *Soft skills* are often equated with terms such as *people skills*, *non-professional skills, employability skills*, *key skills* and *transversal skills*. Therefore, the university graduates are considered key economic stakeholders "in the drive towards enhancing value-added products and services in an economy demanding stronger skill-sets and advanced technical knowledge" [Tomlinson, 2012, p. 408].

According to Tomlinson [2012, pp. 409-410], the connection between higher education and the labor market consists of three aspects: 1) "in terms of the knowledge and skills that HE transfers to graduates and which then feeds back into the labour market"; 2) graduate credentials "serve as signifiers to employers and enable them to 'screen' prospective future employees"; 3) the development of students' personality or "the enrichment of personal and cultural attributes".

Needless to say, higher education stakeholders (policymakers, employers, fee-paying/budget funded students, parents, etc.) claim "clear and tangible outcomes in response to increasing economic stakes" [ibid., p. 411]. In this context, they want to be certain of the existing link between university credentials and future career rewards. As a result, there is a necessity of "better equipping graduates for the challenges of the labour market", producing "a more highly educated and flexible workforce" [ibid., p.411]. For example, in the UK there is "a strong focus on 'employability' skills, including communication, teamworking, ICT and self-management being built into formal curricula" [ibid., p. 412].

Moreover, the era of knowledge-based economy offers diverse challenges for individuals, even if they are highly educated. "Individuals have to flexibly adapt to a job market that places increasing expectation and demands on them; in short, they need to continually maintain their employability" [ibid., p. 413]. Here, a question of lifelong learning, student autonomy and self-regulation arises that are best trained during the university studies.

Frequently, graduates experience a mismatch between their qualifications and returns in the labour market. Therefore, one cannot say for sure about graduate satisfaction with university studies preparing for their futures in employment.

Changing the university image and status to the prestigious look will cause different attitudes towards the institution and give the rise of a cohort of alumni being its reputational brand or "so-called reputational capital" [Harvey, Moon, Geall, 1997; Brown, Hesketh, 2004]. In addition, the alumni associations are the greatest sources of support in teaching, research, employment, and endowment fundraising for university needs.

Higher standards of graduate social and cultural capital open up greater opportunities not only for the graduates but also for the university positioning on the labor and education services market. For students, this will mean acquiring hard skills added by soft skills developing cultural, personal behaviors and interpersonal qualities forming students' "personal capital" [Tomlinson, 2012, p. 420-421].

Thus, the development of graduate attributes, employment increase and returns cannot only be dependent on the usual notions of extracurricular activities, voluntary work, internship schemes and international travel exploited at universities. These concepts demand a more personalized and individualized approach to the student, as future careers require being "a credible adult identity" [ibid., p. 422]. When a university has a clear picture of their final educational outcome - the student/graduate, and the ways to realize that, then this institution may not worry about access, quality and own prestige.

In the current conditions of rapid technological development in all fields of knowledge, universities are challenged to change and move away from the usual ideas about how to educate today's youth. Transformational processes in higher education are supported at the state/government level, because universities are the main place for the training and education of the future generation of conscious and highly qualified citizens of Russia. Having posed the urgent necessity of soft skills

development for university graduates, let us have a closer look at the definitions and interpretations of the soft skills in various sources.

Soft skills, as a phenomenon, are investigated by various scientific disciplines such as pedagogy, psychology, sociology, management and others. The aforementioned skills are attracting more and more attention in recruitment, career development, professional growth and success.

For better understanding of the discussed concept, let us consider the definition of soft skills provided in the dictionaries. In Macmillan dictionary, soft skills are "skills that enable someone to work well with other people, for example being able to communicate effectively, or to work in or lead a team" [Macmillan, 2022]. In addition, they are "personal qualities that enable you to communicate well with other people" [OLD, 2022]. According to Collins Cobuild, "soft skills are interpersonal skills such as the ability to communicate well with other people and to work in a team" [Collins, 2022]. Summarizing the extracted meaning, the key words refer to the person's capability to perform certain tasks of the non-technical origin connected with personal efficiency in communication dependent on one's personal qualities and interpersonal skills. Moreover, in this instance, communication means that there should always be interaction and collaboration with others bringing mutual results. Therefore, the skills can be called *transversal* [Robles, 2012].

Different definitions and understandings of *soft skills* can be found in the pedagogy literature. For instance, Lozovoy et al. [Lozovoy, Zashchitina, Nazvanova, 2019, p. 83] primarily define the concept as "a set of certain personal qualities: responsibility, discipline, self-management". Another interpretation of *soft skills* is associated with managerial skills. They are communication (e.g. the ability to listen and hear), teamwork, emotional intelligence, time management, leadership, problem solving, critical thinking [Bika, 2019].

Following the Boostrs Soft Skills study, there is a core of eight transferable skills or soft skills equally important for any job placement such as "communication written and oral, time management, decision-making and judgment, team spirit,

adaptability, analytical skills and autonomy" [The Importance of Soft Skills…, 2020, p. 3]. These soft skills are thought to be fundamental.

The study results demonstrate the recruiters' demands for soft skills development stating that a candidate for a prospective job placement should acquire a basic set of skills like communication ability, being self-organized, able to make decisions, and having a team spirit [ibid, p. 10]. Thus, not only hard skills are sufficient to be demanded on the labor market under the current economic and technological shifts. The better part of soft skills are centered on the communication abilities of effectively explaining, describing and persuading. The communication experts argue that 85 percent of business success results from well-developed and advanced communication skills [Communication skills, 2004].

In the recent research on soft skills conducted by the Department of Management of HSE University, Perm Campus, the key skills of the future and the view of employers-drivers in the Perm region and Russia on the development of soft skills are investigated [Rylova, 2019]. The scientists have found that there is no single list of soft skills. Moreover, each research group identifies its own classification. However, the most complete list and categories were formed by the World Economic Forum's Future of Jobs report. The study involved global driver employers across industries and identified 35 soft skills. Concurrently, all soft skills were divided into three key groups: 1) *cognitive and physical abilities*: flexibility, creativity, logical reasoning, problem sensitivity, mathematical reasoning, visualization; 2) *basic skills* of two types including *content skills*: active learning, oral communication, active reading, written communication, information literacy as well as *process skills*: active listening, critical thinking, introspection and analysis of others; 3) *cross-functional skills* such as *social skill*s (coordination, emotional intelligence, negotiation, persuasion, customer focus, teaching others) added by complex *problem solving skills*, *system skills* (decision making, systems analysis), *resource management skills*, *technical skills.* From the mentioned list, 10 soft skills are relevant for the Russian employers comprising five skills of the top importance:

active learning, coordination, negotiation, customer focus, complex problem solving skills.

Nowadays, there exist constant global trends of environmental, economic, and social challenges setting tasks to find the solutions for sustainable development via partnership. This trend is widely discussed in the OECD Education 2030 debates [OECD, 2018]. Accordingly, there is an increased need for a learner's agency nurturing in education as a way of recognizing their individuality and talents. In this fashion, change agents appear able to apply the constructed knowledge in unknown situations and evolving circumstances taking responsibility for their activities.

As a result, in the agenda of fast-changing world, there are the more increasing demands for competitive graduates able "to perform tasks creatively, make their own decisions, and work in a team that will facilitate the rapid development of science, industry and economy" on the employment market [Soft Skills Development…, 2021, p. 399]. This means that professional success does not only rely on the hard skills development, i.e. special academic skills providing "an expert level of special professional competencies, knowledge of the methods and procedures necessary for the successful performance of official duties" [Lozovoy, Zashchitina, Nazvanova, 2019, p. 82]. In addition to hard skills, soft skills matter under the permanent changes conditions.

During the last decade, on international and state levels, soft skills were implemented into the higher education landscape (i.e., university curricula). Following Raitskaya and Tikhonova [2018; 2019], Cinque [2016], these educational shifts gave rise to advanced requirements of the employment market that radically changed last century. Digitalization is dynamically spreading worldwide. More importantly, the employment market is transformed by creating positions and working places.

Therefore, the field of higher education needs reformation. However, there is an impressive discrepancy between graduates' competencies and the employers' demands, causing employment problems [Cinque, 2016]. Consequently, the topic

under consideration is currently important for science, research and society at present. Oftentimes, "global competition, the Internet, and the widespread use of technology suggest that the economy of the 21st century will create new challenges for the workforce" [Raitskaya, Tikhonova, 2019, p. 4]. To sum up, the educational reforms should aim at skills development. In order to achieve the stated objectives, international experience will give rise to further discussions.

The Sustainable Development of Higher Education changes the mindset of society towards collective responsibility for the future of humanity. Thus, this leads to the formation of global citizens, ready to solve environmental problems [Wals, Benavot, 2017]. In 2009, soft skills' classification was introduced in the EU regulations. For example, in 26 countries a Europass of skills has been put into practice. The pass confirms skills and facilitate the work process. Corresponding practices exist around the world (e.g. in China, North America, Australia, and Malaysia) [Raitskaya, Tikhonova, 2018]. One more issue for transformations is the 2014 report *Modernisation of Higher Education in Europe: Access Retention and Employability*. The authors discuss the priority choices of the recent graduates' employability [Towards identifying the soft skills…, 2020]. In addition, "Skills for a Digital World" program was initiated in the United States in 2016. This program indicates the relevance of professional and technical skills, general or interpersonal skills such as leadership, teamwork skills, and communication. This naturally requires the support and participation of the authorities.

The *importance* of developing soft skills is constantly debated in various studies [Billing, 2003; Weligamage, 2009; Jackson, 2010; Professional competence…, 2013; Ennis, 2018] to acquire subject-specific knowledge enhanced by professional competences. According to the research, carried out by Harvard University, Carnegie Fonder, and Stanford Research Institute, career success depends to a greater extent on students' soft skills than on professional subject competencies (75-85% vs. 15-25%, respectively) [Tsalikova, Pakhotina, 2019, p. 193]. As

previously stated, communication skills and the collaboration abilities are considered more beneficial from an employer's point of view.

It should be emphasized that students' gender, cultural background, personal qualities, goals and motivation are related to soft skills. Built upon these personal characteristics, skills are closely interrelated to everyday life and work, in response to various situations. A distinguishing feature of soft skills is their flexibility, so they can be associated with any profession, activity or initiative. Thus, the development of soft skills in higher education is a significant condition, transiting from university to the working place [Towards identifying the soft skills…, 2020].

Subsequently, it is very substantial to underline that the issue of embedding soft skills in higher education is *urgent* worldwide. As in Tang (2019), in the United Kingdom and Thailand, for example, higher education institutions take actions to enhance graduates' employment, serving as "human capital providers" [Tang, 2019, p. 1], as their graduates do not possess the fundamental soft skills by the end of their education. Furthermore, they have attempted to introduce the content on the employability increase and soft skills development on the courses delivered, having in mind the findings received in the course of their research stating that soft skills cannot be taught as "a stand-alone subject" [ibid., p. 6].

In this connection, there is a continual interest in higher education transformation (e.g. engineering education) focused on such important issues as identifying the content to be taught and the ways it should be designed and taught with the emphasis "on a broader range of knowledge, skills, and attributes (or habits of mind and modes of thinking) for engineering graduates" [Froyd, Wankat, Smith, 2012, p. 1351]. The authors come to the conclusion that "the knowledge, skills, and habits of mind that are needed for students to perform satisfactorily in an interdependent world" should be developed by introducing certain teaching approaches together with the influence of information, communication, and computational technologies on engineering education [ibid.].

Increasingly, Ranger & Mantzavinou [2018] stress the necessity of the design thinking development with the engineering students. It is apparent that not only critical thinking abilities and skills help advance in the professional field, but also the nurturing of real-world skills including flexibility, persistence and adaptability is demanded for future success. According to Crawley et al. [Implementing the NEET Ways of Thinking at MIT, 2020, p. 15], modern undergraduate engineering curricula are meant to equip future engineers with the thinking skills opening a strategic action vision to face challenges in favor of science and technology development.

To continue the discussion, MIT researchers are convinced of enormous shifts in the engineering profession that can be explained by new types of tasks to solve and the skills appropriate for approaching the problems are based on the types of real teamwork situations where effective communication is a leading factor. In that case, the sets of skills currently vary and the teaching technology should be flexible under the circumstances as well [Craig, Lerner, Poe, 2008]. This is precisely why "communication-across-the-curriculum programs", "communication-intensive (CI) curricular changes" [ibid., p. 280] gain popularity not only throughout American universities but also taken as good benchmark examples of more advanced educational practices abroad.

In this regard, the development of soft skills should be clearly connected and centered on the context of the engineering education referring to a certain lifecycle model like either CDIO (Conceive-Design-Implement-Operate), collaboratively developed by MIT and three Swedish universities (i.e. Chalmers University of Technology, Royal Institute of Technology, Linköping University), MIT's MMMM model (Measure-Model-Manipulate-Make) or five Leuven's (Belgium) "E"s (Engineering-Enterprising-Educating-Environmenting-Ensembling). No matter what terminology is used for the fundamental methodology, it is very important that universities place their students into real-life contexts of generating a process, creating a product, supported by the lifecycle model of product/process development and application [The context of engineering education…, 2008]. Furthermore, in

educational practice this approach is called contextual learning, rooting from the constructivism theory, equipping students with various learning experiences, assisting their becoming self-regulated learners.

It is especially noteworthy that pioneering benchmarks and professional requirements are being formed in Russian higher education [Tsalikova, Pakhotina, 2019]. Soft skills are integrated into business management curricula, but efforts are being made at the university level to implement them. In Russia, soft skills are most often in demand by international or IT companies [Raitskaya, Tikhonova, 2018]. Raitskaya & Tikhonova [2019, p.6] commented on the key competences that are critical for sustainable development in the higher education field: "synthesized sustainability research and problem-solving, systems-thinking competence, anticipatory competence, normative competence, strategic competence, and interpersonal competence".

Prospective employees must have professional qualifications, a set of professional and interpersonal skills (hard and soft skills), and personal qualities that meet the requirements of the employment market, in particular, and economy, generally. The looked for soft skills spectrum is social and communication skills, cognitive skills, emotional intelligence, added by personal qualities [Raitskaya, Tikhonova, 2018]. Hence, "universities and higher education at large will have to go along and find an uneasy way to meet the employability standards" [Raitskaya, Tikhonova, 2019, p. 7]. Thus, this study is aimed at proposing applicable methods and describing possible solutions for the development of soft skills in Russian higher education.

Taking into consideration all the stated viewpoints and the general state-of-art reflecting current agendas, the *present thesis purpose* is to investigate soft skills development in higher education, in general, and, particularly, in a technical university as engineering institutions are platforms for launching knowledge intensive technologies by educating and training skillful graduates to acquire a complex set of hard and soft skills. There is an attempt to conduct a research in the prism of modern

trends in the development of higher education on the example of a regional Russian university, namely: Irkutsk National Research Technical University, providing an overview of reliable literature.

The *object* of research in this work is the development of soft skills in a technical university.

The *subject* of the research is the ways and means of developing soft skills in a technical university.

The *objectives* of the research are as follows:

1. to define technical preconditions of experiment design;
2. to determinate and enrich the essence of the concept of *soft skills* based on the literature review*;*
3. to identify methods and techniques for *soft skills* formation;
4. to select diagnostic methodology and conduct experimental work to identify the level of soft skills development;
5. to develop and test methodological recommendations for the soft skills development in a technical university;
6. to sum up the research findings.

The study applied the qualitative and quantitative methods of action research to examine the soft skills development data based on observations, surveys, interviews, teamwork-based collaboration and communication as well as teaching interventions making up an experimental part of the research work.

The research question of the current work is *How to enhance the development of soft skills in a technical university?*

The answers to this question will come in the subsequent chapters of the writing.

CHAPTER 1. TECHNICAL PRECONDITIONS OF EXPERIMENT DESIGN
1.1. EXPERIMENT CONTEXT: IRKUTSK NATIONAL RESEARCH TECHNICAL UNIVERSITY

Having received the status of *National Research University* in 2010, Federal State Budget Educational Institution of Higher Education "Irkutsk National Research Technical University" or FGBOU VO "INRTU" (hereinafter - INRTU) is a leading engineering institution in Eastern Siberia, famous for its 90 years of history and solid R&D support and facilities. The university is in the capital of the East Siberia region, the city of Irkutsk. It "provides a wide range of higher education and vocational training courses for a strong and diverse community of learners" [INRTU, 2021]. The university has its unique and contemporary science and technology infrastructure with the up-to-date educational trends comprising of 12 schools, "a school of secondary professional education, a military training center, 100 educational and research laboratories" [ibid., 2021], two international laboratories, two coworking centers, and a university branch in the town of Usolye-Sibirskoye. In addition, the INRTU Technopark houses research laboratories, educational, production, corporate research centers, a business incubator, and a spacious conference hall [INRTU, 2021].

The priority goal of INRTU is to nurture a new generation of professionals with the basic skill set (including hard and soft skills) and learning outcomes needed to succeed in an ever-changing world. Therefore, the university offers 88 undergraduate programs lasting 4 and 5 years (Bachelor and Specialist Degrees), 54 Master's and 50 Ph.D. programs in its schools and departments [INRTU, 2021]. Each educational program is a platform of ideas exchange and an atmosphere of creativity and collaboration.

Currently, the university enrolls 18 388 Russian and international students in 192 higher education programs, 15 vocational training courses, 14 English taught programs, including 1083 full-time international students (6 % of all full-time students) [INRTU, 2021]. The university trains at least 150 international freshmen,

yearly organizing summer and winter schools for more than 300 international undergraduates. The academic faculty staff number 1070 people, 18 of whom are international faculty staff from eight countries. The university has links with international partners from 21 countries in the scientific and educational fields, including international associations, networks, organizations, gaining its visibility internationally. Moreover, it actively collaborates on double degree programs with the Asian and European partner universities from the Republic of Korea, the Czech Republic, Finland, France, Germany, China, Poland. Further, INRTU provides services to foreign companies in areas as diverse as oil and gas exploration, composite materials processing, chemical synthesis technology, BIM technologies in construction, environmental risk assessment, and integrated environmental modeling [INRTU, 2021].

On a national and regional scale, the university makes a significant contribution to the economy development and the prosperity of society. For example, INRTU contributed to constructing the most sophisticated domestically built civil airplane, MC-21 (MS-21). Scientists and researchers of INRTU, together with employees of the Irkutsk Aviation Plant, a branch of PJSC Irkut Corporation, developed a complex of competitive aviation technologies. The contribution of INRTU to creating a new Russian airliner MC-21 consists of the development and introduction into serial production of a complex of competitive design technologies, design and technological preparation, and manufacturing of an aircraft. Two large-scale projects were implemented in close contact with the Russian Federation (RF) Government under Decree # 218 (cooperation between universities and enterprises) for five years (2010-2015). More than 100 teachers, graduate, and undergraduate students were recruited.

Subsequently, in 2017, the university won the RF's Government project called "Universities as Centers of Innovation". This status confirms serving not only regional but also national interests. The university creates a vital ecosystem and implements promising innovative projects bringing positive effects on the economic

and social sector both the Irkutsk region and the country. Another example of serving national and regional needs is researching 24 out of 69 fields in the RF's State Classifier of Scientific and Technical Information. The fields of expertise cover 6 of the nine priority areas of the RF's sustainable development of science, technics, and technology [INRTU, 2021].

All the facts mentioned earlier and details on the university status and overall achievements descriptions allow us to look closer at the INRTU status, and the ways we evidence it now. The main focus of INRTU in the center of the Asian continent has been to provide world-class research and sustainable development in priority areas necessary for the region and the country, effectively integrating research, innovation, and education for science and critical sectors of the economy.

Moreover, this focus responds to new global sustainable development goals (SDGs) set forth by UNESCO (2015), creating a just, educated, and socially responsible society, protecting the planet, ensuring prosperity, and improving people's well-being. As can be seen, INRTU supports these ideas and manages its research, academic and economic activities according to the principles set out in 17 SDGs [INRTU, 2021].

Finally, the curriculum is constantly being improved at the university, reflecting new trends in pedagogy. For example, there is a pilot interdisciplinary Russian-taught course named *System Critical Thinking* based on the knowledge of the four disciplines, Philosophy, Psychology, Theory of Management and Logics, tailored to meet students and employers needs by developing crucial soft skills for better adaptability and flexibility in the future career and life.

The most momentous fact about the university is its current status as a member of the Priority-2030 Excellence program. Brief information about the university is presented on the official program website https://priority2030.ru/analytics [Priority 2030, 2021].

According to the data provided, the university participated in the creation of research and educational centers, the program "Startup as a Diploma". The

"Research Policy" section provides key indicators of the university at the grant application time. Thus, the share of financial support of the university from R&D in the total income of the university for the last reporting period amounted to 9.5%. The total of citations for the period 2016-2020 (Scopus) is 4217, and the number of publications such as "Article" and "Review" (Scopus) is 194.612 pcs. The total number of publications for the period 2016-2020 (Scopus) is 1878, where the number of publications classified as QI and QII (Scopus) is 65.313.

The section "Educational Policy" of INRTU presents data on the number of students on the budget full-time basis (77.1%) and contractual basis (22.9%). The share of foreign students is 9.3% of the total student body. The average 2020 USE score is 67.39 for students studying on a budget basis, and 58.56 for contract students.

In terms of education levels, the leading positions are represented by the bachelor's degree (62.4%), followed by a specialty (17.2%), a master's degree (18.1%), and training of highly qualified personnel (2.3%). At INRTU, the main area of knowledge is *engineering* (86.9%).

The teaching staff consists mainly of candidates of sciences (64.9%), and doctors of sciences (10.9%). Foreign professors make up only 1.6% of the total teaching staff.

For the period 2013-2020, the university is not represented in the international rankings QS, THE, ARWU.

The university budget mostly consists of the federal budget (72.5%). INRTU receives the rest of the funds from the local budget and extra-budgetary injections. The financial model of the organization (Model 40/30/30) includes 3 values: budget financing (68.54), extra-budgetary income of the university associated with the R&D implementation, as well as the provision of services (6.08). The extra-budgetary income from educational activities is 25.38.

INRTU belongs to the 1st group of the universities' development ensuring the socio-economic development of territories, strengthening the personnel and scientific

and technological potential of organizations in the real sector of the economy and the social sphere.

Following the INRTU Development Program, the University mission is to create, attract and integrate knowledge and technologies in relation to the principles of engineering thinking and professional competencies that ensure the transformation of the university and industries in the region, Russia and the countries of Eurasia.

The strategic goal of the University is to become a reputable autonomous engineering university with leading positions in the countries of Eurasia by 2030. The achievement of this goal is realized through the concentration of resources and human capital on solving large-scale tasks crucial for the development of the region and the industry of Russia, and the countries of Southeast Asia, in partnership with major business partners, as well as in close cooperation with leading universities and research centers in Europe and Asia. The dominant feature of the strategy is to build up research and educational potential through consortia with partners from industries and the academic environment, to create a modern infrastructure, to attract leading scientists and practitioners, to involve students and teachers in fundamental and applied research, to support all participants in the research process, to form a management system based on digital technologies [Development program…, p. 9].

The target model of the University's development is the transformation of the R&D system and commercialization of intellectual activity results with the participation of industrial partners and students in the interests of key sectors of the real economy of the Russian Federation. INRTU aims at achieving sectoral and territorial leadership in the areas of its strategic projects.

The university model is self-reproducing and scaled by involving new students in R&D and the creation of intellectual property results.

The modern format of education, centered around project-based learning, individualization and involvement of students in engineering, research and entrepreneurial projects, will allow students to form a fundamentally new quality of competencies, including digital ones. The university graduates will continue to work

on the university's developments implementation in the real economy sector, providing industry leadership and contributing to new R&D orders from employers [Development program…, p. 9].

The educational policy describes the basic principles of designing educational programs, planning, organizing and implementing the educational process, ways to ensure and control the education quality and effectiveness, its integration with professional, research and entrepreneurial activities. The purpose of the university's educational policy is to develop human capital, ensure the university competitiveness in the education market, and promote the economic development of the region and individual industries in the digital economy.

Currently, bachelor's degree programs are implemented on the basis of independently established educational standards. The bachelor's and specialty programs offer project activity as a separate course. The individualization of educational trajectories (electives, optional additional modules) are also considered standalone.

The new education policy aims at training graduates who are in demand at leading Russian enterprises and are able to take leading positions in their industries on a global scale in the digital economy.

In 2022-2024, it is planned to implement a new educational policy primarily in the priority areas of the university's strategic projects. By the end of 2024, the university is to adjust and scale other areas of university training until 2030 [ibid., p. 11].

The University plans to open new English-language research and entrepreneurial educational programs for the university strategic projects. This will attract foreign students, as well as develop the English-speaking competencies of Russian students and prepare them to work together with foreign partners and commercialize innovations in foreign markets [ibid., pp. 12-13].

Moreover, the University develops additional education programs:
- to deepen students' competencies or provide additional qualifications;

- professional programs for employees at specialized enterprises taking into account modern changes in the industry;

- programs for the university faculty on the development of digital literacy and soft skills.

By 2024, it is planned to implement academic mobility programs for the formation of digital competencies in the priority areas of geosciences and digital production technologies, as well as in construction and energy [ibid., p. 14].

The research and innovation policy is aimed at transforming the research and development sector of the University in concordance with the National Goals and the Strategy of Scientific and Technological Development of the Russian Federation in order to achieve leading positions in the countries of Eurasia in key priority areas [ibid., p. 15].

Therefore, the University focuses on two strategic projects development:

1) i.GeoDesign;

2) Baikal Center for Digital Production Technologies - Digital Industrial Technologies (i.DIT).

It is necessary to underline that in the course of the Development Program, INRTU uses the resources of the region, which has a great potential of scientific organizations, partner universities, large state-owned companies and entrepreneurs. It becomes an integrator of competencies and modern production technologies. Much attention within the priority areas is paid to the issues of ecology and rational use of resources, which makes it possible to contribute to the achievement of the national goal - a comfortable and safe environment for life. Moreover, to achieve its goals, INRTU is significantly transforming the management system of the research and development sector [ibid., p. 16].

The human capital management policy will be aimed at transforming the university's R&D system with the large-scale involvement of students, postgraduates and young scientists in projects in order to develop their professional, research competencies and ensure sectoral and territorial leadership.

A significant stage in the policy development will be the creation of a competitive environment [ibid., p. 19].

The INRTU management system is targeted at ensuring transformational processes at the University in order to increase its efficiency. The principle of building a management system is transparency and reasonableness of decisions, which is ensured by the openness of data (CDO or Chief Data Officer).

The financial model of INRTU assumes an increase in consolidated revenues from the federal budget and from income-generating activities due to the main track, meaning an increase in the share of students and talented teachers involved in educational, scientific, innovative activities [ibid., p. 22].

Thus, Priority-2030 has a huge impact on INRTU, in particular, and the Russian higher education, and its main areas, in general: education, research and innovations and the collaborative work based on them. The image as well as quality of science and higher education are being transformed. This is possible due to the state support and competition. The role of the university, scientific organizations and enterprises cooperation (consortia) is crucial. The creation of advanced research laboratories, design centers, prototyping centers, technology transfer centers and other scientific and innovative departments will attract leading world scientists to Russian universities, decreasing brain drain and improving creativity and new technological decisions. Students and graduates' involvement in research and innovation activities, the implementation of creative and socially oriented projects are very encouraging for the Russian students and attracting for foreign citizens to study and work at Russian universities. Also, there is a connection between foreign student bodies enrolled in the universities and the number of Scopus publications issued by the leading universities. All in all, the competition leads to the quality of research-intensive technologies and the recognition of the outcomes in quality papers (Q1-2 publications).

1.2. SOFT SKILLS AS A CHALLENGING FACTOR FOR STUDENTS AND TEACHERS

The reason why soft skills are so popular among academics and researchers is that universities, as part of society, are responsible for the learning outcomes of their graduates [Ehlers, Kellermann, 2019]. Additionally, according to Ehlers and Kellerman, universities are shaping the world of tomorrow [Ehlers, Kellermann, 2019]. Social skills are at the center of social interactions in society. Majid et al. (2012) examined students' attitudes towards interpersonal skills for their education and future work. The survey was conducted among undergraduate business students from four Singapore universities. The results showed that social skills are very important for social cohesion in education and work. The students drew attention to 5 influential social skills such as teamwork, collaboration, decision making, problem solving, time management, and critical thinking skills [Importance of soft skills for education…, 2012, pp. 1037-1042].

The students answered that soft skills are substantial for finding a job and improving their careers, but more than half of respondents agreed that professional skills (hard skills) are easier to acquire than soft skills. Notwithstanding, the better part of the respondents disagreed that soft skills cannot be improved through practice. It turned out that professional skills take precedence over social skills. Following the authors, students are well aware of soft skills significance [ibid., pp. 1037-1042].

In the Russian higher education landscape, Raitskaya & Tikhonova [2018] discriminated three groups of soft skills, namely: "(1) *social and communicative skills* (communicative skills, interpersonal skills, teamwork and leadership, social intellect, responsibility, ethics of communication); (2) *cognitive skills* (critical thinking, problem-solving skills, innovative thinking, intellectual load management skills, skills of learning, information skills, time management skills, the ability to work under pressure); (3) *personal attributes and emotional intellect* (emotional intellect, integrity, optimism and positive thinking, flexibility, creativity, motivation, empathy)" [Raitskaya, Tikhonova, 2018, p.7]. As can be seen from the detailed

definition of the soft skills groups, it is observed that the mentioned groups are focused on different learning modes, teaching techniques and methods (like lecture, seminar, workshops, simulations, individual/group project work, case studies, etc.), and types of collaboration or participation.

The report of the Organization for Economic Cooperation and Development presents the results of a three-year study "Skills for Social Progress. The Power of Social and Emotional Skills", designating emotional intelligence and social skills central to students' life and professional success [Tsalikova, Pakhotina, 2019, p. 193]. However, in global higher education there are still thoughts and speculations about soft skills development.

For getting a common understanding on the issue in Russia, some interviews about soft skills implementation at Russian universities in Irkutsk, Tyumen, Khanty-Mansiysk and Kazan were carried out in December, 2021. Seven respondents (3 middle managers and 4 teachers), answered the questions about the status of soft skills in documentation and their development in the university environment. The results of the interview have been interpreted using hermeneutical analysis, which allows to understand the deep meanings of the statements. Based on the data obtained, the following conclusions can be drawn:

1. There exist a difference between the required soft skills and competencies listed in the educational standards and those that students really acquire at the end of their studies.

2. There are obstacles preventing from soft skills development. They are low quality of teaching, lack of proper teaching materials, an insufficient amount of teaching hours.

3. There is a distorted perception of soft skills. The interviewees think that the soft skills listed in the standards, educational programs and syllabi are *artificial, non-specific*, *indistinct* and *outdated*.

Analyzing the respondents' answers, it can be concluded that university faculty do not properly understand the basic concepts of soft skills. Moreover, they lack the

necessary knowledge and skills to apply modern educational technologies and methods for students' soft skills development.

Having identified the problem, the next step was a needs' analysis survey carried out to get a better understanding of the faculty needs and the state-of-art of the teaching skills at INRTU. The interviewees were offered a questionnaire starting with six questions about their background information concerning employability details such as their current status, academic achievements, position, date of birth, experience and expertise. Out of 103 respondents, full-time employees make 91,3%, and 8,7% are part-time ones. 51,5% of interviewees have learned degrees and academic titles, while 31,1% possess learned degrees, and 3,9% have only academic titles. The rest of the interviewees do not have any degree or title. Basically, they are engineers, postgraduates, and other university's staff. Among 103 respondents, there are 11 professors, 74 assistant professors, 12 senior teachers (10,7%, 71,8%, and 11,7%, accordingly). Ninety-eight interviewees (95,1%) have practical expertise in the subject areas taught. Of those, 49 respondents have been teaching their courses for more than 20 years; 31 respondents have been employed from 10 to 20 years; 10 teachers from 5 to 10 years (47,6%, 30,1%, and 9,7%, respectively). Furthermore, the second half of the questionnaire consists of 18 questions relating to teaching competencies and skills. The faculty were to answer the questions from the two suggested perspectives: 1). "How important is this activity to the successful performance of your job?" [Hicks, Hennessy, (n.d.).] 2). "How well do you consider that you currently perform this activity?" [Hicks, Hennessy, (n.d.)].

Table 1

Survey data on competencies significance

Competency	Activity Significance ("fully agree" answers,%)	Quality of the Activity Performance ("fully agree" answers,%)
participation in the advanced teacher training courses	58,3	45,6

using online educational environment (e-learning)	53,4	41,7
using different interactive tools (presentations, visuals, handouts, simulators, etc.)	72,8	43,7
using task-based activities, PjBL, workshops, pair/group activities	62,1	50,5
using individual work, dictation or copying from the blackboard/ slides	21,4	32
learners' participation in discussions	64,1	46,6
learners' independence, creativity	55,3	38,8
teacher's role being a facilitator and monitor	51,5	38,8
student-centered learning use	34	26,2
flexibility tackling learners' needs (deadlines, make-up exams)	26,2	31,1
developing critical thinking and problem solving	71,8	40,8
encouraging active learning, collaboration among students	53,4	37,9
using effective strategies and techniques engaging in the learning process	54,4	39,8
timely constructive feedback	68,9	57,3
developing students' talents and	35,9	25,2

skills		
conducting classes in English	23,3	20,4

(Continuation of Table 1)

Analyzing the survey results shown in Table 1, it can be reported that 50% of the interviewees are aware of the need for teaching competencies upgrading, and 45,6% of the faculty take part in such courses. The information technology competency related to e-learning and online course delivery is a substantial part of 41,7% of the respondents' practice. Almost half of the surveyed faculty apply interactive tools, pair and group work, as well as other student-centered interactions. Nevertheless, the instructor-based activities are still implemented by 32% of the teachers. Conversely, the application of students' active learning in discussions is traditional during classes delivery for 46,6% of the interviewees. 38,8% of respondents are, in their opinion, facilitators and mentors, helping their students develop autonomy and creativity.

Finally, only 26,2% of the respondents apply a student-centered approach in their classes; which is why the faculty are not very much aware of the ways to develop students' critical thinking, diverse talents and skills in their classrooms. As a consequence, they do not specifically encourage active learning, in-class participation, interaction, collaboration, cooperation among students (as few as 37,9% of the teachers make their students involved), as well as do not have necessary teaching strategies. 57,3% of the surveyed respondents tend to provide the students with timely constructive feedback. The class instruction in English is very low as only 21 teachers can eventually deliver classes for international students.

Table 2

Survey data on the assessment types

Statement	Formative assessment	Summative assessment

using the assessment types from the list	questioning - 89%	oral assignment - 78%
	practical assignments - 89%	creative work - 58%
	tests - 82%	computerized testing - 57%
	presentations - 76%	written exam - 43%
	essay writing - 35%	written testing - 42%

Summing up the survey data on assessment, it can be acknowledged that the teachers apply the types of formative and summative assessment, as demonstrated in Table 2. Additionally, they suggested other types of formative and summative assessment used in their teaching practices, which were not stated in the survey. Their list is shown in Table 3.

Table 3

Other forms of assessment

Formative assessment	Summative assessment
MP3 answers	Self-assessment
Group presentations	Peer assessment
Role play	Discussion
Showcase	Simulation
Report	Case study presentation
Creative practical activities	
Case study	
Art object pictures and their description	
Interview-based communication	

Besides, the survey contained a commentary part, where the faculty could share their insights, implications, ideas, opinions and suggestions. More importantly, they described their needs for preventing professional burnout. Moreover, the development of some soft skills like emotional intelligence, stress and time management, leadership, and conflict resolution training is very necessary.

Consequently, teachers' training courses enhancing those skills should develop their teaching and interpersonal skills in the experience exchange in the relevant knowledge field. It proves the creation and implementation relevance of the program aimed at enhancing teaching competencies.

Within the study, there was an interview with the university administration (Vice-rector for Academic Affairs). The questions were connected with the ideal teacher's image articulation in higher education, the essence of teaching excellence, lifelong development, and the improvement of teachers' competencies.

According to the conducted interview, the teacher's image is analogous to a genius in Pedagogy. This means that a teacher is a highly-qualified educated person with good manners, a broad perspective, having their professional passion, education mission, hobbies and interests. It is an ideal teacher's vision. Alternatively, the concept of teacher excellence consists in becoming a teaching expert through practice.

In obedience to Russian legislation, advanced training of teaching staff relates to improving information technology competencies, main defectological knowledge, inclusive education, labor protection knowledge, as well as safety. All these forms of training are available at the university. There exist professional development programs, however, they are retraining. For example, teachers can become accountants, masters of the drilling rig, slingers. In addition, there are advanced training programs for those who aim at enhancing their foreign language proficiency.

Unfortunately though, teachers' competencies training is not available in the university, as INRTU is an engineering institution. It should, however, be noted that any teacher in the era of the knowledge economy and digitalization is obliged to acquire the most demanded skills such as effectively communicating, being able to build a dialogue with a diverse audience, empathizing, public speaking, critical thinking, and basic ICT competencies. The higher education system itself calls for emphasizing these competencies' roles. Therefore, they need to be developed through curriculum changes and pedagogical practices. Increasingly, breakthrough education

technologies are very significant. As a consequence, teacher development programs are very well-timed and required. Teacher training courses enhance teachers' motivation, offering new setting and environment to feel huge difference between conducting an old-fashioned classes ("sage on the stage") and the ones with the use of interactive teaching technologies (student-centered approach).

For the time being, in today challenging world of constant and unpredictable changes, including the COVID-19 pandemic, the best university practices should reflect teachers' abilities and skills to conduct lectures and seminars offline and online, creating and applying various interactive tools (presentations, handouts, visuals, real equipment, simulators, etc.). Teachers' competencies enhancement consists of actively engaging students in the learning process with the effective strategies, techniques, and interaction patterns (active learning, students' collaboration, team problem-solving and project work, in-class writing, etc.) instead of passive knowledge delivery. The focus trendy teaching idea is student-centered learning (SCL). This approach helps overcome the learning and teaching problems appropriate to traditional education approaches concentrating on the learners' needs, rather than teacher's input. An additional point is that in-demand faculty have the developed soft skills such as critical thinking, creativity, problem solving, flexibility, being constructive in terms of feedback, and reflective on their teaching practices. The teacher's function is multifaceted: becoming a facilitator, monitor, moderator, guide and tutor to develop the varied students' talents and skills. As mentioned above, the teachers' soft and professional skills help provide the teaching focus to their students.

Another attempt of soft skills formation research and their importance to students was undertaken by [Peresada, Korepina, 2021]. The authors studied various soft skills, concerning information competency (information literacy) formation-level, including cross-functional skills, personal abilities and basic soft skills. The research was organized based on the Engineering University, INRTU. The students of "Technical Operation of Aircraft and Engines" (AO) and "Aircraft and Helicopter

Construction" (AC) specialization attended the experiment. Thirty-nine respondents were interviewed on the condition of anonymity.

Information competency for a modern specialist is reflected in the Federal State Educational Standard of Higher Education (from here on - FSES HE) of the Russian Federation. According to the FSES HE in 25.03.01 Technical Operation of Aircraft and Engines, the requirements for bachelors in mastering general professional competencies state that a graduate must have the ability to solve standard professional tasks with the help of information and communication technologies; willingness to collect, process, analyze and systematize research information related to the subject of study; the ability to use computer skills, master information technology methods. Following the FSES HE in 24.05.07 Aircraft and Helicopter Engineering (specialty level), it is stated that, concerning general professional competencies, a graduate must be able to obtain, store, process, and systematize information. The ability to work with a computer as a means of information management, as well as competently handle regulatory and technical documentation in the field of professional activity is also required.

As can be seen, skills in information processing methods are essential for developing both general professional and solely professional competencies. Thus, mistakenly acquired information will cause incorrect reproduction and application in the future.

To diagnose the level of information competency formation based on the analysis of diagnostic techniques [Assessing Information and Communication…, 2017; Modeling the Characteristics…, 2014; Shevchuk, Kolyeva, 2011], the researchers developed a diagnostic technique that examines different levels of work with information and computer literacy, using quantitative and qualitative data analysis.

The 2nd-year students of the AO and AC majors filled out the questionnaire "Information competency", in which the components of the formation of information competency are combined, depending on the goal, into four blocks:

1) Ability to work with information sources;

2) Willingness to prepare a report, abstract, article, presentation on a given topic;

3) Computer literacy;

4) Ability to use various forms of information presentation.

Each of the four blocks of the questionnaire consists of 7 items that reveal the essence of the intended competencies: skills and abilities.

Respondents' information skills are evaluated according to the scale specified in the instructions.

The authors have also formulated criteria for evaluating empirical results, following which the overall level of students' information competence formation is determined by the following scale of indicators: *high level, medium level, low level.*

The high level is characterized by forming all (or almost all) components of information competency. It indicates the students' ability to study independently and develop the knowledge and skills to work with various media. This level of competency is an indicator of students' high competitiveness in the future labor market.

According to the proposed criteria, *the average level* denotes the active forming of the students' information competency structure, and the possibility of its implementation to a sufficient extent in academic and extracurricular activities.

The low level is manifested by separate components of the information competency structure or its elements. Students can actualize their competencies in limited information activities at the initial level.

As a result of the data quantitative analysis, the overall level of information competence formation among the 2nd-year aviation specialties' students of INRTU is as follows: 17 (44%) out of 39 respondents have a high level of the discussed competence; 14 respondents (36%) have an average level; 8 respondents (21%) have a low level (see Figure 1).
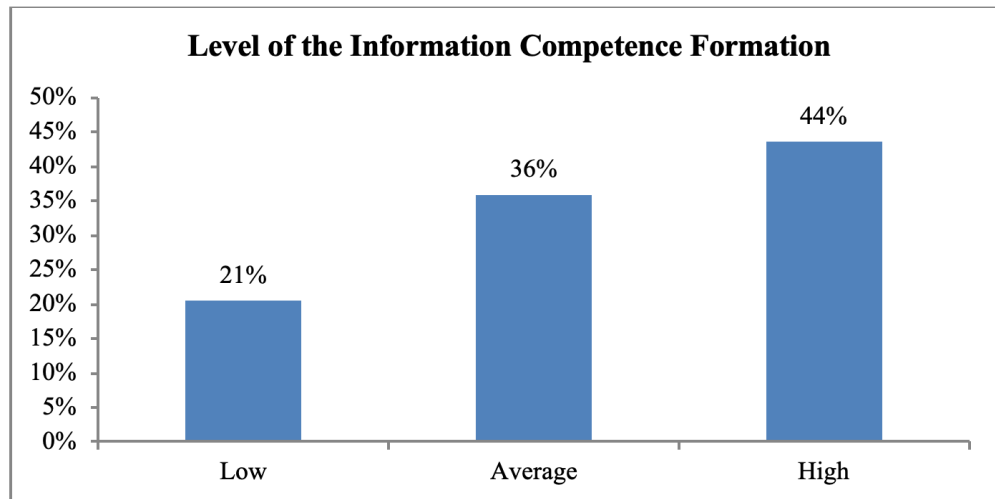
Fig. 1. The level of the information competency formation of technical university students

The quantitative and qualitative analysis of the information competency formation according to the selected criteria revealed detailed results.

When analyzing the block "Ability to work with information sources", 17 students (44% of respondents) noted difficulties in their work. The most difficult skills identified by ten respondents (27% of respondents) are "the ability to work with scientific literature", as well as the related "ability to work in electronic libraries" (7 people, 18% of respondents). Interestingly, 42% of respondents (16 people) marked difficulties associated with establishing communication with specialists as sources of information. Thus, it can be underlined that these students have problems in communication, interaction, and establishing contact, which prevents the exchange of information.

The second block reflects the willingness of students to prepare a report, an abstract, a presentation, or an article. The lack of these competencies and their poor command was specified by 12 students (31% of respondents). Nevertheless, the quantitative distribution of the seven points of this criterion gives a satisfactory result, which tells us about the general willingness of students to learn how to define, integrate and transmit information.

The third block is devoted to "Computer literacy". Along with the general relatively high level of skills reflecting the computer literacy of the average young

person, a representative of the era of computer technology, there is a significant difficulty in mastering a technical university student's highly professional computer skills. Thus, out of 39 respondents, only 12 people (31%) are more or less computer literate, namely

- graphic editors,
- multimedia software for working with sound and video, and
- programs for modeling and editing three-dimensional objects.

The following fact can explain the low result. In the second year of training in aircraft engineering specialties, students have not yet had time to learn how to create new or adapt existing information to a specific task in the relevant, unique disciplines. They have not sufficiently mastered working with these programs and are still uncertain about using the acquired skills.

The final block demonstrates and summarizes the ability to use various forms of information presentation. According to the questionnaire survey results, 24 students (62% of the respondents) have the insufficient formation of these skills, inability to work in a virtual space in a group/team. This block contains forms of work that contribute to critical thinking, creativity, and documentation skills. Students have difficulty writing annotations, preparing essays, and writing business letters in compliance with speech and network etiquette.

Thus, during the experimental study, the authors found out that students' information competency is formed at an insufficient level despite the students' high need for possessing it. There are no necessary skills and abilities, consistency in working with information. Perhaps this is due to various reasons: non-use of practical techniques and methods of working with information in the classroom, limited access to computer programs, lack of experience among students in creating documents of different scientific genres. Obviously, there is a direct interdependence on the teachers' and students' soft skills development, as the students can very often acquire only those skills which are well demonstrated by the teachers to be modeled, imitated, repeated and trained by their learners. In other words, when a teacher

teaches something, it is always a behavioral pattern to be reproduced by their students. Hence, improving students' soft skills teachers should also train their professional skills including soft skills as an integral part.

1.3. APPROACHES AND TECHNIQUES USED FOR THE EXPERIMENT IMPLEMENTATION

All the ideas and approaches of experiment implementation in this work are about student-centered focus of the learning environment, being the basis of Constructivism. However, this theory stems from various views presented in Cognitivism, Social Cognitive Theory and Sociocultural Theory. Moreover, Piaget and Vygotsky are the most prominent scientists of the predecessor theories (Cognitivism and Sociocultural Theory, respectively) as well as the contributors to Constructivism.

According to the pioneer of Constructivism, John Dewey (1859-1952), knowledge is transmitted by teacher's information presentation and reconstructed by the learner, constructing and creating their proper understanding of the world. In other words, knowledge is, thus, constructed by the learners based on their experiences through listening, watching and observing and added to the schemas of prior knowledge, existing in mind. The construction varies among learners meaning that the knowledge is personal [Alanazi, 2016, pp. 1-8]. Social interaction in the collaborative environment is a crucial factor in this process. In Constructivism, learning is an active process, where the learners are active participants and creators of their knowledge developing hard and soft skills. The facilitator (negotiator) provides extensive scaffolding. Ackermann (2001) draws attention to the fact that constructivist-minded teachers help students construct knowledge engaging the students into a collaborative and competitive problem-solving environment, promoting social and communication skills [Ackermann, 2001, p. 438]. Generally, Constructivism considers learning by doing. It should also be mentioned that the constructivist approach to teaching is effective and meaningful in relation

to the outcomes for both teachers and students because it entails sharing knowledge and authority between teachers and students. Additionally, the constructivist teachers seem to be more qualified relating to teaching techniques proving that the approach is more powerful in education. In constructivism, students learn how to acquire knowledge by interacting with their peers in seminar/lecture discussions offline and online, blogs and wikis, being flexible learning environments. Lectures or seminars with a reading set in advance for discussion may encourage active learning in small cooperative learning groups [Hassard, 1990]. However, there are comparisons between combinations of methods, for instance, lectures plus independent reading versus discussion plus reading [On the use and misuse of lectures…, 2015, pp. 12-18].

The idea of cooperative/collaborative learning group activities applied at lectures comes from Cognitivism, according to which, students can learn from each other. Their active learning is enhanced by students' reviews and summaries of the group work supported by the teacher's appropriate choice of manipulative materials (e.g. PowerPoint presentations and other visuals, diagrams, tables, figures, mind mapping tools, mnemonics). In terms of Vygotsky's Sociocultural Theory, group discussions help students internalize and explore the topics and concepts within the group. As a result, various contexts determine students' development, "mediated by tools such as language, materials, signs, and symbols that create uniquely human forms of higher-level thinking" [Wang, Bruce, Hughes, 2011, p. 298]. Thus, an individual's learning takes place in a socio-psychological plane, improved by thinking and problem-solving methods and strategies. From this perspective, instructional scaffolding helps students complete some manageable steps, in order to arrive at the goal. The following instructional scaffolding tools can be employed at lectures and other types of classes: concept and mind maps, question cards, question stems and handouts. For instance, the handouts of the lecture slides clearly show the key points and clarify the structure of the lecture. On the contrary, there is another view that the handouts should be similar to worksheets by leaving gaps. In doing so,

students have to fill in the missing information encouraged to be more attentive during the lecture or any other practical activity [Revell, Wainwright, 2009].

Therefore, a student forms an idea of how new behaviors are performed, for example, observing a teacher's manner of introducing information at an interactive lecture. Speaking about lecture activities, a model can be created, where the students imitate each other's behavior. Students learn by observing each other, while doing group work or working in pairs during the class or performing individual presentations in front of the class or senior students' delivering a part of the lecture instead of the lecturer (i.e. live demonstrations of behavior). There is also a great opportunity for them to adopt peer experiences from different types of activities connected with building utterances and using certain vocabulary (verbal behavior) in their speech, writing group essays or doing peer-assessing of the written essays and exercises (written behavior), being the examples of indirect forms of peer interaction modeling. In addition, behavioral models can be well thought of by using reinforcement, being a central concept of Behaviorism.

The related theory to Constructivism is Constructionism, elaborated by Seymour Papert, according to which learners should create physical artifacts as tangible outcomes of their practical learning. Students are involved and engaged in learning by making. Therefore, knowledge is constructed by practicing skills physically and shaped by designing products in the learning environment. Constructionism differs from constructivism in that learning occurs physically, tangibly, but not only cognitively. Interestingly, constructionism is more focused on technology [Papert, Harel, 1991]. The expression "object-to-think-with" implies the pragmatism of the approach (i.e. connecting abstract knowledge to visual artifacts via cognitive links), whereas the knowledge exists "as proof of learning" [Alanazi, 2016, p. 5]. Constructionism is included in this discussion because its learning outcomes are directly focused on developing technology and products, being physical and tangible, not only cognitive ones as traditionally considered in Constructivism. Moreover, "constructionist activities integrate arts and design with the subjects being taught"

[Alanazi, 2016, p. 5]. Finally, learners design and redesign, think and rethink their products, sharpening their system and critical thinking, using digital environments, and improving their soft skills.

Contrasting and comparing the two theories, it should further be mentioned that the constructivist approach to teaching is more effective and meaningful in terms of the outcomes for both the teachers and students because of being student-centered. Obviously, it entails sharing knowledge and authority between teachers and students, whereas constructionism is more instructor-centered (sage on the stage) and, consequently, focused more on the teaching process. Moreover, the constructivist teachers seem to be more qualified relating to teaching techniques proving that the approach is more powerful in education. Another drawback of constructionism is that students are like *tabula rasa* (blank slates) and they cannot design their own instructions because they are guided by teachers in learning, making and performing.

Following Constructivism and its foundations, another major source of experiment framework originates from Dewey's findings on the societal impact on the learner's development. Dewey's life philosophy can be explained by a continuously evolving experience of human interaction with the environment resulting in the progressive development [Dewey, 1938]. Here, of great importance for this experiment are his achievements in teaching methods and techniques including games, learning by doing, problem-based learning and the project method. Therefore, the term *project* is commonly associated with the progressive education.

In our vision, completely undeservedly, all the laurels of primacy in the creation of the project method do not belong to Dewey, but to his follower and colleague Kilpatrick, who published a famous article about the project method [Kilpatrick, 1918]. The fact is Kilpatrick "based his project concept on Dewey's theory of experience" [Knoll, 1995, pp. 307-318]. However, Kilpatrick's psychological or behavioral approach to the project method interpretation as "hearty purposeful act" [Kilpatrick, 1918, p. 5], being "the typical unit of the worthy life" in a democratic society [ibid., p. 6], was not very much applied and reflected in

educational practices. Kilpatrick believed that learner's motivation was the most considerable one in choosing what activities to do and named them *projects*. On the contrary, he did not consider the projects to be connected with manual or constructive occupations. In his view, active doing and participating were not essential to project making. According to Kilpatrick, any project had four stages of purposing, planning, executing and judging. One can agree that education should be considered as life itself, albeit one cannot diminish its preparation significance for learners' further living. In other words, not only "stimulus-response bonds" [ibid., p. 15] matter in the upbringing and learning. In addition, interestingly enough, John Dewey criticized his pupil's theory. He argued that the project was not the learner's individual enterprise. To Dewey, it was a mutual doing between teacher and students [Dewey, 1938, p. 43]. Unlike Kilpatrick, he acknowledged the teacher's role in learners' guidance and direction, treating the project method as one of the successful teaching solutions.

The project work approach, aimed at nurturing various soft skills, is framed by the CDIO Initiative consisting of several cycle steps: Conceiving - Designing - Implementing - Operating. This initiative is applied in engineering higher education worldwide [Wedel, Boldizar, Malmqvist, 2005]. The curriculum based on the CDIO approach "addresses the technical fundamentals of the particular program as well as a broad set of personal, interpersonal and product and system building competencies" [ibid., 2005, p. 2]. Its most significant advantage is design-build-test activities and coherent learners' experiences [ibid., 2005, p. 2], that are well complied with the project work framework. It is significant to state that professional competencies and soft skills like communication and teamwork are introduced into courses as project-based learning. In the course of the studies, students are encouraged by real-life problem-solving in their collaborative and cooperative work. The activities occur in the "dialogue with informed expert sources" [ibid., 2005, p. 2]. For this reason, the discussed way of the soft skills development is thought to be an innovative approach related to experiential learning. Besides, the enhancing of communication skills in engineering activities is crucial. Simulating professional communication, certain soft

skills are strengthened such as creative and critical thinking, leadership and entrepreneurial skills. The aforementioned can be "achieved within the setting of a problem-based, project-organized course (PBL)" [ibid., 2005, p. 2]. The students' activities are centered around project-oriented problem based learning "enabling students to experience problems in real cases, gather the discipline-based knowledge as needed and to motivate students to an active search of further knowledge in dealing with problems at hand" [Bowden, Marton, 1998, p. 6-7]. The peculiarity of the PBL approach consists in the motivation development to study and solve complex authentic problems. In engineering, it means project work under supervised guidance or problem-oriented project work. It is interesting to note that UNESCO Chair for Problem-Based Learning in Engineering Education appeared in 2007. In 2014 the Aalborg Center for Problem Based Learning in Engineering Science and Sustainability under the Auspices of UNESCO began its contribution to the boost of university engineering training.

Project initiation and development is vital for team development. solving important problems. Projects are appropriate tools for training, the research skills development. They have a crucial impact on organizational learning [Cho, Brown, 2013, p. 746]. In other words, PBL links the learning and project creation with human resource development [ibid., 2013, p. 745]. However, the relation between PBL and the human resource development has not obtained sufficient recognition in comparison with learning, which is oftentimes exploited in business [ibid., 2013], as well as in education [Hmelo-Silver, Barrows, 2006].

Researches connected with PBL have noted positive influence on students' knowledge and progress [Doing with understanding..., 1998; Standardized test outcomes…, 2008; Mergendoller, Maxwell, Bellisimo, 2006; Walker, Leary, 2009], improving the learning outcomes with low-performing students [Standardized test outcomes…, 2008; Mergendoller, Maxwell, Bellisimo, 2006], motivation and engagement [Belland, Ertmer, Simons, 2006; Brush, Saye, 2008]. Currently, critically needed skills are as follows: problem-solving, critical thinking, and communication

skills [Belland, Ertmer, Simons, 2006; Motivating project-based learning…, 1991; Grant, 2011; Mergendoller, Maxwell, Bellisimo, 2006].

Barron et al. [1998, p. 276] addressed an example of a project in Geometry "linked to architecture and design", using the measurement skills, where 84% of the fifth-grade students conformed to architectural construction standards. Their ability to understand, apply, and present geometric concepts increased. Additionally, Mergendoller et al. [2006, p. 53] acknowledged that PBL turned out to be more desirable for delivering Macroeconomics compared to traditional lectures.

Furthermore, Brush and Saye [2008, p. 22] considered the PBL method as a favourable tool to enhance students' motivation and engagement with historical issues in 11th-grades. Students are inspired to make informative and accurate projects since they are personally interested in their outcomes. As a result, they are intensively engaged in the project work. This means that their level of knowledge is increasing. Doing their projects, they achieve required learning outcomes and cognitive goals [Grant, 2011, p. 6].

It is noteworthy that there exist no accepted understanding of PBL as a method. There are modifications depending on the knowledge field, region, or educational institution. Basically, PBL is about a small students' group, brought together to find the problem resolution, and a facilitator [Schmidt, Rotgans, Yew, 2011]. The facilitator is to encourage students to think deeply and critically, ask questions to enlarge their ideas and summarize findings. The students should ask themselves reflective questions during their project work that can also help in their skills development [Collins, 1989].

According to Arsenijević [2013, pp. 270-279], project work is an inherent part of learning languages. However, it can be applied to any discipline acquisition, delivered either in mother tongue or English. This method is highly demanded by ESL and ESP teachers as it helps create a real-life environment and bridges "the gap between language learning and its application" [ibid., p. 270]. Applying project work in class, it is easy to avoid the overuse of theoretical knowledge transmitting, because

the focus of the method is on students and their practical skills development supported by the English theory and realized via teamwork and other types of collaboration. This collaboration implies co-creation of new knowledge with the help of metacognitive skills.

It is relevant to emphasize that in the project work students develop their productive skills, i.e. speaking and writing, better than in a traditional learning environment. This concludes that such interactions can help develop not only communication as one of the central socialization soft skills but also the above mentioned soft skills connected with cognitive skills, personal attributes and emotional intellect. In other words, students become able to solve real-life problems outside the class having trained the modeled situations in class.

Following Arsenijević [2013, pp. 270-272], there are crucial advantages of project work implementation in teaching:

1)   "simultaneous acquisition of language, content and skills" [ibid.] with the relevance to learners' life and experience;

2)   "real-world subject matters and its cross-curricular character" [ibid.] being entertaining (the course variety);

3)   "learner autonomy" [ibid.] (independence skills development) and lifelong learning perspectives;

4)   "a set of goal-oriented tasks" [ibid.] elaborated in small groups encouraged by peer teaching;

5)   reading, analyzing and discussing authentic texts.

It is natural that the discussed method has obvious disadvantages such as "noise, lack of time, the use of mother tongue and mixed ability groups as the most typical ones" [ibid. p. 271]. Moulton and Holmes [2000, p. 28] have shown that students' beliefs about ESL classes are often "limited to the study of grammar and vocabulary and they resented being asked to accomplish non-linguistic tasks" [ibid.], bringing low learning outcomes.

Another challenging factor of project work is a teacher's role in planning and designing the activities. The teacher takes responsibility for creating a proper balance between "teacher control and learner autonomy" [Arsenijević, 2013, p. 271] establishing a new sort of *guide-student* relations. In addition, lacking the practical experience of the project work, the teacher should be able to align themselves with students, predicting how it is to be a student and what reactions and responses they would produce if they were students in reality. So, simulation is a very important part of project work planning and developing.

In ESL projects are usually classified by the activity types, the project length and the age of the students involved. As in [Legutke, Thomas, 1993, pp. 160-166], three types of projects are useful in ELT: encounter projects (communicative collaboration with native speakers), text projects (students deal with authentic texts from various sources), class correspondence projects (letters and emails writing, producing video recordings, etc.). Apart from those project examples, there exist information and research projects (collecting data and its use), survey projects (conducting investigations on different topics), production projects (tangible outcomes in the form of finite products), performance and organizational projects (organizing and holding events).

Sheppard and Stoller [Sheppard, Stoller, 1995] outlined general steps for developing the ESL projects. There are eight stages including the following: 1). defining a theme; 2). determining the final outcomes; 3). structuring the project; 4). identifying language skills and strategies for project realization; 5). gathering data; 6). compiling and analyzing the data; 7). presenting the final product; 8). evaluating the project. Project work usually results in a term paper writing (written assignment) and its oral presentation supported by visuals, i.e. the final assignments are focused on the students' productive skills assessment such as speaking and writing. The writing has a specific structure and a list of references. The presentation delivery also has its rules and requirements set by the teacher. According to the authors, introducing project-based learning into the ESL or ESP curriculum makes students prepared for their

future jobs developing their soft skills. Concurrently, this type of activity demands better class planning, making the teachers develop their soft skills as well.

CHAPTER 2. EXPERIMENTAL PROJECT IMPLEMENTATION
2.1. EXPERIMENT IN ESL USING ACTIVE LEARNING TECHNIQUES

The experiment preparatory activities started in the middle of September, 2021 with class observations. Twelve English classes attended in the groups of students of the second and third years of studies became a starting point for the analysis of the current state of affairs in teaching ESL at the university. The analysis results show that there are certain problems in teaching and learning EFL. The most crucial problem referring to learning is students' inability to communicate in English, meaning that they do not have proper speaking and writing skills stated in the syllabi. Some students were speaking Russian, others tried to reproduce texts learned by heart. Students do not prepare for the classes which is why they experience difficulties at the practical classes. Moreover, they lack the required language proficiency level by the third year of studies.

Not surprising, but the fact is that education is a two way process involving teacher-student interaction and their mutual influence. Therefore, teaching is also important here to discuss. From class observations there are some problematic issues connected with teachers' English communication skills and their instruction in English. The content of the classes is mostly taken from the assigned coursebook, no additional materials are used. Information Communication Technologies are not applied at all. For some cases audio exercises and videos were exploited but the purpose of their use was just to listen to or watch followed by word repetition or translation without content discussing and removing difficulties in language understanding. The types of activities did not develop students' soft skills involving various communication or critical thinking etc. in real-life situations. The teaching style is predominantly instructor-centered (sage on the stage). This influences the choice of tasks offered or interaction patterns (*teacher-students* interaction is very often seen). Naturally, the pair interaction is particularly misused and reduced to drill given colloquial clichés and patterns without the opportunity to develop fluent speaking or writing skills. As a result, the teacher talking time prevails over student

talking time, if at all in English. Direct use of the techniques proposed in the teacher's books do not help the classes become more vivid, capturing and student-centered. There is a low level of teachers' creativity in the English class preparation.

In total, out of 12 classes observed, only 3 classes were different demonstrating teachers' professional skills to lesson planning, selection of materials or the use of ready-made textbooks and developments for the teachers. The classes were centered on using games (e.g. the simulation of scientific conference where students well role played defending their slide presentations in Q&A discussions), jigsaw reading based class with active learning tasks and proper types of interaction, and an unusual approach to the coursebooks guidelines interpretation introducing the peer teaching and students feedback. It should also be mentioned that all class observations were planned beforehand and the teachers observed had their opportunities to get well prepared for the classes and demonstrate their teaching skills in the best possible way.

Another aggravating factor in such observation results was the method of teachers' choice and the choice of classes to attend. I managed to attend four classes by prior arrangement with the teachers. The rest refused me to come as they were simply afraid of showing their classes and finding various reasons for that. Thus, I communicated this problem with the director of the School of Linguistics and Intercultural Communication. I was very surprised when I faced the fact that there are some teachers who are simply assigned to have been observed (i.e. the victims of choice). There is another group of teachers who are not accessible or reachable (i.e. "untouchable", under the director's protection, personal attitudes).

It turned out that in one unit the teachers are divided into two camps and this situation is created by the head of the institute. There is obviously no equality, sort of "discrimination" by any inconvenience caused. This was proved by my communication with the teachers and their concerns about pushing their foreheads together. The conclusion is that the psychological climate in the institute is unhealthy, creating ill-natured competition, rivalry, inequality, preventing teachers from creatively developing and feeling like one team. Above that, there is no habitual

practice of exchanging teachers' experience by attending the classes in order to improve overall communication and enhance teachers' competencies. All this is not needed as it may create the start of unwelcome changes. It is easier to imitate activities rather than find ways to solve current problems and transform outdated practices. The environment for teachers is not about development but stagnation primarily affecting the students. The teachers are not well motivated to enhance themselves, so their students experience all deficiencies because of that.

Under the circumstances, the first iteration of the experiment was planned and implemented. From the observed teachers, I managed to persuade one teacher to collaborate in my experiment. Initially, the group of the third year students was the target audience. However, the students did not feel like participating in the experiment as they were busy doing their core projects. So, a group of first-year students became an experimental one, taught by the very teacher. My purpose was to get the students interested in the unusual way of teaching and learning. The experiment lasted from November, 10th, 2021 till December, 20th, 2021 and consisted of several stages:

Step 1: Pre-project work (establishing contact with the students and their motivation, needs analysis, forming study groups etc.);

Step 2: Mini-project interventions;

Step 3: Project "Creative Book Review" (4 weeks; November, 24th-December, 17th, 2021).

First of all, the pre-project work contained my acquaintance with the students. For this purpose, I prepared the welcoming class on the development of soft skills in a technical university, where the students were able to actively participate and contribute their opinion to the pair, group and open class discussions. The outcome of the class was the students' decision to take part in teaching and learning proposed, improving their soft skills as well as the English language proficiency. The group of students consists of 12 students, ten of which took part in the experiment.

Before the teaching, students' needs analysis was carried out to identify their preferences in learning English. From the students' anonymous answers to the needs analysis questionnaire, their reasons for learning English became clear.
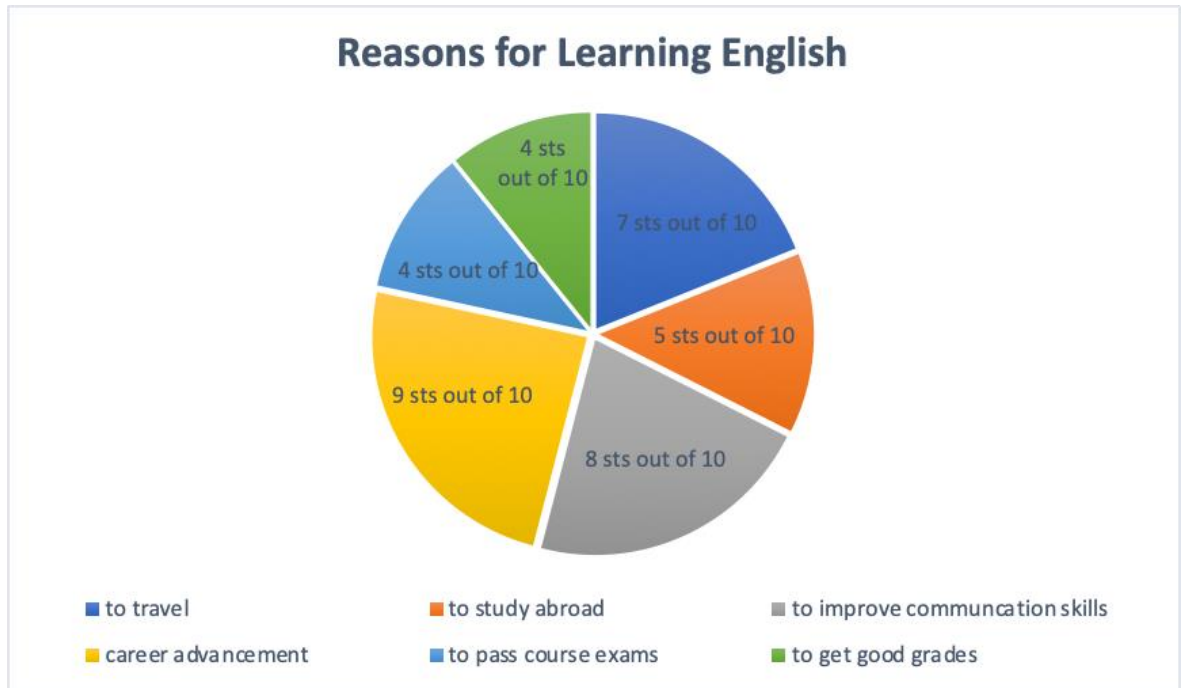

Fig. 2. Students' reasons for learning English

As can be seen from the diagram in Fig. 2, the students have inner motivation to study English to improve their communication skills (80% of the respondents) for socializing connected with their future career advancement perspectives (90% of the respondents). For 70% of the surveyed students traveling abroad is very important and they need language proficiency for that. Half of the group is interested in further continuing their education abroad, which indicates their specific needs for mastering English and achieving relevant learning outcomes. The questionnaire contained some statements about grades, passing course exams and pleasing parents by their learning outcomes. It can be concluded that students want to learn English for achieving true learning outcomes, which is crucial personally for them, although 40% of the respondents potentially fulfill the course requirements because of getting demanded grading and assessment. The survey questions on the reasons for learning English utilized a 5-point Likert scale.

The significance of needs analysis and the usage of questionnaires as effective tools of identifying "where the learners are, in terms of communicative competence, and where they need to be to meet their specific (engineering, business etc.) aims" [Korepina, 2013] is vital in ESL for the teacher to choose the appropriate methodology and context of teaching. It may however be noted that the use of needs analysis questionnaires as a tool is usually left unattained at higher education institutions. In contrast, another tool called a placement test is widely used for assessing students' level of language proficiency. What is interesting in this is that needs' analysis questionnaires and placement tests help teachers deal with understanding of the target situation analysis, learning situation analysis and present situation analysis, providing additional information about the learners, their learning styles, preferences and experiences.

From the data received in students' needs analysis questionnaires, it is also apparent that 100% of the students under experiment do not like studying Grammar and developing writing skills (e.g. writing Grammar exercises and stories, learning Grammar rules). As for the reading (90% of the respondents), speaking and listening skills (80% accordingly) development, the students like to be involved in the appropriate activities. The teacher's awareness about the students' preferences on receptive and productive skills is very essential, as it gives the idea about what types of activities to begin with and which activities and tasks to introduce in slow and small stages. In addition, in the questionnaire there is a section about the class activities either familiar to students or interesting for them to practice during the classes. According to the findings, the four most important activities for the students in the course based on previous learning experiences are dialogue, story-telling, discussions, and writing letters. Therefore, it could be summarized that the students are used to individual, pair and open class interactions. However, the activities based on team or group work are obviously less trained or untrained. In doing so, less familiar types of assignments for students turned out to be debates and project work (experienced by four students); presentations and reflections (experienced by three

students). Such creative types of assignments connected with creating video clips or blogging proved to be unfamiliar.

As a result of the needs analysis, it can be stressed that the students can participate and perform well in the types of activities experienced at a secondary school. The mentioned types develop basic language skills not so much focusing on soft skills development demanding more complex types of interaction in real-life situations/simulations with authentic context exploitation.

Consequently, applying the discussed theoretical basis and taking into account the data from the needs analysis for the experiment realization, the framework of project work was chosen as the most successful to develop students' soft skills, specified in [Arsenijević, 2013]. The stages of the project work were updated by one initial step of introducing class rules for successful project work outcomes. This step provides the students with clear requirements of participation, class attendance, engagement, class rules connected with the study groups division, and exact procedures of being assessed at the end of the semester (i.e. formative vs. summative assessment). Another step was added after the evaluation stage of the project called a concluding step (reflective feedback, peer and self-assessment).

Thus, the stages of the project work look like as follows:

1). Introducing class rules for successful project work;

2). Defining the topic;

3). Determining the final outcome;

4). Structuring the project;

5). Identifying language skills and learning strategies;

6). Gathering information;

7). Compiling and analyzing information;

8). Presenting the final product;

9). Evaluating the project (final assignment class);

10). Concluding step: written feedback (reflection), self-evaluation, and skill self-assessment.

Currently, teaching English to 1st-year students is carried out using a textbook developed by the teachers of the institute. Some of the authors of this piloted coursebook are members of the methodological commission that decides on the publications by employees of the Institute of Linguistics and Intercultural Communication. However, the quality of the tested material leaves much to be desired in terms of the methodology and approaches, the selection of types of tasks, the purpose of introducing certain tasks, an abundance of Grammar and other types of errors in exploiting the authentic materials. The advantages of the piloted coursebook are themes and topics connected with university and campus facilities, internationalization at home and abroad, science opportunities and critical thinking, how to make a presentation etc. Although the types of assignments do not reflect the breakthrough trends in teaching, that may well be applied in ESL coursebooks for developing students' soft skills.

Thus, the experiment was centered on the pilot coursebook use with updating the assignments from the position of the student-centered approach and active learning. For example, in Unit 2 "Studying abroad" the first class topic "English language certificates" instead of the task: *Read the text and answer the questions* (pp. 34-35) a group work with jigsaw reading was introduced. Some handouts and cards were developed for the reading assignment encouraging students to discuss their parts of the texts and later teach their peers (see Appendix 1). The activity is moderated and facilitated by the teacher whose role is being a guide on the side. The plan of reading became as follows:

1. Scan the text: What is its main idea?

2. Skim the text and write down 3 names of the certificates/exams.

3. Group work: handouts.

4. Swap the group: ABCs.

5. Present your part of the text, ask questions.

   Listen to the other members and fill in the table.

6. Answer the questions given in the text on p. 34.

During the class the students were divided into three small groups in accordance with the exams discussed in the text. For their home assignment and further class work, they chose a study group and divided into groups A and B numbering 4 and 6 people in each, accordingly. As a result, students' homework appeared to be different from what is given in the coursebook. The assignment became more creative and challenging for the students as follows:

In their study groups, students prepare PdF or PPT presentation of IELTS (group A) and TOEFL (group B) based on the class materials. Personal test results as a starting point to professional success (see ex. 1b, p. 3, go to the link and do the General English test) are helpful and should be reflected in the presentations. On making up a presentation, use additional sources: ex. 8, 9, 10, 11 p. 36-37.

Students decide how to present the chosen content and distribute duties between themselves. All students from each group should take part in the presentation delivery. Duration: 7-10 minutes per group. Deadline: by 9 p.m., November 16, 2021 (Tuesday), to submit on the course web resource.

As can be seen, this type of assignment develops not only students' language proficiency but also various types of soft skills including creativity, critical thinking, the ability to work in a team and as a team, making use of the opportunities of being a leader or a participant, the ability to collaborate and cooperate with the groupmates, learning to be either an active listener or an efficient speaker, becoming more empathetic and help each other and many others, depending on the group interaction. Moreover, this assignment was a mini-project to see where the students are in their hard and soft skills development. Another mini-project dealt with mind map creating and presenting it to the open class as a group work outcome..

From the students' feedback on their experience of cooperative and collaborative learning in a team and their self-assessment, it can be concluded that the challenging points were related to establishing good communication with the group members, active participation, searching for the information on the Internet, time management and deadline issues, role distribution as well as choosing a group leader,

and sharing responsibilities. The emotional component made it difficult to communicate, as teamwork needs more openness, rather than shyness. In addition, the teams created chats in messengers to prepare their assignments. Also, they stressed the fact that they should have been more responsible in performing their duties, proving their critical approach to the experienced interaction. The positive result of the teamwork was the help to each other, that makes the preparation for the assignment more interesting. The examples of the handouts for students' reflection and self-assessment are given in Appendices 2 and 3.

The third step was the implementation of the project work itself. The project name is *Creative Book Review*. The final assignment of the project is formulated as shown below:

Students are supposed to read the book, submit all intermediate tasks, and prepare the final assignment: dramatize the book you have read in all possible ways like role-playing, visuals (slides, multimedia sources, created video, demonstrating acting skills, music, and song-singing, etc.), effective presentation and skilled use of the studied authentic material. Modern software use is highly evaluated.

The project substituted the entertaining task given in the coursebook on p. 44, which reads:

Books Assigned to Freshmen by Top Universities

Even before the academic year has started, students in US colleges have work to do. Most of the top colleges provide their future students with must-read lists, items that are considered important by the institutions. What's interesting, the titles are not usually program-related, but rather serve to help a student adjust to the new life in college. Find out about these books at https://blog.thepensters.com/college-freshmen-books/

First of all, the project work scenario started with ***Introducing class rules for successful project work***. Before the beginning of the project, the teacher should articulate class rules, conditions, and some restrictions for successful students' preparation and further achievements. All the group participants should follow the

rules during the project as well as throughout the semester. Depending on the group, the rules may be varied, although the main issues to point out are such as class attendance, homework preparation (how to submit the assignments, online/offline, paper/file submission, deadlines), the importance of participation in-class activities; meeting the deadlines; group work collaboration; individual contribution to teamwork and personal engagement in the project developing and presentation; assessment criteria. The students who do not meet all the criteria are to take the term credit based on the materials studied during the term in accordance with the syllabus.

In *Defining the topic,* the teacher elicits ideas, deliberates them with students, and eventually offers a list of topics from which students can make a choice. The questions may refer to the students' reading skills and preferences like: *What do you like reading? Why? Do you usually read for pleasure or for studies? Have you ever experienced that reading for studying seemed like reading for pleasure? Can you come up with the topics that would be interesting for you to read now?*

While listening to the students answers, the teacher makes up a list of the topics on the whiteboard. Students in their teams decide which topic is the most interesting to them and discuss their choices in the groups.

As a result, students are to choose one English book that meets the needs of the groupmates. The book must be authentic; popular scientific; from a reliable source (publisher).

The next step of **Determining the final outcome** is closely concerned with the book choice, which is why the teacher shares the final assignment with the students: *Students are supposed to read the book (abstract), submit all intermediate tasks, and prepare the final assignment: dramatize the abstract you have read in all possible ways like role-playing, visuals (slides, multimedia sources, created video, demonstrating acting skills, music, and song-singing, etc.), effective presentation and skilled use of the studied authentic material. Modern software use is highly evaluated.*

Further, the stage of **Structuring the project** is very important, as the students are to resolve the following questions: *What data do you need? What is necessary for*

this project? Where will you get the data? How can you find it? What preparatory steps do you need to take before preparing the final assignment? What is the timeline? The teacher explains that at present students avoid library research and trust the Internet while collecting the data. The teacher stresses the idea that not all data sources available on the Internet are valid and reliable. Books and scientific journals are considered most reliable.

Another step of project work is ***Identifying language skills and learning strategies.*** It includes preparing the students for gathering and analyzing materials (skimming, scanning, search for detail, gist, note-taking, grids, charts, etc.). Contextual guessing helps infer the meaning from the connotation, environment and arrangement of words in a sentence, identifying their forms and meanings by their attributes. Therefore, the students are aware of what they are going to do. Guessing strategies are useful in such types of guesswork as exploring what part of speech the word. Students use their word formation knowledge to guess the meaning of new words. The main conclusion is to boost students' confidence by showing that there is no need to know every single word for the text understanding. They are thought to guess some meanings from the context looking for key words or key concepts.

Gathering information relates to gathering information beyond the class time as other ESL course components are to be covered. At the stage, students conduct library and Web research as the basic part of the background data collection about the author of the book, the book itself. They study pdf (or other formats) and audiobook versions. Students read the books chosen in groups during a 2-week time span looking for details to use in their final scene. What is more important, in every class, students need to submit a summary in written of the appropriate reading part (150-200 words, printed version). In addition, there are 4 checkpoints on the already read parts scheduled at every class (15 minutes per group) at which the students give the answers to the following questions:

1). Have you found any reliable background information on the author and their book? (newspapers, magazines, scientific journals, TV, news…). If the students have not done it yet, they should get ready for the next time.

2). What is the studied abstract about?

3). Did you like the abstract? Why/ why not? Did you like this part more or less than the previous one?

4). What was new to you in this part of the book?

5). Was this piece informative? In which way?

6). What lexical units have you written out from the book? (The students make a list of words each time.) Think over how you can use these terms in your final project scene.

7). Can you summarize the details you have written out?

8). What piece of information would be useful for your final project presentation/ dramatizing? Make notes of useful information which can be exploited in your final preparation.

The students are encouraged to ask the teacher for timely feedback on the book reading, gathering, and analyzing the information if they feel lost.

Compiling and analyzing information is the stage, where students analyze, organize and synthesize the information gathered in groups. They discuss and exchange the information in groups. As they need to use the materials orally, they proofread the works together, discussing and correcting the mistakes. The students independently elaborate on developing a plan for the final event, creating a script, and assign roles and responsibilities for the preparation of the event. Moreover, students independently rehearse scenes or create the final audio or video products serving to help their role plays and dramatizing based on the books. As this project work part is done beyond the class, for the clarification of any urgent issues they can contact the teacher by email or in person at the time appointed during the classes if they need some extra help.

The students need to read and make a script of the final scene while reading the book during a 2-week time span. The work is done in parts in order not to omit the details and necessary information they have studied at the beginning of their journey. This plan/script should be done like a whole thing. It means that they take e.g. a separate part of the copybook or a special file on the computer and devote it to the final project scene. It is very wise to mind a chronological order. The vocabulary and plan should be divided into separate rubrics. Students should be ready to submit their notes at every class checkpoint.

Coming closer to ***Presenting the final product,*** being in the final project phase students present their projects to the groupmates and teachers in class. They are free to use a PowerPoint Presentation or other support materials and software. No matter how excited they are about their projects, this stage always generates a stress. Reducing the stress level, students present their projects in small groups, to the colleagues from the same study programs, because it is much easier for the audience to follow familiar topics. In this case, one group work disadvantage is that weak students do not contribute to the final product creating as much as their more advanced peers. At the same time, each student is to present the entire product to get evaluated, i.e., for getting the grades. Since the students know that they will present the product from the project start, they do their best to perform in a best possible way.

In this connection, students are given some tips to follow:

1). Every student should take part in the final project scene, presenting not only in the preparation, to get the grades.

2). Clarity, speech literacy, fluency, pronunciation skills. Students should speak up and not read the information. They should demonstrate knowledge of the studied material and interaction with the audience (eye contact, poise, body language, voice, etc.).

3). Make sure that all the key issues of the read material are included in your final project scene.

4). Timing: no more than 15 minutes per group.

During the final assignment class, ***Evaluating the project*** takes place. At this stage, students are encouraged to discuss the projects, concentrated on positive things (oral open feedback):

1). Which group presentation is the easiest/out-of-the-box?

2). Which is the most interesting/exciting/capturing/inspiring? Why?

3). Which presentation was the best? Why?

4). Did the final project scene attract your attention to the further book reading?

5). What points of your competitor's presentation would you include in your future project scene? Why?

Finally, students are to discuss the usefulness of this experience and its relevance to their future career needs. The students give feedback on the project and group work:

1). Was the book reading useful for you? Why/ why not?

2). How can it help in your future job?

3). Does the knowledge gained help you to apply this info in other courses? Chemistry? Some other courses? How?

4). Which skills have you developed while preparing this assignment?

5). What skills did you need to cope with this project?

In conclusion, there is the final step of ***Written feedback (reflection), self-evaluation, and skill self-assessment*** taking up 40 minutes of class activities. As a follow-up activity, the students are to write their reflections according to the suggested templates on their achievements and group dynamics. They also need self and peer assessment using an offered template. This part of the project work is very substantial for the students to assess their outcomes and be aware of them. The teacher gets a clearer picture of their success or failure based on the students' reflections and evaluations. This is helpful in finalizing their grades.

Thus, following the described scenario two study groups (teams) worked on the preparation of their projects having chosen two very different books to read and review. The first group read a book about astronomy, the planets and the Universe

discovery called "30-Second Astronomy" (2013). The second group dealt with "Women in Science" (2011) focusing on the chapter about *Women in Chemistry.* As a result of the project work, students successfully performed their scenes and roles with audio and video support as well as presentation slides, being in costumes, and having stage props made specifically for their performance. They did everything themselves: from the book choice to the script writing, sharing duties and responsibilities to achieve the final goals.

From the students' reflective feedback either oral or written, some positive implications can be made. The students realized their personal responsibility for good preparation of the group work. They liked peer learning and mutual help. They experienced their personal discoveries on the book content. The students are glad to work in a team, improving their participation. Moreover, they like to be creative and critical to their interaction. Some students obviously became group leaders. One of the main conclusions is that they are more confident now despite all content difficulties and the adjacent issues.

The project results were presented at the motivation meeting with the faculty of the institute held on the 30th of Dec., 2021 under the auspices of the Vice-Rector for Academic Affairs at INRTU. During the meeting current trends in higher education were discussed supported by the findings of the project work aiming at project scaling. By the end of the event, the faculty was offered a survey on their knowledge of soft skills development at the university (in google forms). Nevertheless, due to the unwelcome environment mentioned in the beginning of this paragraph, reluctance to something new, they opposed the offered trends. Moreover, the middle management of the institute created obstacles (i.e. poor communication either in person or via email) and engaged in delays so that this event did not take place at all. Fortunately, the meeting happened. However, the results of it did not produce any visible changes or transformations in terms of scaling. As far as the survey outcomes are concerned, only one teacher answered the questions in the questionnaire,

providing very vague answers. They tried to explain that they know everything about teaching, and actually, teach using up-to-date techniques and approaches.

2.2. SOFT SKILLS DEVELOPMENT IN ENGINEERING PROJECT WORK

The second iteration of the experiment took place in the spring semester (February-April, 2022). It is focused on the application of project work in engineering courses. My initial task was to communicate with as many stakeholders as possible to get a proper understanding of the state-of-affairs in engineering project work implementation at the university and be able to offer some practical solutions.

The data collection is based on the observation of project work classes in 3rd-year groups in the autumn semester (2 classes in October, 2021) as well as the communication with the university administration, Head of the Center for Project-Based Learning, teachers and students. It was found that there are real problems with project work interpretation and implementation. Generally, the project work is substituted by a traditional Qualification Thesis and the procedures of its realization and preparation. In some cases, the project work is about giving and completing tasks. As a result, there is low students' attendance. In addition, some general education departments do not have project work at all, as they are not required (i.e. History, Philosophy, Russian and Foreign Languages, Strength of Materials, Theoretical Mechanics and other disciplines). For these reasons, there is a need to unify the mechanisms for the project activities implementation in the university, the creation of a unified methodology for improving the educational environment, and attracting more teachers and students into the real and creative project work. There is no communication, experience exchange or teacher training on the project work either.

The preparatory work for the experiment planning consisted of reviewing literature on the project work issues in engineering, defining benchmarks and searching for the practical examples of their project work realization. For this purpose, scientific publications and relevant types of sources about MIT and UCL

project work features were selected and thoroughly studied. It was found that the project work is very well structured and supported by methodological findings and practical implications that might be easily imitated, exploited and further updated at INRTU.

In particular, in both the universities there are special programs based on the engineering project work (problem-based learning or project-based learning).

In MIT, the program is called the New Engineering Education Transformation (NEET) program. It is distinguished by its unique content and focus areas including project-based learning (PjBL) [Ranger, Mantzavinou, 2018, p. 167; Motivating project-based learning…, 1991; Integrating problem-and project-based learning…, 2014; Han, Capraro, Capraro, 2015], "human-centered design (HCD) thinking" [Ranger, Mantzavinou, 2018, p. 167; Brown, Wyatt, 2015], communication-intensive classes as well as communication-across-the-curriculum programs, where communication instruction is integrated into the engineering courses [Craig, Lerner, Poe, 2008].

Ranger and Mantzavinou [2018, p. 170] showed an example of project work realization in MIT for the course "Developing World Prosthetics". According to the authors, it is "an effective framework for incorporating HCD thinking and industry partnerships into development engineering education" [ibid., p. 167]. Particularly topical is the fact that the framework is very well structured, offering constant support to students. The course lasts for one semester and is tailored for 11 weeks. Students' teams are formed of 4-5 people, being multidisciplinary. Instructors and teaching assistants (graduate students, senior undergraduate students) guide and facilitate project activities. Guest lectures and partners' workshops together with class lectures, project mentorship, and assigned readings with ten assignments are part of the curriculum. The project work itself consists of the following stages [Ranger, Mantzavinou, 2018, p. 170]: 1) *Problem definition* (week 1: the real-life challenges are provided by international partners, students teams are assigned topics to develop); 2) *Background research* (week 2: students study literature for topic's better

understanding, search for the solutions available, having targeted interviews with stakeholders, partners); 3) *Mission statement* (week 3: students formulate a clear statement about the team's plans for the semester); 4) *Functional requirements and design parameters* (week 4: students define functional requirements by developing a list of independent functions and parameters, collecting metrics); After week 4 students are to hold their *Team presentation 1* for getting feedback. 5) *Strategy to Concept* (weeks 5 and 6: students suggest top three concept ideas to class, starting with a broad means to approach the problem, and coming to more specific prototype ideas); After week 6 students are to have *Team presentation 2* for getting feedback. 6) *Design* (weeks 7, 8 and 9: students consider their designs as an assembly of modules, breaking the design into modules, prototyping the most critical ones); After week 9 students are to deliver their *Team presentation 3.* 7) *Experimental evaluation / Validation* (weeks 10 and 11: students determine if the functional requirements have been met in the course of bench-top experiments or field testing). After week 11 students defend their Final Presentation and submit their written report (a conference paper).

Analyzing the described project work framework, it should be concluded that MIT's thoroughly planned and targeted stages with lots of communication on the realization of the final outcomes is an excellent model to borrow with probable adjustments to a certain higher education institution.

MIT's experts on communication skills development in engineering proposed communication intensive classes as the best option of practicing advanced communication skills, presenting a comprehensive review of the classes in biological engineering, astronautics engineering and biomedical engineering [Craig, Lerner, Poe, 2008, pp. 280-301]. Specifically, within the "communication-across-the-curriculum programs", communication instruction is embedded unlike a traditional teaching Writing and Speaking as separate technical writing or speaking courses [ibid., p. 280]. Many communication intensive classes fit into the already-existing laboratory practicals, where the students are supposed to elaborate their written and

oral assignments. In this fashion, students become more professional, accommodating themselves to being both scientists and engineers by constructing their "discursive" and "scientific identities" through class communication [Brown, Revels, Kelly, 2005, p. 790]. Therefore, two main types of written assignments for biological engineering are an essay and expression engineering report. For the essay writing, students research the foundations and concepts of the laboratory work [Craig, Lerner, Poe, 2008, p. 295-297]:

Genome Engineering Essay

You are asked to write a thoughtful, researched essay exploring how a foundational engineering concept (e.g., abstraction, modularity, insulation, standardization, decoupling) can be applied as a design tool for biological engineering. Your lab work with M13 will provide the context for your argument.

The essay template is very well elaborated and guided, providing an example of ***Abstract*** and consequent parts including ***Introduction***, ***Body*** (parts 1-3), ***Conclusions*** or ***Summary***. Interestingly enough, the ***Abstract*** is a model paragraph for students to get a better understanding of the assignment. In addition, the ***Abstract*** is recommended to be included in the essay as their own. In the upcoming mentioned parts there are clear instructions about what, how, what for and for whom to write, giving examples of useful phrases and words, famous quotes, problems, issues or concepts to be described, speculated or critically thought of. Finally, the students need to meet the reader's expectations (e.g. "At the conclusion of this section, the reader should have a good understanding of …"; "End this by highlighting how …"; "End this part by commenting on how …"; "In this section, your readers expect you to tie up the concepts you raised in your introduction with the specific examples you've described in terms of M13.").

In the next writing, an expression engineering report, students pretend to be scientists, preparing a manuscript for publishing [ibid., p. 297-298]:

You are asked to write a formal lab report detailing your work in this module. Specifics for each section of this report are detailed below. General information about formatting the report are mostly addressed here.

The writing section begins with ***Abstract,*** under 250 words. From the guidelines students learn about what is included in it, when it is better to draft the section, academic integrity requirements. ***Introduction***, ***Materials and Methods***, ***Results: Figures*** and ***Discussion*** equip the students with content peculiarities and guidelines for writing strategies in preparing "authentic" activities.

The authors draw attention to various types of communication products as a result of project work (teamwork). Students fulfill individual writing assignments such as individual lab notebooks/journals, two iterations/drafts of a design proposal, conferences. The group work assignments include project work itself (e.g. collaboratively developing a hypothesis), establishing communication with advisors, faculty and teammates; rehearsals with other teams and peer feedback; the first project design presentation and other oral presentations; the final report and presentation. The assessed tasks are lab journals, technical briefings, design reviews, technical reports, design portfolios, concept quizzes, oral exams, and competitive final events. Peer assessment and self-assessment is an essential part of project organization and collaborative teamwork.

Let us now consider the features of the second benchmark, Integrated Engineering Programme (IEP) at University College London (UCL). The common university curriculum structure is built around authentic engineering projects (PBL) embracing 40% of the curriculum [Graham, 2018, p. 96]. The most interesting thing about the project work is their *Challenges and Scenarios* approach related to a series of 5-week curricular cycles. To be exact, students study 4 weeks developing their "critical engineering skills" [ibid., p. 104] and constructing their consequent knowledge. Subsequently, they apply their knowledge, and train skills during "a 1-week intensive design project" to "consolidate and contextualize what students have learned in the modules" [ibid., p. 96; 108]. The topics of Scenarios are varied

depending on the chosen specialty. In Biomedical Engineering, for instance, students elaborate on designing "a smartphone app for measuring pulse rates"; designing and building "an article of smart clothing for an athlete"; using "electrical activity from an arm to control a computer game"; pitching "a startup idea based on a real medical device developed by a researcher in the Biomedical Engineering department" or developing "a prototype device to support independence and quality of life for a disabled population, as identified by a partner charity" [Graham, 2018, p.109].

There is also a well-structured skills development program named "*Design and Professional Skills",* where they study "*cross-cutting topics* such as teamwork, leadership, communications and project management" delivered by "the core IEP team"[ibid., p. 107]. The skills connected with "technical drawing, design, risk, ethics, law and professional standards" are delivered by department faculty [ibid.] Meanwhile, it should be underlined that project work has a multidisciplinarity incline like in MIT. Another advantageous feature of the UCL program is that students tackle not only engineering problems but also open-ended humanitarian ones, being itself "a two-week challenge" [ibid., p. 97]. For example, all engineering students are engaged in the project *How to Change the World* (HTCTW) at the end of the first year of studies.

Taking into consideration all mentioned benchmark features, a presentation on engineering skills development was prepared for the subsequent communicating of the results to the main stakeholders of the university (Vice-Rector for Academic Affairs, Head of Curriculum and Instruction Department, Head of the Center for Project-Based Learning of INRTU), who are interested in changing the existing approaches to project management.

As a result of negotiations and discussions, a strategy for implementing innovations in the current situation was developed in the foresight project (game).

The purpose of the game is identifying initiative project topics proposed either by mentors (teachers) or students (possible future mentors). This activity engages in proactive students and teachers in the project development as part of the "Project

Activities" in the 2022-2023 academic year. The event contributes to the development of educational formats aimed primarily at developing students' soft skills in project activities (see Appendix 4).

My responsibility in this project was to prepare a teacher training workshop aimed at improving faculty's skills in becoming mentors, practicing some activities to be scaled in their project work. Therefore, a script for a two-day event (the duration of each class is 130 minutes) was created including both content-knowledge and activities examples to be experienced by the faculty to be able to apply in their collaboration with students during the game.

On the first day of the workshop, 28 people came to the event. They were involved in active learning activities in small groups of 5-6 people (5 teams). They collaborated on the topic of soft skills development guided by discussion questions preparing group presentations. They were offered to elaborate on the topic suggesting their vision and solutions. The questions to think about were as follows: *What is your understanding of soft skills? Why is there a need to develop soft skills? Where are soft skills developed? Why? What is the benefit of developing soft skills for students, teachers, university, society?* (the list of stakeholders can be expanded and specified at the request of the group). *How do you usually develop soft skills? What pedagogical tools do you use for that?* (The teams were to choose a speaker. Preparation time: 30 minutes).

The team presentations were very creative and full of insights. The outcomes of brainstorming and think-group-share activities appeared on flip charts or an interactive white board. The participants defended their vision and approaches, comparing them to the ones of other teams.

After that, there was a 40-minute lecture about soft skills clarifying and developing further the team's constructed knowledge. The participants got a clear picture of soft skills, their importance for all stakeholders interested, including the university (the member of Priority 2030 program). Educational ideologies were reviewed focusing on Progressivism and its achievements valuable for project work,

some benchmarks were exemplified with their authentic activities (tasks, developing soft skills in PBL).

The next step of the first day of interaction was another task aiming at elaborating ideas for a certain context (engineering, socio-humanitarian, arts etc.). The teams received the handouts with project work stages introduced. They were suggested analyzing the project work stages in their small groups both in class and at home. Their home assignment consisted in creating a project work scenario as their group's vision: describing the roles and functions of the Teacher, the Student, the interaction of the Teacher-Student, Student-Student; designating tangible learning outcomes of each stage of the project work; suggesting the ways of building communication between project participants (The teams were to choose a speaker. Preparation time: 30 minutes).

On the second day of the workshop, after having received a very challenging assignment, only 2 teams participated in the activities. 12 people came, 3 of which were for the first time. There was a natural dropout because on the first day a lot of middle managers participated in the workshop. It turned out that it was in those teams where there were a lot of them that further cooperation did not work out. In the two teams, most of the members were teachers. However, the event took place and reached its goals. It started with an introductory part. As the number of participants reduced, I had to act according to the available situation, making some changes on the plan and taking quick decisions on the spot. Moreover, the preparation of the homework was completed only by one team, the second team hurriedly finished their presentation (the duties were divided between the team members: half of the team were completing their homework, the other part were listening to the first group, preparing questions). Actually, the content, approaches used and the intentions of the speakers were very clear, persuading and capturing. It was very interesting to get to know that so many fresh and trendy ideas were voiced. It was obvious that the teachers have already been practicing some parts of project work with their students. This is very motivating and inspiring.

It should also be mentioned that due to the decrease in the number of teams, the logic of the topics, when preparing tasks, has also changed. It occurred that the two teams had the same contextual focus, namely: the engineering context. Although it was planned that the contexts would be different, such as engineering, socio-humanitarian or arts, with subsequent mutual reflection, feedback on the improvement of the proposed models. Under the circumstances, this proved impossible. Therefore, I immediately made possible substitutions. Firstly, 3 guests came just to watch the work of the teams. Naturally, I asked them to join the teams up to an equal number of participants. The teams consisted of 6 people. Then I finalized the task, adjusting what the teams would do. Having project scenarios on engineering topics, the teams needed to go beyond their usual vision, and make the project multidisciplinary, including not only socio-humanitarian inclination but also many other components. This was another serious challenge for the teams they had not expected. Here the real teamwork began with lively discussions, defense of points of view, persuasion and drawing a common vision. It was a pleasure to watch the teams work. After 30 minutes of collaborative efforts, the teams came up with two ideas of multidisciplinary projects. At the plenary, the teams actively participated in the discussion, asked questions to each other, and showed sincere interest. They were to ask and answer the main questions related to the project work: *What is typical for the technical/socio-humanitarian/arts context in project activities? What is typical for multidisciplinary projects? What is common? What's different? What do you agree with? What do you disagree with? What would you add, expand, change, etc.? Justify your choice. What is common in building project work in different contexts / directions of training? What is the fundamental difference? Give examples.*

The final part of the workshop was oral reflections in both the teams. The reflection questions were as follows: *What did I learn? What will I take with me? What will I think about next?*

From the open reflections, some interesting facts can be summarized. Firstly, all participants were glad to learn that they have the same problems concerning

project work elaboration and implementation. Secondly, they liked their attempts to think broader and make suggestions on multidisciplinary projects, which seem viable. Thirdly, as the better part of the participants took part in 2 days of the workshop, they highly evaluated my personal contribution to the preparation of the workshop and its guidance. In addition, they thanked me for being a very good moderator for the event.

Apart from the oral feedback, I prepared a written one sent to the participants' emails after the workshop (see Appendix 5). Eventually, I received 3 more feedback sheets. Initially, the most difficult thing for the participants was the establishment of interaction between complete strangers who accidentally got into the team. Another problem is the development of a unified approach during the presentation preparation. The teams consisted of well-trained professionals in completely different areas. In this case, the ability to listen to each other and make a decision together became leading. In other words, the teachers had to find ways to effectively communicate, sharpening their skills. In addition, there was an opinion of the "weakness" of the middle managers who took part only on the first day of the event. From the feedback, the participants' views on how to teach a completely new course "Project work" was very helpful. When preparing a group presentation, they liked brainstorming activities as well.

CONCLUSION

This thesis creation is connected not only with acquiring valuable skills to research and improve on hard skills, but also to develop the necessary soft skills in situations of everyday communication that require quick decision-making, constructive dialogue and the ability to overcome many obstacles. Moreover, it is necessary to note the importance of conducting experimental work and theoretical development of the problem under discussion for a more holistic immersion in the research topic. The advantage of doing research in English is obvious as the initial data for the experiments are taken from the publications of English-speaking researchers and practitioners worldwide, in other words, from authentic sources. Due to the analyzed sources and their findings, there is an exchange of experience, thought and modern trends in higher education teaching that makes higher education globalization come true.

As a result of studying literature, carrying out practical work and experimenting, the value of the constructed experience related to the soft skills development in a real-life context is significant for further iterations of the experimental issues as well as for the formulating some recommendations useful and helpful for the educators interested in higher education transformation and being on the changers track for the times to come. It is necessary to highlight the fact that all experiment procedures can be easily transferred to any higher education institution as they are not financially expensive. However, launching the project requires planned team activities in step-by-step implementation and thinking through all organizational issues. Therefore, it is possible to formulate practical recommendations on the application of the results of the theoretical and practical activities carried out.

To begin with, the development of soft skills is a relevant issue to improve on, specifically, at any higher educational institution. Launching the projects discussed makes an institution more attractive and prestigious for its main stakeholders: prospective students, enrolled students, faculty, graduates, employers, partners, state authority, etc. Realizing such projects is a switch to a new organizational

development and change, resulting in profitable collaborations and partnerships, research and innovation opportunities, start-ups and entrepreneurial activities. The university graduates appear to be "brands" on the labor market, as they are able to be employed by leading enterprises in Russia and worldwide. Due to the changes, universities change their statuses being more internationalized at home and abroad, because they offer courses tailored according to international standards and learners' needs. In this sense, they become more competitive. Thus, developing soft skills in a university is related to human capital investments, quality enhancement and, eventually, success.

Secondly, the steps of project implementation may be as follows (taking up about 3-6 months):

1) Persuasion of the university top and middle management: to connect the goal of the project work establishing with the university education goal of developing soft skills;

2) Build a team of like-minded people ready to act and change;

3) Meetings, communicating about the project, developing the project ideas focusing on peculiarities of the educational/teaching university context, making adjustments for the institution, etc.;

4) Trial: set up a project with a trial period imitating the project procedures proposed in this thesis (two iterations are possible: the first one developed for ESL; the second one - for engineering and other contexts), consider some adjustments if needed (pilot groups counseling and tutoring; feedback and assessment of the course's impact; improvement based on the assessment analysis);

5) Implementation: the institutionalization of the project [Bess, Dee, 2008].

Thirdly, there are some practical comments regarding the features of the work done. The experience exchange (attending classes of colleagues, participating in events and meetings connected to the project implementation) is very important as from that communication a lot of problems, difficulties, lacks, obstacles,

misunderstandings, traps and pitfalls can be identified. A changer should use these signs in upgrading the experiment issues or timely reacting to the hazards.

Next, the person who starts transformations at a university should be firm in positioning themselves as an implementer as well as a leader of the project.   It should also be understood that there is no reverse movement in transformational processes, when one has the aim of the effectiveness and success achievement. Moreover, self-development in educational aspects and soft skills improvement are also important.

Another issue relates to the above mentioned, as promotion of current trends in higher education to the stakeholders (e.g. faculty motivational meetings or teacher training courses, students scaffolding) is possible, if one reads a lot, learns from the leading experts, attends the educational workshops, lectures and seminars, imbibing knowledge and strengthening their educational background (e.g. how to use active learning, what techniques to apply in the framework of learner-centered approach, etc.).

There are also some practical implications on initiating an idea and launching something new. There always should be an organizer and motivator for joint activities. At a university, there are human resources, ideas, and individuals with desire to do something. Strangely enough, all these parties cannot meet on their own, because the university is a huge mechanism with scattered and complex connections, in which it is easy to lose faith in yourself and the value of your beliefs, without finding true like-minded people.

In addition, choosing a changers' track, one needs to be ready that faculty are unwilling and full of fear to participate in collaborations, share experiences. Moreover, there are communication problems starting from the bottom and moving upwards to the middle management. The inability to communicate effectively with students and colleagues demonstrates the lack of soft skills, even if the existence of the problem is totally denied. Therefore, lack of desire to develop, low motivation of

the faculty affects not only the productivity and quality of teaching itself, but also has a direct and immediate impact on the students taught.

For example, project work can be poorly developed, having no unified algorithm for building and conducting project work in groups of students. Dissimulation happens in applying project work. Furthermore, middle managers are not personally interested in changing, transforming and improving anything ("pressure" on teachers, students, etc., the lack of methodological schools / clubs for teachers to exchange pedagogical experience, not all teachers feel comfortable etc.). This is about an ill-natured environment creating inequality.

Middle managers, male, doubt the ability of women to be constructive and able to move existing problems from the point of oblivion. Consequently, there is a clear competition and "restraint" of initiatives, which can critically affect the effectiveness of the planned work and "fail" the experiments ("consumer" approach in order to derive personal benefits from interaction; lack of real joint goals to achieve the success of all stages planned for each team member).

In summary, success comes to those who plan everything, predict possible stumbling blocks or favorable outcomes within the framework. The ability to take decisions on-action and in-action are also crucial. The personal characteristics and soft skills play a huge role in achieving the desired goal. If there are no people who can implement the soft skills development projects (either for students or for faculty), it is a good idea to find an external expert for carrying out proper activities and consulting.

LIST OF REFERENCES

1. Ackermann, E. Piaget's constructivism, Papert's constructionism: What's the difference // Future of learning group publication. 2001. V. 5. № 3. P. 438.

2. Alanazi, A. A critical review of constructivist theory and the emergence of constructionism // American Research Journal of Humanities and Social Sciences. 2016. V. 2. P. 1-8.

3. Arsenijević, J. Project Work in ESP // The First International Conference on Teaching English for Specific Purposes. 2013. P. 270-279.

4. Avdeeva, S., Rudnev, M.G., Vasin, G.M., Tarasova, K.V., Panova, D.M. Assessing Information and Communication Technology Competence of Students: Approaches, Tools, Validity and Reliability of Results // Voprosy obrazovaniya / Educational Studies Moscow. 2017. №. 4. P. 104-132.

5. Barron, B.J., Schwartz, D.L., Vye, N.J., Moore, A., Petrosino, A., Zech, L., Bransford, J.D. Doing with understanding: Lessons from research on problem-and project-based learning // Journal of the learning sciences. 1998. V. 7. № 3-4. P. 271-311.

6. Belland, B.R., Ertmer, P.A., Simons, K.D. Perceptions of the value of problem-based learning among students with special needs and their teachers // The Interdisciplinary Journal of Problem-based Learning. 2006. V. 1. № 2. P. 1-18.

7. Bess, J.L., Dee, J.R. Understanding college and university organization: Dynamics of the system. – Stylus Publishing, LLC., 2008. V. 2. P. 800.

8. Bika, N. How to assess soft skills in an interview: [Official website]. [2022]. URL: https://resources.workable.com/tutorial/soft-skills- (Access date: 01.04.22).

9. Billing, D. Generic cognitive abilities in higher education: An international analysis of skills sought by stakeholders // Compare: A Journal of Comparative and International Education. 2003. V. 33. №. 3. P. 335-350.

10. Blumenfeld, P.C., Soloway, E., Mark, R.W., Krajcik, J.S., Guzdial, M., Palincsar, A. Motivating project-based learning: sustaining the doing, supporting the learning // Educational Psychologist. 1991. V. 26 № 3/4. P. 369-398.

11. Bowden, J., Marton, F. The University of Learning. Beyond quality and competence. – London: Kogan Page, 1998. 320 p.

12. Brown, P., Hesketh, A.J. The Mismanagement of Talent: Employability and Jobs in the Knowledge-Based Economy. Oxford: Oxford University Press. 2004. 288 p.

13. Brown, B.A., Reveles, J.M., Kelly, G.J. Scientific literacy and discursive identity: A theoretical framework for understanding science learning // Sci. Edu. 2005. V. 89, № 5. P. 779-802.

14. Brown, T., Wyatt, J. Design thinking for social innovation // Ann. Rev. Policy Des. 2015. V. 3. № 1. P. 1-10.

15. Brush T., Saye, J. The effects of multimedia-supported problem-based inquiry on student engagement, empathy, and assumptions about history // The Interdisciplinary Journal of Problem-based Learning. 2008. V. 2. № 2. P. 21-56.

16. Caggiano, V., Schleutker, K., Petrone, L., Gonzalez-Bernal, J. Towards identifying the soft skills needed in curricula: Finnish and Italian students' self-evaluations indicate differences between groups // Sustainability. 2020. V. 12. № 10. P. 1-10.

17. Cho, Y., Brown, C. Project-based learning in education: Integrating business needs and student learning // European Journal of Training and Development. 2013. V. 37. № 8. P. 744-765.

18. Cinque, M. 'Lost in translation'. Soft skills development in European countries // Tuning Journal. 2016. V. 3. Issue 2. P. 389-427.

19. Collins, 2022 - Collins Cobuild Dictionary: [Official website]. [2022]. URL: https://www.collinsdictionary.com/dictionary/english/soft-skills (Access date: 25. 04. 2022).

20. Collins, A., Brown, J.S., Newman, S.E. Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics / L.B. Resnick (Ed.) / Knowing, learning and instruction: Essays in honor of Robert Glaser. Routledge, 1989. 528 p.

21. Craig, J.L., Lerner, N., Poe, M. Innovation Across the Curriculum: Three Case Studies in Teaching Science and Engineering Communication // IEEE Transactions on professional communication. 2008. V. 51. № 3. P. 280-301.

22. Crawley, E., Cha, J., Malmqvist, J., Brodeur, D. The context of engineering education // Proceedings of the 4th International CDIO Conference, Gent, Belgium. 2008. P. 1-18.

23. Crawley, Ed.F., Bathe, M., Lavi, R., Mitra, A.B. Implementing the NEET Ways of Thinking at MIT and Assessing their Efficacy // ASEE's virtual conference. 2020. P. 1-22.

24. Development Program of the Federal State Budgetary Educational Institution of Higher Education "Irkutsk National Research Technical University" for 2021-2030 (Программа развития Федерального государственного бюджетного образовательного учреждения высшего образования "Иркутский национальный исследовательский технический университет" на 2021-2030 годы). Irkutsk, 2021. [Official website]. URL: https://www.istu.edu/upload/iblock/b7e/pdf (Access date: 25. 01. 2022).

25. Dewey, J. Democracy and education: An introduction to the philosophy of education. Macmillan, 1923. 434 p.

26. Ehlers, U., Kellermann, S. Future Skills: The Future of Learning and Higher education. Results of the International Future Skills Delphi Survey. Karlsruhe, 2019. P. 2-69.

27. Eliseev, I.N., Eliseev, I.I., Larina, T.N., Krovosheev, N.V. Modeling the Characteristics of Diagnostic Means for Assessing Information Competencies of Students // Engineering Journal of Don (electronic scientific journal). 2014. №4, URL: http://ivdon.ru /ru/magazine/archive/n4y2014/2566 (Access date: 25. 09. 2021).

28. Ennis R.H. Critical thinking across the curriculum: A vision // Topoi. 2018. V. 37. №. 1. P. 165-184.

29. Facts on File, J.G. Ferguson Publishing Company. Communication skills. / Ed. by Richard Worth. Ferguson pub., 2nd edition, 2004. 128p.

30. Froyd, J.E., Wankat, P.C., Smith, K.A. Five major shifts in 100 years of engineering education // Proceedings of the IEEE, 100 (Special Centennial Issue). 2012. P. 1344-1360.

31. Geier, R., Blumenfeld, P.C., Mark, R.W., Krajcik, J.S., Fishman, B., Soloway, E., Clay-Chambers, J. Standardized test outcomes for students engaged in inquiry-based science curricula in the context of urban reform // Journal of Research Science Teaching. 2008. Vol. 45. № 8. P. 922-939.

32. Graham, R. The global state of the art in engineering education // Massachusetts Institute of Technology (MIT) Report, USA: Massachusetts, 2018. 162 p.

33. Grant, M.M. Learning, beliefs, and products: students' perspectives with project-based learning // The Interdisciplinary Journal of Problem-based Learning. 2011. V. 5. № 2. P. 37-69.

34. Han, S., Capraro, R., Capraro, M.M. How science, technology, engineering, and mathematics (stem) project-based learning (PBL) affects high, middle, and low achievers differently: the impact of student factors on achievement // International Journal of Science and Mathematics Education. 2015. V. 13. № 5. P. 1089-1113.

35. Harvey, L., Moon, S., Geall, V. Graduates' Work: Organizational Change and Students' Attributes. Birmingham: QHE. 1997. 139 p.

36. Hassard, J. Science Experiences: Cooperative Learning and the Teaching of Science. Addison-Wesley, 1990. 315 p.

37. Hicks, C., Hennessy, D. (n.d.). Hennessy-Hicks training needs analysis questionnaire and manual. [Electronic resource]. URL: https://www.who.int/workforcealliance/knowledge/HennessyHicks_trainingneedstool.pdf (Access date: 15. 01. 2021).

38. Hmelo-Silver, C.E., Barrows, H.S. Goals and strategies of a problem-based learning facilitator // Interdisciplinary journal of problem-based learning. 2006. V. 1. № 1. P. 21-39.

39. INRTU - Irkutsk National Research Technical University: [Official website]. [2022]. URL: https://eng.istu.edu/about/about/description/ (Access date: 15. 02. 2022).

40. Jackson, D. An international profile of industry-relevant competencies and skill gaps in modern graduates // International Journal of Management Education. 2010. V. 8. №. 3. P. 29-58.

41. Kilpatrick, W. The project method // Teachers college record. 1918. V. 19. № 4. P. 319-335.

42. Knoll, M. The Project Method: Its Origin and International Development. In: Progressive Education Across the Continents. A Handbook, ed. Hermann Röhrs and Volker Lenhart. New York: Lang 1995. P. 307-318. URL: https://www.mi-knoll.de/145401.html (Access date: 20. 04. 2022).

43. Korepina, N.A. On the Issue of ESP Teaching Methodology: Needs Analysis / L. Szczuka-Dorna (ed.) / Modern approaches to LSP: Selected issues in teaching adults at higher education level. Poznan: Publishing House of Poznan University of Technology, 2013. P. 34-42.

44. Kostikova, I. Holubnycha, L., Girich, Z., Movmyga, N. Soft Skills Development with University Students // Revista Romaneasca pentru Educatie Multidimensional. 2021. V. 13. № 1. P. 398-416.

45. Kunter, M., Klusmann, U., Baumert, J., Richter, D., Voss, T., Hachfeld, A. Professional competence of teachers: effects on instructional quality and student development // Journal of educational psychology. 2013. V. 105. № 3. P. 805.

46. Legutke, M., Thomas, H. Process and Experience in the Language Classroom. London: Longman, 1993. 350p.

47. Lozovoy, A.Y., Zashchitina, E.K., Nazvanova, I.A. Students' soft skills as a factor of their professional competitiveness improvement // Planning and Teaching Engineering Staff for the Industrial and Economic Complex of the Region. 2019. P. 82-85.

48. Macmillan, 2022 - Macmillan Dictionary: [Official website]. [2022]. URL: https://www.macmillandictionary.com/dictionary/british/soft-skills (Access date: 25. 04. 2022).

49. Majid, S., Liming, Z., Tong, S., Raihana, S. Importance of soft skills for education and career success // International Journal for Cross-Disciplinary Subjects in Education. 2012. V. 2. № 2. P. 1037-1042.

50. Mergendoller, J.R., Maxwell, N.L., Bellisimo, Y. The effectiveness of problem-based instruction: a comparative study of instructional methods and student characteristics // The Interdisciplinary Journal of Problem-based Learning. 2006. V. 1. № 2. P. 49-69.

51. Moulton, M.R., Holmes, V.L. An ESL capstone course: Integrating research tools, techniques, and technology // TESOL Journal. 2000. V. 9. № 2. P. 23-28.

52. OECD, 2018 - The future of education and skills: Education 2030 // OECD Education Working Papers: [electronic resource]. [2018]. URL: https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf (Access date: 05. 04. 2022).

53. OLD, 2022 - Oxford Learner's Dictionary: [Official website]. [2022]. URL: https://www.oxfordlearnersdictionaries.com/definition/english/soft-skills (Access date: 25. 04. 2022).

54. Papert, S., Harel, I. Situating constructionism // Constructionism. 1991. V. 36. № 2. P. 1-11.

55. Peresada, O.V., Korepina, N.A. Formation of technical university students' information competency using information and communication technologies (ICT) // Actual problems and prospects for the development of civil aviation. Proceedings of the X International Scientific and Practical Conference. Irkutsk, 2021. P. 358-369.

56. Priority 2030. Ministry of Science and Higher Education of the Russian Federation: [Official website]. [2022]. URL: https://priority2030.ru/en (Access date: 20. 01. 2022).

57. Raitskaya, L.K., Tikhonova, E.V. Russian professors' and students' perspective on Soft skills from the global perspective // RUDN Journal of Psychology and Pedagogics. 2018. V. 15. № 3. P. 350-363.

58. Raitskaya, L., Tikhonova, E. Skills and Competencies in Higher Education and Beyond // Journal of Language and Education. 2019. V. 5. № 4. P. 4-8.

59. Ranger, B.J., Mantzavinou, A. Design thinking in development engineering education: A case study on creating prosthetic and assistive technologies for the developing world // Development Engineering. 2018. V. 3. P. 166-174.

60. Revell, A., Wainwright, E. What makes lectures 'unmissable'? Insights into teaching excellence and active learning // Journal of Geography in Higher Education. 2009. V. 33. № 2. P. 209-223.

61. Robles, M.M. Executive Perceptions of the Top 10 Soft Skills Needed in Today's Workplace // Business Communication Quarterly. 2012. V. 75. №4. P. 453-465.

62. Rylova, A.G. Soft skills are the skills of the 21st century: what do employers-drivers in Russia and the Perm region value the most? 19 February, 2019. URL: https://perm.hse.ru/news/243254110.html (Access date: 10. 04. 2022).

63. Schmidt, H.G, Rotgans, J.I., Yew, E.H.J. The process of problem-based learning: What works and why // Medical Education. 2011. V. 45 № 8. P. 792-806.

64. Schmidt, H.G., Wagener, S.L., Smeets, G.A., Keemink, L.M., van der Molen, H.T. On the use and misuse of lectures in higher education // Health Professions Education. 2015. V. 1. № 1. P. 12-18.

65. Sheppard, K., Stoller, F.L. Guidelines for the integration of student projects into ESP classrooms // English Teaching Forum. 2015. V. 33. № 2. P. 10-15.

66. Shevchuk, E.V., Kolyeva, N.S. Diagnosis of Formation of Information Competence of Students of Adolescent Age // Theory and Practice of Social Development. 2011. № 6. P. 114-116.

67. Tang, K.N. Beyond Employability: Embedding Soft Skills in Higher Education // Turkish Online Journal of Educational Technology-TOJET. 2019. V. 18. №. 2. P. 1-9.

68. The Importance of Soft Skills in the Job Market. An Analysis of the Soft Skills Demand by Job, Function, and Seniority Level / M. Lecis, [et. al.]. Boostrs. 2020. 26 p.

69. Tomlinson, M. Graduate employability: A review of conceptual and empirical themes // Higher Education Policy. 2012. V. 25. № 4. P. 407-431.

70. Tsalikova, I., Pakhotina, S. Scientific Research on the Issue of Soft Skills Development (Review of the Data in International Databases of Scopus, Web of Science) // The education and science journal. 2019. № 21. P. 187-207.

71. Walker, A., Leary, H. A problem based learning meta-analysis: differences across problem types, implementation types, disciplines, and assessment levels // The Interdisciplinary Journal of Problem-based Learning. 2009. V. 3. № 1. P. 12-43.

72. Wals, A.E.J., Benavot, A. Can we meet the sustainability challenges? The role of education and lifelong learning // European Journal of Education. 2017. V. 52. №. 4. P. 404-413.

73. Wang, L., Bruce, C., Hughes, H. Sociocultural theories and their application in information literacy research and education // Australian Academic & Research Libraries. 2011. V. 42. № 4. P. 296-308.

74. Wedel, M.K., Boldizar, A., Malmqvist, J. Active learning through group dialogue in a project-based course on environmentally adapted product development // Proceedings of the 1st Annual CDIO Conference. 2005. P. 1-9.

75. Wiek, A., Xiong, A., Brundiers, K., Van Der Leeuw, S. Integrating problem-and project-based learning into sustainability programs: A case study on the School of Sustainability at Arizona State University // International Journal of Sustainability in Higher Education. 2014. V. 15. № 4. P. 431-449.

76. Weligamage, S.S. Graduates' employability skills: Evidence from literature review // ASAIHL. Sri Lanka: University of Kelaniya. 2009. P. 115-125.

Handouts

Group A

Read the text on p. 34-35 (introduction + TOEFL)

1). Write out new or unknown words, check their meanings in the dictionary. Also see ex. 3, p.34:

Now, teach each other.

2). Fill in the table about TOEFL:

		TOEFL	IELTS	FCE
1	Decipher the abbreviation			
2	Number of countries/unis accepting the certificate			
3	Mode of taking an exam			
4	Exam structure			
5	Cost			
6	Validity/ expiry date			

Now, practice talking about TOEFL with your groupmates.

3). Ask 3 questions on your part of the text:

Group B

Read the text on p. 34-35 (introduction + IELTS)

1). Write out new or unknown words, check their meanings in the dictionary. Also see ex. 3, p.34:

Now, teach each other.

2). Fill in the table about IELTS:

		TOEFL	IELTS	FCE
1	Decipher the abbreviation			
2	Number of countries/unis accepting the certificate			
3	Mode of taking an exam			
4	Exam structure			
5	Cost			
6	Validity/ expiry date			

Now, practice talking about IELTS with your groupmates.

3). Ask 3 questions on your part of the text:

Group C

Read the text on p. 34-35 (introduction + FCE)

1). Write out new or unknown words, check their meanings in the dictionary. Also see ex. 3, p.34:

Now, teach each other.

2). Fill in the table about FCE:

		TOEFL	IELTS	FCE
1	Decipher the abbreviation			
2	Number of countries/unis accepting the certificate			
3	Mode of taking an exam			
4	Exam structure			
5	Cost			
6	Validity/ expiry date			

Now, practice talking about FCE with your groupmates.

3). Ask 3 questions on your part of the text:

Students' Reflection Card

Students are supposed to write a reflection based on their experience in the group work on presentation preparation and its delivery.

Preparing the reflection card (RC), students should follow the plan and questions that will help organize their ideas:

     a)   Describe what you did to prepare for the group presentation:

1). What did you succeed in?

2). What was most challenging to you about this assignment?

3). What questions arose during your work on this assignment that you had not considered before?

4). What action has each member taken that was helpful for the group?

5). What action could each member take to make the group even better?

     b)   Now explain what you will do to prepare for the next group presentation or other group work. What would you do differently or change?

The RC should be no longer than one page (no more than 300 words).

Evaluation criteria include a) writing and formatting requirements (word counting, 1,5 line spacing, 12 font Times New Roman), b) clarity and structure of the presented ideas, and c) critical reflection and argumentation structuring.

Group Evaluation[1]

This evaluation will be highly confidential and will be known only to the professor.

Evaluator's name:

Date:

On each line below, write in a group members' name, including your own.

Provide a rating of the group members' participation in the following space. Use the scale given below:

0 - no participation

1 - minimal participation

2 - active participation

3 - exceptional participation

Name and Surname	Rating
1	
2	
3	
4	
5	

---

[1] Major, C. H., Harris, M. S., Zakrajsek, T. Teaching for learning: 101 intentionally designed educational activities to put students on the path to success. Routledge. 2015. 356 p.

Project Implementation Stages

1) April 18 - May 01, 2022: topics submission for the project foresight game on the official website resources and registration of the participants;

2) April 28-29, 2022: teacher training workshop on mentors' soft skills enhancement for guiding project activities;

3) May 04 - 11: students registration and selecting topics from the proposed list;

4) May 14: team building under mentors guidance;

5) May 21: foresight game (collaboratively developing a plan for the project implementation).

Teachers' Reflection Card

Напишите рефлексию, отражающую Ваш опыт командной работы по подготовке презентаций.

При подготовке рефлексии используйте навигационные вопросы, которые помогут систематизировать Ваши идеи:

а) Опишите, что Вы сделали для подготовки групповой презентации:

1). В чем Вы преуспели? Что получилось?

2). Что для Вас было самым сложным в этом задании?

3). Какие вопросы/идеи возникли у Вас в ходе работы над этим заданием, с которыми Вы раньше не сталкивались?

4). Какие действия, предпринятые каждым отдельным участником, были полезны для достижения командного результата?

5). Какие действия мог бы предпринять каждый участник, чтобы улучшить командное взаимодействие?

б) Объясните, что Вы будете делать, чтобы подготовиться к следующей групповой презентации или другой командной работе. Что бы Вы сделали по-другому или изменили? Почему?

в) Какие навыки Вы приобрели? Что узнали нового? Что открыли в восприятии *себя, других*?

г) Каково Ваше общее впечатление от мероприятия? Что бы Вы порекомендовали изменить/улучшить содержательно, организационно и с методической точки зрения? Почему?