

Developing Business Communication Skills Through Interdisciplinary Approach to Study English

Kira Vyshnevskaya¹ Olga Bratanych² Sergii Skydan¹ Olena Hushko^{1,*} Iryna Lopatynska³ Oksana Balanaeva³

¹ *Kryvyi Rih Economic Institute of Kyiv National Economic University named after Vadym Hetman, Kryvyi Rih 50000, Ukraine*

² *Kryvyi Rih metallurgical institute of the National metallurgical academy of Ukraine, Kryvyi Rih 50006, Ukraine*

³ *Donetsk Law Institute of the Ministry of Internal Affairs of Ukraine, Kryvyi Rih 50000, Ukraine*

*Corresponding author. Email: pygmalion.utu@gmail.com

ABSTRACT

The present-day fast-developing knowledge society calls for an interdisciplinary approach to studying a foreign language in non-linguistic Universities. To meet contemporary requirements, teaching a foreign language for specific domains demands a new syllabus approach meant to enhance students' motivation to study and improve both language level and business communication skills. The paper covers some issues of interdisciplinary approach, defines the fundamental principles of its implementation and dwells upon actual program samples for using interdisciplinary links of ESP and profile disciplines in different fields of higher education.

Keywords: *foreign language, medium of instruction, integrating content, profile subjects, motivation*

1. INTRODUCTION

Communication skills such as public speaking, networking, listening, writing, negotiating are especially crucial in the workplace if you want to move up your career ladder as fast as possible. The peculiarity of mastering business communication skills in non-linguistic Universities is to focus on acquiring professionally relevant language material [1]. Formation of communicative competence of non-linguistic students involves preparation for intercultural business communication in the professional sphere, which, consequently, highlights the expediency of updating the interdisciplinary / cross-curricular links of the foreign language and professional cycle courses. Interdisciplinary foreign language teaching in non-linguistic Universities should go hand in hand with the principle of integration, which is defined as a basic one in ESP program and built on an assessment of purposes, needs and functions for which English is required [2]. ESP concentrates more on language in context than on teaching grammar and language structures [3]. The central focus point in teaching English in non-linguistic Universities is to integrate it into a subject matter area important to the learners, therefore, combining them effectively. Such combination is a highly motivating one, since students have opportunity to apply what they learn in their English classes to their major area of study, whether it is computer science, engineering, or law. Thus, interdisciplinary approach is oriented at integrating knowledge from different disciplines, simultaneous development of proper communicative,

professional, academic and social skills [4]. In our view, however, the implementation of cross-curricular links in teaching foreign languages is still somewhat episodic. This shortcoming is explained, first of all, by the lack of coordination between the foreign language and other disciplines curricula, which makes it impossible for the students to consciously transfer the acquired academic and professional knowledge to the sphere of foreign language.

1.1. Theories and Arguments for Integrating content of profile subjects into the English Language Curriculum in a non-linguistic University

Interdisciplinary approach to designing a foreign language course in a non-linguistic University is generally considered to be a way to achieve the goal of mastering a foreign language in the field of professional activity [4-5]. Taking advantage of interdisciplinary studying a graduate is ready for networking with representatives of foreign cultures on professional subjects, getting acquainted with the latest international sources for achieving the purpose of professional development. It is of crucial importance that the interdisciplinary approach combines language and vocational training, students are aware of ways of expressing a complex of professional material in a foreign language. Interdisciplinarity covers all procedures for designing a foreign language course in the professional sphere of communication, namely, the ways of selecting didactic units and texts directly for teaching, methods and techniques for placing foreign language material and their

implementation in teaching practice. Interdisciplinary links are displayed both at the contents level of integrated curriculum and at the level of technology used to improve students' foreign language skills for communication [4-6]. Interdisciplinary approach reveals the synthesizing relationships between objects, which is reflected in the learning process, namely in the content, technologies, forms of the educational process [5,7].

It is essential that reliance on interdisciplinary studying is possible only through appreciating the language as a unique means of communication, principle way of representing knowledge about the world. That is why the analysis of ways of updating interdisciplinary links shows the necessity for careful selection and systematic consideration of language material in close connection with the disciplines of the professional cycle [5,7,8]. Thorough analysis and selection are sine qua non condition for creating successful environment for students to be prepared for realizing their professional foreign-language communication.

The implementation of interdisciplinarity is based on the following constituents:

- in-depth understanding of the types of interdisciplinary connections between the subject of a foreign language and disciplines of the professional cycle;
- reliance on interdisciplinary connections, actualizing students' foreign language skills and expanding their ability to solve applied problems in the field of professional learning focus;
- close contact with the departments of profile subjects, consulting with specialists and reading industry-specific literature in order to provide opportunity for identifying more relevant content, framework for communicative activities, social norms of behaviour essential for future specialists' successful business communication in a foreign language [6,8].

1.2. Our Contribution

Interdisciplinary links are apparently unstable, not fixed [5-8]. Therefore, for their wide use in the process of forming professional competence, it is necessary to separate relevant information from different disciplines at each stage of teaching and to establish the framework of their use, i.e. to determine the content of cross-curricular links [6-8]. In our practical activities, we proceed from the analysis of language needs, which are the basis for determining the content of foreign language learning and take into account the use of relevant knowledge in other disciplines. We are trying to answer such questions as: What material should you use? When exactly? In what particular way? The answers depend first and foremost on complex of linguistic, communicative, professional, psychological and cultural blocks of competencies to be formed for making up the foreign-language business communication competence. Each of these blocks combines a number of relevant competencies which are not the same for different fields of higher education and

determined by the specific functional profile of students' specialty.

Rather than provide abstract concepts we suggest concrete, vivid, real-life program samples for using interdisciplinary links of ESP and profile disciplines in different fields of higher education such as Industrial Engineering and Metallurgy, Law and IT.

2. SPECIAL FEATURES OF INTERDISCIPLINARY LINKS IN INDUSTRIAL ENGINEERING AND METALLURGY

According to the higher education standard of Ukraine for the first (bachelor) level of the Industrial Engineering training area one of the key competencies of a bachelor's level graduate should be "the ability to effectively form a communication strategy and communicate in the official and foreign languages for information, ideas, problems and solutions related to specialization, with the engineering community and society as a whole", that is, not just to read and translate professional texts, but to be skilled in professional communication.

The Encyclopedic Dictionary [9] gives the following definition of business communication: "Business communication is a special form of communication aimed at organizing and optimizing the cooperation of people in the labour process (within the framework of production, scientific, commercial and other types of joint activities). Business communication includes negotiation, meetings, official correspondence and public speaking. In a specific professional field, business communication is specific and is called professional, and sometimes professional, official, statutory".

With this definition in mind, when speaking about the formation of communication skills for electronic (online), verbal and written communication in any industrial sector, we find it more appropriate to use the terms "business communication" and "business communication skills". Whatever industry you are in the future, it is obvious, that any plans you have to dominate your industry sector are to be built on the strongest and most consistent communication strategies.

Having analysed the relevant scientific literature and Internet resources, we found out that, as of today, the subject and procedural aspects of the formation of business communication skills through the implementation of interdisciplinary links of foreign language and professional disciplines in technical university students, which have their own specifics, are not quite studied yet.

There are two forms of implementation of interdisciplinary links of English with professional disciplines in the practice of Ukrainian technical as well as other non-linguistic universities. These are ESP and EMI (English as a Medium of Instruction).

In ESP and EMI, interdisciplinary links are characterized by a role-based "learning objective / learning tool" ratio. In ESP, English is the goal, and professional discipline is one

of the learning tools that defines the "background" content of learning and the forms of simulated interaction in the workplace setting and professional communication skills training. In EMI, English is a tool that is gradually being improved, and a professional discipline is the goal of learning. ESP and EMI provide both learning and practical application of professional English, which is a natural process of building communication skills. They make learning a foreign language more conscious and motivated [10].

At the Bachelor's level, in most Non-Linguistic universities of Ukraine, ESP is taught during the first 4 semesters, when students study mainly general education subjects, and, therefore, ESP does not follow professional disciplines, but is ahead of them and serves as a kind of "Introduction to Specialty". That is why the content of the educational material for reading, speaking, listening and writing, which is selected by the foreign language teacher,

should get students acquainted with the professional production environment (the layout of the enterprise (metallurgical plant), subjects of work, tools, products, working conditions) rather than with production functions, technological processes and equipment. In addition, text material should be concise, informative, and problematic and encourage students to engage in discussion, dialogical and monological professionally oriented speech, thus contributing to the development of professional communication skills.

Professional communication skills are shaped through interdisciplinary forms of communication activities. The major ways to build professional communication skills through an interdisciplinary approach for the first (bachelor) level of the training area Mechanical Engineering, specialty Metallurgy are presented in Table 1.

Table 1 Bachelor students' business communication skills through the interdisciplinary approach

Types of business communication	Interdisciplinary communication activities
Public speaking	Reports on scientific discoveries, achievements, innovations in the field of Metallurgy and presentations on the scientific interests of students. Creating advertising video clips of finished products of the metallurgical plant, etc.
Listening	You Tube videos: "A Day in the Life of a Metallurgy and Materials Student", "The Department of Metallurgical Engineering & Materials Science" "Careers in Metallurgical Engineering", "What is Industrial Engineering", "All You Need To Know About Metallurgy – Iken Edu", etc.
Networking	Simulations "Networking during a small talk with the steel mill top managers to establish the right connections for getting a job at the steel mill", "Networking during the birthday celebration of the shop manager with the aim of getting a promotion", etc.
Writing	Resume, recommendation, cover letter, letter of request for additional information; business letters, etc.
Negotiating	Win-win conversations; job interviews; negotiations on organization of an exhibition of steel plant products in a foreign country; telephone conversations, etc.

In the master's program of technical universities, students also study ESP, but at this stage of training the foreign language goes in parallel with the study of special disciplines. That is why the content of the educational material for reading, speaking, listening and writing, which is selected by the foreign language teacher, should not only introduce students to the vocabulary related to specific technological processes and production equipment, but also contribute to the formation of professional communication competence.

Popova N.V. [11] rightly notes that the formation of the foreign-language business communication competence in the magistracy of non-linguistic areas should be based on the interdisciplinary approach. This approach combines the linguistic, professional, psychological and cultural orientation of the Master's degree program and makes it possible to evenly distribute the content of the Master's degree program in a business foreign language between classroom and independent types of work.

We share M.M. Stepanova's [12] opinion that "the professional component of the business communication competence is those professional competencies which are formed by the future master in the process of his training. Their composition and content depend on the master's specialization, and therefore in the model of formation of business communication competence this part is variable. Interdisciplinary links with the subjects of the professional cycle studied by master's students at the university ensure the organic inclusion of professional competencies in the competence of foreign-language business communication". According to L. Semiv [13] the concept of "competence" contains a set of knowledge, skills and attitudes that allow individuals to effectively act or perform certain functions aimed at achieving certain standards in a professional field or a particular activity.

As a rule, professional communication is more related to the performance of professional functions. That is why the content of simulated foreign-language professional

communication should be lexically connected not only with the content of the professional discipline, but also with the production functions of a specialist in a particular industry and the professional environment (a shop, a laboratory, a blast furnace, a department, an office, etc.). ESP teacher's knowledge of the main production functions of a specialist will allow him to make samples and situational tasks for monological, dialogical, polylogical speech and written professional communication more realistic and closer to the conditions of the professional environment.

The research of interdisciplinary links of a foreign language with professional disciplines requires an interdisciplinary approach to the research itself by way of studying curricula, scientific literature, industrial practice, Internet resources, etc. of a particular specialty or training area.

The interdisciplinary activities for developing technical university students' professional communication skills such as public speaking, networking, listening, writing,

negotiating should be based on major engineer-functions and responsibilities defined by Jennifer O'Donovan [14], namely: research (seeking new principles and processes); development (applying the results of research to useful purposes, e.g. new production technologies, machines, gadgets, etc.); design (determining product shape, specifying materials to satisfy technical requirements and to meet performance specification, etc.); production (supervising and improving production, drawing up safety protocols, reporting issues to the Manager, etc.); operation (examining machinery for defects, handling any repairs or upgrades to the machinery); management and other functions (deciding how assets are to be used).

Interdisciplinary approach to our research allowed creating interdisciplinary-functional approach to building professional communication skills as a tool to bridge ESP, professional disciplines and major engineering functions and to develop integrated interdisciplinary communication activities (Table2).

Table 2 Magister students' business communication skills through the interdisciplinary-functional approach

Engineer-functions	Business communication skills	Interdisciplinary communication activities
research, development (based on the course paper)	Public speaking	Presentations of research results in the metallurgical industry: corporate; briefing; exclusive; conference
	Writing	Scientific articles, scientific reports.
	Networking	Simulations: "Networking at a scientific conference with the view of finding partners for joint research into the scientific and technical problem of the metallurgical industry"; "Networking at an exhibition of metallurgical industry achievements with the view of finding an investor to implement your invention".
design	Writing	A requirement specification, a design or product specification, an "in-service" or "maintained as" specification, etc.
production	Negotiating	Reporting issues to the Manager over the telephone.
	Writing	Drawing up safety protocols, reporting issues to the Manager.
	Listening	Videos: Europe's Biggest Blast Furnace – A colossus being made fit for the future (made in Germany); Steel Metallurgy – Principles of Metallurgy; SunCoke Coke-making Process; Heat Treatment – The Science of Forging.
operation	Negotiating	Conference call: "Interviewing process supervisors and operators".
	Writing/Public speaking	Reporting on the results of examining machinery for defects.
	Listening	Video "Fundamentals of Mechanical Engineering"
management	Public speaking	Meetings: problematic, instructive, operative.
	Negotiating	Negotiations within the framework of cooperation on attraction of investments; negotiations in conditions of conflict on raw material quality; negotiations on metal products supply.
	Writing	Orders, instructions.

3. BUSINESS COMMUNICATION STANDARDS IN TRAINING A LAW STUDENT

Communication is an integral part of a lawyer's professional activity, regardless of their specialization. An important feature is that foreign-language communication skills often proceed in a special procedural mode with observance of certain, clearly defined forms of communication such as receiving applications from

citizens; interrogation during the preliminary investigation; interrogation in court in the consideration of criminal cases, interrogation and obtaining relevant evidence from the parties involved in civil proceedings; counsels' opening and closing statements, making, sustaining and overruling objection, judicial debates, exchange of replies, defendants' last word, to name just a few [15].

In addition to legal knowledge, a future lawyer and law enforcement officer must acquire first rate communication skills in order to build and sustain rapport with clients, develop the ability to convince a person, be a confident speaker when arguing a case in court, negotiating settlements and explaining complex information to clients. A successful legal professional is actively involved in various types of professional communication, thus, has to use persuasive, clear and succinct language to interact with various officials, heads of companies and institutions, and be able to communicate effectively in a foreign language to get to the heart of the matter.

Law enforcement professional communication involves not only procedural forms of communication (interrogation, face-to-face, etc.), but also non-procedural foreign language communication. The latter is based on the rules of linguistic behaviour adopted in a society, in particular linguistic social environment such as speech etiquette formulas embodying the most common features of human linguistic

behaviour in a variety of life situations and legally relevant circumstances [16].

Studying different cases does not only help to check and revise studied material, but also identifies students' mistakes, gives opportunity to overcome organizational-pedagogical and psychological difficulties of professional communication. Besides, knowledge of professional vocabulary, maintaining a properly organized monologue in foreign languages, adequate translation of professional messages into a foreign or native language contributes to the formation of students' effective business communication skills. In the created experimental program of developing communicative skills through the interdisciplinary approach to teaching English the connections and areas of integration with other special disciplines included into professional curriculum of future lawyers and law enforcement officers were determined (tab.3). The content of these subjects was considered during preparation of tasks and assignments for simulation role-playing, discussion and game-based learning.

The suggested activities are optional ones; they may have some varieties and changes. We assume listening and speaking activities as a basis, since developing communicative skills for real life situations is doomed to failure without them.

Table 3 The content of profile subjects and foreign language integration for development business communication skills of future lawyers and law enforcement officers

Discipline	Subject under Consideration	Year of study	Foreign Language Class Contextual Activity Based upon Interdisciplinary Links
Sociology History of State and Law	1) Law and society. 2) Legal resources. 3) History of Law. Different branches of Law.	1	1) Hot summary of the video "What is Law?". Presentation on the topic "Ancient societies". 2) Presentation "The best source of law: encyclopedias, computerized database, references and forms books". 3) Discussion in small groups. What is society? "The students speak about the position and usage of Law in various ancient societies till nowadays.
Judicial and Law enforcement bodies of Ukraine	1) Lawyer. 2) Classification of legal profession. 3) Legal establishments. 4) Judicial bodies. 5) Court structure Jurisdiction.	1	1.1) Thematic presentation and discussion "Peculiarities of legal profession". 1.2) Watching and discussion "My dream job is to be a police officer" (2019). 2) Round table on the theme "Why do we serve?" (students prepare questions to each other about their training, choice of specialization, challenges and opportunities). 3) Watching video fragment with subsequent discussion "Brief History of British Police" (2018). 4) Mini-projects: Jury Duty "Rules and expectations". 5.1) Watching a video: "Understanding the levels of the US federal courts" 5.2) Role-play on the topic "In the court room". 5.3) Writing a letter on the topic: "A lawyer's letter to a client".
Administrative activity of the National Police	1) Law enforcement bodies in Ukraine. 2) Rights and duties of the law enforcement officers in the UK and the USA. 3) Investigator's powers and activity in Ukraine.	2	1) Game-presentation: "Police ranks in Ukraine and in the UK" with the subsequent compare the structures in both countries. 2.1) 5 Must-see Cop Movies: ("The Untouchables", "Street Kings", "The Departed", "Training Day", "The Policeman". 2.2) Debates "British police vs American police". 3.1) Watching a video "How to become a detective". 3.2) Scientific conference "National police in the development of a democratic society".
Organization the activity of the Migration services in Ukraine	1) Performing the migration control. 2) Passport and Visa.	2	1.1) Role-play "Police survey. Migration control". 1.2) Round table "Police officer's etiquette. Why is it important to behave properly during the migration control?". 2) Initial client interview "How to get ID card". Talk "5 top questions often ask" (students prepare information about the process of receiving Visa, types of Visa, necessary documents for Visa).
Special and tactical training Security of Road traffic	1) Police and public security. 2) Security in the public places. 3) Escorting the public officials.	3	1) Role-play "Volunteer organization in Ukraine and Great Britain 'Neighbourhood Watch' ". 2.1) Interview "Radio communication about the incident (priority, location and specifics about the incident)". 2.2) Debates: "Strong arm Police equipment suppliers". 3) Watching video fragment "Emergency call". (2016) Group expert: "Safe escorting". (The Student group is divided into several teams which prepare the algorithm of escorting in different situations).
Criminal Law	1) Classification of offences and crimes.	3	1.1) Brain ring: "The history of crime classification"

	2) Characteristics of different types of crimes.		1.2) Watching video "Crime classification by Allen and Arcadier.P.A." 1.3) Debates on the topic "Misdemeanours vs felonies". 2.1) Watching video fragments "Organized crime" with subsequent discussion "Different classification of crimes (minor crimes, felonies, s, serious crimes, etc.)". 2.2) Role-play "Define the kind of crime".
Criminalistics	1) Criminal investigation. Criminal procedure. 2) Types of evidence. Testimonial evidence. Relevant evidence.	4	1.1) Watching video fragments "Amazing Forensic Science Techniques" (2015) and subsequent discussion. 1.2) Watching video fragments and subsequent discussion: "Suspects". 2) Expert group: "What kind of evidence is it?" (after watching the video students are given an assignment to classify objects as pieces of evidence and to explain their decision.)
Proving a criminal offence	1) Collection and storage of evidence before the trial.	4	1.1) Round table: "The crime evidence, the suspect's reaction, identification of the offence". 1.2) Brainstorming ideas on contemporary gathering information: "Categories of evidence and procedure of its gathering".
Peculiarities of the prosecutor's and advocate's activity in the Criminal process	1) Mediation. 2) Activities of all sides in the criminal process.	4	1) Group expert: "Criminals need help more than punishment". 2.1) Role-play: "Witness and investigator". 2.2) Scientific and practical conference "Combating crimes in police activity: "Challenges of 21-st century".

4. INTERDISCIPLINARY APPROACH IMPLICATION IN THE ENGLISH LANGUAGE COURSE FOR INFORMATION TECHNOLOGY STUDENTS

English can rightfully be called the professional language of IT-specialists. Without knowledge of the English language and its IT terminology, it is impossible to read a passport for computer equipment, pass an international certification exam or find out the latest news from manufacturers of hardware and software [17]. Other arguments which we suggest as motivational key factors include:

- most programming languages are based on English keywords;
- in most cases the interface is presented in English only;
- almost all reference materials and technical specifications are written in English;

- many foreign companies actively use the services of IT specialists from other countries, and in order to accurately understand the needs of customers, it is necessary to know English well;
- programmers need to keep abreast of all the news and updates and it is not a secret that the latest books and articles in the IT field are published in English;
- in the Internet there are hundreds of free training courses in English by widely known specialists in programming alongside with fee-paying ones where it is possible to get an international certificate – an essential addition to the IT specialist's CV;
- competent specialists are constantly required at IT giants most of which are located in the USA, but in order to communicate with colleagues and management at these companies, one must know English.

In Table 4 we present our view on the curricula of teaching English to IT specialists introduced through the prism of various communicative activities on the basis of interdisciplinary approach.

Table 4 The content of profile subjects and foreign language integration for development IT students' business communication skills

Discipline	Subject under Consideration	Year of study	Foreign Language Class Contextual Activity Based upon Interdisciplinary Integration
Programming Essentials in C++	1) Introduction to computer programming. 2) Fundamental concepts and techniques used in object-oriented programming. 3) Strings processing, exceptions handling, namespaces, classes and objects, class hierarchy and inheritance.	1	1) Team contest "FAQ (Frequently Asked Questions)". Questions are given within the following sphere: machine and high-level programming languages, compilation process; machine code; compilation process; simple programs; variables; integers; values, literals, operators; characters: values, literals, operators; input/output operations. Each team of the contestants makes a list of FAQs in the given sphere. In the course of the contest the teams have to be ready to ask and answer their opponents' questions. 2) Brain-ring "Object-oriented programming". 3) Mini Project "Dictionary Research". It is given as a home assignment and followed by the further representation at the lesson. Students work in groups of 3-4 and make up a list of vocabulary on the given topic providing thorough definitions and illustrating examples of use in the specific sphere.
Web Design	1) Basic website: incorporating a text, sound, images, hyperlinks, plug-ins, and social media interactivity. 2) Skills and techniques. 3) Homepage design.	1	1) Podcast "How To Create a Website in a Weekend!" As a home assignment, students create their podcasts with detailed instructions and represent them to the class. To choose the best podcast at the final stage voting is held (collectively developed criteria are taken into account). 2) Poster presentation "Page layout". Students must produce a clear and concise poster presentation for this activity. To do this they must get to grips with the topic and think carefully about how to solve problems. [18]. 3) Project "Effective homepage design techniques and ideas for your website".
Programming Essentials in Python	1) Data types, variables, basic input-output operations, basic operators.	1	1) Quiz "Facts". The class is divided into three or four groups. As a home assignment each group create their quizzes based on the given area of questions, where there is one correct and three incorrect answers, and represent them to the class. The other teams in turn choose the answer getting points for right choices. If

	2) Modules, packages, string and list methods, exceptions.		no team takes the right one, the point goes to the team which asked (on the condition that the question was reasonably posed). The teams continue to exchange questions from their quizzes. To choose the winner at the final stage all the points are summed up. 2) Team contest "FAQ".
Office Software	1) General representation. 2) Office Suite components, classification and modern requirements for office suites. 3) Possible office software problems.	1	1) Watching scenes from "Pirates of Silicon Valley" (1999), an American biographical drama film which explores the impact that the rivalry between Jobs (Apple Computer) and Gates (Microsoft) had on the development of the personal computer. It is preceded by the before watching series of exercises and followed by the discussion based on the questions prearranged by the teacher. 2) Mini Project "Dictionary Research" 3.1) Customer Service Role Playing "How to solve a problem with faulty software". There is a lead actor (student) who is a representative of Hardware And Software Maintenance Service. His/her task is to deal with clients (the rest of the students) who have various problems with their software. The lead actor is substituted after solving 2-3 problems. Possible problems are prearranged and given to students beforehand to get prepared. 3.2) Writing exchange letters. An assistant of Hardware And Software Maintenance Service writes a letter to a system engineer in his/her department asking how to eliminate a software glitch. The system engineer gives deliberate instructions in his/her letter.
Web Development Technologies	1) Browsers. 2) Programming languages. 3) Web development frameworks.	2	1) Role Playing "Our browser is the best for you". The representatives from Google, Chrome, Safari, Firefox and Internet Explorer meet in the studio to try and prove that their browser is head and shoulders above the rest. 2) Round table on the theme "Events that changed the history of programming". 3) Scientific conference "Latest technologies for web development".
Data Bases	1) Terminology. 2) Overview. 3) History of database development. 4) Database interaction.	3	1) Mini Project "Dictionary Research". 2) Watching scenes from "The Matrix" (1999), an American-Australian science fiction action film which depicts a dystopian future in which humanity is trapped inside a simulated reality, the Matrix, created by intelligent machines to distract humans while using their bodies as an energy source. 3) Team contest "FAQ (Frequently Asked Questions)". 4) Presentation of database languages (DCL, DDL, DML, DQL, etc.)
Operating Systems and Data Safety	1) Internals and design principles. 2) Malicious Software. 3) Defences. 4) Intelligent Systems – Machine Intelligence.	3	1) Mini Project "Dictionary Research" 2) Podcast "How to Provide Data Safety". 3) Presentation of Compile-time and Runtime Techniques. 4.1) Watching scenes from "Ex Machina" (2014), a British science fiction film where a young programmer is selected to be the human component in a Turing test to determine the capabilities and consciousness of a new artificial intelligence robot. 4.2) Debates "Artificial Intelligence: pros and cons".
Computer Networks	1) Social networking sites around the world.	3	1.1) Watching scenes from "The Social Network" (2010), an American biographical drama about the founding Facebook. 1.2) Debates "Facebook vs Instagram"
Data Visualization	1) Characteristics of effective graphical displays. 2) Types of big data visualization categories. 3) Common data visualization tools.	3	1) Podcast "What makes data visualization effective?" 2) Presentation of various types of diagrams/charts tables/geospatial used for data visualization. 3) Round table on the theme "Data Visualization Tools That You Cannot Miss in 2020".
Enterprise information system	1) Overview on enterprise information systems. 2) Enterprise information system development.	4	1) Quiz "What is EIS?" 2) Scientific conference "The emerging role of enterprise information systems".
Software Project Management	1) Software project manager. 2) Project Management Framework. 3) Software Project Management Activities.	4	1) Round table on the theme "The role and responsibility of a software project manager". 2) Debates "The best agile project management methodology: Scrum, Kanban, Extreme Programming (XP), Feature-Driven Development (FDD), Dynamic Systems Development Method (DSDM), Crystal: Pros and Cons". 3) Presentation of activities in Software Project Management (Project planning and Tracking; Project Resource Management; Scope Management; Estimation Management; Project Risk Management; Scheduling Management; Project Communication Management; Configuration Management).
Java Programming	1) The Java language.	4	1.1) Podcast "My experience of dealing with Java applets". 1.2) Debates "Using the alternatives to Java: Microsoft's C# and Adobe Flash".

The suggested program has passed cognitive-enrichment stage (expanding students' vocationally-oriented vocabulary; involving them into designing of various professionally oriented speech situations; making up appropriate dialogues, polylogues, monologues) and communicatively active stage aimed at developing business-focused linguistic skills by arranging such forms of joint activity as debates, discussions on professional topics, round tables, simulation of television talk shows. Currently we are in the third, reflexive-evaluation stage, targeted at successful acquiring comprehensive communication skills and abilities to solve professional problems on the basis of foreign language proficiency. The comparative pre-experiment and post-experiment results

are the immediate research goal and to be provided in the next article.

5. ISSUES OF INTRODUCING EMI AS A POWERFUL TOOL FOR INTERDISCIPLINARY LEARNING OF ENGLISH AND PROFESSIONAL DISCIPLINES IN UKRAINIAN UNIVERSITIES

As it has been mentioned above EMI is a powerful tool for interdisciplinary learning of a foreign language and professional disciplines. It is widely regarded as a medium

of instruction in non-English regions of the world [10]. Dr. Nicola Galloway [19] cited practical reasons for the spread of EMI after carrying out a study of EMI students in Japan and China. Most academic research is published in English (about 94 per cent of research in international, high-impact publications is in English). So if students want to stay current with their field, it makes sense for them to learn in English, given that the content is mostly in English. In many technical fields, much of the content and vocabulary is also in English, as are students' dissertations and research". She also praised "the booming Chinese English language teaching industry.

Although the incorporation of English Medium Instruction (EMI) in multilingual higher education institutions is widely accepted [10,19,20], according to Joan Catherine Ploettner, having conducted a study of EMI students in Spain and Portugal, "it may be a source of tension for university professors for whom English is an additional language, particularly when both teacher and students share an L1 other than English."

As practice shows, EMI has not yet been widely applied in the practice of non-linguistic universities in general and especially in peripheral technical universities with a small contingent of students. There are a number of reasons for this, namely,

- Despite the requirement of the Ministry of Education and Science of Ukraine for teachers to have a B2 level certificate of foreign language proficiency to obtain the title of an associate professor, there is not yet a sufficient number of teachers who are certified and motivated in terms of using a foreign language as a tool of teaching professional disciplines.
- Insufficient financial interest of teachers of special disciplines in teaching such courses, the preparation for

6. CONCLUSION

It is of paramount importance that all the proposed experimental program of interdisciplinary activities is based upon such principles as functionality, selectivity, integrativity. Functionality provides future specialists with the ability to perform their functional duties by selecting necessary language material for negotiating or professional communication. In the course of education or vocational training the process of studying is targeted at the activity of the students and takes into account their specific profession. This aim can be achieved through the creation of models of standard communicative situations serving to develop the skills of professional foreign language communication. Selectivity principle contributes to selecting which disciplines to associate with studying a foreign language and what methods and technologies are required to motivate the students and advance their academic qualifications and educational background. The principle of integrativity gives students the opportunity to use their linguistic, intercultural, methodological and professional knowledge to analyse case-study or carry out a project that involves planning, searching, organizing and

which requires much more time and effort to simplify and adapt the training material to the real foreign language capabilities of both teachers and students.

- Inadequate entry level of foreign language skills of a large number of students.
- The impossibility of realizing the fair requirement to provide students with the right to choose the language for studying a professional course in their native or foreign language due to the incomplete staffing of academic groups of one specialty.

Although EMI does not exactly contribute much to the development of all professional communication skills, it provides a powerful lexical and knowledge base for targeted development of these skills in ESP. Elective courses in a foreign language, which are actually EMI, can be a powerful mechanism for shaping the overall professional competence of students as well as their professional communication skills [20]. For example, an elective course "The Art of Presentation", which can be taught to students of any specialty in a foreign language, gives opportunity for the implementation of interdisciplinary links, computer science, psychology and professional disciplines [10,19]. Teaching such a course will significantly improve the professional communicative culture of future specialists; contribute to the formation of their public speaking skills; deepen their professional knowledge [20]. Interdisciplinary links of a foreign language and special disciplines broaden the "information field" for students' independent work on special disciplines and their self-education.

presenting professional communicative competence based on the interpenetration and complementarity of linguistic and communication skills with professional skills.

The findings presented in this paper draw on a systematic review of the literature relating to the components of interdisciplinary approach to teaching English. This paper is a result of many hours' hard work and collaboration of ESP professors from different Ukrainian Non-Linguistic Universities. We believe we managed to prove the benefits of an interdisciplinary approach to ESP teaching to develop business communication skills in students of three training areas; to substantiate functional-interdisciplinary approach to shaping business communication skills when teaching ESP. Based on the theoretical interdisciplinary studies of the subject and procedural aspects of forming business communication skills we have provided specific, vivid, real-life program samples for employing interdisciplinary links of ESP and profile disciplines in different fields of higher education such as Mechanical Engineering and Metallurgy, IT and Law. We have also highlighted the issues of introducing EMI as a powerful tool for the interdisciplinary learning of English and professional disciplines in Ukrainian Universities. Further research into the interdisciplinary links between English language courses and core disciplines may focus on the

extent to which they influence each other in ESP and EMI learning.

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