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Review research paper

DEVELOPING CRITICAL THINKING IN READING COMPREHENSION OF TEXTS FOR SPECIFIC PURPOSES AT ALL LEVELS OF BLOOM'S TAXONOMY

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Abstract. *This study tackles the role of ESP teacher, course design, teaching techniques, and evaluation procedures. It further focuses on evaluating teaching techniques which should improve students' reading comprehension which operates at multiple levels, by applying Bloom's six levels to in-class reading tasks. To accomplish this, twelve B2 level students engaged in activities that revolve around their reading of a text for specific purposes. Through these activities, teaching techniques were assessed and students comprehension was evaluated on each of the six levels. The activities used for research at level 1 were done in person in the classroom. The research activities for levels 2-6 were arranged through an eLearning platform, and students worked independently to complete them and return them to the teacher via internet. The research method used was action research. Based on the findings, it is aimed to offer answers and suggestions that may be useful for EAP and ESP teachers. The research has shown that using reading comprehension strategies at all levels of Bloom's taxonomy in achieving comprehension is beneficial not only in language education, but also for the development of the higher order thinking skills of adolescents. It equips them with the ability to think critically and creatively, and provides them with vital tools that they will use during their whole life.*

Key words: *English for specific purposes, reading comprehension, Bloom's taxonomy, critical thinking*

1. INTRODUCTION

The objective of the article is to provide theoretical and practical knowledge regarding an exploration of how principles of Bloom's taxonomy can be applied to reading comprehension for language learners in EAP and ESP classes in order to find the most suitable strategies for assessing students' reading comprehension proficiency at each of the six levels of Bloom's taxonomy. Reading comprehension according to Bloom's taxonomy can be looked at from many angles. Is reading and remembering the content from a text proof of sufficient comprehension? Are there other levels which need to be investigated? Is the expansion of reading strategies appropriate for adolescents? Are

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all students able to reach all levels of Bloom's taxonomy? By which strategies can we check their comprehension? This article aims to address these questions.

The methods and principles of Bloom's taxonomy, strategies of reading comprehension, materials, time management, and the practice of receptive skills for reading comprehension activities are combined with productive skills of writing and developing creativity and critical thinking.

Since the main emphasis of the article lays on using reading comprehension strategies at all levels of Bloom's taxonomy in an upper secondary school setting, we introduced a topic related to reading comprehension alongside activities that were used among adolescents. At this age learners' cognitivity is developing as a result of improvement in their ability to think abstractly and to consider hypothetical items, which is often demonstrated through their creative approaches to arguments.

This paper preferably concentrates on the reading skills presented in CEFR for learners of a foreign language at the B2 level. According to CEFR, a proficient, B2 level foreign language user is able to read for overall ideas, for specific information, for detailed understanding, and for implications (Council of Europe, 2001). During reading activities, a B2 reader can process written texts by one or more writers, and can master activities that require them to read for general concepts and specific information. They can read and follow directions. They are also proficient enough in the foreign language to read for pleasure.

2. English for Specific Purposes and Developing Communicative Skills

According to Strevens (1988: 1-2) English for Specific Purposes (ESP) meets "specified needs of the learner, related in content to particular disciplines, occupations, and activities, centered on the language appropriate to those activities, in syntax, lexis, discourse, semantics, etc". In addition, Robinson (1980) states that ESP courses are determined in all essentials by the prior analysis of the communication needs of the learners and of the context. ESP courses are fundamentally pragmatic in their interests and are strongly oriented to practice in the selection of relevant genre exemplars, language items, and instructional tasks from real-world contexts. Subject matters may include themes or topics governed by students' needs, purposes, and interests, or any subject in their curriculum.

According to Kováčiková (2020: 27) ESP or EAP is the term that has traditionally been used for courses which aim at teaching English language needed for specific situations, mainly related to academic or occupational contexts. Kováčiková (2020) further states that ESP prepares students for the real world through learner-centred tasks by developing their languages skills with learning how to read, write, listen to, and speak about selected content, for example, by working with authentic reading materials that require students to interpret and evaluate a text in oral or written form.

3. Reading Comprehension as a Communicative Skill in EAP and ESP

Studies done by The Collaboration of English Councils of Teachers (2013-2014) indicate the importance of two reading subskills of equal priority levels: word recognition and language comprehension. Both of these are a part of the process of teaching students to read. Word recognition is when students are able to recognize a written word by pronunciation when they read it. Language comprehension is the ability of students to

interpret words and ideas and their wider meanings by grasping not only the exact meaning of the words or ideas, but also the meaning between the lines.

The word 'comprehend' comes from a Latin root meaning to 'wrestle with something'. Many teens who find reading challenging are perfectly capable of accurately recognizing and reading individual words; rather they struggle (or 'wrestle') with understanding the words as a whole and fail to comprehend the overall meaning of what they are reading (National Institute for Literacy, 2004). Snow (2002) found that at least two things are necessary to succeed in reading comprehension. First, students must be active readers, and secondly, they need to interact and be committed to the written text.

Reading comprehension requires smaller steps and is considered to be a process. According to Duke (2003: 44), reading comprehension allows students to interact with a text at many different levels while drawing from their previous background and experiences. Becoming a good reader hinges on an ability to employ strategies to make meaning from the text, thereby achieving comprehension (National Institute for Literacy, 2004). Küçükoğlu (2013) writes that there is a requirement for the process and strategies of reading comprehension to be described. She adds that students have to be entrusted with numerous reading activities by their teachers. These activities can include making predictions, making connections, visualizing, inferring, asking questions, and summarizing. Teachers should give teenagers the freedom to understand a text by observing, listening, understanding, and independently experiencing.

Küçükoğlu (2013: 709) reckons that in learning reading comprehension there are three crucial procedures that need to be completed: to clarify what type of an educational strategy is reasonable for a task and how to employ that strategy; to show students the entire operation of the activity; and to let the students try the strategy themselves through exercises and activities in various settings such as in pairs or small groups. Keenan et al. (2008) stress that teachers need to prepare a varied range of strategies for comprehension reading, so students can test their knowledge at different skill levels and through different processes.

The results of active reading comprehension include an ability to engage with a text based on their previous experiences both from reading and from life. Snow (2002) explains that outcomes often take the form of the students' inputs and responses, which indicate their level of understanding. Beside the direct outcomes of reading comprehension, understanding the text, there are also very beneficial indirect outcomes for students who master reading comprehension. Yuliana (2019) points out that teens with the finest results in reading comprehension are more likely to read for pleasure, to excel in intellectual content, and even to be successful in achieving later life goals.

Reading comprehension takes on another layer of complexity when the text being read is a text for specific purposes and it is provided in a foreign language. Even though students have the skills to read and know the basic English vocabulary and grammar, this does not automatically translate to their understanding of an academic or specific English text as a whole. Students will still need to acquire the academic vocabulary specific to the topic they are reading about in order to begin to understand the text and then build comprehension to higher-order levels of thinking (Park, 2010).

4. BLOOM'S TAXONOMY AND ITS SIGNIFICANCE IN EAP AND ESP

Bloom's taxonomy was created by Benjamin Bloom in 1956. It consists of six levels and is often illustrated as a pyramid. Krathwohl (2002) states that Bloom saw these six levels as more than only an instrument for assessing the results of understanding. Scully (2017) underlines that Bloom did not make a clear distinction between lower order and higher order thinking. For this reason, the taxonomy was revised in 2001 by Anderson and Krathwohl (Anderson et al., 2001), leaving its original number of six categories for measuring cognitivities, but specifying these levels into two groups to better classify the thinking skills they required. The first three levels (remember – recall facts and basic concepts; understand – explain ideas or concepts; and apply – use information in new situations to solve problems) constitute the Lower-Order Thinking Skills (LOTS). The last three levels (analyse – take apart information to show relationships, causes and connections; evaluate – justify a stand or a position; and create – produce something new) are considered Higher-Order Thinking Skills (HOTS). Scully (2017) explains that by reaching the highest level of the pyramid in a certain skill, students become equipped to face more sophisticated and more practical challenges in their future. Fastiggi (2014) suggests that students should be challenged by their teachers to solve more difficult tasks for their cognitive thinking.

In order to achieve HOTS, a student first needs to master LOTS. Even though students may complain about memorizing, it is important that they can achieve the lower levels in order to build a foundation for later, higher-order levels. If they are to use a concept in real life, they first must understand that concept. Without understanding, they will never gain the abilities to analyse and evaluate. In order to reach authentic comprehension and proficiency, they must progress through the entire pyramid. In other words: "before you can understand a concept, you must remember it. To apply a concept, you must first understand it. In order to evaluate a concept, you must have analysed it. To create an accurate conclusion, you must have completed a thorough evaluation" (Shabatura, 2018). This applies to how the research of this paper is structured and what levels students were evaluated on.

Bloom's taxonomy prepares students for training their cognitive skills, as it is equipped with a hierarchical order for cognitive proficiencies (Fastiggi, 2014). As Fastiggi (2014) points out it has practically been used all over the world, supporting productivity of lessons and evaluation of students' learning. Helpful characteristics of the taxonomy include its orientation for education, its categorized groups of objectives; the clear and rational explanation of each comprehension level; and the progression of the levels from the easiest one to the most difficult one. Bloom's taxonomy is helpful for teachers in many ways, and can be used as a framework for delivering appropriate activities, assessments, questions, learning objectives, and intended outcomes (Persaud, 2018). According to Gershon (2013), it guides teachers towards creating lessons more easily and with clear objectives. By asking specific questions to differentiate between Bloom's levels, teachers can check the comprehension of their students throughout the learning process. According to Surjosuseno and Watts (1999: 227), Bloom's taxonomy is a helpful tool for making sure that students are challenged at every level of proficiency during the learning process, from lower order thinking skills to higher order thinking skills. Fastiggi (2014) states that as an educational framework Bloom's Taxonomy can be applied to any cognitive content and that, regardless of the subject, the taxonomy is a practical tool for teachers to use because it outlines a framework for planning lessons that challenge and help students to reach their potential. It is appropriate to use Bloom's taxonomy as a guideline for helping B2 level students achieve reading proficiency in a foreign language (Ornstein, 1990; Council of Europe, 2001; CEFR: 69-71, 96).

5. RESEARCH

The following part introduces and describes the research, including its methods, principles, materials, time management, and rubrics. Firstly, research aims and questions are specified. Secondly, the participants are introduced and described. Next, research methods are presented. Finally, the results are analysed and interpreted, and conclusions are drawn.

5.1. Research Aims and Research Questions

The paper has the following research objectives:

1. To explore how the principles of Bloom's taxonomy can be applied to reading comprehension of a text for specific purposes in foreign language teaching.
2. To find the most useful strategies for assessing students' reading comprehension proficiency at each of the six levels of Bloom's taxonomy.

Based on the objectives, the following research questions were established and explored throughout the study.

1. How can the principles of Bloom's taxonomy be applied to reading comprehension of a text for specific purposes in teaching English as a foreign language?
2. What strategies are most useful in assessing reading comprehension proficiency at each of the six levels of Bloom's taxonomy?

5.2. Participants

The research involved students studying in a five-year programme focused on English as a foreign language in the fifth grade of upper secondary school level at an Evangelic bilingual grammar school in Slovakia. The language instruction contains general English classes and English for Specific Purposes (ESP) classes. The ESP classes include core academic subjects, such as history, geography, maths, physics, and religion. The research was conducted with twelve B2 level students aged 19-21 in March and April 2020. Six religion lessons were taught which consisted of eight reading comprehension activities according to the six levels of Bloom's taxonomy.

5.3. Research Methodology

The decision to follow the methodology of action research was made because the researcher had observed weak reading skills and a lack of overall comprehension among her students during former reading exercises and wished to improve their reading skills and comprehension.

The action research consists of phases which are repeated in a cycle, since the researcher must collect information, then adapt and restructure his/her methods. The aim is to continually improve the actions in order to achieve higher quality results through the educational process. The researcher must choose what problem he or she wants to solve, and how the task should be managed. Further, the researcher must choose what steps and methods to use for the research. Next, the researcher must collect data, analyse it, and interpret the results. Based on these interpretations, the researcher chooses the best strategy to apply to the educational process. The methods are adapted, new data is collected, interpreted, and evaluated, and the results are compared to the previous round of analysis. These steps can be repeated as many times as necessary in order to continually improve the strategies being studied and achieve the best results.

The principles of action research lent themselves well to this study's focus. The researcher set out to discover how the principles of Bloom's taxonomy could be used to develop reading comprehension of a text for specific purposes at the upper secondary school level. To demonstrate this, activities and learning objectives were developed for each of the six levels. After the completion of each level the researcher evaluated what could have been more useful and adapted the next level's activities and objectives accordingly. The research followed the four stages of action research for each level: planning, implementing, observing, and reflecting (Latief, 2012). Between each round of research, the researcher evaluated what could be improved and adapted the rounds that followed accordingly.

To achieve the objectives, a 'catalogue' (checklist) was used which equalled a written form of testing characterized by objectivity and economy. Tasks were created to test the students' proficiency at each specific level. Their fulfilment of each task was then graded according to an established rubric for that level. Because each level was handled differently, the specific methodology for each level is described in detail in the following teaching sessions which constitute the most important part of the whole research process.

6. Research Results

6.1. Level 1: Remember

According to Ornstein (1990), this level is defined as "the most basic, requiring the least amount of cognitive rigour. This is about students recalling key information, for example, the meaning of a word". Verbs for level 1 are remember, include, define, name, order, describe, recite, recognise, label, recall, record, list, relate, reproduce, match, repeat, state, arrange, underline.

Planning and Implementation: Two different activities were used to address the first level of Bloom's taxonomy, remembering. Through these activities, students were asked to demonstrate their ability to recall facts and basic concepts. First, students were given 21 words selected by the teacher from the "Essay on Forgiveness" by C.S. Lewis, which they had not yet read. They were also given 21 definitions separately and in a random order. Students were divided into groups of 2-3 and told to work together to match the definitions on one side with the selected words. They were given 10 minutes to complete this exercise. The teacher did not immediately check the answers. Secondly, students were given the text "Essay on Forgiveness" and told to read the essay individually by skimming and looking for the overall idea. After they had completed this, they were asked to read the essay a second time for more detail. Under the text the definitions from the first activity were written. These were divided into two groups of word definitions: 10 words in the first 3 paragraphs and 11 words in the final 4 paragraphs, making a total of 21 words. Students were told to find the words from the previous activity in the text based on the definitions at the bottom of the page. They were given 20 minutes to complete this activity. These series of activities measured students' ability to scan quickly through a longer and complex text to find specific information – in this case vocabulary words that they had been introduced to before reading the text – according to the CEFR requirements. Students were asked to match words with definitions, recognize and underline those same words in the given text, and recall the definitions of the words through the quizlet exercises.

Evaluation Method and Results: Because the activities for level 1 were entirely objective, students' answers were checked against a key of the correct answer and given a percentage grade to evaluate proficiency at the remembering stage. Of the 12 students who completed the level 1 matching activity, 9 students scored between 90-100%, 1 student between 80-90%, 0 between 70%-80%, 2 between 60-70%, and 0 below 60%. In the second exercise, finding the words in the text, 9 students scored between 90-100%, 1 between 80-90%, 2 between 70%-80%, and 0 below 70%. The averages of all scores were 88.1% and 88.5% respectively.

Observation and Reflection: Overall, the researcher was pleased with the results of the activities from level 1. However, she noticed that many students made the same mistakes in the second activity as the mistakes from the first, showing little or no improvement between levels. She believed this was due to the fact that feedback was not given as promptly as it could have been given following the first exercises. Moving forward, the methods were adapted and the researcher resolved to give more prompt and consistent feedback while students completed the future tasks and to see how this change impacted the results of the following levels.

6.2. Level 2: Understand

According to Ornstein (1990), at this level, "the student who recalls the definition of a word, for example, would also be able to show understanding of the word by using it in the context of different sentences". This level includes verbs such as arrange, explain, interpret, classify, express, locate, describe, identify, and report.

Planning and Implementation: To show that they had achieved the second level of Bloom's taxonomy, students were given an activity that demonstrated their ability to explain ideas and concepts from the text they had read. Students were told to read the text again, this time with the following list of comprehension questions:

- Why is forgiveness mentioned in Christian Creed?
- How do you understand God's forgiveness?
- What is the difference between forgiving and excusing?
- What can be misunderstood by asking God's forgiveness?
- Describe what words combination 'extenuating circumstances'+ mean?
- Write down two remedies, which are helping to forgive?
- What is the difference between forgiving other people who hurt you and the one in which you are asking God's forgiveness?
- How can we forgive?

At this stage, students were reminded to answer the questions according to the ideas expressed in the text, not according to their own opinions and ideas. The researcher had resolved to give more prompt and consistent feedback to students throughout the remaining levels. Students were asked to demonstrate understanding of the main ideas of the text, identify new ideas, and grasp the overall meaning of the text as outlined in CEFR requirements for B2 English proficiency in reading. Students were asked to identify answers to the given questions within the text, and then restate those answers in their own words. Their answers to the various discussion questions were expected to describe, explain, and discuss those answers in written form. Throughout level 2, the teacher checked their students' understanding of the text through questions that are designed to measure understanding of the overall meaning and main themes of the text. The students had to grasp information from

what they read and use this information to interpret the text as a whole in order to demonstrate understanding of the relationships between the ideas expressed in the text as it was presented.

Evaluation Method and Results: Like the activities for level 1, the activity for level 2 was also mostly objective, although there was expected to be some variance in how students phrased their answers. The main evaluation method was to measure each student's answers against a key and ensure that the students understood what the main ideas of the article were and what points the author was trying to make, as opposed to what their own personal opinions on the topic were. Of the 12 students 2 students scored between 80-90%, 5 (most of the students) between 70%-80%, 1 between 60-70%, 3 between 50-60%, 0 between 40-50%, and 1 below 40%. The average of all scores was 66.7%.

Observation and Reflection: The results of level 2 were significantly lower than those from level 1. Students had struggled to follow the directions of the task and to understand the overall objective. In order to improve this, the researcher adapted the methodology to include a rubric for each level that showed students what objectives they would be evaluated by. These rubrics are displayed in the "Evaluation Methods" sections for the remaining levels. The researcher expected that this more explicit outlining of activity objectives would give students a clearer idea of how to approach the future activities.

6.3. Level 3: Apply

As Ornstein (1990) states, "this usually involves students answering questions or solving problems". Verbs like apply, practice, solve, use, prepare, demonstrate, schedule, demonstrate, operate, sketch, and measure are used at level 3.

Planning and Implementation: Students were given a series of journaling prompts to demonstrate their ability to use information in new situations according to the third level of Bloom's taxonomy. Students were asked to choose two out of a series of five questions, reflect on them, and write a one-page journal response on their own reflections and ideas. The journaling prompts given were as followed:

- Summarise an article into 2-3 sentences; write self-reflection how you see forgiveness after reading?
- Pick up two things that surprised you or interested you? Explain why?
- What's going on within you when you forgive those who assault you?
- Have you ever forgiven someone? How did you feel about and what you have learnt from it? Either way IF nothing or something – explain your answer.
- How does forgiveness apply to your life? IF does or does not – explain your answer.

According to the methodology adaptations, students were also given an evaluation rubric that outlined the specific objectives they were expected to achieve.

This activity measured students' ability to summarise a text and highlight important ideas from the text as a whole. These tasks aligned with CEFR requirements for B2 language learners reading comprehension abilities. Students were asked to apply the concepts of the text to their own lives and demonstrate the application by writing about their personal experiences and thoughts in relationship to the text. In doing so they were expected to consider how the theme of forgiveness could be measured and/or used in their own lives. Throughout level 3, the students' degree of fluency and spontaneity of the tasks completion was checked. The teacher was able to determine students' independence as readers and to check their ability to adapt what they read to different texts and purposes - in this case to their own lives and experiences.

Evaluation Method and Results: Level 3 was evaluated out of 15 points according to the following rubric. The left column lists the aspects of the exercise that were evaluated. The remaining columns are labelled 1 (being the fewest number of points that a student could earn per category) to 5 (the maximum number of points per category) for the teacher to evaluate how effectively that aspect was accomplished. Of the 12 students 4 (most of the students) scored between 90-100%, 1 between 80-90%, 1 between 70%-80%, 1 between 60-70%, 2 between 50-60%, 1 between 40-50%, and 2 below 40%. The average of all scores was 68.9%.

Table 1 Evaluation Rubric for Level 3 Apply

	No		Partly		Fully
Does the journal display an understanding of important ideas from the text?					
Does the journal show that the student is capable of APPLYING the ideas from the article to his or her own life or experiences?					
Does the journal demonstrate that the student CONSIDERED the theme of forgiveness in the article and how it connects to his or her life?					

Observation and Reflection: Upon observing the results of level 3, the researcher was pleased to see a slight improvement from the results of level 2. However, after reflecting on students' work, she observed that many students were taking aspects of the reading text out of context and struggling both to grasp the whole picture of the text and to differentiate between themes and key ideas. To adapt the methodology accordingly, she resolved to create clearer guidelines and boundaries for future activities. These boundaries were designed to give students freedom to think critically about the text as they chose, but to help guide them in such a way that they could differentiate between the topics at hand. For example, in the activities for levels 4 and 5, skeleton graphs and tables were provided for students to fill out, giving them specific boxes or columns to fill out, but freedom to choose what textual evidence they used to do so. For level 6, students were given predetermined parameters to help start them on the right track for their creative projects, but were allowed to be creative within those parameters.

6.4. Level 4: Analyse

According to Ornstein (1990), this level is defined as "students being able to draw connections between ideas, thinking critically, to break down information into the sum of its parts." Verbs for level 4 include analyse, diagram, question, calculate, discriminate, test, categorise, distinguish, differentiate, contrast, examine, compare, criticise, experiment, and inventory.

Planning and Implementation: Students were given the task of completing a Venn diagram to demonstrate their ability to draw connections between ideas. Through this activity, students showed their mastery of the fourth level of Bloom's taxonomy. Students were asked to read back through the text looking for information on two specific aspects of the article, and to consider these questions: *What does Lewis say about how God forgives? What does Lewis say about how people forgive? What do they have in common? What is different about them?*

Then, using the information they found in the article, they were instructed to fill out a Venn diagram as an adaptation to the methodology based on previous levels' results. Students could choose what information to use to complete the chart, but the chart was designed to guide them in the right direction in order to avoid common errors of taking key aspects of the text out of context. Each of the three sections was to be filled with 3-4 points. This series of activities measured students' ability to comment on and discuss contrasting ideas within a text, according to the CEFR requirements. Students were asked to categorise statements and concepts from the text, distinguishing between two similar but different themes: God's forgiveness and human forgiveness. Using these statements and concepts, they were to compare and contrast the two themes and to demonstrate the process on the Venn diagram. Throughout level 4, the teacher checked how well students could process the text in the context of modern issues, and break down what they have read and make connections between concepts, taking into consideration the writer's viewpoint. Teachers should be aware that this level, which expects students to demonstrate higher order thinking, can be challenging for some students.

Evaluation Method and Results: The students' work for level 4 was evaluated out of 29 points according to the following rubric and calculated as a percentage. Table 4 depicts the rubric used to evaluate students' performance on level 4's Venn diagram activity. The top part of the table has columns for marking how many of the required points the student included in each column of the Venn diagram (rows 1-4). For the second part of the table, the left column lists the aspects of the exercise that were evaluated. The remaining columns are labelled 1 (being the fewest number of points that a student could earn per category) to 5 (the maximum number of points per category) for the teacher to evaluate how effectively that aspect was accomplished. Of the 12 students 2 students scored between 90-100%, 1 student between 80-90%, 1 between 70%-80%, 0 between 60-70%, 2 between 50-60%, 4 (most students) between 40-50%, and 2 below 40%. The average of all scores was 58.0%.

Observation and Reflection: Unfortunately, the results of level 4 were much lower than any of the previous levels. This indicated that the adaptations made between levels 3 and 4 had not proven to be adequate. The researcher noticed that in addition to taking aspects of the text out of context, students seemed to struggle with the abstract themes of the reading such as God, sin, and forgiveness. In order to adapt the methodology accordingly, the researcher resolved to incorporate more tangible ideas into the remaining levels. For instance, level 5 deals with parables, in which abstract concepts are given more tangible representations. Level 6 offers tangible outcomes (i.e. blog posts, podcasts, and collages) as a means for students to express their critical thinking about abstract themes.

Table 2 Evaluation Rubric for Level 4 Analyse

	0	1	2	3	
How many accurate points are in the section "God's forgiveness"?					
How many accurate points are in the section "people's forgiveness"?					
How many accurate points are in the centre section?					
	No 1	2	Partly 3	4	Fully 5
The student's work displays an ability to comment and discuss multiple ideas in the text.					
The student was able to effectively put statements and concepts into their appropriate categories.					
The student demonstrated an ability to COMPARE two ideas.					
The student demonstrated an ability to CONTRAST two ideas.					

6.5. Level 5: Evaluate

According to Ornstein (1990) at this level "students can make accurate assessments or judgements about different concepts. They can make inferences, find effective solutions to problems and justify conclusions, while drawing on their knowledge and understanding". This level includes verbs such as arrange, design, prepare, assemble, formulate, propose, collect, manage, set up, compose, organise, synthesise, create, plan, write, construct, modify, and conduct.

Planning and Implementation: To show that they had achieved the fifth level of Bloom's taxonomy, students were given an activity that demonstrated their ability to justify a decision. To complete this activity, students needed to combine their understanding of the Lewis text with two additional readings. They were asked to read two of Jesus' parables about forgiveness from the Bible, texts found in Matthew 18:21-35 and Luke 7:36-50. After reading, they needed to evaluate each story by filling out a chart that covered the following 5 questions according to the C.S. Lewis article about forgiveness: Summarize the passage (2-3 sentences), What does the parable say about God's forgiveness?, How does the forgiveness of God in this parable relate to C.S. Lewis's article?, What is man's relationship with forgiveness in the parable?, How does the forgiveness of man (or the lack of forgiveness by man) in this parable relate to C.S. Lewis's article?

Based on the previous levels' results the additional readings that students were given for level 5 included tangible representations of the more abstract themes explored in the C.S. Lewis text. This activity was designed to engage students with level 5 of Bloom's taxonomy, evaluate, and therefore the actions required of students involved verbs identified as part of this level: assemble, collect, set up, organise, and synthesise. To demonstrate these skills, students were asked to collect data from two outside texts and evaluate them according to the overall meaning of Lewis's original text. They should

then synthesise and organise the ideas and assemble them into the given table as a visual means of setting up thematic connections. Throughout level 5, the teacher should check students' ability to process outside material for new information or arguments and connect these external ideas with the original text. Students should show ability to apply what they find in the text to their own experiences. Teachers should pay attention to students' ability to make inferences, find effective solutions to problems, and justify conclusions.

Evaluation Method and Results: Level 5 was evaluated out of 30 points according to the following rubric, and calculated as a percentage. Table 5 depicts the rubric used to evaluate students' performance on level 5's activity. The left column lists the aspects of the exercise that were evaluated. The remaining columns are labelled 1 (being the fewest number of points that a student could earn per category) to 5 (the maximum number of points per category) for the teacher to evaluate how effectively that aspect was accomplished. Of the twelve students, 2 students scored between 90-100%, 2 students between 80-90%, 3 between 70%-80%, 0 between 60-70%, 2 between 50-60%, 3 between 40-50%, and 0 below 40%. The average of all scores was 73.3%.

Table 3 Evaluation Rubric of Level 5 Evaluate

	No 1	2	Partly 3	4	Fully 5
Number of boxes accurately filled out for the first parable (Matthew 18).					
Number of boxes accurately filled out for the second parable (Luke 7).					
The student demonstrated the ability to COLLECT data from outside texts.					
The student demonstrated the ability to EVALUATE data from the outside texts according to the original text.					
The student demonstrated the ability to ORGANISE ideas from both texts and place them in the chart appropriately.					
The student's work demonstrated that they had made connections between the THEMES of the original article and the two parables.					

Observation and Reflection: The results of level 5 were a significant improvement over the results of level 4, indicating that providing tangible representations helped the students process more abstract ideas. One observation the researcher made following level 5 was that some students were still struggling to back up connections with explanation or evidence. It was clear that the students were beginning to grasp the themes from the C.S. Lewis text, but when evaluating their work, it was difficult for the researcher to follow the connections they were making. In order to remedy this, the researcher made a final adaptation to the final level of research, and added a component to the requirements for the creative project by asking every student to write a one-page explanation of how their project connected to the text and its key points.

6.6. Level 6: Create

The most complex level of Bloom's taxonomy is defined by Ornstein (1990) as "the ultimate aim of students' learning journey [where] students demonstrate what they have learnt by creating something new, either tangible or conceptual". Verbs such as appraise, estimate, select, argue, evaluate, support, assess, judge, value, attack, predict, score, compare, rate, and defend are used at the sixth and final level.

Planning and Implementation: Students were given a list of project choices to demonstrate their ability to produce original work according to the final level of Bloom's taxonomy, creating. They were asked to choose one of the following options to demonstrate their understanding of C.S. Lewis's essay about forgiveness:

- Create a collage or piece of art that represents forgiveness based on C.S. Lewis's definition and write a one-page explanation of the finished product and how it related to the original text.
- Create a 10-minute podcast during which the student and a friend discussed C.S. Lewis's view of forgiveness and how it applies to life in the 21st century. To conclude, the students should write a one-page explanation of the finished product and how it related to the original text.
- Create a blog post where the student invented and responded to the letters of two people needing advice on different problems surrounding the theme of forgiveness. The student would then answer the questions through the blog post as if he/she was C.S. Lewis. To conclude, the students should write a one-page explanation of the finished product and how it related to the original text.

Each option given to students for their creative project required them to write a one-page explanation that demonstrated the connection of their work to the text itself in order to help them think through and process their interaction with the text. Students were asked to demonstrate what they had learned by creating something new. They were given options of tasks to demonstrate their learning. These tasks asked them to create scenarios and then predict how the author of the original text might respond, evaluate the theme of the text in a modern day context and argue for whatever conclusion they came to, or create a piece of art that they felt represented the text and then support their creation. Regardless of which activity the student chose, they were required to engage with the text at the sixth and final level of Bloom's taxonomy. Throughout this level, the teacher should evaluate students' ability to make judgements about the ideas and arguments that they read in the text in the context of either external or internal criteria. Teachers should encourage students to prioritize what they learn as they form their conclusions and challenge them to pay attention to the insights they gain while relating this knowledge to "real-world" situations.

Evaluation Method and Results: Level 6 was evaluated out of 25 points according to the following rubric, and calculated as a percentage. Table 6 depicts the rubric used to evaluate students' performance on level 6's activity. The left column lists the aspects of the exercise that were evaluated. The remaining columns are labelled 1 (being the fewest number of points that a student could earn per category) to 5 (the maximum number of points per category) for the teacher to evaluate how effectively that aspect was accomplished. Of the 12 students 5 (the most students) scored between 90-100%, 3 between 80-90%, 1 between 70%-80%, 0 between 60-70%, 1 between 50-60%, 0 between 40-50%, and 2 below 40%. The average of all scores was 76.3%.

Table 4 Evaluation Rubric for Level 6 Create

	No 1	2	Partly 3	4	Fully 5
The student's project was one of the given options.					
The project demonstrated CREATIVITY.					
The project demonstrated CRITICAL THINKING.					
The project effectively demonstrated what the student had learned from their work with the original text.					
The project demonstrated that the student had ENGAGED with the text and its ideas.					

Observation and Reflection: Overall, the researcher was pleased with the results of level 6. One aspect that she might change in the future is to develop a more structured way for the teacher to check in with the students throughout the creative process to make sure they are on the right track.

7. Interpretation of the Research Results

The majority of students demonstrated that they had thought critically about the concept of Lewis's forgiveness during their completion of the assignments. This indicated that the tasks had been effective as a whole. To evaluate each level more specifically, the data from each of the assignments was analysed, as discussed in the following paragraph.

When looking at the data from all six levels of activities, the strongest results were produced at level 1, remembering. Of the 12 students, 9 achieved scores in the 90%-100% range for both of the level 1 exercises. Additionally, no students scored below 60% on the level 1, which cannot be said of any other level's results. The averages of all students' level 1 scores were 88.1% and 88.5%, the highest average of all the levels. These results show that level 1 was the level in which the most students showed proficiency. As level 1 is the most fundamental of the six levels, these results are not surprising. The data also indicates that the activities in level 1, specifically the matching and word finding activities, proved most effective for students.

The data shows that student achievement was lowest in level 4, analyse. The average overall score for level 4 was 58.0%. Level 4 had the highest number of students with scores below 60% (8 of 12 students). This indicates that level 4 proved the most challenging for students, and supports the conclusion that the activity used in this level, specifically asking students to complete the Venn diagram comparing and contrasting two ideas, was less effective in teaching students than those in other levels. The results at the other 4 levels – 2, 3, 5, and 6 fell between those from levels 1 and 4. The average scores at these levels were 66.7%, 68.9%, 69.4%, and 76.3% respectively. As these scores are considered sufficient for a passing grade, they indicate that the activities used to teach the corresponding levels were

effective, but also have room for some improvement in order to have more students achieving higher results and to improve the overall level of comprehension for all students as indicated by a higher average score.

8. Conclusion

Two research questions were stated before the research itself took place. The first research question was "How can the principles of Bloom's taxonomy be applied to reading comprehension in teaching English as a foreign language?" According to our research, this can be done by breaking down the aspects of reading comprehension into six levels to mirror Bloom's taxonomy. As shown in the research, by creating activities that measure student's comprehension based on the listed verbs from each level, an instructor can effectively test and evaluate each student's comprehension at the targeted level. The second research question was "What strategies are most useful in assessing proficiency at each of the six levels of Bloom's taxonomy?" The average score for all strategies fell within the range of a passing grade since no average score fell below 50.0%. Therefore, all strategies can be considered generally useful. However, some were certainly more useful than others.

Based on the research, we can state that the most effective strategies were those used to assess levels 1 and 6. These activities include matching and finding words within a text to measure students' ability to remember key information, and open-ended, project-based creative activities to measure student's ability to think critically and creatively based on what they learned from a text. The least effective strategy was the diagram used to assess level 4, in which students had to compare and contrast two key ideas from the text.

The previous lines presented the conclusions of the research in light of the established research questions. Firstly, the results of the research pointed to the need to focus on each level separately. Interesting to observe was improvement on levels of Bloom's taxonomy where some respondents got less percentage in lower levels, but the sixth level for them was excellent. Students were permanently challenged with the same text (they read it at least six times) during quite a short time. So, the researcher could observe progress in adolescents' cognitive development. On the other hand, it would be engaging to further study why some students did excellently at all five of the first levels, but could not create something new when asked.

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Review research paper

DESIGNING AN ESP COURSE FOR THE 21ST CENTURY STUDENTS: THE CLASH OF THE DIGITAL IMMIGRANTS AND NATIVES

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Abstract. *How do teachers design an ESP syllabus for the students born and raised with technology? Are we prepared for the students arriving at universities with new ways of thinking and consuming information? Is it time for us to rethink and re-examine the way we create our syllabi? The ESP course for Computer Science students taught at the South East European University (SEEU) in Macedonia is designed according to students' needs and it includes a number of 21st century skills. Twenty first century skills are 12 abilities that today's students need to succeed in their careers during the Information Age. Upon successful completion of the course, students are expected to be able to use the language that they will acquire and practice throughout the course, integrating the four main language elements and skills towards fulfilling their academic needs as well as their occupational needs for their future careers. The idea of this paper is to show whether the author, being a digital immigrant herself, has succeed in creating an engaging and motivating syllabus for the digital natives. It will also cover some aspects of the online teaching during the COVID-19 pandemic. As it will be demonstrated in the paper, letting students have a say in the design of the syllabus proved to be beneficial for both parties.*

Key words: *ESP, syllabus design, digital natives, 21st century skills*

1. INTRODUCTION

How do teachers design an ESP syllabus for the students born and raised with technology? Are we prepared for the students arriving at universities with new ways of thinking and consuming information? Is it time for us to rethink and re-examine the way we create our syllabi? The new learning opportunities offer students vast information and infinite access to authentic resources. Students, on the other side, lack the necessary knowledge and skills to use that information. Instructors should bear this in mind when creating modern and contemporary syllabus that reflects the digital environment where students spend most of their time.

Can their 'natural' digital environment be transferred into the academic context? And can that transfer be successful? The author of this paper strongly believes so. However,

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instructors need to realize that the sole moving of lectures into a digital (online) environment does not necessarily mean effective and efficient learning. The challenge is to systematically embed both modes of delivery by identifying the values of face-to-face instruction and digital instruction. They should also be able to recognize what way of teaching is more convenient for the students and can be done better in a different environment. Finally, they should be able to combine the two modes of delivery in order to get better learning outcomes.

On the other hand, the academic year 2020 has faced a new challenge that went beyond just simply adjusting the syllabi for the learning styles of the new generations. The pandemic COVID-19 situation has changed the face of education worldwide. The situation has forced the universities and all other educational institutions to replace traditional face-to-face study programs with online courses. The transition happened in a short period of time with no actual preparation on the side of the instructors. The shift from physical classrooms to online classrooms happened overnight with instructors shifting their pedagogical approach and adapting to the new situation. During this period, the main concern was not about whether online teaching–learning methods can provide quality education, but how academic institutions will be able to implement online learning in a substantial manner (Carey, 2020).

Online learning may be a cost-effective and flexible alternative to classroom learning, but if not implemented properly it may be a waste of time and money. Arsham (2015) points out that online teaching and learning are not connected to a fixed time or space. Therefore, online learning is regarded as a practical alternative to classroom learning that is fixed. Online courses can also create interactive learning environment where students and instructors interact, exchange ideas, discuss course related topics and initiate new discussions. According to Arsham, in a successful online discussion, students build on one another's perspectives to get deeper understanding of the topics in the same way they do in in-person discussion. In both types of discussion, the point is to understand the material from different standpoints.

Teachers of the future will perform the very same functions they do now, in terms of planning and evaluation, but will make use of technology to give students a richer, more stimulating learning environment. But teachers will find that, as computers become new tools, the technology demands new kinds of student-teacher relations. Students must become more autonomous, active learners, and so teachers must hand over some of their power and authority—not to the computer, but to the students themselves (Hanson-Smith, 1997, p. 3). For instance, Sottilo (2000) notes that in the hands of professors who know what they are doing, online instruction is superior to face-to-face instruction.

Based on the curriculum requirements, the English for Specific Purposes (ESP) courses described in this paper have to address students' needs in today's digital world. The findings in this paper suggest that the use of online mode of course delivery can create high level of student engagement and increase their motivation to learn English. The paper describes the ways in which student learning can be more active and accessible in an online learning environment and suggests various assessment tools for achieving that task. It also attempts to understand the importance of online learning in the period of a crisis and pandemics such as the Covid-19.

2. Literature Review

Since the early decades of this century, distance or virtual education has become an increasingly common alternative to classroom-based learning. Although digital education may provide an excellent opportunity to access education, this method is not ideal for everyone. According to Richardson, teachers must "incorporate technology as seamlessly as possible. The technology is the means, not the content of the presentation. It should not overwhelm the lesson, but enhance it. If a non-technology-based means of presentation would be more effective, then by all means use it. The simplest, most intriguing tool to impart instruction is the best tool. Paper and pencil can sometimes be more effective than computer equipment - and paper does not crash! (Khampusaen 2004, p. 14)." According to Khampusaen (2014), many academic professionals have been looking for the answer to whether foreign languages can and should be taught online (p. 90). However, teachers are still the most important factor in online teaching. He further indicates that social learning environment can significantly increase teachers-students' engagement (p. 91).

As a result, in the recent years an increased number of universities offer online studies and online courses, guided by the idea that students born in a digital age may find in-person learning less contemporary and demotivating. But, is this really true? To answer this question, Prensky (2001) published his paper on a new generation of students. Prensky (2001) coined the term "Digital Natives" to point out towards the theoretical affinity and digital literacy of the new generation. But on the other hand, Prensky also referred to the lack of digital literacy among educators by naming them "Digital Immigrants". The term refers to the educators being outsiders in the land of the digital natives. He indicates that there is a discrepancy between the natives and the immigrants regarding the education process. The teaching practice of the immigrants is not compatible with the natives' skills and preferences.

However, according to Kennedy (2008), the arguments used to support these opinions need closer examination before university educators start changing curricula and learning practices (p. 9). These arguments are established on a hypothesis that all the students coming to universities have the same digital background and educational experience. This implies that students coming to universities are all digital natives and they all have more or less consistent technological experiences. Moreover, these students are believed to have advanced knowledge and understanding of technology. But this generalization hinders the objective point of view regarding students' technological skills, knowledge and preferences.

Online learning increases flexibility of access, eliminates geographical barriers, and improves convenience of use and effectiveness of collaborative learning. Learners' intention to use e-learning is influenced by perceived usefulness and self-efficacy (Liaw, 2008; Liaw, Huang, & Chen, 2007). Furthermore, some studies also indicate that students tend to perform better in an online learning environment than in a conventional classroom instruction (Yusuf & Afolabi, 2010). According to Dashestani and Stojkovic (2015) it is very important for ESP teachers to develop a variety of strategies for using technology in the classroom. Through the use of diversity of methodologies and strategies the instructor can increase students' motivation and their engagement in the learning process. However, without having a clear understanding of the benefits and weaknesses of each technology, its integration in ESP instruction would not be a wise approach. Furthermore, the question of developing new, digital kind of literacy among students arises. Defining the digital literacy needed for reading in digital environments has been challenging, with many terms proposed by

researchers including "multiliteracies", which suggests that meaning occurs in settings where written text is part of visual, audio, and spatial patterns of meaning (Cope & Kalantzis, 2000, as cited in Richardson et. al, 2012, p. 297), and "new literacies", which focuses on the skills and strategies necessary to work with rapidly changing ICTs (Leu, 2002; Leu, Kinzer, Coiro, & Carrmack, 2004, as cited in Richardson et.al, 2012, p. 297).

Representatives at the 21st Century Literacy Summit (2005) used the following definition of literacy to guide their work: *"21st century literacy is the set of abilities and skills where aural, visual and digital literacy overlap. These include the ability to understand the power of images and sounds, to recognize and use that power, to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms"* (as cited in Richardson et al., 2012, p. 297). Expectations for readers now include being information literate**,** meaning, being able to find and use information in any paper or electronic form and being critically literate. Students should be able to analyze information to determine various meanings and connotations. Students are also expected to analyze information for relevance, accuracy, and authenticity and synthesize content from multiple sources (Castek, Coiro, Hartman, Henry, Leu, & Zawilinski, 2007, as cited in Richardson et al., 2012, p. 297).

Having in mind the researches done in the field of ESP teaching and online instruction, the author of the paper tried to create an engaging and motivating syllabus for her ESP students. What follows is her attempt to bring closer the worlds of the digital immigrants and natives in the online classroom where students have many opportunities for self-directed and autonomous learning.

3. Syllabus Adaptation for Online Teaching

Motivation is one of the most important factors when it comes to learning a second language and especially learning that language in school. "Motivation is the driving force behind the energy required to complete a task, a lack of motivation will give rise to a lack of driving power behind completing a certain task" (Nugent, 2013). Unfortunately, there is not a universal way to achieve motivating students to fully learn the language because the techniques that work in certain conditions with certain students do not necessarily give the same results in other conditions. The sources of motivation are either internal or external. For an effective learning of a second language it is necessary to pay equal attention to both motivational sources. The ultimate goal for every language teacher is to have motivated, challenge-driven, ready to learn students. Unfortunately, in numerous occasions, the worlds of the teachers and the students collide. Those are the worlds of Prensky's (2001) digital immigrants and digital natives.

Motivation is closely related to self-driven and autonomous learning. And, on the other hand, autonomy can be a by-product of the digital learning. The concept of learner autonomy emphasizes the role of the learner rather than the role of the teacher. Learner autonomy focuses on the process rather than the product and according to Jacobs & Farell (2001), it supports learners in further developing their own learning objectives and perceiving learning as a lifelong process. According to Hafner and Miller (2011), learner autonomy is often mistakenly associated solely with independent out-of-class learning in which learners are in control of all aspects of their learning process. However, learner autonomy can also develop in the structured learning environment of the classroom and become part of the pedagogical objectives of a language course (p. 69). Furthermore, they

state that we have now entered a digital age which is characterized by widespread participation in globalized, online spaces which offer rich opportunities for informal, self-directed learning. In this sense, language educators may draw upon the architecture of such spaces in order to design opportunities for autonomous learning in formal contexts (p. 86).

Students from all faculties at South East European University (SEEU) in Macedonia (except for the Department of English Language and Literature) are required to complete English language courses specialized to their field. Students generally begin these courses during the third semester. The Language Center (LC) provides the syllabus, materials, and the instructors for these courses. The English for Specific Purposes for Computer Science 1 and 2 courses are two semester courses which include four class hours per week. The number of credits awarded is 6 (six). The full length of the course is 15 weeks per semester and they are designed according to students' needs and interests. The courses focus on the four main language skills: reading, writing, listening and speaking. Furthermore, the emphasis of the courses is on acquiring and enhancing students' vocabulary and language skills, critical thinking skills and job hunting skills as one of the most important 21st century skills. Upon successful completion of the course, students are able to use the language that they will acquire and practice throughout the course, integrating the four main language elements towards fulfilling their academic needs as well as their occupational needs for their future careers. Thus, they:

- will know how to job hunt,
- will learn how to deliver a speech,
- will think critically,
- will appreciate opposing points of view.

During the COVID-19 pandemic the education worldwide has undergone great changes. The pandemic has changed the face of the education forever. Students had to adapt to the new ways of learning and teachers had to adapt to the new modes of teaching. Luckily, our University had already established a solid Learning Management System (LMS) that has been used for many years and it constantly upgraded. Throughout the years we had used different LMSs – Angel (developed with Indiana University, USA), LIBRI (SEEU's developed LMS) and Google Classroom as the latest. In addition, starting from the academic 2018 the last two teaching weeks in January were entirely transferred online. However, there was still an immediate need of adapting approaches and syllabi in order to deliver quality education as a response to COVID-19. The syllabi for ESP 1 and 2 included a variety of different approaches and techniques for learning and assessment including: website evaluations, CV/cover letter. informative 'explore a topic' presentations, discussion forums, mock job interviews, persuasive speech, online debate and online quizzes.

Listed below are few of the author's attempts to alter the learning and teaching aspect of ESP and design syllabi which are both challenging and interesting and reflect the new 'normal' in education.

3.1. ESP 1 and 2 overview

The author of this study used the five guidelines described below by Egbert (2005, p. 7) to design her study of implementing Computer Assisted Language Learning (CALL) in the classroom. Here they are presented in the way they were used in these courses to create an online learning environment:

1. *Use technology to support the pedagogical goals of the class and curriculum* – The researcher designed the technology around the learning goals, not simply as a way to use technology but as a way to enhance learning with technology.
2. *Use the technology as a tool* – The technology was not the goal but a support system for learning.
3. *Use technology effectively* - The technology was selected because it was effective.
4. *Use technology efficiently* - The technology was selected because it was efficient.

The abovementioned guidelines postulated by Egbert are used as signposts for implementing online learning in these particular ESP classes They ideally describe what the main use of technology should be in the classroom and should be used as underlying principles for creating digital (online) learning environment. As it will be shown further in the paper, students considered online activities to be an effective and efficient way to learn the course content. The effectiveness of the assignments was validated through the use of different online tasks that were used throughout the semester and that were highly rated by the students. The efficiency was indicated by students' responses that they were able to learn the course content at their own pace.

Given below are the screenshots of the ESP 1 and 2 courses as they were delivered on Google Classroom. There are numerous materials and assessment tasks posted there that are divided according to the specific topic which was covered throughout the semester.

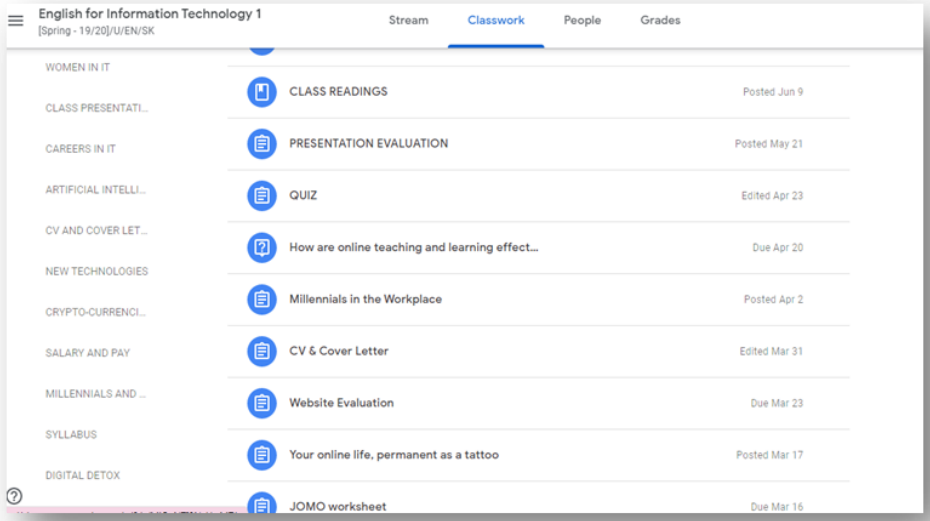

Fig. 1 ESP 1 overview on GC

As it can be seen from the picture, the ESP 1 course covered a variety of interesting topics for the students to discover. The autonomous learning was enhanced by the different assessment tasks followed by peer and self-evaluations. Help and assistance was provided when needed, without waiting for the class or the office hours. Students discovered that they appreciated the immediate feedback received online, whereas in a classroom, maybe not everyone would get immediate feedback. Further, the feedback

online can give students a better chance to think about a criticism and have time to make adjustments that may not happen in the classroom.

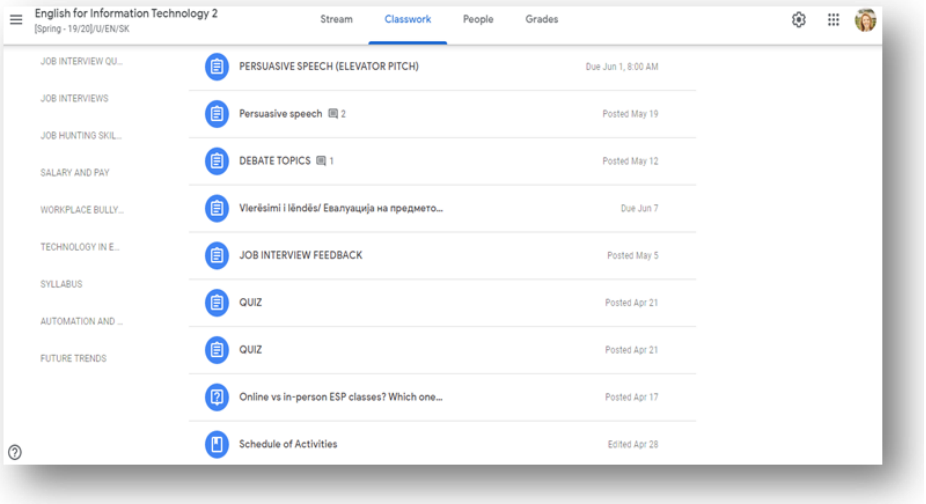

Fig. 2 ESP 2 overview on GC

The digital world is ever-changing and dynamic, new digital devices and applications are designed and new ways to use those devices occur. Nevertheless, this study recognizes how adept today's students are with digital tools and whether they would prefer to use these tools also in their learning. Students reacted positively to the digital tasks that were created for the courses and found them useful in their learning. Additionally, these tasks can be further adapted by instructors to introduce more digital tasks in their EFL/ESP classrooms even when the pandemic is finished. By applying the study's recommendations, instructors can offer to their students a much more fulfilling course of study, one which respects the students' world of digital devices and tools.

Below is a representation of some of the teaching tools that have been used in the ESP classes described in this paper. The tools cover a variety of learning materials that were adapted and adjusted for learning in an online environment. Further below, a short description of some of the tools will be given.

3.2. Online class debate

Debates have already been proven to be an effective tool in teaching English. This proved to be correct for this particular ESP 2 class as well. According to students' poll at the end of the semester, the online debate was the most effective assignment. Some students stated that they liked the direct interaction they had with their peers. For others it was the exchange of ideas during the debate that prevailed in making the choice among the other assignments.

Given below is the poll distributed among the students in which they need to decide on the topic for the debate. The topics were proposed by the students, thus providing

them with an opportunity to be responsible for their own research and have a say in what will be discussed about in the online class.

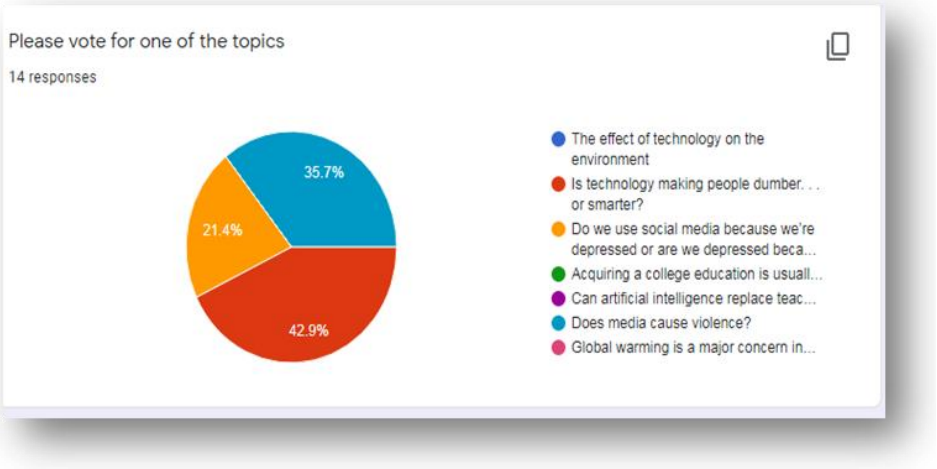

Fig. 3 Debate topics

Presented below are the rules and the guidelines according to which the online debate was organized. Having strict rules enables the effectiveness and the efficacy of the online debate anad provides students with enough time to present their case to the class. The effectiveness of the class debate has shown that even in an online environment there can still be a social interaction, something that students highly appreciate.

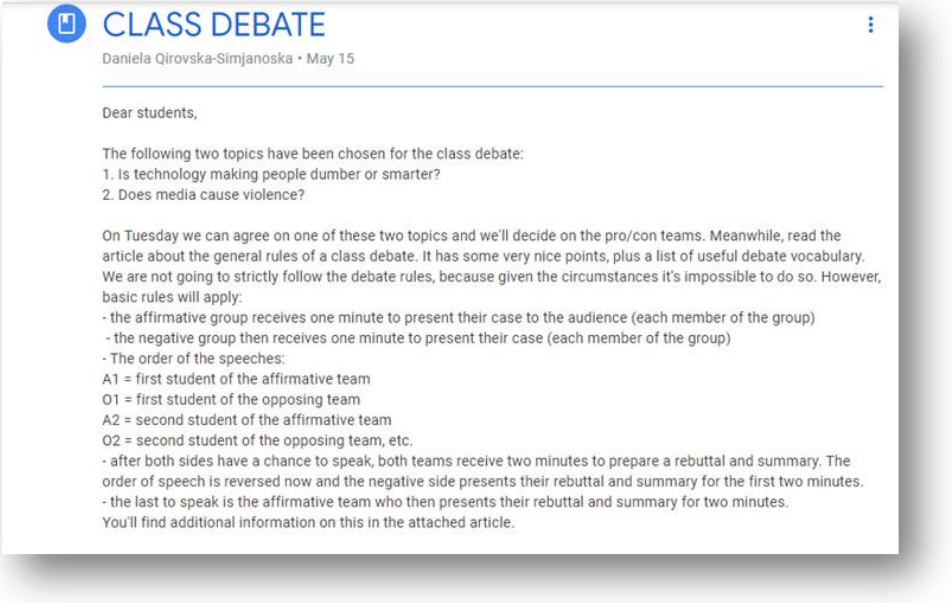

Fig. 4 Debate rules

3.3. Discussion forum on Google Classroom

Tajeddin & Alemi (2012) point out that the use of online discussion forums motivates ESP students to use interactional meta-discourse markers. These meta-markers are important element of online discussion forums. By using the meta-discourse markers students show how their ideas are connected to each other, they present their ideas and take a stance and they improve their academic writing skills.
In order for the discussion forum to be successful, the instructor made sure that her online presence is corresponding to the class presence, making the digital learning environment as interactive as possible. Students realized that they could 'talk' to the instructor and other students in an online environment, perhaps in a way similar to a chat on Facebook/Snapchat. Not only students, but also instructors, should realize that social interaction means something quite different today than ten years ago.

The next picture shows how the discussion forum thread looked:

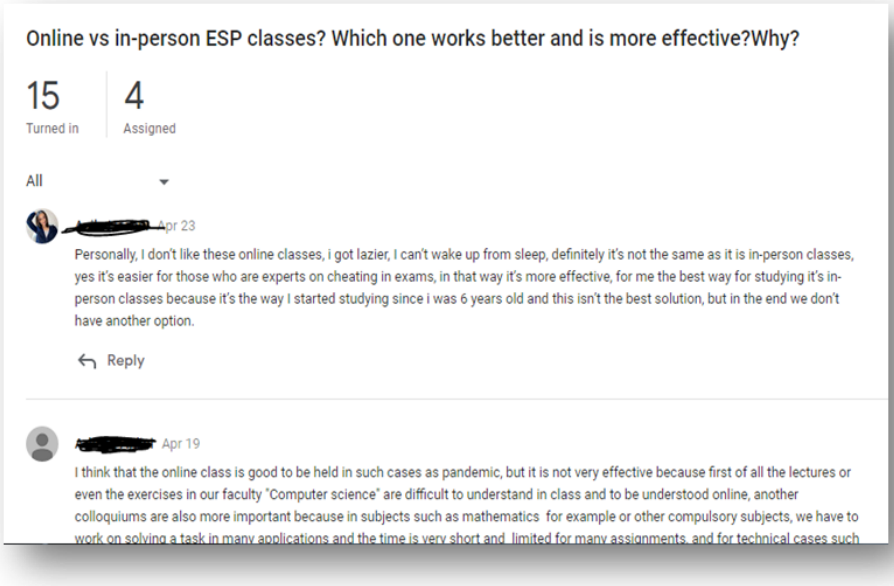

Fig. 5 Discussion forum

Having responses from students on the current situation provided a valuable insight into their opinions as well as their understanding of the content and the language knowledge. This made them more engaged and helped instructor tailor the next activities and lessons to suit students' level of understanding of concepts.

3.4 Persuasive speech (elevator pitch)

For this assignment students were supposed to imagine themselves being start-up owners. They have an idea/product, but need investment to further work on developing the idea. They had to shortly (30-60 sec) describe the idea/product to a potential investor. In order to do that, they were required to record themselves giving the short

presentation using persuasive speech to persuade and sell their idea. The students were given the chance to choose either to record themselves or have this task as a writing part in the final exam. Given below is the result of their voting:

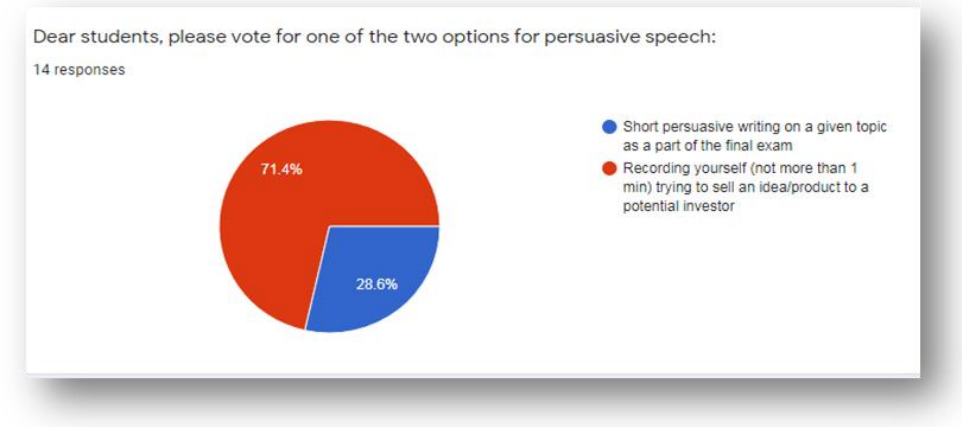

Fig. 6 Persuasive speech voting

The persuasive speech proved to be a very successful and challenging task for the students. It received positive reactions in the students' evaluation survey which will be addressed in the next section. Students enjoyed watching their colleagues' videos and share their real-time feedback.

As the paper demonstrated, there is an abundance of online tools that can be used to create an effective and efficient learning environment. Instructors can use various videos, audios, texts, to reach out to their students and make their learning valuable. The strongest point of the online learning is the fact that it is student-centered and offers flexibility in terms of time and space. When utilized correctly, it can be superior to face-to-face instruction.

4. The Students' Experience

Towards the end of the semester, students' evaluations are administered throughout the faculties and centers. The evaluations are done online through GC and include 16 statements that cover the materials used in class, the course content, the instructor's role and the students' role as well. Due to the pandemic, the students' evaluations were shortened to 8 questions only and they served as an instrument for measuring the quality of online teaching at SEEU. The students tick the answer on questions 1-6 that best explains their opinion on a Lickert scale from Strongly agree (SA), Agree (A), Neutral (N), Disagree (D) to Strongly disagree (SD). Students respond to questions 7-8 by using 5 point scale, from excellent (5) to poor (1). At the end they are required to provide suggestions for further improvement of the course/instructor or comment on any relevant questions regarding the course. This activity is managed through University's e-Learning Center and it is completely anonymous.

Given below is the student evaluation survey:

Instructions: Tick the answer that best explains your opinion: SA (strongly agree), A (agree), N (neutral), D (disagree); SD (strongly disagree)

Course/instructor:

1. The course materials posted online (topics, lectures, videos, etc.) were well organized and user friendly (easy to follow). SA A N D SD
2. The information and instructions by the instructor for following the course through the GC platform were clear.
3. The selection of materials and tasks on GC was relevant and appropriate for reaching the course objectives.
4. The instructor used the opportunities for online interaction with students (discussions, chats, assignments, etc.)
5. The assessment (mid-term exam, assignments, quizzes, projects, etc.) was well organized and appropriately reflected the syllabus.
6. The instructor provided regular feedback on the given assignments.

Summary statements

Please respond to questions 7 and 8 using a 5 point scale, from excellent (5) to poor (1).

7. Overall course content rating 5 4 3 2 1
8. Overall instructor rating

Please provide any comment or suggestion related to the course.

After examining students' answers at the end, the most interesting conclusion was that they reported that the greatest disadvantage of learning in an online environment was their inability to fully concentrate while being online. This is a challenge in the digital world, as often is reported in studies. The generation of the digital natives is constantly moving from one resource to the other, imagining that multi-tasking is really possible. Many recent studies have shown that multi-tasking is not really possible and leads to errors and distraction. It has been proven that it is impossible for the brain to process more than one string of information at a time. That is the reason why students believe they can do many tasks at once, when actually lot of information is slowing them down. An important part of instruction in any classroom today is to demonstrate to learners that they must manage their time efficiently and concentrate on one task at a time.

Overall, students indicated that they felt more motivated when learning in a digital environment. This is most likely because students 'feel at home' in the digital world. They do not have to move to a desk and chair but can stay in the comfortable zone they are used to. Students' motivation was connected to the tasks they were assigned to do. The more challenging task led to more increased motivation. The obvious conclusion is that instructors should think carefully about how to motivate a digital learner by creating challenging tasks that can be accomplished in a comfortable zone or space they are used to.

5. Recommendations for the Future

This paper recognizes the value and the potential of technology and the way it is and will continue to reshape the educational landscape. Based on the course outcomes and students' opinions, it makes the following recommendations:

- Instructors - Creating an effective learning environment that is not constrained to classroom walls is not a simple task. But, once done, it will prove to be very beneficial for the students and the instructors as well. Technology can connect students to each other and to different students worldwide more easily, providing a setting for exchange of ideas and experiences. Some of the learning activities will

still best be done in the classroom, but there is a great potential in turning the outside world in a learning place. One of the most positive characteristics of technology is fast and easy access to information. Getting information quickly means saving time for other things. If planned appropriately, in-person and digital learning could lead to less time-consuming tasks, such as long explanations, writing on the board, checking homework and grading. In such cases technology is of great assistance, not only to the students but also to instructors.

Instructors need to: start using some familiar technological tools as an integrated part of their course, provide support and encourage students to use those tools, stimulate students' interests and work on developing their 21st century skills.

- Students - They should furthermore develop their digital skills and thus become more competitive on the labour market. They should acknowledge the idea that learning happens everywhere and lasts for a lifetime, hence prepare themselves for lifelong learning.
- Higher education institutions - By having information always accessible and at hand, teaching and learning will inevitably change. Higher education institutions should embrace that change first by offering contemporary courses that incorporate technology, and then by making resources available to students everywhere. Higher education institutions should prepare for the future to come by providing innovative models for education with technology at its core.

The proposed recommendations in this study can be used for developing a contemporary syllabus for teaching ESP that will be based on students' preferences for learning environments (in-person or online). Such a syllabus will be responsive to students' learning needs and their learning expectations. English learning syllabi need to continuously respond to change, because language is reshaping and evolving together with technology.

6. CONCLUSION

This study included designing a series of digital tasks for the students to use in an online class. The digital world is ever-changing and dynamic, new digital devices and applications are designed and new ways to use those devices occur. Students reacted positively to the digital tasks that were created for this study and found them useful in their learning. By applying the study's recommendations, instructors can offer to their students a much more fulfilling course of study, one which respects the students' world of digital devices. Better students' performance is a combination of technology, students' control of learning and their learning objectives, and does not happen because of the type of instruction per se, as this paper has shown.

Technology is inevitably connected to the teaching/learning process. It helps instructors but at the same time, technology transfers some responsibility for learning to students. Students can guide their learning at their own pace, direct their progress and have access to course content by participating in an online learning. Technology can provide the tools for independent organization of the learning process. In such environment, students who use technology become active users, not just passive information receivers (EDC, 2011). For that purpose, students need to use different technological tools in the classroom. Hamilton (2007) indicates that by limiting the classroom to one technological tool the most important element of integration is eliminated. The learning becomes valid and genuine only by

combining the technology of today with life skills students will need in the future. The pandemic situation that we faced has also taught us that students must possess certain skills such as skills of problem-solving, critical thinking, flexibility, information and technology literacy, as the most important ones. Educational institutions must systematically embed these skills in their courses thus making students more competitive and prepared for the outside world.

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Review research paper

POSITIVE VIEWS AND CHALLENGES OF USING PROJECT WORK IN ESP LESSONS

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Abstract. *ESP lessons in higher education develop foreign language competences of university students and prepare them for their professional lives. This paper brings views of university students on using projects in the classroom within their ESP lessons. As a part of the research through methods of focus groups, their analyses, the results and interpretations uncover positive and negative sides of using projects in ESP classroom from students' points of views. The results show that project work on the one hand strengthens and builds responsibility for learning and thus leads towards autonomous learning as one of the educational objectives of 21st century schooling. On the other hand, the research shows that the students see themselves as still not ready to take over responsibility for their own learning, they do not feel competent to give presentations, feel anxious to speak a foreign language in public and do not see themselves competent enough to develop their own projects in foreign languages within the topics of their future professions even though their language level reaches B1 level according to CEFR. Interpretation of these findings show insufficient or ineffective use of projects in earlier educational level, not enough attention given to development of productive skills and confidence in a foreign language use.*

Key words*: ESP lessons, project work, higher education, focus groups*

1. INTRODUCTION

Tendencies and views of education in the third millennium show the direction of modernization in education that it should serve as a means of cross-connection of subjects with the problems of the world around us and the lives of students with the aim to develop knowledge mainly through skills and abilities needed for solving life situations, that education together with the development of learners' autonomy, adaptability, creativity and ability to solve problems are priorities (Kovacikova, 2020). Townsend, Clarke, Ainscow already in 1999 (p. 366) summarized the shifts of 3rd millennium thinking that can be projected in educational environment. These authors named the competences for further development, such as possibilities of students to learn from many sources, understand the learning process and gain basic skills in learning, being aware of the content and curriculum of what is learnt, accepting the fact that success is based on how well learners learn as individuals, as well as how well learners work together as a team. They highlight the fact that formal education

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is only the basis for lifelong learning and thus schools are only one of a multitude of steps in their educational journey. They also say that formal education provides a range of interactions between learners and the world of business, commerce, and politics. The final point comments on the two qualities of successful people that should be, in their eyes, capability and adaptability (Townsed, Clarke, Ainscow, 1999, p. 366).

When we add the foreign language competence as one of the key competence of today's global world, the vision of a learner is to be autonomous, able to think critically, competent enough to evaluate the source and skilled in both macro- and micro- skills. The necessity of foreign language learning cannot be doubted in the modern world. In Slovakia, the compulsory language learning starts in the third class of elementary schools with the aim to reach B1, B2, or C1 level (CEFR) when leaving secondary schools (https://www.statpedu.sk/files/articles/nove_dokumenty/cielove-poziadavky-pre-mat-skusky/anglicky-jazyk_b1b2.pdf). Thus, in higher education, colleges and universities apart from philological universities, other professional educational institutions usually provide English language lessons within language classes according to their specializations covering academic and professional foreign language competences.

According to Raisanen et al. (2008) the main distinction of ESP is that the English taught caters to the needs of learners in specific disciplines other than the arts and languages. The focus of ESP is on terminology used in specific fields such as law, medicine, technology, finance, etc., highlighting the importance to remember the usage of English language in a specific context. In higher education, especially at non-philological education, ELT is covered by ESP courses. However, relations of professional specializations of students with language preparation must be maintained. Convergence of ESP with other disciplines is discussed by Stojkovic, Chmelikova, and Hurajova (2018) who claim that a balance of content and linguistic issues when designing a particular ESP course are inevitable for ESP teachers.

Coming back to the introduction part of this paper, modern trends in education lead to approaches that aim to gain knowledge more effectively, teaching students how to use this knowledge in real situations and how to become more autonomous in learning beyond the school walls. Project work can be seen as one of the possible ways of applying the above mentioned principles in ESP classes. Tracing back the roots of projects to the beginning of the 20th century (Dewey, Kilpatrick, etc.), they can be viewed as a method, form or strategy of teaching. Ulrich (2016) claims that project-based learning has been one of the most inspiring and sustainable educational approach nowadays. Kovacikova (2020) understands project work as the one following the principles of the learner-centered approach and content (CBLL) and task-based learning (TBL). The basis for project work is a project as a purposefully organized summary of ideas focused on an important centre of practical knowledge. It should be a clearly designed approaching a real activity and thus it emphasizes its utilitarian and practical character. Skalkova (2000) and Kozuchova et al. (1997) shed light on empirical side of project work. These authors are convinced that due to a project practical side, its preparation and presenting may draw natural interest out of students' cognition. They present three main features that should be followed in project work:

- learners' responsibility for self-learning,
- learners' autonomy in gaining knowledge,
- learners' effort put in goal achievement (product=project).

Project work in ESP classes according to Sheppard (1995) is to be effective mainly due to the reasons that it lends itself to:

- authentic language use,
- focus on language at the discourse level rather than the sentence level,
- authentic tasks,
- learner centeredness.

What is more, project work provides purposeful language use as it needs active personal involvement from students. They choose a project, after that they elaborate it and then present it. In case that the project is evaluated fairly and under the criteria that have been known before, the students may actually see also the objective value of their work and necessary feedback. Based on Stoller's suggestion (1997), the following steps are to be taken when incorporating project work in ESP lessons:

1. Students and their teacher agree on a topic for a project and a final outcome (e.g. a report, poster, display, presentation, video, etc.).
2. Students and their teacher agree on a structure of the project, starting with gathering necessary information, evaluating the relevance and trustworthiness of the information. They also organize their time management and in case of a team work, they divide their roles. As these are ESP lessons, the sources of data are mainly and if possible, searched in English language.
3. Teacher informs and prepares the students for the language demands and supports them with activities mainly when they search and gather the information. They learn how to skim, scan, take notes, cite, etc.
4. Students gather the information.
5. Teacher teaches students how to compile, analyze and interpret the data.
6. Students compile, analyze and interpret the data.
7. Teacher provides the students with presentation techniques and helps them succeed with the presentation of their final products.
8. Teacher together with the students sets the criteria of project evaluation that could be done as a whole class activity and then compared with the teacher's evaluation taking into consideration the content, language and performance of the project.
9. Feedback should be given on everybody who has taken part in presentation of the project.

By integrating project work in ESP lessons, students develop language skills while becoming more knowledgeable about the particular topic that goes hand in hand with their professional specialization. These specializations are by far beyond the professional limits of English teachers who teach ESP, therefore project work might be mutually resourceful and inspiring. Hutchinson and Waters (1993) conclude that the relevance of an ESP course to the needs of the learners will make learning better and faster. In addition, project work in ESP courses adds additional value of experiencing the foreign language use in real tasks within a safe environment. Thus, stress from presenting and negative emotions such as anxiety in using foreign language might be gradually overcome. Horwitz (1996) claims that it is human and natural to feel stress or anxiety in certain situations, however, it is inevitable to learn how to cope with the negative feelings. As commented by Kralova (2019), anxious language learners are less effective learners. She presents several foreign language anxiety coping strategies that can be applied also in ESP classes.

2. RESEARCH

The research part describes partial results of the design-based research that focused on using project work during ESP lessons at the Slovak University of Agriculture in Nitra, Slovakia. This university is a unique one in the Slovak Republic as it covers several faculties ranging from Faculty of Technical Faculty, Horticulture and Landscape Engineering Faculty, The Faculty of Biotechnology and Food Sciences, The Faculty of Agrobiology and Food Resources. Students studying at this university may choose from various professional fields of study, such as Agricultural Technologies and Commerce Activities, Operation of Transport and Manipulation Machinery, Garden Architecture, Urban Agriculture, Agro-Food Science, Applied Biology, Food Technology, Food of Animal and Plant Origin, Management of Plant Production, Management of Animal Production, Nutrition, Special Breeding, Hippology, Sustainable Agriculture and Country Development and many others.

These study programs vary a lot in their specializations, however, ESP lessons are organized in a form of a mixed group of students from different study programs and specializations. Thus, it places a difficult task for a teacher to design an effective ESP course. ESP courses at SUA focus on the development of communicative competence and it is guided by the Department of Foreign Languages. The current situation of language classes shows that the level of language competence of students enrolling the course varies from A2 to B1 (CEFR). The study material that is used during ESP lessons compiles texts on various topics related to the specializations of the students with the list of vocabulary, vocabulary and grammar exercises developing writing, speaking skills, and translation tasks. This textbook is updated by the authors from the Department of Foreign Languages once every two- to three-year span depending on students' needs. Contact ESP classes are provided once a week and take 90 minutes. The whole course is finished and evaluated usually with a test designed from vocabulary, grammar, reading and writing activities sourcing from the textbook. The course usually finishes after 12-13 weeks, so in total, students take approximately 26 academic lessons (1/45 minutes) per semester. ESP classes are compulsory depending on the study specialization, but usually within 1 or 2 semesters.

The whole study employed 104 students in total. These students joined ESP lessons in three groups. Two of them (project groups) and one 'traditional' (textbook-based group).The research started with a diagnostic test of language competences through the standardized Quick Placement Test (OUP, 2001) that covers grammatical, vocabulary and reading section. The aim was to find out the initial language level of students taking ESP course. Apart from two students who reached B2 level, the average of B1 level enabled the researchers to work with almost homogenous groups.

As it has been mentioned above, the textbook *ESP in Agriculture (Pre-Intermediate)* (Holúbeková, 2012) that is used with the students, covers various topics and its aim is to improve student language knowledge, improve communicative competence, and provides development of reading skills of general and specific texts. The offered topics are as follows:

- Travelling and Transport (aimed mainly at the students from the Faculty of Engineering),
- City Greenery (the Faculty of Horticulture and Landscape Engineering),
- Nutrition (for the students of the Faculty of Biotechnology and Food Production),
- Natural Environment (for the students of the Faculty of Agrobiology and Food Resources),
- Jobs and Careers (applicable to all the study fields).

The students working with this textbook had the same structure of the ESP lesson, during which they went through Pre-reading exercises to Text 1, that was either specific or general. It followed with the List of vocabulary related to the text, then Text 2, that was mostly specific in its nature, followed with some activities. In the second part of the lesson, English grammar was presented and practiced. Grammar topics were usually connected with an appropriate language level and connected to the texts from the textbook.

The other two groups worked on the above mentioned topics, with the difference that their *'working instrument'* was project work with the final product - project. These topics were taken only as frame topics and were narrowed with the specific sub-topics of students themselves taking into consideration their own research ideas and themes that they were working on within other specialized courses. Most commonly, they chose subjects of their bachelor or master theses as a scope for their projects. In the introductory class they were exposed to an example of such a project, along with the rules and criteria agreed on together.

The authors of each project were asked to fill in an evaluation form in a form of unofficial questionnaire, where they answered questions on how much time they devoted to project elaboration; which sources they chose; in case of a team work, the question was whether the work on the project was fairly divided among team members; and last but not least, their opinion on project (ranked from 'very interesting' up to 'totally uniteresting' added with their open answers if applicable. This questionnaire, firstly used only for teacher's needs, they served as a helpful tool for the comparison of data analysis of focus group meetings that are discussed further in the paper as a main research method.

The holistic approach to this study was covered by a triangulation of three research techniqeus that were employed in the reserach. In the first phase, diagnostic test 1 was applied in order to get to approximate level of English language competence with the help of a standardized test. The development of students' communicative competence was searched through the comparison of the test results in both groups (a textbook-based with a project-based one) and then processed statistically.

Diagnostic test 2 was a tool for this part of research and it was designed and constructed by the researcher and with the help and advice of the experts teaching ESP at the Department of Languages, SUA, in Nitra. Even though this part of the study is not the aim of this paper, we assumed that it is necessary for the better understanding of the whole process of the research. Apart from testing, the content analysis was used. The results provided the answer to the question regarding the increase in gained specific vocabulary in the project-based group compared to the textbook-based one. By analysing the projects presented by the students, vocabulary usage was ranked into specific groupings according to its purpose of use. The words were identified within the list prepared by Coxhead (Gillet, 2011) – *A Guide for Students in Higher Education.* Coxhead's classification ranked the words into a general or specific word families in fields such as Environmental Science, Computer Science, Technology, etc. Coxhead studied over 3.5 million words in total from 28 subject areas. This tool helped us distinguish the vocabulary in the projects and it was used as a framework for this vocabulary which was then divided into the general or specific one. After that it was quantified and then compared in each group. After examining each project regarding the vocabulary it offered, compared to the related topic in the textbook, helped find out the answer on a research aim to find out how application of project work in ESP affects learner's knowledge of professional vocabulary.

As the aim of this paper is to find out students' opinions and attitudes towards implementation of project work in ESP classes, the research method of focus group was used. Cohen et al. (2007), Jarell (2000) and Cozma (2007) consider focus groups to be a form of group interview. However, it is not in the sense of 'back-and-forth' responses between an interviewer and a group. It is rather an interaction within the group who discuss a topic supplied by the researcher with the aim to reach a collective, rather than an individual view. The participants interact with each other instead of the interviewer and the data emerge from the interaction of the group. It is an explorative technique, connecting a smaller number of people together as they are led by a moderator who facilitates the group. As Jarell (2000) suggests, when a group is formed, moderator takes the lead. After the introduction, the participants are explained the purpose of the focus group. The moderator also establishes the group rules for the group, briefly describes their roles, and informs them about recording of the discussion, explaining the confidentiality of participants' comment. Participants are also indicated that their opinions are neither wrong nor right, and requested to speak one at a time. After that, the moderator introduces the focus group concept. Then, the moderator begins to elicit information from participants by presenting them with the question. In the end, the obtained information is summarized and the group is closed.

As for the duration, it depends on the type of participants. Jarell (2000) suggests the time frame that is generally somewhat shorter than one-and-a-half to two hours. However, the shorter meeting calls for a well-planned session. In our research the analyses and conclusions of focus meetings are drawn via SWOT analysis. SWOT analysis is an instrument of strategic planning used for the evaluation of strengths (S), weaknesses (W), opportunities (O), and threats (T). This evaluation technique was first used by Humphrey who conducted his research at Stanford University in the 1960s. Vesela (2012) mentions that SWOT analysis describes positive and negative aspects and identifies the factors in the environment which may positively or negatively influence some projects or strategies. It belongs to the group of tools studying the relevance and possible coherence of specific programmes. This analysis reduces uncertainties and supports the strategy improvements or its general assessment.

3. PROCEDURE OF THE RESEARCH

In our study, two focus group meeting were formed, consisting of 20 and 25 people, all of them had participated in ESP lessons. As the meetings were planned as the last session of ESP course out of 81 respondents, only 45 appeared due to their other commitments. In focus groups, the students were asked to express their opinions on using project work within their ESP course. The discussion was recorded and the participants had been informed and agreed with it. The moderator was not their ESP teacher in order to gain more objective views from the students. The focus group was held in a classroom with tables arranged in a circle in order to develop an open and friendly atmosphere. Each focus group session took approximately 30-40 minutes. Everything was recorded with the prior consent of all the participants. The transcripts were analysed and interpreted through SWOT analysis which answered the questions of strengths, weaknesses, opportunities, and threats of project work implementation within ESP classes from the point of view of the students. The analysed results are shown further in the SWOT analyses.

Table 1 SWOT Analysis

STRENGTHS	WEAKNESSES
Students´positive attitudes towards project work	Poster as a project presentation
ESP vocabulary extension	Vocabulary (sometimes too difficult and specific)
Students encounter project work also in some other classes	Unfair peer evaluation
OPPORTUNITIES	THREATS
Students focus on a particular problem.	Number of projects (presentations) in one class. If it is more than 2, it is very challenging for attention.
Stress when presenting in front of the class.	Stress and discomfort when presenting. Feeling anxious in front of the class.
ESP vocabulary extension	Vocabulary (too difficult to pronounce, understand)
Every student should work on their own topic.	

In focus groups, the students were asked to express their opinions on using project work within ESP courses. They claimed that, compared to the traditional format of English classes that they had been exposed to previously, project classes were more interesting and they had been more actively involved. Despite some mental discomfort at the beginning at the thought of presenting in English, they afterwards appreciated the valuable experience of presenting in English. This experience made them more confident not only in foreign competences but also in their presentation skills. Moreover, they also claimed that they felt better acquainted with the topic they had chosen for their project and they had learned more than from the times they passively watched and listened to projects. They also criticised the topic limits, and wished to have more freedom in future about the choice of the topic. According to them, one of the drawbacks was the peer evaluation by the students. Most of them were very generous to their colleagues and they did not follow the set criteria for evaluation. Very often, the evaluation sheets of the presenters were more critical than those handed in by their colleagues.

5. Result Analysis and Interpetation

When looking at the positive results in the parts of strengths and opportunities (SO), the focus group meetings revealed that:

- **Students perceive project education positively**.

In comparison with the traditional approach where students become demotivated by a textbook dealing with the topics that are far from students' interests. Therefore, the book in ESP classes becomes an ineffective instrument when it is used at every lesson as the main source of knowledge. Attractiveness and increasing interest can be counted among the strengths of project work. Students are forced to be creative and therefore it makes them think differently about their work and subject.

- **Students focus on a particular problem.**

In ESP lessons, students are very often in mixed-ability groups regarding their language skills. In non-philological universities students from different faculties with unrelated specializations meet, therefore it is quite difficult for a teacher to select appropriate topics in English classes. Project education allows students to focus on their field of interest, or an issue which is in their study focus. At the same time, they are forced to enrich their vocabulary on a particular topic. It was obvious that the students elaborated the topic according to their study specializations. They did not consider the conditions for projects to be strict and unreal. As for the form of the project, the students were offered to choose from PowerPoint, Prezi, or a poster format. The most popular opinion was to choose either PowerPoint or Prezi due to the fact that visual, audial and dynamic features of these formats are most attractive for audience. Among all the presented project there was only one poster for a garden plan from the students studying garden architecture specialization. The poster was hand-drawn and therefore it caught the attention other students.

- **Students encounter projects also in other subjects.**

Project presentation is very common at university environment. However, not many teachers introduce the rules that should be followed in effective presentations and language classes are tailored for teaching and learning adequate presentation techniques. Oral presentations also develop students' confidence in presenting in front of other people.

- **Students benefit from vocabulary extension.**

During focus group meetings students admit that when they listen to a presentation, they acquire new vocabulary. By working on their own projects, students stated positively that they enriched their vocabulary with a lot of useful words as they had to go through many references, translations and eventually they learnt and fixed it for the act of performance. At the same time, the words they used were actively searched for their own needs and therefore they remembered them more.

- **Every student should work on their own topic.**

During focus meetings students mentioned the issues with team work. It was revealed that some students often free-ride of others' work. Therefore, it is difficult to divide the work evenly. The more hard-working individuals in a group do not want to let down the weaker ones and they often work for them. It seems that the tradition of team working skills is still not very developed in our educational environment. As an opportunity of project work in ESP, students suggested planning of one project for one student under ideal conditions.

As for weaknesses and threats (WT) in SWOT analysis some students mentioned the poster as an inappropriate format of project presentation. This has been discussed above in the text.

- **Number of presentations in one class.**

An average presentation took around 10 minutes. A discussion that followed was limited in some cases as it depends on a lot of factors. Firstly, there is vocabulary and pronunciation. Presenters were not able to engage a vivid talk if they do not have adequate vocabulary. Another factor threatening a discussion is no interest from the side of the students listening to a presentation. If the topic is not interesting for them, they have no reason to respond. Another interesting point was that the students did not enter the discussion because they did not want to make any discomfort to their colleagues. Students´ "empathy" with a presenter is very typical

for Slovak students. However, it could be negatively perceived from the point of view of knowledge.

- **Stress from presenting.**

The worst thing for students was to overcome the stress of presenting their projects in front of their colleagues. Students evaluated this experience negatively – it was very difficult for them to present in front of their classmates. Some of them even admitted that it would be just as problematic to do so in their mother tongue. Only few of them had presented before in front of the audience. Another disturbing moment for the students was a high number of students in a group. Therefore, fewer students in the classroom would be more welcoming.

- **Use of unrelated specific vocabulary or problems with pronunciation.**

The students who were in the audience negatively commented on acquiring passive vocabulary that was far from their specialization. If a student was from the technological field or specialisation, the specific vocabulary from agrobiology was far from his/her professional scope. Another issue with vocabulary the uttered the difficulties in pronunciation and identification of the used vocabularies as the words were very specific for certain fields.

As for limitations of this qualitative research it must be said that the focus group method was still very new for the students and not all the students openly expressed their ideas. Some of them were very shy and claimed they had no opinion on the subject. Students in Slovakia in general have not been led to express their attitudes and opinions openly from a very young age. On the opposite, via expressing students' comments openly during focus groups meetings, they felt important and enjoyed the position of being partners in the management and evaluation of their educational process. Also, through the discussion the relationship between the teacher and students reached a higher, more open level. As for the recommendation, the success of a focus group meeting depends on the size of a group and the choice of a moderator who is not a teacher appeared to be more objective.

5. Conclusion

The presented paper discusses the attitudes and opinions of the students in ESP classes on using project work. The project work was implemented in ESP classes at non-philological university with a group of students with mixed-abilities and language skills and mainly from unrelated study fields and specializations during one semester. At the beginning of ESP course the students were introduced the idea, aim, and procedure of project work with its final outcomes. The topics of the projects were chosen according to the study specializations of the students and elaborated in a team of maximum three people. The projects were presented during the semester in a form of an oral presentation with the help of Prezi, PowerPoint or poster formats. The students had to take into consideration the timing and content of the presentation with appropriate language, correct pronunciation and use of specific vocabulary related to the topic. After presentation of the project the classroom evaluated the content, form and performance of the project. After 12 weeks of project work performed during ESP classes, the students were asked about their opinions on using projects in their ESP lessons. Two focus groups with 20 and 25 students in total were studied in order to find out the opinions and attitudes of the students that had prepared and performed their projects during ESP lessons, with the help

of the moderator managing the group talks. The students' responses were analysed through SWOT analysis, stating the strengths, weaknesses, opportunities and threats of project work in ESP from the students' points of view. The results revealed positive attitudes of the students towards project use in ESP lessons when compared with traditional ESP lesson following a textbook. They appreciated their active work on chosen topics. They used vocabulary that was necessary for their professional fields and specific project. They also welcomed the format of visual and audial presentation via PowerPoint or Prezi programs. However, the students critically commented on the format of a poster as they found it static and the use of very specialized words that were mainly in the project far from their professional interests. They also commented the challenges of the team work and fair division of the project planning and realization as well as not very objective peer evaluation. As one of the biggest challenges of the project work was mentioned anxiety of students in presenting in English in front of their peers. Even though the results of the research cannot be generalized as the number of participants in the study was small, this paper reveals positive and challenging sides of project work used in ESP lessons in higher education.

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Review research paper

INTERNET KNOWLEDGE EXCHANGE AND CO-AUTHORSHIP AS FACILITATORS IN SCIENTIFIC RESEARCH

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Abstract. *The aim of this paper is to determine to what extent the use of Internet as a way of acquiring information for research purposes is a successful tool. The Internet can facilitate the research in different ways, some of which are being presented in the paper. Researchers have access to a wide range of databases available on the Internet, also having the opportunity to use sites designed as a social media for academics such as ResearchGate or Academia. Apart from that, there exists some degree of correspondence between open access philosophy and hacker ethics which is being related to academia to point to the possible ethic value researches have towards one another. The paper focuses on advantages of using Internet for the purposes of facilitating research, at the same time introducing the topic of collaboration and co-authorship as vital in today's 'publish-or-perish' academia world.*

Key words: *Internet, research, information, collaboration, so-authorship, open access publication*

1. INTRODUCTION

Oxford dictionary defines Internet as "an international computer network connecting other networks and computers from companies, universities, etc" (Oxford Advanced Learner's Dictionary, s.v. "internet", accessed on March 4, 2020). Cambridge dictionary gives even more detailed and precise definition stating that it is "the large system of connected computers around the world that allows people to share information and communication with each other" (Cambridge Dictionary, s.v. "internet", accessed on March 4, 2020), the key element of the definition being information and communication, due to their importance and necessity in the modern world. Researchers find this media an excellent tool in their scientific research, considering it one of the most convenient avenues of current flow of new information, otherwise difficult to retrieve. Moreover, it can be considered to be modern encyclopedia, its databases being immense and ever-growing. Furthermore, it reduces the cost of conducting research, as well as reducing the time spent on the research itself. However, the biggest advantage of obtaining data online rather than in a library is the immediate access and the ease of search. This aspect of search for

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information can drastically shorten academic searches, resulting in a vastly focused research effort.

One of the biggest disadvantages of obtaining information from the Internet is certainly the inaccessibility to high standard journals, which can be accessed only through licensed libraries paying subscription fees to the publishers or buying them. Being of high standard and value, these are usually quite expensive. Limited accessibility to data leads to less thorough research, which ultimately results in not thorough enough findings.

2. Literature Search and Online Databases

Literature search is often an exhaustive and time-consuming undertaking. Prior to the existence of the Internet, the main sources of information were libraries, both local and national, containing current and archived scientific journals, books and articles, and it still remains an important component of any systemic academic search. However, following the advancement of technology, the Internet now offers plenty of information and literature. A part of conducting a scientific literature search now consists of web-based search engines, such as Google Scholar, and a variety of electronic databases, which are listed by Wikipedia to approximately 150 online databases and search engines. When doing a research, scientists have various methods of literature research at their disposal, such as hand search and electronic search of journals; snowballing, which includes reference searching and tracking citations, and personal knowledge (Grewal, Kataria and Dhawan, 2016). Analysis of previous literature research methodology and results allow the researcher to examine critically how scientists had approached issues before and can help in the formulation of new ideas about the problem in question.

2.1. Using online academic journal databases

As written information in academia became vaster, the libraries had to dispose of the majority of their records, sometimes having to discard useful information that could be further utilized. In order to stop this detrimental practice, in 1995 a company named JSTOR (Journal Storage) was founded by the president of Princeton College, William G. Bowen, so as to provide digitalized versions of academic journals, economy and history journals, which marked the beginning of creating and using online databases. Digitalization of existing archives provided the opportunity for the older volumes of journals to be still accessible in the libraries and universities and for the new ones to be accessible in both ways, printed and digitalized, as well as for the ones that are created only in the digitalized version. JSTOR offers access to approximately twelve million academic articles published in the US before 1924 without charge. Following the foundation and success of the JSTOR model, other databases came into existence offering further research resources. Some of the most famous and utilized besides JSTOR, are: Scopus, Web of Science, PubMed, ERIC, IEEE Xplore, ScienceDirect, etc.

Scopus is one of the two biggest commercial online databases that covers scholarly literature from almost any discipline. It focuses on social sciences, arts and humanities, but it also includes literature on science, technology and medicine (STM), Health Sciences, Life Sciences, Physical Sciences. Scopus' provider is Elsevier. (2020)

Web of Science is the second big online scholarly database. Usually, academic institutions provide either access to Web of Science or Scopus on their campus for free. This database is multidisciplinary and its provider is Clarivate Analytics (formerly Thomson Reuters).

PubMed database, whose provider is National Institute of Health US (NIH), is the most reliable and exhaustive resource for research in medicine and biological sciences.

ERIC (Educational Resources Information Center), sponsored by the Institute of Education Sciences of the U.S. Department of Education, is the world's largest digital library of indexed and full-text education literature and the most popular resource database for educational sciences.

IEEE Xplore, whose provider is IEEE (Institute of Electronics Engineers), is the leading academic database in the field of computer science and engineering.

ScienceDirect is a multidisciplinary database featuring millions of academic articles published by Elsevier. ("The Best Academic Research Databases [2019 Update] – Paperpile", 2019)

Google Scholar, on the other hand, is not a bibliographic database but a search engine. However, the items one finds on Google Scholar are academic ones. Items found in databases like Scopus or Web of Science go through editorial process, while Google Scholar's built-in algorithm is such that anything resembling academic articles, papers, book chapters, theses, research reports, conference proceedings is appended to the existing list. "It retrieves documents or page matches based on the keywords searched and then organizes the results using a closely guarded relevance algorithm" (Vine, 2006, 98). What Google Scholar does is provide the link to the information, not the information itself. Furthermore, its identifier is not stable enough for the information to be retrieved on the permanent basis. "To be able to be eligible as a database, Google Scholar would need to have stable identifier for its records and ensure that no records will be eliminated" (Kumar, 2020). Google Scholar "works well for journal articles and conference papers the publishing arenas in which computer scientists, engineers and hard scientists are most comfortable […]. Books and edited collections, are often indexed with incomplete bibliographic information creating a distributed, invisibly duplicated, scatter of additional work for scholars..." (Zeitlyn& Beardmore-Herd, 2018). On the other hand, Google Scholar seeks to come up with links to open access versions of the articles. Google Scholar is a useful addition to other trusted sources of information, rather than the reliable source of information itself.

3. Importance of Open Access Information Sharing

Nowadays the publishing conventions of Gold and Green Open Access options are used by most academic journals. The Gold option allows publication with costs being met by the author. Green Access is free of cost to the author and independently of publication by publisher, material may be posted to a website controlled by the author, institution which funded the work or an independent repository. The advantage of Gold Open Access is their free accessibility immediately upon the publication. Green Open Access allows an author to publish an article freely; however, publishing houses have different policies on the length of time required for the articles to be freely released, which is also referred to as embargo period. ("What Is Open Access?" 2020) When talking about the more frequent open access publishing method in medical science, Dogra (2015, 1) says that "this is a welcome change from the society-controlled and readers-pay-fee-based journals where only a few privileged members have access to specific material […]. Indeed, this is a remarkable contribution to science […]. This free access leads to dissemination of scientific work across the globe promoting innovations in science and sharing of important information that leads to better medical care worldwide." Giustini (2005)

accentuates the importance of open access publishing concerning "anyone not affiliated with a large medical center or university," observing that "the ability to search for and access research material that is available for free on the web is a boon" (Giustini, 2005, 1488).

3.1. Gift culture philosophy

There exist a significant number of academics nowadays, who are strong believers that "information sharing is a powerful positive good and there is an ethical duty to share expertise by writing free and open-source code and facilitating access to information wherever possible" (Pearce, 2012, 1). The possible parallels between academia open research publishing policy and hacker ethics will be presented and the potential connection with the gift culture established.

The hackers being referred to in this paper are "the people who proudly call themselves 'hackers'- not as the term [that] is now abused by journalists to mean a computer criminal, but in its true and original sense of an enthusiast, an artist, a tinkerer, a problem solver, an expert" (Raymond, 2001, *xii*). The philosophy of "hacker ethics" was described in Levy's book *Hackers: Heroes of the Computer Revolution* (2010). Levy defines it in the following way: "It was a philosophy of sharing, openness, decentralization, and getting your hands on machines […] to improve the world" (Levy, 2010 ix). This philosophy is "enabled by the gift culture of open source, in which recognition of an individual is determined by the amount of knowledge given away" (Pearce, 2012, 2).

Raymond describes the gift culture in his book *The Cathedral and the Bazaar* (2001). He argues that "human beings have an innate drive to compete for power" (Raymond, 2001, 80), and that the way of gaining status has been changing depending on the kind of society people were living in. Talking about the gift culture, he observes that in these cultures "social status is determined not by what you control but by what you give away" (Raymond, 2001, 81), noticing that this can be observed in some aboriginal cultures but also in some social strata close to the western modern man, specifically the social strata of very wealthy, in which the acts of philanthropy tend to be rather common and also a way of gaining a social status. There exist parallels between this kind of culture and the hacker ethics and their society, where, as he says "the only available measure of competitive success is reputation among peers" (Raymond, 2001, 81), which makes their society a gift culture of open source. "This type of philosophy should be familiar to many in academia, which has also historically followed a gift culture, which regards contributors through a process of peer review" (Pearce, 2012, 2).

Bergquist and Ljungberg (2001) explain that the parallel between the gift culture and academia is that giving away knowledge is a way of gaining reputation and the way academic's career progresses. Giving away knowledge in the academic field and the consequent "acceptance of a gift by a society implies recognition of the donor and the existence of certain reciprocal rights" (Bergquist & Ljungberg, 2001, 318). The most important issue, however, is that by sharing knowledge a researcher gives rise not only to the possibility of their work being referred to, thus both continuing the work and going further to the scientific frontier. It also means becoming or staying visible in the academic field. The reputation of the researcher stays secured by the fact that their work is recognized by being referred to as the original idea by the way of citing it. In this way, peer review is the process by which gaining status in the academic field is obtained (Bergquist & Ljungberg, 2001).

Henriksen (2016, 2) accentuates the importance of publishing as an "essential element in the scholarly communication system." She adds that in this kind of system publication activity is connected to reward, responsibility and recognition. Recognition is the resulting element of the process of publication which is considered a gift. In that way the social status is gained and maintained thus resulting in what is parallel to the gift culture. "It is by authoring a publication the researchers attribute credit and enable the accrual of reputation in the reward system, and this reputation is influential in the consideration for employment, funding and increases in salary" (Henriksen, 2016, 2).

4. Collaboration and Co-authorship

4.1. Collaboration platforms/social media for scientists

Not all the sites where open access papers can be found are databases modelled like JSTOR or earlier mentioned Internet databases. The different models are collaboration platforms like ResearchGate or Academia.edu which have fundamentally altered the way scientists work, share information and their findings. Founded by physicians Dr. Ijad Madisch, Dr. Sören Hofmayer, and computer scientist Horst Fickenscher in 2008, and with more than 17 million users, ResearchGate is built for open scientific exchange of information and knowledge. "It's restricted to working scientists, a rule it enforces by requiring users to register via institutional e-mail addresses" (Kintisch, 2014), whereas the Academia.edu's policy is that everyone can be a part of it. One of the most useful aspects of it is the Q&A forum section where the topics in the form of the questions can be discussed whereby colleagues from the same or different science field can exchange opinions and ideas and even start collaboration. One can also find suggestions and solutions to their problems in research, making the section a form of peer-review before submission for publication. Moreover, academia beginners can start collaborating with academia experts and make use of their experience to enhance their own research. Both experienced and young researchers can benefit from collaborating, working together and sharing ideas; young researchers can benefit from the knowledge and expertise of experienced researchers, but the experienced ones can also benefit from the enthusiasm, zeal and energy of their younger colleagues.

Dr. Ijad Madisch says that "collaboration is key for science. Scientists need to work together to drive progress and they need access to each other's findings to build on them together." ("ResearchGate and Springer Nature embark on pilot to deliver seamless discovery and an enhanced reading experience | Corporate Affairs Homepage | Springer Nature", 2019)

4.2. The Importance of Publishing and Co-authorship Contribution

The drive to publish constantly creates a dynamic that is experienced throughout all levels of academic research. This makes co-authorship an alternative path towards creating a diverse body of published material. Collaboration amongst researchers is a well-established means to avoid detrimental gaps in an academic publishing record. "Network plays an especially important role in research... Researchers rely much more, compared with other work forces, on interactions with collaborators" (Li, Hu & Pei, 2020, 2).

The creation of 'publish-or-perish' culture leads academics to seek constant publication. Consequently, when such great emphasis is placed purely upon achieving publication, the

quality of academic research may suffer. The stigma of publishing gaps and the forced necessity for researchers to publish make continued publishing more important than the research itself.

4.3. Technology Contributing to Co-authorship

Collaborative research methods, another means of facilitating research among academics, have been facilitated by the "developments in information technologies - especially the launch of the World Wide Web in the 1990s (CERN, 2017)," and they "have probably contributed to an increase in co-authorship as well as co-authors" (Henriksen, 2018, 2). Henriksen explains that the facilitation of communication, interaction and sharing information drives impetus to the raising collaboration among researchers. "Nowadays, science is more accessible and freer than it has ever been before and—because of globalization—there is a particularly growing interest in scientific collaboration" (Popp et al. 2018, 4). Furthermore, in the age of technology, geographical distances present no hindrance anymore to their joint projects. Because of technology, researchers can now, more than ever, find their way to collaborating with each other regardless of the part of the world they are living in. However, live collaboration has got some advantages that outweigh online collaboration. There is an emotional and social element that plays a part in the growth of co-authorship. A shared objective amongst researchers can create general debate where problems are analyzed. This can lead to the creation of a congenial collective endeavor that would otherwise have been isolated and thus more difficult. The collaborations developed among researchers can also lead to successive projects which can result in professional ties becoming friendships as well. The fact that "researchers still favor face-to-face meetings to establish collaboration" (Henriksen, 2018, 2) tells us that numerous technological options are facilitators, however not the only and mostly preferred means of communication.

4.4. The importance of single authorship and early careers

For researchers at the early stages of building an academic career pursuing fractional and mutual involvement in diverse projects can be a pathway to increasing their list of published research and start developing a long-term career in academia. However, single authoring remains an important part of an academic career, being especially important for the beginning of the career to prove the ability of qualitative autonomous research. "Thus, the publish-or-perish culture seems to be partially counterbalanced by the cultural values and emphasis on demonstrating individual contributions" (Drongstrup, 2018, 56).

4.5. The increasing opportunity for citation

Furthermore, co-authorship papers stand better chances of citation. Citations of articles published in academic journals are very important for scholars. It is citations that are considered to add their work valuation. "Fischbach et al. (2011) examined co-authorship networks of researchers publishing in Electronic Markets, particularly the International Journal of Networked Business (EM). Among others, the study found that co-authored papers were cited more compared to those authored individually" (Kumar, 2015, 65). Rovira came to the same conclusion in their research stating that "there is a co-authorship advantage when the average citation of co-authored articles is higher in relation to single-authored articles" (Rovira, 2020, 171).

4.6. Peer review among co-authors

There is another interesting feature that accompanies joint projects. The organization of co-authorship writing is such that authors already fulfill the function of peer-reviewing among each other prior to its submission, thus improving the quality of the paper (Rovira, 2020). Rovira adds that because of such structure of writing, co-authorship paper stands better chance for publishing. “Besides adding a layer of internal peer-review, academic cooperation can also expand the field by pairing expertise, especially when sharing and borrowing ideas from other disciplines” (Rovira, 2020, 185).

5. Conclusion

The Internet was presented as the facilitator in the process of conducting research and the various ways in which it is being done, the access to publication and collaboration being very important ones. Being able to know the achievements of other researchers and the continuation of their findings is very important for the science to accelerate more quickly. Collaboration between researchers that can be brought about on certain platforms and media is an important feature that is of great assistance in their work. The results obtained are seen in terms of shortened working time and the quality of work due to the different fields of expertise researchers put into the joint project. However, one of the most interesting collaborations that can take place is the collaboration between younger and more experienced researchers. It is very helpful for the younger researchers to be guided and taught by their more experienced colleagues, but at the same time younger researchers at the beginning of the career bring fresh ideas, are more energetic and eager to contribute to science, prove their worth and promote their further career.

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Review research paper

NARRATIVE-BASED MEDICAL WRITING: AN EMP CASE STUDY

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Abstract. *The article discusses a case study employing medical writing for the development of skills, attitudes and values that are essential for the healthcare worker's identity. The emphasis is made on empathy, communication skills and communicative tolerance. The authors argue that these attitudes can be enhanced in the academic curriculum of medical universities. The possible way to improve personal qualities essential for the future career of a medical worker is through narrative-based medical writing, which can be implemented in the course of the English for Specific (Medical) Purposes (ES(M)P) course. The 13-week course 'Narrative-based medical writing' designed and performed at Voronezh Medical University involved 60 undergraduate students. The participants had to complete 10 to 13 writing assignments describing patients' experience of a disease. The key findings of the study have demonstrated a more competent usage of reflective writing techniques, a higher level of empathy manifestation and communicative tolerance comparing to the baseline measurements. These results support the idea that EMP with a narrative-based writing module can make an essential contribution to the development of communicative tolerance and empathic manifestation, thereby enabling the development of the crucial professional attitudes of a healthcare practitioner.*

Key words*: narrative-based medical writing, EMP, empathy, communicative tolerance, communication skills*

1. INTRODUCTION

Narrative, in its general sense, is a text which describes people and events. It has been existing since the beginning of the humankind: it is manifested in various forms of oral or written genres – epic poems, legends, sagas, fairy tales, novels. Narrative in terms of linguistics is commonly defined as "a spoken or written account of connected events; a story". (Oxford English Dictionary). Russian "Brief Literature Encyclopedia (*Kratkaya literaturnaya entsiklopediya*)" (Чудаков, 1968) describes "narrative" as an independently created story about a set of interrelated events presented to the reader or listener as a sequence of words or images.

Narrative-based medicine as a science was originated comparatively recently, at the end of the 20th century. Rita Charon, Patricia Mary "Trisha" Greenhalgh, Brian Hurwitz,

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Howard A. Brody are stated to be its founders. The rise of interest towards this branch of science is closely connected with essence of the doctor-patient relation: a patient needs to tell his story full of suffering and emotions, a doctor needs to adequately listen to the patient and his story and transform it into a medical history for its further beneficial use in the clinical environment.

"Narrative medicine has been variously defined, but at its broadest it includes developing a "sense of story" in practitioners, an appreciation for and understanding of the fact that, from a certain perspective, medicine is a story-telling enterprise." (Shapiro, 2012: 309) In this regard it is possible to consider narrative-based medicine as a medical approach that utilizes people's narratives in clinical practice, research, and education as a way to promote healing. It aims to address the relational and psychological dimensions that occur in tandem with physical illness, with an attempt to deal with the individual stories of patients. In doing this, narrative medicine aims not only to validate the experience of the patient, but also to encourage creativity and self-reflection in the physician. (Charon & Hermann, 2012)

"Narrative-based medicine (NBM) is the application of narrative ideas to the practice of medicine". (Zaharias, 2018: 177) As stated, narrative-based medicine is intended to improve that imbalance between the patients' dissatisfaction with the quality of provided healthcare service resulting from their expectations addressing doctors' attitude and behavior, on the one side, and doctors' dissatisfaction with their working environment including "difficult patients", stressful work etc., on the other side. This obviously marks a close interplay between most crucial interpersonal components of effective healthcare management (Mercer et al., 2002), namely, empathy and good communication, representing a multidisciplinary subject of health, communication and applied linguistics research.

Empathy is generally attributed to attitudes ranking high among essential healthcare qualities and values as it has a significant impact on doctor-patient cooperation. Research on clinical communication has demonstrated that empathy is able to enhance the doctor–patient relationship and improve both patient and doctor satisfaction. (Mercer et al., 2002) There is certain evidence proving interdependence between the patient's awareness of the doctor's empathy and the patient's ability to adhere to therapy, i.e. patient's compliance with treatment which is known to provide positive clinical outcomes. (Mercer et al., 2002)

Communication can be regarded as a natural environment of healthcare. We share a traditional view that good communication skills are crucial for a medical practitioner and are subject for professional training alongside with other medical skills and techniques. Communication skills' development is being closely scrutinized recently as patient-centred approach is gaining more popularity in doctor-patient relationship. Good communication skills are obviously a beneficial tool for creating comfortable environment for all healthcare discourse participants. Being an empathic communicator is a role model for any healthcare worker willing to implement patient-centred approach in their daily practice. (Choudhary & Gupta, 2015; King & Hoppe, 2013)

Furthermore, medical researchers exploring doctor-patient relations report on communicative tolerance. (Bashkin, 2015; Sidorenko et al., 2019; Torubarova, 2014) Communicative tolerance is said to determine successful interpersonal interaction and, as a result, successful professional socialization of future medical workers. The term "communicative tolerance" consists of two definitions – "communicative" and "tolerance". "Communicative" means "willing to talk and give information to other people", "tolerance" means "the quality of being willing to accept or tolerate somebody/something, especially opinions or behaviour that you may not agree with, or people who are not like you".

(Oxford learner's dictionaries) Thus, it may be concluded that "communicative tolerance" is a feature describing the relationship between people, which is determined by personal meaningful, conflict-free manner of human behavior. A person with a high level of communicative culture is characterized as balanced, able to communicate with different people, which results in a psychologically comfortable environment for cooperation. In contrast, the lack of communicative tolerance or its low level prevents successful communication in the social, professional or household sphere.

Even though much research has been done on communication, communicative tolerance and empathy with regard to effective clinical practice, they all remain a challenge for higher medical education in Russia and globally. "Medical students and GP trainees are taught the importance of good communication skills, patient-centredness, and the biopsychosocial and "holistic" paradigms, and about addressing the patient's ideas, concerns, and expectations. Despite this, patients frequently complain that doctors do not listen, they appear disinterested, they interrupt, they make assumptions, and they do not address patient concerns. Doctors defend themselves by complaining about difficult patients, the pressures of patient numbers and time, and the travesties of consumer medicine. Nevertheless, from a patient perspective, doctors have lost sight of what matters". (Zaharias, 2018: 177).

1.2. Narrative-based reflective practice as a way to develop physician identity

Patients' dissatisfaction is a clear indicator that there is still a gap between 'a bench' and 'a bedside' in regard to good communication practice, and higher medical education has yet to find pedagogical solutions to address these issues. The global demand for better clinical communication and respect for patients' needs may lead to a faster shift to humanities, e.g. Applied Linguistics (ESP, EMP) as additional sources of communication skills and professional values' development.

Medical educators turn to various pedagogical practices that may contribute to the development of personal attitude essential for future healthcare professionals. One of these approaches "involves narrative reflective practice as a way to develop physician identity". (Clandinin et al., 2010: 1) This is exactly the area where linguists have a substantial toolkit of educational tasks, assignments and scenarios that can be used for both empathy and communication development.

Rita Charon, a proponent of the narrative-based medicine approach, and her successors work "from a narrative view of experience" asking medical students "to write stories of their experiences with patients", stories that "are critical to the care of their patient that do not belong in the hospital chart but have to be written somewhere." (Clandinin et al., 2010: 2)

"Physicians too have felt the need to tell stories about their patients, themselves, and the ties that bind them, and medical education has incorporated writing about patients (and themselves) as a valuable educational tool to help learners develop critical thinking, challenge facile assumptions, think more deeply about patients and themselves in relation to their patients, become more aware of their own and patients' emotions, and ward off cynicism and disillusionment." (Shapiro, 2012: 309) Obviously, narrative writing can also be considered as a way of developing critical thinking and reflection, which appear to be the key professional characteristics of future health workers.

According to Charon and Coulehan, narrative medicine (Charon, 2006) includes the following elements:

- attention (being fully present in listening to, observing, and attending to the patient);
- representation (how the patient is represented—in writing and in telling—to colleagues, learners, the patients themselves and their family, and to the self of the physician);
- affiliation (commitment to adopting a position of compassionate solidarity with the patient's suffering, empathy for the patient's perspective, and advocacy for the patient's needs. (Coulehan, 2009)

Our hypothesis is that these elements can become integral components of narrative writing module within the academic curriculum of a medical university. As Russian medical universities' undergraduate programs involve a compulsory EMP course, EMP teachers may use language practice for the benefit of narrative medicine. So, the aim of our case study is to prove that narrative writing assignments can be used in the language classroom for the development of professional attitudes and values of future healthcare practitioners.

2. Materials and Methods

Our case study 'Narrative-based medical writing' was designed and performed as a part of the English for Medical Purposes (EMP) course at Voronezh Medical University in 2018-2019 academic year. It lasted for 13 weeks. The inclusion criteria were voluntary participation and topic vocabulary competence. The topic vocabulary competence was developed prior to the case study and was based on the second module of the EMP course.

The second module of the basic EMP course involves 'Diseases' – language topics introducing most common diseases' vocabulary, i.e. definitions, etiology signs, symptoms, diagnosis, treatment, risks and prevention. There was also a topic 'Pain', which introduced and drilled the vocabulary on types and characteristics of pain including its severity and association with particular diseases. So, by the time of 'Narrative-based medical writing' was introduced, undergraduate students had already become familiar with the basic vocabulary on diseases which was allowed them to feel free while expressing their thoughts rather than struggle with terminology. Besides, they had listening exercises on doctor–patient consultations, and were involved in nursing clinical experience "on sites", so the students were also aware of common medical worker–patient roles in the interaction.

The 'Narrative-based medical writing' consisted of 10-13 writing assignments. An assignment had an instruction which asked students on behalf of patients suffering from a disease to write what they thought and felt about their diseases. The instruction went as follows:

'Imagine you are a patient suffering from a disease. Describe in detail what you feel and think about your condition, how it started or the worst attack of the illness. Choose any disease you have studied in Module II or describe the one of your own choice'.

The participation in the case study was voluntary. There were 60 undergraduate students who participated in the study. They were all 2-year students of General Medicine Department. The following diseases were chosen: diabetes mellitus, herniated disc, bronchial asthma, psoriasis, Crohn's disease, allergies, gout. Participants were free to choose genre and style of their texts. They were not limited to any word count. Students could also use

information about the disease from any reliable sources such as articles from the journals, encyclopedia, textbooks, books of reference in medicine/pharmacy, etc.

The assessment included writing skills marking and professional attitudes' evaluation. The latter was done with a test measuring empathic abilities and communicative tolerance. Language errors were marked and discussed with each student individually, recommendations for text improvement and development were given to each author.

4. RESULTS

The case study 'Narrative-based medical writing' has brought out some findings below which are accompanied by language illustrations and observations.

Apparently, all the students' works tended to follow either an essay or a personal diary genre. It should be noted that the writing of each participant deserves careful attention and analysis, and can be used as a phenomenological method of studying the personality of future healthcare professionals.

If at first the students' works resembled articles from popular science magazines, then the descriptions acquired an emotional coloring, in each work the empathy of a suffering person was obvious. The following examples are the most revealing:

Example 1, bronchial asthma, an extract from an essay*,

(beginning): My story is about such an unpleasant disease as bronchial asthma. I have to fight it for the rest of my life, because asthma is incurable. However, it will not bring many problems to your life if you clearly know how to behave in any situation…

(ending): As a result, the doctor diagnosed bronchial asthma of the non-allergic type. I was scared, but later doctor explained to me that this is an ordinary diagnosis and I can live normally. However, I understood only one thing - any irritant can provoke a new attack. It can be cold water, a pungent smell, physical exertion or just severe stress and of course allergens: dust, wool, pollen of plants. We had to get rid of all soft toys and carpets at home, replace feather pillows, hide all books in glass bookcases, because of the dust mites.

Example 2, diabetes mellitus, personal diary entries*,

07.10.2018. I was 12 years old, I studied in 6th grade. In our family, through my mother's line, there is a tendency to diabetes. So my grandmother got sick at the age of sixty, and her brother, too ... Probably, this is a hereditary factor or maybe some kind of strong moral experience.

24.10.2018. … at night I wake up only at the very last moment. And not long ago at night I had a strong attack. I banged my head against the bed, screamed very loudly and at the same time I had my eyes opened. My husband brought me to consciousness with great difficulty, sweet water helped. By the way, Coca-Cola very quickly increases blood sugar levels.

10.11.2018. What is a honeymoon in the understanding of ordinary people? Honeymoon is the conventional name of the beginning of a joint married life, when young people go on a long-awaited fascinating journey together far away from the whole world. But we, diabetics of the first type are special people. For us, the concept of a honeymoon is a unique period when our pancreas begins to produce insulin again.

(*please note that the authors' spelling and punctuation are generally preserved)

The authors of the fragments have demonstrated that they are familiar with the topic vocabulary of the diseases, e.g. *"bronchial asthma of the non-allergic type", "asthma is incurable", "any irritant can provoke a new attack", "this is a hereditary factor" (about diabetes), "Coca-Cola very quickly increases blood sugar levels".*

The works have also shown certain narrative techniques, including a plot and a sequence of events, personification, back story, metaphors and other features typical for narration:

"What is a honeymoon in the understanding of ordinary people? Honeymoon is the conventional name of the beginning of a joint married life, when young people go on a long-awaited fascinating journey together far away from the whole world. But we, diabetics of the first type…"

"For us, the concept of a honeymoon is a unique period when our pancreas begins to produce insulin again."

"My story is about such an unpleasant disease as bronchial asthma. I have to fight it for the rest of my life, because asthma is incurable. However, it will not bring many problems to your life if you clearly know how to behave in any situation…"

"In our family, through my mother's line, there is a tendency to diabetes. So my grandmother got sick at the age of sixty, and her brother, too …"

The students have used reflective writing techniques. As can be seen from the examples, all students' writings involved argumentation, observation, analysis, exploration and evaluation of what happened and why, e.g.

'For us, the concept of a honeymoon is a unique period…'

'However, I understood only one thing…'

'Probably, this is a hereditary factor'…

Another observation is that the students managed to sincerely act as a patient (use of the 1st person pronouns, dramatic details), the authors have also used their relatives or other real people's experience, which means that they lived through other people's environment. This might be considered a positive result showing empathy development by means of narrative techniques.

One of the most interesting observations we have made is that the authors seem to have difficulties in feelings and emotions description. Their use of emotional vocabulary is rather limited (if any). This might be due to the imaginary situation the case study conditions have put them in. However, even this result can be regarded as positive, since it revealed the difficulty which patients have manifesting their feelings, emotions and personal experience at the physician's consultation.

Speaking about communicative tolerance, it should be mentioned that experts distinguish several types of communicative tolerance:

- situational communicative tolerance – which is manifested as a personal relationship to a specific person;
- typological communicative tolerance – is manifested in relation to personality of a certain type or group of people (separate race, nationality, social group);
- professional tolerance – is manifested between people – participants in relationships in the professional sphere (doctor - patient, nurse - patient, etc.);
- general communicative tolerance. (Boiko, 1996)

The sphere of our interests was professional communicative tolerance as one of the most significant personal and professional attitudes of a medical worker and possible ways of influencing it. As reported, tolerance can be influenced in the process of education (Boiko, 1996; Kamalova et al., 2019; Torubarova, 2014) To assess the level of communicative tolerance, Boiko test of communicative tolerance measurement was applied (Raigorodsky, 1998) The results obtained demonstrated that the level of communicative tolerance increased in all participants: prior to the study, 9 students showed low and 51 people showed an average level of communicative tolerance; at the end, the level of communicative tolerance of all participants was characterized as high (see Table 1).

Empathy is a core component in the content of medical training. It is manifested as a conscious compassion, sympathy with the current emotional state of another person without losing the sense of the origin of this experience. This attitude is based on high moral standards which a future doctor should possess in this intention to render assistance and support. Experts report on empathy-enhancing educational interventions in undergraduate medical education. (Batt-Rawden et al., 2013; Stepien & Baernstein, 2006; Cunico et al., 2012; Stebletsova & Torubarova, 2017) The empathy level was assessed in medical undergraduates before and after the study with the balanced emotional empathy scale (BEES) questionnaire (Mehrabian & Epstein, 1972), Russian version (Raigorodsky, 1998). It is important to note that the level of empathic manifestations was medium and high after the experiment in comparison with the low and medium, which was observed among the participants before the study (see Table 1).

Table 1. Levels of communicative tolerance and empathic manifestation in medical students participated in the study

	Before			After		
	low (%)	medium (%)	high (%)	low (%)	medium (%)	high (%)
Communicative tolerance	9 (15%)	51 (85%)	-	-	-	60 (100%)
Empathic manifestations	6 (10%)	54 (90%)	-	-	45 (75%)	15 (25%)

5. Conclusion

The case study ‘Narrative-based medical writing’ has demonstrated that narrative writing as an integral module of EMP course has multifunctional potential for professional medical training. Being implemented in language practice it can obviously add to improvement of writing skills. Moreover, narrative–based medical writing can positively influence the development of professional skills and attitudes commonly covered by the concept of effective doctor-patient communication.

We may also conclude that although students’ stories about the disease written on behalf of patients cannot be strictly attributed to one writing function or style, any narrative-based medical writing inevitably incorporates description, reflection and narration and demonstrates future doctors the language power in constructing a patient’s reality, which is, much more than their medical history, develop their communicative skills as an essential instrument in their narrative-based medicine toolkit.

Therefore, the results obtained clearly demonstrated that a specially organized training activity within an EMP course can contribute to both communicative skills and professional values development crucial for a healthcare practitioner.

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Review research paper

POSSIBILITIES OF IMPROVING READING OF SUBJECT-SPECIFIC TEXTS

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Abstract. *In their future professional career the non-philological universities´ graduates will undoubtedly encounter the necessity of reading technical texts in a foreign language. Utilising the basic knowledge in linguistics, they should be able to orient easily in the text and context, use prediction, comprehend the texts without the word-by-word translation, as well as be aware of making use of various progressive reading techniques, if necessary and if useful. The author carried out a quantitative and qualitative research at three Slovak non-philological universities with the sample of 300 respondents. The research proved our anticipations that the situation regarding the university students' reading skills level is quite serious and that the improvement in this field is possible in a short time period.*

Key words*: reading skills, subject-specific texts, reading techniques, linguistics knowledge*

1. INTRODUCTION

Nowadays, nobody would doubt the fact that reading skill is an essential skill which should not be understood only in its limited range, i.e. that a person reads the texts comprised of words, sentences and paragraphs. A member of the current knowledge society in this millennium is aware of acquiring new information or knowledge via reading, thus numerous countries pay attention to the reading literacy of their pupils and students not only in their native language but in foreign languages, too.

Reading may seem to be the simplest language skill, and therefore it is frequently massively underestimated. If we consider reading to be an interaction of a reader and a text, then in the foreign language several other factors play the role: e.g. mother tongue competence acquired (linguistic knowledge – morphology, lexicology, syntax or stylistics), which are supportive in understanding the foreign language structures and specific knowledge background. The differences between the mother tongue and foreign language are significant as well (e.g. in the case of very different language families). The author does not want to advocate English as the No. 1 foreign language, nevertheless, and some might not like it, English has become *lingua franca* of the scientific research and academia. Therefore, mastering it and mastering the specific language skill required is the prerequisite of a successful scientific or academic career.

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A technical university graduate will frequently encounter technical texts written in a foreign language in their professional career. Utilising the basics of linguistics, they should easily orient in the text and context, they should know how to utilise prediction and master the word-by-word translating of irrelevant parts to appropriate estimation of the unknown words. Besides, they should be capable of making use of various progressive reading techniques.

The author carried out a quantitative and qualitative research at three Slovak non-philological universities with the sample of 300 respondents. The research proved our anticipations that the situation regarding the university students is serious. The students read little, they are frequently superficially interested in the content of the reading material, and, in addition, they have no or very low linguistic knowledge which could be used for better reading comprehension. The research also proved that the improvement in a short time period – two months – is possible. After the training in formal and content text structuring, training in an appropriate estimation of unknown word meaning and training in reading techniques, the reading skills of the respondents improved significantly.

2. THEORETICAL BACKGROUND

Taking the opinions of many linguists into consideration**,** reading cannot be precisely defined. According to Grabe (1991), reading is a selective process between the reader and the text, where the reader applies their general knowledge as well as knowledge of the language itself. For Goodman (1982), it is a psycholinguistic game, for Smith (1978) it is the use of visual information (text) and non-visual information including language comprehension, familiarity to the topic, reading skill, and general knowledge. Alderson (2005) considers its precise definition impossible since the text the reader reads inevitably relates to the fact how they read it – to mention just a few linguistic opinions. The author is the most in line with Alderson and Urquhart's (1989) description: reading is a complex interdisciplinary cognitive ability involving language, psychological, sociological, information and communication aspects. Considering the approach to reading, the linguistics distinguishes two basic divisions of models of reading. The first one mentions psycholinguistic, schematic, language-oriented, and cognitive; the second division mentions bottom-up theory, top-down theory and an interactive school. The last one which says that both theories are used in the reading process is supported by the majority of linguists nowadays and corresponds with author's practical experience as well. We know, that it is necessary to make a distinction between the process of reading and the result of that process, the product (Alderson, 2005), as there is the interaction between a reader and the text which is likely to be dynamic, variable, and different for the same reader on the same text at a different time or with a different purpose of reading. The process of reading is influenced by three factors: readers, text and their interaction. Reading in foreign language shares some similarities with reading in one's native tongue, nevertheless, reading of a scientific text or subject-specific text could be different. We can process the scientific text more effectively with the use of the reader's knowledge of the models of reading, the reader's linguistic knowledge, lexical predictions, progressive reading strategies, and an appropriate text selection.

It is necessary to mention the factors influencing reading: the reader, text, and the interaction of the reader and the text. Regarding reading in foreign language, we have also considered: *knowledge level* and orientation at the time of beginning reading in foreign language, *acquired mother tongue level* – reflecting the transfer of reading skills,

knowledge of structures in native language, acquired foreign language level as it influences the choice of the texts for reading and purpose of reading, difference between mother tongue and foreign language, cultural background, reading strategy used in mother tongue, reading strategy used for reading in foreign language, cultural precocity and attitude to the reading process, knowledge of various formats and registers, and the background knowledge of the topic.

When speaking about reading, it is not possible to omit the term of context, or extra-textual components as they play an important role in processing specific information. Comprehension of a specific text information in detail and as a whole can be done only by a reader knowing not only language, but also possessing general encyclopaedic knowledge background and the specific domain knowledge. Going deeper into the topic, we should mention co-text and pretext. The explanation found in Oxford Reference reads that co-text means the words surrounding a particular word or passage within a text that provide context and help to determine meaning. The term co-text is mentioned also by Widdowson (2004) who highlighted distinctions between the internal *co-textual relations* which can be semantically outlined within a text, and the *external contextual relations* that have to be accounted for in apprehending their pragmatic meaning. The term *pretext* according to Widdowson (2004, 75) generally refers to an ulterior motive: "...our understanding of a text, its realization as discourse, depends on the degree to which we can ratify the linguistic and contextual knowledge that its author presumes we share". As Jordan (1997) mentions, reading – as cited from self-assessment or questionnaires-based surveys – is for students the skill causing the least difficulty. This information might be misleading as it is exactly the reading skill in which the students are not aware of their imperfections. This was also the main reason why the author carried out the following research to find whether this underestimated skill can be improved.

You may agree or not, but it was mainly *English for Science and Technology* (EST) which was the site for creating the foundations of English for Specific Purposes in reading instruction and research. To make it short, when reading a subject specific text we should consider its syntactic structure, paragraphs, utilisation of aforementioned reading models, lexical knowledge, reading techniques and strategies, an appropriate text selection, and potential troubles and mistakes in reading.

3. METHODS

Prior to the research itself, the author asked several research questions and defined three hypotheses. For the purposes of the contribution, the author mentions only two of the research questions and one hypothesis.

For the answers to research questions the author used the direct research method – a questionnaire and the replies are evaluated in graphs. The questions were as follows: Research question No. 1: *Do the students of the faculties involved in the research consider their reading skill as a sufficiently developed skill?* Research question No. 2: *Do the students of the faculties involved in the research identify any difficulties or bad habits in their own reading skills?* The hypothesis stated was as follows:

Hypothesis 1 (H1): It is assumed that the readers who have the knowledge of formal and content text structures can perform better in the reading process than the ones who lack that

knowledge. The author aimed at proving that the aforementioned knowledge in text structure can ease as well as shorten the reading process and improve the students´ reading skills.

The author was convinced that the reading skills development was a bit underestimated and neglected in favour of other, mostly speaking skills. In her opinion, a short training built on reading techniques and strategies, estimation of unfamiliar words via known derivations, prefixes, and suffixes, and on the basic knowledge of text formal and content structure could significantly improve and accelerate the reading process of university students.

In the research the author used: *direct research methods* (a questionnaire for students, an interview for the English practitioners, tests for students and observations of reading skills progress in the process of aforementioned training for reading skills development), and *indirect research methods* (classification and analysis of obtained materials, generalisation of obtained data on the basis of own pedagogical experience). The results were processed by the means of a quantitative method, in the form of tables and graphs as well via statistical analysis.

The *main research subjects' sample* consisted of the students of two faculties in Trnava: 1) Slovak University of Technology, Faculty of Materials Science and Technology (STU MTF – 102 students), 2) Trnava University, Faculty of Law (TU PF – 103 students). For better results processing and comparison, the author randomly excluded two students of STU MTF and three students form TU PF, so that the number of 100 students was equal and easily comparable. The research sample was chosen with regards to the majors, the author assumed that STU MTF students would be technically oriented and oriented more on science, whereas TU PF students would be focused more on humanities, so the differences in some areas were anticipated.

The *comparative subjects' sample* was represented by the students of two faculties from Trenčín: Trenčín University of Alexander Dubček in Trenčín, Faculty of Social and Economic Relations (50 students) and Trenčín University of Alexander Dubček in Trenčín, Faculty of Mechatronics (50 students). The other subjects of the research sample were represented by the English teachers of all faculties in question. In addition, the author studied, analysed and compared the pedagogical documents (curricula and syllabi for the particular semester, as well as teaching objectives of individual lessons), prepared tests which were applied before and after the implementation of training and activities for reading skills development, questions for interviewing the English teachers at related faculties, and a questionnaire for students.

4. RESULTS

The research procedure was divided into three stages: in Stage 1 (the preparation stage) all the materials for direct research methods (questionnaires, tests, and questions for interviews) were gathered, and the pedagogical documents obtained from the faculties analysed. A set of exercises and activities for reading skills training were prepared, too. In Stage 1, the students were tested to find about their level of reading skills.

In Stage 2 the author together with the English practitioners applied the aforementioned methods and activities for the reading skills development, via appropriate specific texts selected so that they correspond with the study programme in question. The author herself carried out the training at two Trnava faculties and monitored the process of reading skills development in Trenčín faculties. The English practitioners involved in the research utilised

mostly the following methods for reading skills development: reading comprehension, reading and follow-up questions, and reading and translation. Reading of the input text usually took from five to ten minutes, and the follow-up activities ten to fifteen minutes. The rest of the lesson was allotted to the training of another skills – speaking or writing. This means that there were very few lessons which were only about the reading skills development, and as reading would be a key skill for many students in their future professional career, the author also adjusted the proposal for reading skills training appropriately. The implementation of the methods for reading skills development was carried out through two months of the summer semester. The author was in constant personal mail or phone contact with her Trenčín fellow teachers so that the process could be monitored and possible drawbacks eliminated. The following sources together with author's long year pedagogical experience were used: F. Grellet, J. Bamford, R. R. Day, B. M. Smith, E. Spargo, B. Hamilton Pryce, B. M. Smith, and own materials.

In the last Stage 3 the author utilised prepared tests to show the anticipated progress in the reading skills development as well as a questionnaire for the students to get their feedback about their own reading skills, the training, and their progress during and after the implementation of the training for reading skills development. The tests results were evaluated, analysed and compared with the test from Stage 1. Similarly, the information obtained from students' questionnaires and interviews with the English teachers at the faculties involved in the research were evaluated. Regarding the results and generalising own pedagogical experience, the author prepared the benefits applicable not only at STU MTF, but at other faculties (and possibly at secondary educational institutions) as well.

It is not possible to mention all the most interesting results, so the author will mention just several of them, particularly those related to the aforementioned research questions and hypothesis. Firstly, the author asked about their relationship to reading which was answered positively by almost all respondents, although, the students of the Faculty of Law were the ones, who had the strongest relationship to reading, which was quite understandable as their study profile required a lot of reading, Regarding the students' opinion which language skill they considered the most important, the research results were quite similar. The students did not distinguish – or they did not know – which language skill would be essential for their future career, and they assigned that all skills are important. According to them, the speaking skill was the second in relevance. The most interesting result for the author herself, was the fact that the students considered the reading skill as the least important which corresponded with the author's anticipation that the reading skill was underestimated.

The next questionnaire item aimed at being aware of having some imperfections in own reading skill. The students' replies were mostly in the field of answers *slightly disagree* and *disagree* – they thought their reading skills are sufficiently developed and did not need further development or improvement (as shown in Fig. 1).

This students' persuasion had dramatically changed after writing Test 1, when they realised they were wrong. As seen in Fig. 2, the students' opinion on whether they were aware of having imperfections in their reading skills had changed to fields *Agree* and *Slightly agree.* This means that the students were ready to accept the fact that a training focused on their reading skills development is more than necessary.

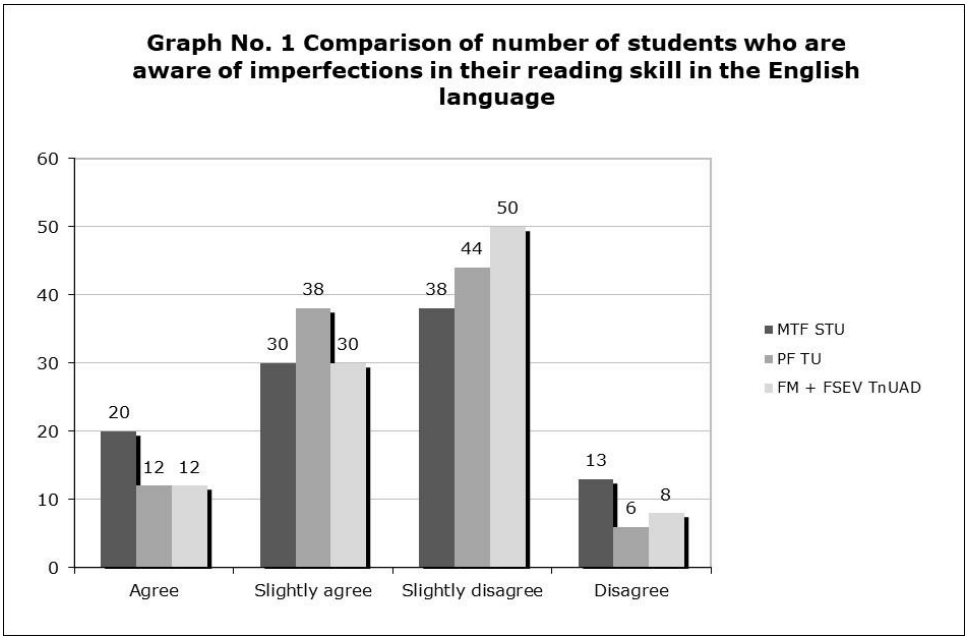

Fig. 1 Comparison of students' awareness of imperfections in their reading skills in English

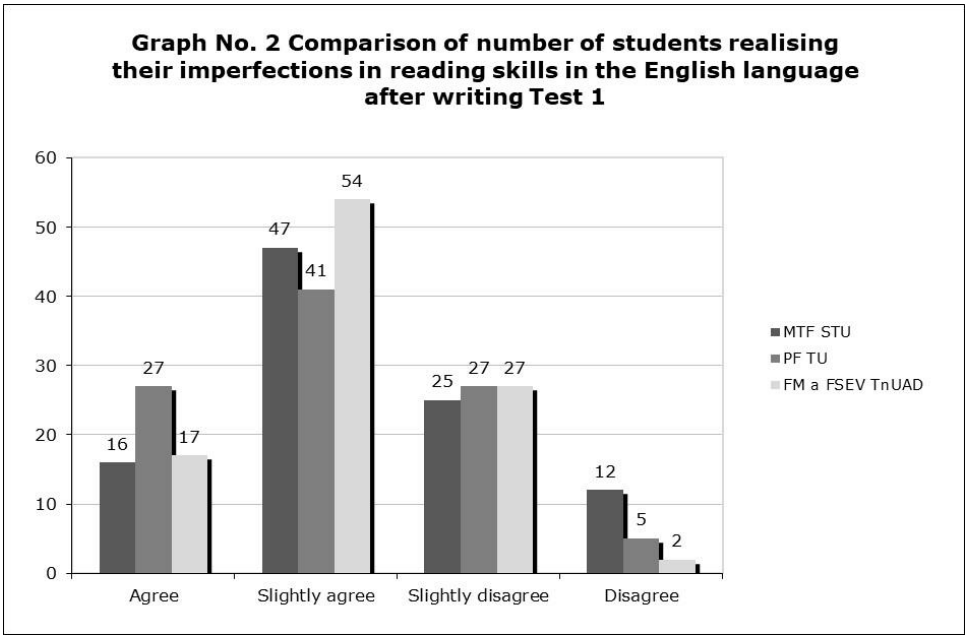

Fig. 2 Comparison of students realising imperfections in reading skills after writing Test 1

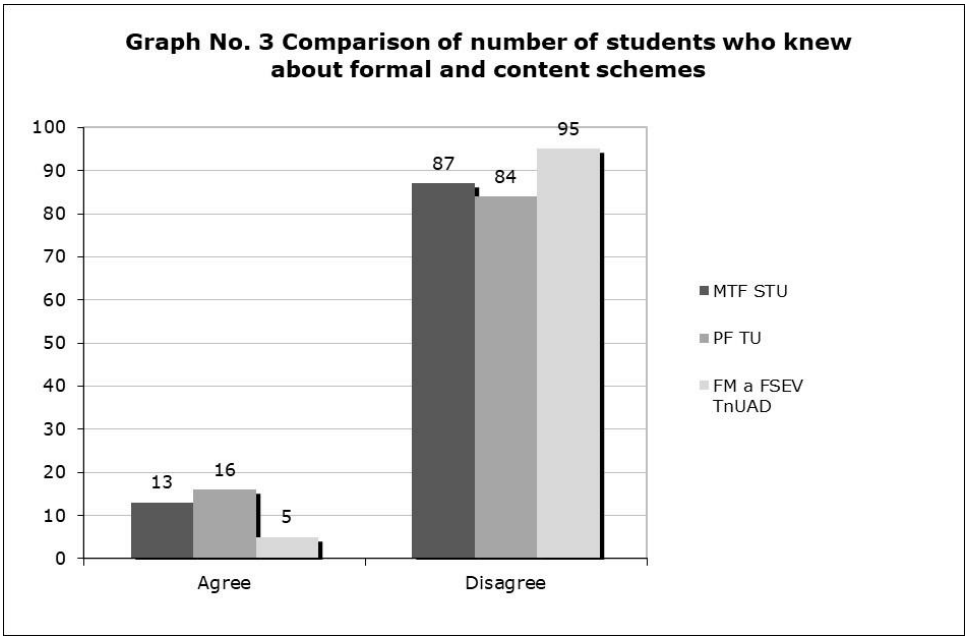

Fig. 3 Comparison - students having knowledge of formal and content text construction

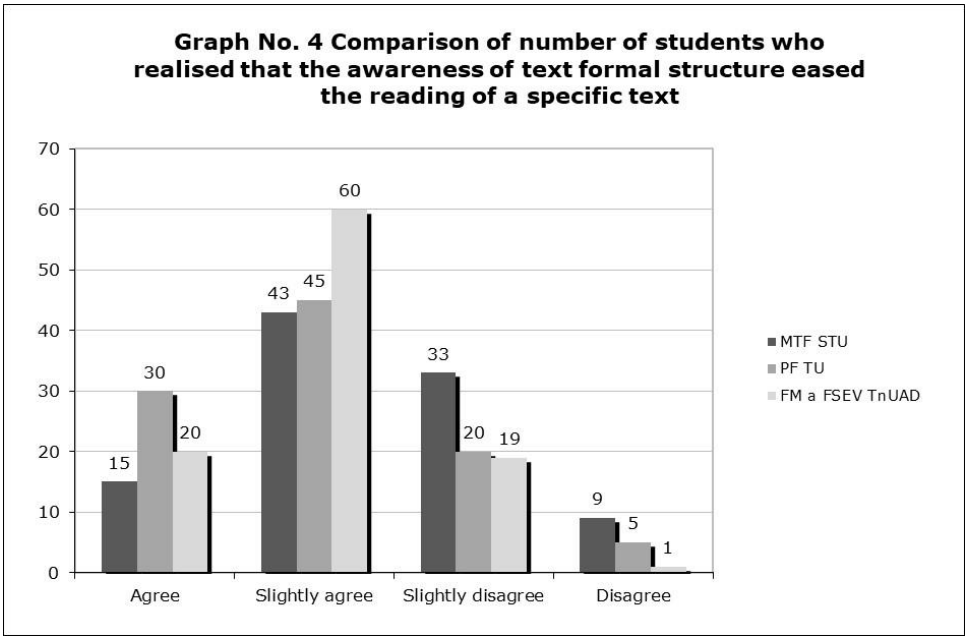

Fig. 4 Comparison of number of students appreciating knowledge in formal text structure

The further questionnaire question focused on having knowledge of formal and content text structures in various genres. Here the students replied they knew nothing or a very little. As shown in Fig. 3, in the field *Disagree* we can see that 87 STU MTF students, 84 students of the Faculty of Law and 95 students from Trenčín faculties replied they had no knowledge of how the text is structured in terms of its format and content, i.e. they had almost no knowledge in how the text is built, and hence, they were more receptive to obtain more knowledge in the field.

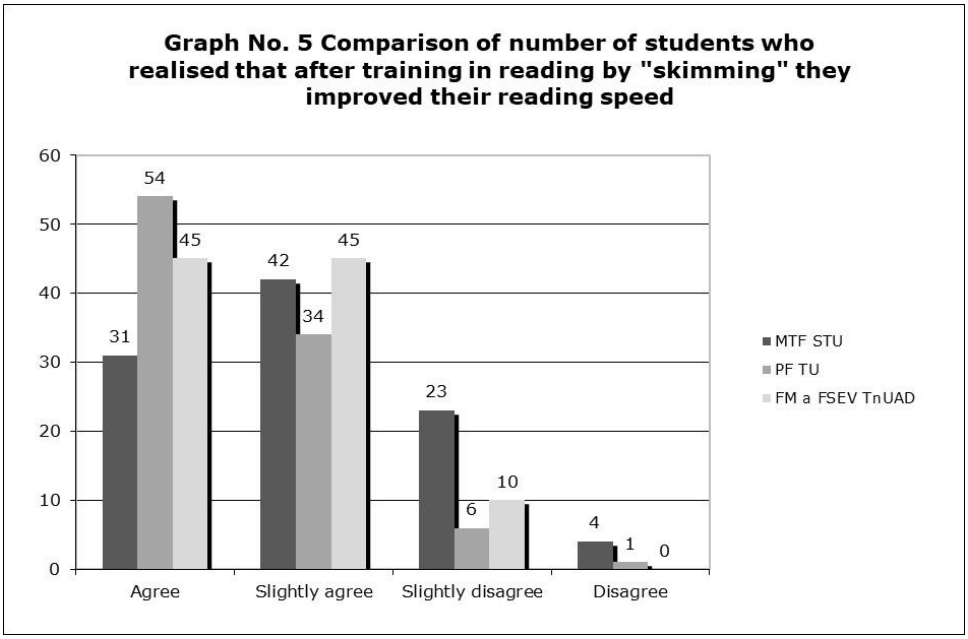

Fig. 5 Comparison of number of students who realised improvement of their reading speed after training by 'skimming' reading technique

After the training, as the students passed through Test 2, they realised that having knowledge in formal and content text structure could significantly ease reading of almost any specific text. The graph in Fig. 4 illustrates that the majority of respondents' replies were in the field of *agree* and *slightly agree*, i.e. they realised that the knowledge of the formal text structure – particularly knowledge of the genre varieties – really allowed them to read more effectively (58% - STU MTF, 78% - TU PF, and 80% TnUAD FM/FSEV).

The last graph points out the following situation: after the training, which included exercising of reading techniques, the students had changed their answers, they realised that the skimming reading technique could ease the reading of texts significantly.

Finally, after the training and passing the Test 2, the students were asked whether they became interested in their reading skills development and the results were (61% STU MTF students, 70% TU PF students, and 67% TnUAD FM/FSEV students replied positively), that many of them began to be more interested in reading as a skill. This also proves the author's opinion that a short training could change the students' attitude to the skill, not to underestimate it, but subsist on its constant development.

4.1. The research questions

Regarding the aforementioned research questions, the answers to the research questions No. 1 and No. 2 are clear – the students thought their reading skills are sufficiently developed, and were not aware of having any imperfections in their reading skill. This means that the author came out from a reasonable anticipation that this language skill is underestimated and the continuous development of their own reading skills is more or less neglected.

4.2. Verification of hypotheses

The author considered Hypothesis 1 as the most important and at the same time the most difficult to train and then prove. According to statistical analysis in which chi-quadrate was used to identify the change, it was proved that the knowledge of formal and content structure of the specific text has a statistically significant influence on text comprehension and speed of reading, i.e. Hypothesis 1 was confirmed.

7. CONCLUSION

Nowadays, the English language has increased its power as a tool in professional communication, therefore, it is necessary to focus the attention on the students' specific needs of particular skills development. The students of technical and other non-language universities should have the possibility to develop those skills in particular – either listening, speaking, writing, or speaking – that they will need and preferably use in their future career. The technical universities graduates are expected to use reading skills very often in their jobs as they have to be in continuous contact with latest technology development and here, an enormous portion of specific literature (research results, conference proceedings, and specific journals) is available only in foreign language – in our case English. Nevertheless, in the author's opinion, all university graduates will sooner or later need to work with a text in foreign language and be competent readers, i.e. be able to realise how the text is built, understand special terms without the help of a dictionary, or use various reading techniques (e.g. scanning, skimming and surveying) for faster information acquisition.

As found by the research, the reality at the sampled faculties was different, students-readers did not know many reading techniques, they read slowly, some of them even partially aloud, focused on word-for-word comprehension, relied on dictionaries, and did not know what the formal and content text structures were. This meant that the reading process took longer, the information acquisition was limited, and the comprehension of the complex texts improbable. The research has also proved that the improvement of students' reading skills is possible in a short time if their reading skills are appropriately trained and developed.

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Original scientific paper

ASSESSING LEARNERS' ACADEMIC PHRASEOLOGY IN THE DIGITAL AGE: A CORPUS-INFORMED APPROACH TO ESP TEXTS

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Abstract. *In the field of English for Specific Purposes (ESP), as in any other type of interlanguage, phraseology contributes significantly to successful academic writing (Biber and Barbieri 2007). For particular learner varieties, such as Romanian English, few studies have examined formulaic sequences (Hyland 2008), mainly focusing on lexico-grammatical patterns (Chitez 2012, 2014). The proposed paper investigates the use of phraseology in Romanian students' academic papers, written during their ESP courses, by adopting a double contrastive perspective: first, we contrast texts produced in two different disciplines (Literature Studies and Information Technology), and second, we compare academic phraseology in learner language with native speaker phraseology. For the analysis we have compiled two corpora (ESP-LIT and ESP-IT), each consisting of 40 texts representing a discipline specific didactic genre - essay. For reference we used the Academic Phrasebank (Davis and Morley 2018). The aim is to find out whether the use of academic formulaic expressions differs according to the discipline and the extent to which students integrate expert academic phrases into their writing. The methodology can be replicated for different language learning settings.*

Key words: *phraseology in ESP, discipline-specific phraseology, corpus-based contrastive phraseology, ESP in Romania*

1. INTRODUCTION

Using English in educational and professional settings is a reality that everybody acknowledges and embraces (Nelson et al 2020). From early school years until later in life, learning and using English either in teaching scenarios or in everyday situations have become usual global citizen's activities. Educational institutions, in particular, have been challenged to provide group-adapted solutions to the growing need of mastering English language skills. English for Specific Purpose (ESP) with its multiple extensions or sub-disciplines (e.g. English for Academic Purposes - EAP) is one of these solutions. As a "learner needs-based approach" (Belcher 2009, 3), the field of ESP incorporates versatile teaching methods that can address an array of language related concerns, such as the "macro- (rhetorical, whole-text) and micro- (lexicogrammatical) level characteristics of the written and spoken genres" (ibid. 4), or any other applied linguistics aspect useful to the English language learners.

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At the lexicogrammatical level, phraseology plays an essential role considering the fact that mastery of academic phases supports ESP learners in their effort to become expert academic writers rather than native-like writers (Römer and Arbor 2009). Academic phrases have been investigated and compiled by numerous scholars either in their realization as multiword units (Szudarski 2018, 75), as lexical bundles extracted with the support of n-gram approaches (e.g. Hyland 2008), or as phrase phrases, i.e. p-frames (Golparvar and Barabadi 2020). Even if academic phrase lists are not easily compiled, nor can be always integrated into "teaching practice" (Granger 2017, 23), their importance for teaching and learning processes cannot be disputed (Biber and Barbieri 2007).

In this study, we scrutinize the use of phraseological units in ESP writing from a double contrastive perspective, using corpus linguistics approaches: on the one hand, our aim is to identify salient differences, if any, between two disciplines, and on the other, to establish whether the use of such phrases in the analysed L2 writing is different from the use of phraseology in English L1 writing.

2. ESP IN CONTEXT

3.1. Varieties of English

As already mentioned, ESP is only one of the varieties of English learners are exposed to during teaching practice (Belcher 2017). Several typologies of English as a foreign language are present in pre-university, university curricula and further education contexts: (a) English as a Foreign Language (EFL) is the umbrella term for processes involving the learning of English as a non-native language by speakers of other languages. EFL implements learner-centered methods, where learners "are given a meaningful role in pedagogic decision making by being treated as active and autonomous players" (Nosratinia and Zaker 2014, 1). The domain closest to EFL in point of general linguistic competence building is (b) English as a Lingua Franca (ELF). What distinguishes them is "the nature of speakers' goals: EFL is considered successful when it converges to a target model, ELF when it is mutually intelligible" (Hülmbauer 2009, 328). (c) English Language Teaching (ELT), is the teaching counterpart of EFL. ELT focuses on the professional aspects of the field, numerous studies emphasizing the English teachers' professional identity (TPI), which is shaped by the process of teaching English (Pennington 2014). (d) Teaching English to Speakers of Other Languages (TESOL) is also a teacher-oriented branch which "was traditionally a discipline led by teachers" (Rose 2019, 898). Criticism has been raised that, in recent years, there is "wave of new theory surrounding teaching, (e.g. translanguaging, ELF-aware pedagogy) but many of these ideas are generated by researchers, and are yet to be accompanied by a matching volume of teacher input on how new perspectives can improve their language teaching practices" (ibid.).

Furthermore, the domain of ESP itself can be subdivided into several other branches that represent rather specialized language domains:

> *There are, and no doubt will be, as many types of ESP as there are specific learner needs and target communities that learners wish to thrive in. Perhaps the best known of these (especially among language educators who are themselves most often situated in academia) is EAP, or English for Academic Purposes, tailored to the needs of learners at various, usually higher, educational levels (see Hyland, 2006, for an excellent overview of EAP issues and practices). Less well known (to many academics) and potentially more diversified, given the breadth and variety of*

> *the worlds of work, is English for Occupational Purposes (EOP). The fastest growing branches of EOP are those associated with professions that are themselves constantly expanding and generating offshoots, such as English for Business Purposes (EBP); English for Legal Purposes (ELP); and English for Medical Purposes (EMP). There are also numerous other less well known but equally intriguing varieties of EOP, such as English for Air Traffic Controllers, English for Tourist Guides, English for Horse Breeders, and English for Brewers.* (Belcher 2009, 2).

Our study reflects phenomena of higher education ESP practice which are relevant for the ESP and TESOL communities, if we refer to practical aspects of academic writing examples in context. It also aims at describing EFL language features characterizing the Romanian undergraduate learners.

3.2. ESP in Romania

Ever since the Romanian education made the shift from communism-imposed foreign language teaching (i.e. primarily Russian as a Foreign Language) towards English as a Foreign Language, which happened in the first decade after the fall of the dictatorship in 1989, school and university curricula have been constantly enriched with English language lessons and courses. English is prioritized in all educational cycles and students study it not only as a compulsory subject but also during additional optional classes. As a result, English is quite frequently, one of the usual assessment disciplines in high school graduation exams (i.e. Romanian *Bacalaureat*) but also at the university. At the same time, little has been done in the direction of creating research-based teaching materials targeting the Romanian student learners. In particular, academic writing issues have been largely ignored.

> *Even though Romanian higher education has adhered to the Bologna Process and by law No. 288/2004 students are expected to write theses to graduate from each of the three university cycles, academic writing teaching in Romania is not guided by educational policy and writing support is provided according to each university's internal policies.* (Bercuci and Chitez 2019, 736)

The use of digital analyses including corpora to assess ESP phenomena in the Romanian user groups has been scarcely attempted. A recent study by Ene and Sparks (2020) presents some of the most significant research contributions in the area of EFL writing, in Romania, in general, without a particular focus on corpus linguistics methods. Several other recent studies by Bercuci and Chitez (2019) and Chitez and Bercuci (2019, 2020), indicate that, while ESP students can use corpora as authentic language materials to consult and improve their academic writing, ESP teachers can create learner corpora either for salient feature identification or student self-correction.

3.3. Phraseology in ESP: digital analysis outcomes

There is a growing body of literature that recognizes the importance of phraseology in mastering a foreign language. The majority of these studies use large sets of data and digital corpora that can be analysed and assessed using digital tools (see section 4.1.2.). For example, Hyland (2008a, 2008b) shows that multiword units play a crucial role in language learning and fluent linguistic production (p. 4). In addition, Paquot (2017) argues that word combinations of various types have a major role in areas like "language acquisition, processing, fluency, idiomaticity and change language acquisition" (p. 122). In the context of academic writing, previous research has demonstrated the importance

and usefulness of phraseological units (e.g. Chen and Baker, 2010; Simpson-Vlach and Ellis, 2010; Ädel and Erman 2011, Paquot and Granger, 2012). It has been argued that multiword units are an essential component of writing in specific fields of study or registers. Furthermore, mastering key phrases/multiword units shows the degree of communicative competence of a certain member in that particular field of study (Hyland 2008, p. 5). Therefore, in order to navigate within a certain academic register and discipline, one should be able to use typical recurrent word combinations successfully. In an attempt to identify the most used phraseological units in academic writing, scholars have created lists of salient formulaic sequences that appear in academic writing, such as: Academic Formulas List (AFL, (Simpson-Vlach and Ellis, 2010) and Academic Collocation List / ACL (Ackermann and Chen, 2013).

4. ANALYSIS

4.1. Data, tools and methods

4.1.1. Data

For the purpose of this study, we have compiled two learner corpora, ESP-IT and ESP-LIT, containing student academic writing from the West University of Timisoara, Romania. They are a sub-set of the Romanian Corpus of Academic Genres (ROGER[1]), a bilingual (i.e. Romanian-English) comparable corpus currently under construction. The configuration of the corpora for this study is:

(a) Corpus of English for Specific Purpose in the Information Technology Discipline / ESP-IT – it amounts to 63,842 tokens and consists of 40 texts written during their ESP classes by undergraduate students (1st and 2nd year), enrolled in the Informatics faculty. The texts included in the corpus are papers that students write regularly and represent across-the-curriculum didactic genres such as essay and scientific paper.

(b) Corpus of English for Specific Purpose in the Literature Studies / ESP-LIT - it amounts 67,529 tokens and consists of 40 texts written by postgraduate students of Literature Studies (1st and 2nd year). The texts that make up the corpus are discipline-specific essays.

ESP-IT and ESP-LIT are largely comparable, with one characteristic that distinguishes them: The Information Technology corpus consists of papers written by undergraduate students, whereas the Literature Studies corpus contains postgraduate level papers. However, considering that one of the objectives of the study is to identify salient phraseology features that characterise student writing in different disciplines, a different language proficiency level (undergraduate versus graduate) might support saliency detection (Granger and Bestgen 2014).

4.1.2. Tools

For the corpus-based analysis, we used tools such as the Lancsbox (Brezina, Weill-Tessier and McEnery 2020) package, and the programming language, Python (Van Rossum and Drake 2009). Lancsbox was used for concordancing (using the *KWIC* function) and for generating 4 and 5-Ggram lists (using the *N-gram* function) from each of the two learner corpora. Python was used to: (1) compare the two disciplines based on their 4 and

[1] More information at: https://roger.projects.uvt.ro/.

5-Gram lists and (2) to identify the extent to which students use expert phrases in their writing.

4.1.3. Methods

Corpus-based contrastive analysis

As mentioned before, the primary aim of the present study is to use digital methods (i.e. corpus linguistics) adapted for linguistic research in order to find out whether the use of academic formulaic expressions differs according to the discipline. In order to do this, we compared discipline-specific corpora and extracted phraseology shared by both of them.

The following steps were taken in order to conduct the analysis:

- First, the phraseological units were extracted using the *lexical bundle* (LB) approach: LBs are multiword units defined as "frequently recurrent strings of uninterrupted word-forms" (Hyland, 2008, p. 5). They are extracted automatically from the data set using the *N-gram* function of corpus concordance tool packages. With the help of Lancsbox's *N-gram* function we extracted the most frequent 4- and 5-grams from the two learner corpora. The cut-off frequency threshold was set at 0.25 times per ten thousand words. The dispersion criterion was also addressed, an N-gram had to occur in at least 2 texts. After extraction, the N-gram lists were saved into machine-readable files (.csv).
- Then, we used a self-developed (see below) Python programme to compare the ESP-IT 4 and 5-Gram lists with their corresponding N-gram lists from the ESP-LIT corpus and extract the common phraseological units.

Python programming for phrase list comparison

Acknowledging the importance of programming skills in research, the current paper presents two cases of using Python for linguistic research, performed with novice Python programming skills. We decided to implement individualized approaches to handling our data as there were no already available tools to perform the necessary analyses. We were supported, during the process, by an Information Technology engineer who improved our solutions when necessary.

Our first analysis aimed at extracting and comparing N-gram lists from ESP-IT and ESP-LIT with the aim of discovering the common phrases in the two corpora. In order to do this, we needed to extract 4 and 5-Grams from the two corpora and compare the correspondent lists two by two. The function of extracting the N-grams, taking into consideration relative frequency and dispersion rate, is already provided by packages for language data analysis, such as Lancsbox (Brezina, Weill-Tessier and McEnery 2020), so it was not necessary to write a Python program to perform this task. However, for the comparison of the lists, there was no tool available, and a procedure like this done manually would have been a very tedious task. Therefore, we tried to find an alternative to the manual analysis, by writing a Python program. Several steps were undertaken: First, the N-gram lists that also contained the raw and normalized frequency were saved in .csv files. Then, with the help of a *for loop* we searched for phrases in ESP-IT that also existed in ESP-LIT and if their relative frequency was higher than 2. In this way, we identified the N-grams shared by both corpora. We stored our results in a json format file because this type of file is suitable for data storage, being easily buildable and readable. The output JSON file is displayed in Figure 1.

```
{
   "5-gram":"when it comes to the",
   "IT_frequency":4.0,
   "IT_relative_freq":0.63,
   "LIT_frequency":5.0,
   "LIT_relative_freq":0.74
},
{
   "5-gram":"of this paper is to",
   "IT_frequency":3.0,
   "IT_relative_freq":0.47,
   "LIT_frequency":3.0,
   "LIT_relative_freq":0.45
}
```


Fig.1 Output file of n-gram comparison

In the second type of analysis, we wanted to find out if expert phrases were to be found in the student corpora. We compiled an expert phrase list that contained 36 academic phrases specific to short paper introductions, using the Manchester Academic Phrasebank (Davis and Morley 2018). Our idea was to try to find the strings of words contained in every phrase of the expert list in the two learner corpora. The first step we took was to set up a rule by which the program would identify words in the data. So, we established that Python would consider a word the text which has an empty space before and after it. However, we had a problem with the words that were followed by a punctuation mark, because even if the word was similar to one in the expert list, it was not taken into consideration if it had the punctuation mark just after it: the program was modified in order to omit the punctuation marks.

One challenge that this program raised was that, during the initial stage of the analysis, we got numerous irrelevant results. A learner phrase was considered compatible with the expert phrase if it displayed only one or two words contained by the expert phrases searched, such as “this”, “paper” or “which” or the program picked up words that were used in the sentences, but which were not used to form the searched phrases. We tried several solutions to improve this. First, we modified the program in order to make sure that when a certain phrase was chosen, the words occurred close enough to each other in order to actually form the phrase searched. Then, we chose to display only the sentences that contained at least 60 % of the expert phrase searched (e.g. at least 4 out of 7 words).

```
"fileName":"ESPLIT1006.txt",
      "data":[
         {
            "sentenceSearched":"In this paper, I argue that",
            "context":"  In this paper, I will try to look at the impact t
hat immigration has made in the American society, especially in the nowada
ys political and social context, which is well known to present a rather h
ostile attitude towards immigrants \u2013 be they legal or illegal ",
            "precision":"83.33333333333334%",
            "listFoundWords":[
               "In",
               "this",
               "paper,",
               "I",
               "that"


"sentenceSearched":"The aim of this paper is to",
            "context":"  Given the issues that the keyword proposed to ana
lysis provides, the aim of the following paper is to highlight the ambival
ence of the term, as it is presented in a series of reliable sources which
 are meant to portray different views regarding the subject of immigration
 ",
            "precision":"71.42857142857143%",
            "listFoundWords":[
               "aim",
               "of",
               "paper",
               "is",
               "to
```


Fig. 2 Output JSON file expert phrase analysis

We did this also because we were aware of the fact that students might use variations of the expert phrases. Finally, we added a list of stop words (with the purpose to not be taken into consideration by the program) that contained words like *to, which, that, in*. The results were stored in a JSON file (Figure 2). We plan on improving this program because the results still needed considerable manual checking: for example, the text highlighting was done manually.

4.2. Analysis and results

The first part of the analysis investigated whether the use of academic formulaic expressions in the academic papers written in English L2 (i.e. ESP) by the Romanian students is similar in the two disciplines, Information Technology and Literature Studies. With the help of the Python programme, we compared the 4 and 5-gram lists from the two disciplines. In this way, we identified the 4 and 5-grams shared by both disciplinary discourses (displayed in Table 1) as well as the discipline-specific ones (displayed in Table 2).

4.2.1. Common N-grams in ESP-IT and ESP-LIT

As Table 1 indicates, the 4 and 5-grams which occur in both disciplines are context-independent discourse-organizing structures. The most frequent 5-grams that are shared by the two groups are "*due to the fact that"* and "*one of the most important"*. The 4-grams shared by the two discipline-specific ESP learner corpora are more numerous than

the 5-grams, the two corpora sharing fifteen common 4-grams, among which *"on the other hand", "as well as the"*, or *"as a result of"*.

Table 1 4- and 5-Grams shared by ESP-IT and ESP-LIT

5-Gram	ESP-IT freq.	ESP-IT rel. freq.[2]	LIT freq.	ESP-LIT rel. freq.
due to the fact that	6	0.94	7	1.04
one of the most important	4	0.63	4	0.59
when it comes to the	4	0.63	5	0.74
of this paper is to	3	0.47	3	0.45
4-Gram	ESP-IT freq.	ESP-IT rel. freq.	LIT freq.	ESP-LIT rel. freq.
one of the most	16	2.51	25	3.71
when it comes to	15	2.35	18	2.67
is one of the	14	2.2	13	1.93
on the other hand	10	1.57	7	1.04
due to the fact	6	0.94	8	1.19
the fact that it	5	0.78	4	0.59
as well as the	5	0.78	11	1.63
in this case the	5	0.78	3	0.45
the fact that the	4	0.63	11	1.63
we can say that	4	0.63	4	0.59
as a result of	4	0.63	5	0.74
it comes to the	4	0.63	5	0.74
is based on the	3	0.47	3	0.45
for the first time	3	0.47	4	0.59
take a look at	3	0.47	3	0.45

4.2.2. Discipline specific N-grams in ESP-IT and ESP-LIT

Our results show that discipline specific phrases are prevalent in both corpora: they are both topic related and discourse-organizing structures. The phrases found in ESP-IT refer to approaches specific to the hard sciences, where the authors are rather concerned about presenting information about the procedures they use (e.g. *"for the running time is"*) and display results (e.g. *"table has the following structure")*.

The texts from the Literature Studies corpus, on the other hand, are rich in argumentative structures (e.g. *"it is safe to say"*) and topic-related phrases (*"prose in the 20th century"*). A selection of the most used discipline specific phrases in ESP-IT and ESP-LIT can be observed in Table 2.

[2] Relative frequency, normalized per 10k words (pttw)

Table 2 ESP-IT Discipline specific N-grams

Topic related	Rel freq.[3]	Discourse-organizing	Rel freq.
ESP-IT		ESP-IT	
5-Grams		*5-Grams*	
the array is already sorted	1.1	is one of the most	1.1
the creation of personal computing	0.63	to be the most inefficient	0.79
in ascending or descending order	0.63	we can see that the	0.63
when it comes to sorting	0.63	tasks for efficient use of	0.47
to kill a mockingbird is	0.74	in the context of the	0.60
the beginning of the novel	0.60	and the way in which	0.60
the united states of America	0.60	of the ways in which	0.60
in the early twentieth century	0.45	is one of the reasons	0.60
4-Grams		*4-Grams*	
the array is already	1.57	in this paper we	1.41
the number of elements	1.1	to be the most	0.94
the running time of	1.1	we can see the	0.94
the time complexity of	1.1	for the purpose of	0.47
in the American society	1.19	in the case of	2.23
in the novel is	0.89	the way in which	2.09
the status of the	0.89	in the face of	2.09
in favor of the	0.59	is the fact that	1.49

The results point to another interesting trend as well: Figures 3 and 4 display clear difference between the two disciplines in the use of content-related and discourse-organizing N-grams. It looks like IT students are more inclined to use content-related phrases, whereas literature students show a clear higher interest in using discourse-organizing structures that help them support their claims.

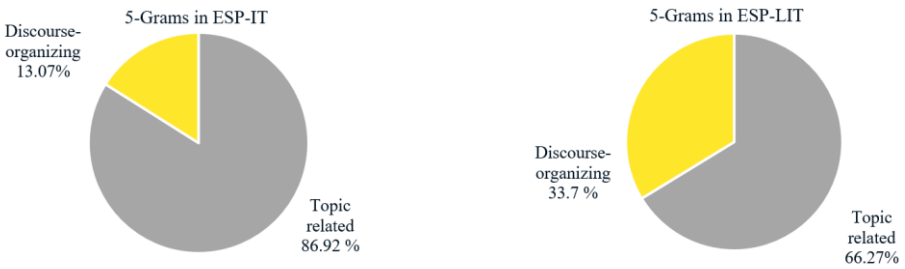

Fig. 3 Dispersion of 5-Grams in ESP-IT and ESP-LIT

[3] Relative frequency, normalized per 10k words (pttw)

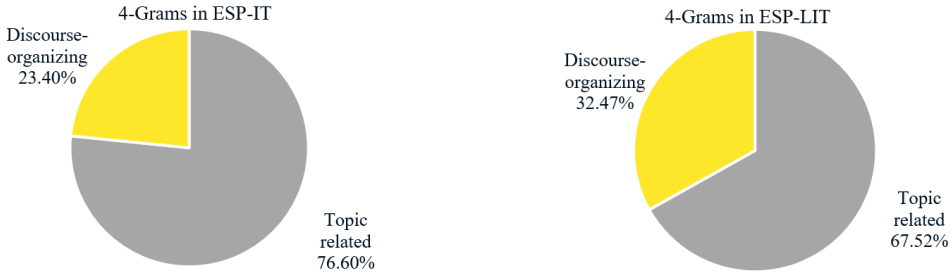

Fig. 4 Dispersion of 4-Grams in ESP-IT and ESP-LIT

4.2.3. Expert phraseology in ESP student writing

Our analysis also revealed that students show a certain degree of familiarity with using variations of expert phrasal elements. However, it could be noticed that they use variations of a limited number of phraseological constructions.

Similarities in the use of expert phrases in ESP-IT and ESP-LIT

A formulaic phraseological construction that proved to be frequent in both disciplines, is the structure that contains *This paper* in initial position, followed by various words such as *aims, illustrates, contains*, etc., as can be seen in Table 3. It occurs in 5/40 texts in ESP-IT and in 3/40 texts in ESP-LIT. Students also prefer variations of the expert phrases that best fit their context. A higher than two words matching rate between the expert list and the learner corpora was found in only two instances: *"**This paper** also **aims** to collect"* and *"**This paper presents** a theoretical introduction"* (ESP-IT). The other constructions used are "*This paper"*, followed by other words than the ones contained in the Academic Phrasebank (Morley 2014).

Table 3 Similarities in ESP-IT and ESP-LIT

Expert Phrase	ESP-IT	Occ.	ESP-LIT	Occ.
This paper*	*makes* a comparison between *presents* a theoretical introduction and practical comparison *is about* the time performance of *contains* the description of *also aims to* collect	5	*illustrates* the ways in which the term *illustrate* how the term *will focus* on the *focuses on* discussing	4
This research paper*	*makes* a comparison between	1	-	0

Differences in the usage of expert phrases in ESP-IT and ESP-LIT

Interestingly, there are also differences in the ways in which the students from the two analysed corpora use the expert formulaic phrases displayed in Table 4. Structures that contain "*In this paper/essay*" in initial position are used by students to explain what they

will do in their papers. The difference in usage, however, lies in the way they use pronouns in their writing. Information Technology students use the first person plural, *we*, even if their paper is single-authored, whereas the Literature Studies ones prefer the first person singular *I.*

Another difference that can be observed is the way in which IT and LIT students choose to state the aim of their paper. The students in ESP-IT used more varied words such as *"the goal/purpose/ scope of this paper",* whereas the students in ESP-LIT seem to prefer the "*the aim of this paper*". However, as the two learner corpora are fairly small, a larger dataset could provide a better understanding of this trend. Other phraseologies not included on the expert list: "The structure of the paper is as following:"; "The structure of this paper is as follows".

Table 4 Differences in ESP-IT and ESP-LIT

	ESP-IT	Occ.	ESP-LIT	Occ.
	use of **"we"** versus **"I"**			
In this paper *	***we** are going to compare* ***we** investigate the performance of* ***we** will use the presentation of the* ***we** will implement the mentioned*	4	***I** will focus on the current challenges* ***I** will try to look at the impact that immigration*	2
In my paper*	-		***I** am going to focus on*	1
In this essay*	-		***I** will argue that*	1
	use of **"goal"** versus **"aim"**			
The * of * paper	***The goal of this paper** is to compare* ***The purpose of this paper** is to go a little in-depth on* ***The scope of this paper** is to analyse and compare*	3	*Therefore, **the aim** of this paper is to show that* *Given the context, **the aim** of the following paper is to highlight* ***The purpose of this paper*** is to study how	3

5. Discussion and Conclusions

Although the two sets of data (i.e. ESP discipline-specific corpora) capture linguistic phenomena that are representative for a certain learner population at a specific time during their English learning process, they efficiently support digital analyses resulting in frequency-based and automatic retrieval examples. The two approaches that we implemented, the n-gram contrastive analysis and Python-programmed algorithm for the automatic comparisons, have offered us an overview upon phrase use phenomena in the two learner groups.

The typology of the phrases analysed with the help of corpora is dependent on the phrase extraction method. That is to say that, when standard n-gram analysis is performed, the co-occurring units are not all particularly relevant for academic writing conclusions. That is why we decided to divide the n-grams into two groups: discourse-organizing n-grams versus topic-

related n-grams. By doing that, several salient features of academic phrase use in the two disciplines could be identified: first, the IT students used considerably more content-related phrases (both 4- and 5-grams) than discourse organizing phrases compared to the Literature Studies students. Quite interestingly, the author-role phraseology used by the IT students indicates preferences towards the use of the 1st person plural "we" rather than the 1st person singular "I", like the philology students use in their texts. Considering that the corpus is composed of the same genre, namely essay, it can be asserted that is indeed a discipline-specific phraseology characteristic. At the same time, there are evident similarities in the way students of both disciplines use academic phrases, such as the "*due to the fact that"* and "*one of the most important*. They seem to be the most frequent phrases in both corpora, which highlight linguistic choices that can be explained either through pedagogical practice (i.e. same type of academic phrase-use guides and training) or through the teddy bear phenomenon (Hasselgren 2007) manifesting in certain interlanguage groups.

The second type of analysis, where we developed a Python programme to compare learner phrases with expert phrases extracted from the Academic Phrasebank (Davis and Morley 2018) revealed that the learners use academic phrases that are present in the native-speaker list (e.g. *this paper + presents*/*illustrates*/*makes a comparison*), but, on the other, the degree of lexical variation is quite low: both groups of students (Informatics and Philology) use only a few of the academic phrases that are present in the Academic Phrasebank. Another distinctive feature seems to be the selection of particular lexical components of discourse-organizing multiword units: while students in Informatics use a more varied range of nouns forming introductory phrases (e.g. the goal/aim/scope), in literary essays lexical variation within this type of phrases was lower and quite repetitive (e.g. preference for "aim" as support noun).

The results of the study can be exploited pedagogically by ESP teachers in two different configurations. One of them would be to understand which ESP learner group needs guided assistance for a particular language learning component (e.g. Chitez 2017). For example, it seems that IT students need better practice in academic conventions (i.e. discourse organizing phrases) than philology students. Or, teachers could choose to replicate this approach, build their own learner corpora and conduct corpus analyses in order to identify which aspects of language need further assistance. In this way, ESP research-based teaching (Lehtonen 2018) can be supported and best-practice examples shared and improved.

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Review research paper

INTELLECTUAL OPERATIONS DEVELOPMENT THROUGH LANGUAGE ACQUISITION AT A TECHNICAL UNIVERSITY

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Abstract. *This paper deals with the idea of efficient intellectual operations development required for students to be successful at acquiring information via IT tools and learning a foreign language. The authors provide a list of functional soft skills referred as cogitative abilities. These operations ensure critical data selection during relevant engineering information search contained in digital engineering environment. Intellectual skills are rated in the course of instruction of graduates and undergraduates. Suggestions on skills formation and their further improvement on the basis of IT tools and functional approach are given.*

Key words: *intellectual operations, cogitative abilities, information flows, technical university, IT tools, functional approach*

1. INTRODUCTION

For successful professional activity, students should be taught to critically analyze incoming information and formulate reasoned conclusions on this basis. The quality of training depends on the ability of students to operate with information and to use information resources in cognitive activity. Development of cogitative abilities takes place throughout a person's life, but the most productive period is the student age (17-23 years). According to the age psychology (Vygotsky 1978; Klychnikova 1983; Korniyenko 1996; etc.) at this age, there is a rise in mental activity, the need to establish cause-and-effect relationships and involvement in creative types of cognitive activity. The level of student thinking abilities shaped at university is significant for their future career and social adaptation in modern society.

The subject of this paper is intellectual (cogitative) skills and abilities development. Intelligence is a system of mental mechanisms that makes it possible to build a subjective picture of what is happening 'inside' an individual (Kholodnaya 2002). It is also the thinking ability of a person and it represents a set of cognitive processes.

Intellectual skills show:

- the level of cogitative instincts;
- the ability to identify the challenge and anticipate the ways to settle it;
- the ability to make presuppositions on causes and consequences of phenomena;

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- how to hold multiple meanings of complex phenomena and statements at the
- same time.

As noted by Smirnov (2014) only a little more than half of students increase their intellectual capacity from the first year to the fifth, and, as a rule, this increase is observed in weak and average students, and the best students show no progress. For the most students, the level of intellectual operations such as comparison, classification, and definition is very low.

The purpose of our research is to get some understanding on the impact of IT educational resources and technologies on intellectual skills development. We share the idea that evolution of the digital educational environment at a technical university is aimed at the improvement of a student intellectual level by the potential of IT tools (Martynova 2008) and that the result of learning digitalization is rational intellectual activity (Nazarenko 2010, 114). Personal reserve opportunities and pedagogical grounds to develop intellecual skills should be identified.

2. Research Methods and Approach

To achieve the purpose the following research methods and approaches were adopted:

- thorough examination of syllabus and curricula regarding the specified skills development;
- definition of the phenomenon 'intellectual skills';
- drawing up the list of intellectual skills necessary both for language acquisition and engineering activity;
- investigation of psychological and pedagogical IT fundamentals in assignments design;
- selection of the appropriate IT tools to develop intellectual skills and abilities;
- demonstration of efficient skills development by means of ESP assignments.

2.1. Intellectual skills

Intellectual skills are associated with cognition, intelligence and thinking with some focus on other mental operations. Intellectual skills refer to critical, analytical, synthesizing and problem-solving skills, and are defined as methods an individual can use to evaluate or organize information and data. They are formed in the course of active instruction. The development of abilities are results of mastering operational mechanisms (Aebersold, Field 2002; Achard; Niemeier 2004; Nattal 2005; Derewianka 2016), and information transformation based on cogitative operations. Intellectual skills include: assimilation of new knowledge; development of critical analysis concerning studied information; application of basic knowledge in wider contexts. Shaping of general intellectual skills at a technical university such as skills of self-education and self-development was investigated by Russian and foreign researchers (Goncharuk 2006; Grishko 2007; Rudenko 2016; Inozemtseva 2017; Ivanova et al. 2018; Repkina 2018).

According to Jean Piaget there are four stages of intelligence development regarding the age-specific periods. The fourth period of intelligence development is the period of formal operations. It begins from the age of 12 and lasts further throughout life. (Piaget 2003). But instruction could speed up the completion of these stages. For example, P. Ya. Halperin states that with targeted training formal operations appear earlier (Halperin 2011).

Intellectual skills ensure the development of productive thinking and contribute to a shift in mental development and increase the level of cognitive activity. Intellectual skill is the awareness of a rational way to implement a particular mental operation and its use in solving various problems (Rumyzytseva 2004; Yegorova 2005; Kupriyanycheva 2006). Intellectual skills are: the ability to think, perceive, remember, be attentive, and have intuition. Thus, most authors relate them as mental or logical operations. But by now there is no complete classification of intellectual skills.

2.2. Taxonomy of Learning Domains: the Cognitive Domain

Bloom's taxonomy of learning domains was created in 1956 under the leadership of educational psychologist Dr. Benjamin Bloom to promote higher forms of thinking in education (Bloom 1956), for example: analyzing and evaluating concepts, processes, procedures, and principles, rather than just remembering facts (rote learning). The following is shown in the order of learning domains importance:

- create: produce new or original work (design, assemble, construct, develop, formulate, investigate, conjecture);
- evaluate: justify a stand or decision (appraise, argue, defend, judge, select, support, value, critique, weigh);
- analyze: draw connections among ideas (differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test);
- apply: use information in new situations (execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch);
- understand: explain ideas or concepts (classify, describe, discuss, explain, identify, locate, recognize, report, select, translate);
- remember: recall facts and basic concepts (define, duplicate, memorize, repeat, state).

In accordance with the conditions of learning by Robert Mills Gagné (1984) intellectual skills are subdivided into different levels of learning: discrimination, concrete concept, defined concept, rule, and problem-solving (Gagne 1985). For example, discrimination is the ability to differentiate objects based on one or more of their physical characteristics, features or dimensions. Robert Gagné suggests that learning tasks for intellectual skills can be organized in a hierarchy according to complexity:

- stimulus recognition,
- response generation,
- procedure following,
- use of terminology,
- discriminations,
- concept formation,
- rule application,
- problem solving.

In pedagogy intellectual development is reduced to the development of the mind. Intellectual skills are the subject of a special shaping. Six components of intelligence are stated (Field 2004; Buzzetto-More, Sweat-Guy, Elobaid 2007; Lightbown, Spada 2013):

- the ability to perform digital operations;
- vocabulary;
- the ability to perceive similarities or differences between geometric shape;
- fluency of speech;

- the ability to reasoning;
- memory.

It is rational to develop cross-subject and specifics for individual subjects academic and intellectual skills on the basis of classification made by Y. K. Babanskiy (Babanskiy 1982):

- definition of object analysis and synthesis and their components;
- identification of significant object features;
- reaction rate and attention to detail;
- focus on problem solving;
- distributed attention;
- spatial perception;
- working memory and rational memory;
- logical comprehension of training material;
- solution of cognitive issues;
- comparison of objects and phenomena in order to find similarities and differences;
- establishment of cause-and-effect relationships;
- acquisition and classification of information;
- thinking (speed, creativity, logics);
- problem statement and the ways to solve it;
- performance of cogitative operations.

2.3. **Intellectual competencies**

In recent decades, there has been a shift to the development of key competencies in the educational content. On the formation of key intellectual skills of self-education, self-development (Crow, Dabars 2015; Bastedo et al. 2016) intellectual competencies reveal:

- maturity of cogitative instincts and research activity;
- the ability to find out challenges and problems and speculate on as to their settlement;
- the ability to speculate on the probable cause of different phenomena and their implications;
- keeping in mind at a time various ideas, complicated phenomena, issues and texts.

3. The Ways of Intellectual Skills Development

The following stages are involved in intellectual skills shaping:

- designation of the efficient thinking;
- undertaking of cognitive and creative assignments;
- development of skills required in modern society;
- shaping of reasoning skills;
- syllabi and methods of instruction design;
- options for skills formation are to be integrated in the content of ESP course.

Intellectual skills include abilities to:

- identify the problem;
- analyze critically;
- generalize;
- compare and classify the information under study;
- state cause-effect relations.

3.1. Academic skills development – the way to student functional literacy

Educational skills	Intellectual skills
set a goal	be able to select information
define and implement objectives, make up procedures	mine new knowledge
correlate the result with the goal	be able to process information
evaluate the result	be able to transform information

Unfortunately, students have lost the ability to 'grasp' the integrated knowledge for assimilation. The current pace of technology, creation and processing of information have significantly exceeded the ability of a person to consciously learn and apply knowledge. Perception of the world around us through an entertainment and reference model, rather than through science and education as before, formed a 'clip thinking', which resulted in a superficial and unappreciated perception of information. The 'telegraph' style of writing and thinking becomes the only one available to a person. The user often only has time to run through a couple of sentences of text with a glance at the image. Clip thinking corresponds to our time. It allows you to snatch the necessary information from the rapidly changing content, but at the same time the whole picture of the world is lost. Therefore, the problem of shaping critical thinking and reading skills becomes relevant.

Students have to be taught to give reasons, to prove, to make conclusions, and read productively only on the basis of mental operations. These operations are: analysis and synthesis; comparison, generalization and concretization; abstraction; classification; argumentation and reasoning (inductive and deductive). This is consistent with the concept of universal educational actions (Asmolov 1999). The required skills shaping necessary for foreign language acquisition are considered to be: critical thinking, information skills, skills of reasoning, predictive skills, etc.

3.2. Critical thinking

Critical thinking is the ability to analyze and interpret information to assess its context and validity. It is the kind of mental activity allowing a person to make up reasoning about proposed considerations. Critical thinking refers to a diverse range of intellectual skills concerned with information evaluation. It is necessary for having strong analytical skills. This can include multiple specific skills:

- asking questions about information;
- comparison of material with known information;
- drawing the context analysis of information.

Critical thinking comprises such logical operations as: analysis, synthesis, comparison, summarizing, and reflection concerning personal mental activity. All statements are evaluated in accordance with the adopted standards, canons and code of ethics. Inconsistent details and material are detected.

The content significant for earning critical thinking includes the items necessary for cognitive student activity in the digital environment (Bednenko 2010). Intellectual skills peculiar to critical thinking are:

- search for information;
- making sense of received data in comparison with acquired before;
- analyzing information and drawing reasoned conclusion;
- planning and predicting;
- making comparison and analogy;
- correlating information from different sources;
- organizing information;
- considering and evaluating different points of view;
- generalizing and differentiating received data and summing up;
- stating cause-effect relations;
- applying outcome for defined task decision;
- evaluating acquired knowledge and information.

Critical thinking capability was considered by numerous scholars as background for improvement in mental activity. It was regarded as the background for cutting edge knowledge and personal development. Four-stage development of critical thinking:

1. motivation for determination the problems;
2. understanding and stating the ways for their decision;
3. personal attitude towards the data under study;
4. application of the obtained results in non-standard situation.

All the above-mentioned provisions that reveal the features of critical thinking formation by means of ICT can be implemented in the course English for Specific Purposes (ESP) for students of the technical University.

Teaching students critical thinking in a modern university by means of information technologies is shown in the review of Russian authors (Popkov, Korzhuev 2004; Khutorskoy, Krayevskiy 2008; Ivanova 2018, etc.) and works of foreign authors (Craig 2015; Christesen, Eyring 2011; Ackerman, Goldsmith 2011; Bastedo 2016, etc.). It is advisable to form within a separate ESP course the assignments for critical skills shaping. Critical thinking skills include: reasoning, analyzing, decision making, problem solving, evaluation.

3.3. Information skills

One of the general qualification requirements of engineering specialist areas is the awareness of rational methods for searching and rational application of scientific and technical information. General qualification requirements for engineering occupations are:

- rational information search and usage;
- ability to find multiple sources and choose the best one.

Previously, the main and the only object of linguistic research was the text (its analysis, comprehension, etc.). However, in order to feel free in the information society, a person must process a huge amount of information. The avalanche of information contained in information flows cannot be fully perceived and analyzed due to psychophysiological limitations. A new information object ‘information flow’ requires the use of new technologies to be the means for extracting sense by the addressee. Information flow is meant, first of all, as a set of texts that act as a single object: the recipients are interested in the meaning contained in hundreds or even thousands of texts at once.

The psychologists Zhinkin (1998), Sokolov (2013), Zimnaya (2004), etc., began to discuss the role of semantic milestones at text comprehension. According to computer science they are 'keywords', which carry a semantic load in the text when searching for information. Keywords refer to the logical-factual chain (Dridze 2009). The text is divided into parts based on its semantic content - semantic grouping occurs. And in each semantic part a 'semantic point' is made. It is the extract of the main meaning. By semantic milestones, you can restore the content of the entire text using paraphrasing. The result is text-invariant which is equal to comprehension.

A set of keywords (SKW) is a mental substratum of internal speech. Semantic milestones are equal to the language of thought quanta. The SKW is characterized by integrity and coherence. Inner speech takes place. SKW is related to mental operations of a person during speech comprehension. The composition of SKW should not exceed the volume of human operational memory (7+-2). Key words are mostly localized in 1-2 sentences of paragraphs initiating the thematic chains in the text.

For information skills shaping some exercises can be proposed. Materials were selected from authentic specific professional fields for on-screen reading and computer-based learning.

Ex. №1. *Think of the following specialist areas: Machine Tools, Tool Engineering, Industrial Processes, Metal-Forming Technologies, Rolling Technologies, Casting Technologies, Welding Technologies, Materials Science, Electronic Technologies, Laser Technologies, Material Processing Technologies. Which of them correspond to the extract below?*

"The global demand for aluminum and aluminum products is increasing because aluminum alloys can offer excellent corrosion resistance with good strength and low density compared with steel. Aluminum, when being used in mobile applications, saves much more energy an greenhouse gas (GHG) emissions over lifetime of the product. It was reported that 1 kg of aluminum in a car reduces CO2(eq) emissions by 19 kg during its whole life-cycle. In addition, 5%-7% fuel savings can be realized for every 10% weight reduction by substituting aluminum for heavier steel through appropriate design. The application of aluminum in passenger vehicles and light trucks manufactured in 2006 will lead to potential savings of approximately 140 million tonnes of CO2(eq) emissions an to energy savings of equivalent to 55 billion liters of crude oil over the lifecycle of these vehicles."

(Jurang CUI, Hans J. Roven. Recycling of automotive aluminum. *Transactions of Nonferrous Metals Society of China*, 20 (2010): 2057-2063. https://www.sciencedirect.com/science/article/abs/pii/S1003632609604179)

Ex. № 2. *Match the sentences below (1 – 9) with functions (a – g). Some phrases in bold will help you.* a) *warning*; b) *evaluating*; c) *inviting*; d) *complaining*; e) *instructing*; f) *suggesting*; g) *apologizing*.

1. **Let us** now proceed to a description of the scale.
2. **It would be wrong** to consider these as rival theories and they certainly do not **have to** be seen to be mutually exclusive.
3. **Consider** two separable aspects of an everyday understanding of mind.
4. This is **especially important** for time-lapse imaging, for instance when looking at the propagation of damage in a sample previously subjected to impact (e.g. compression or fatigue after impact).

5. **It possible to** undertake laminography using laboratory X-ray CT systems by positioning the sample inclined with respect to the principal ray of the X-ray cone-beam (known as the rotary scan geometry).
6. **Due to** the interactions, the features **become** distorted, for example some faces are removed.
7. **Unfortunately**, nearly all research works on feature recognition ignore the fact that manufacturing experiance plays important role in feature recognition.

Ex. № 3. *Match the groups of markers (1 – 8) and appropriate functions (a – h).* a) *markers sequencing*; b) *markers re-expressing*; c) *markers specifying*; d) *markers referring*; e) *markers resuming*; f) *markers exemplifying*; g) *markers summarizing*; h) *markers focusing.*

1) to illustrate this, thus, for example;
2) let us consider, we must now turn to, I shall begin by;
3) first of all, next, at this point, in conclusion;
4) that is to say, or rather, to put it another way, i.e.;
5) to sum up, in short;
6) to resume, to return to the previous point, getting back to the argument;
7) in this respect, in that connection, as we said, apart from this;
8) namely, that is to say, viz, to wit.

3.4. Exercises aimed at the development of inner speech by means of IT

Types of interactive exercises in LMS Moodle 3.2. are: Match, Cards, Cloze, Drag and Drop and etc. As evidenced by our practice of learning in Moodle the time required to undertake interactive assignments is saved by 30% on average, and the acquired knowledge is stored in the memory much longer. Modern students mainly use the right-hemisphere, since the information about the world is obtained from the screens perceptually in the form of images. So when the educational materials are created for a new generation, the neurophysiological features of information processing must correspond to and be taken into account. In the result these materials should be interactive multimedia. Content selection should be done in accordance with the criteria of authenticity, integrity, and consistency. They should possess all features of electronic engineering discourse. Texts should also include examples of argumentation, and IT tools should be integrated into the ESP course.

Ex. 1. (Cloze), Guess the meaning from the context and do not consult a dictionary. There are logical prompts on the right. Mental activity and insight should take place to guess the meaning through the right context.

1. The tank and boosters are **jettisoned (……)** *during ascent, only the orbiter goes into orbit.*
2. The Shuttle was originally **conceived (……)** *to operate like an airliner.*
3. He also put forward the revolutionary idea that space was **pervaded (…….)** by various *kinds of force*: magnetic, electric, radiant, thermal, and gravitational.
4. Faraday **enhanced** the theoretical understanding of electricity and magnetism.

Ex. 2. Argumentation skills
Skills are part of the ESP course content. Argumentation skills belong to the category of intellectual skills, and they cannot be developed automatically. The ESP course is an opportunity to master these skills. The list of skills for engineering students should be

expanded, since the range of issues that they must analyze and discuss is wide, for example the ability to:

- justify the purpose of the statement;
- appeal to the arguments of the opponent;
- sum up and draw conclusions;
- respect of the opposite of point of view;
- provide clear and concise evidence;
- adhere to the issue under discussion;
- compare or contrast your own judgment with the opposite point of view;
- listen to the partner, hear and understand what is being discussed, etc.

The principle of situational learning are instances that require students to find heuristic solutions involved in the ESP course content. For example, to answer the question

'Why is the external fuel tank orange?' students have to consult the Internet to find the facts and explain why such an engineering decision was made during the Shuttle project (professional competence), and present some reasoned statements (communicative competence).

Ex. 3. Explain why such an engineering decision was made during the implementation of the Shuttle program (professional competence), and present a reasoned statement (communicative competence).

1. Why was the external tank of the orbiter of orange color?

- *reason 1*
- Shuttle delivered into GTO payload. One pound of payload costs much.
- *reason 2.*
- First the external tank was painted. But then it became unpainted to increase the payload by 500 kg (the weight of paint).

The following computer programs are used to facilitate student work with information flows and resources:

1. Visual World http://www.visualworld.ru
2. TextAnalyst 2.0
3. Text compactor (TC) http://textcompactor.com

For example, an automatic summariser "Visual World". It is free.

The file size must not exceed 500 кб (doc, docx, rtf, pdf), 100 Кб (txt, html).

Abbreviated text of the abstract = text volume 17% from the original.

= text volume 61% from the original.

Text "Self-driving Car"

1. A shortened summary - the text Volume 17% of the original text of 1770 marks.

Car events such as the Frankfurt Motor Show have showcased even more advanced technologies such as Bosch's emergency autonomous braking system and Ford's obstacle avoidance system that automatically steers around obstacles in the road. Still, major automakers such as Nissan have suggested they could have autonomous cars ready for dealerships by 2020.

2. Abbreviated text of the abstract - text size 61% of the original:

Federal officials apparently like what they see in self-driving cars: their potential to operate more safely and fuel-efficiently than the vast majority of human drivers.

Nevada, Florida, California and the District of Columbia have already begun setting ground rules for the operation of self-driving cars. Self-driving cars offer more than added convenience during a driver's work commute. Widespread use of fully autonomous vehicles could slash annual costs related to road accidents by $488 billion and save $158 billion in fuel costs.

Ron Medford, director of safety for Google's autonomous car project, told that the auto industry should prepare to deal with fallout from accidents involving autonomous cars.

Car events such as the Frankfurt Motor Show have showcased even more advanced technologies such as emergency autonomous braking system and obstacle avoidance system that automatically steers around obstacles in the road. But self-driving cars won't hit the road anytime soon, except for test drives. Still, major automakers such as Nissan have suggested they could have autonomous cars ready for dealerships by 2022. The time is needed to road-test each technology before unveiling the full autonomous car package.

3.5. Degrees of informational literacy development

Low degree

Students are able to:

- to find international words slowly;
- to give a wrong text content prediction, using special characteristics and text structure inertly (such as its title, subtitles, running titles, different references, including tables, graphs, etc.);
- to compare the text title with the key words concerning the suggested topic;
- to differentiate relevant and irrelevant ideas;
- to misapprehend the word order.

Students are not able to:

- to refer to the background knowledge concerning the subject;
- to generalize the key ideas of the text for communicative purposes;
- to be aware that the same sound and letter combinations may have different meanings;
- to make use of dictionaries and reference books properly.

Average degree

Students are able to:

- to identify international words promptly and guess the meanings with pronunciation and spelling;
- to predict the text content promptly by text features and structure;
- to make use of the background knowledge promptly concerning the suggested subject;
- to examine the whole text to identify the important and required information;
- to look through the information and to note only the relevant points;
- to be aware of words derivation, sentence patterns, paragraph structure and text structure;
- to be aware of polysemy and make the right choice of the word meaning in a given context.

Students are not able to:

- to generalize the main points, to evaluate the significance of the obtained information to be used later on;
- to employ analysis and synthesis gradually;
- to achieve insight by getting together details (words, word combinations, sentences) to aggregate the whole;
- to evaluate information from the text by means of intellectual (cogitative) skills.

High degree

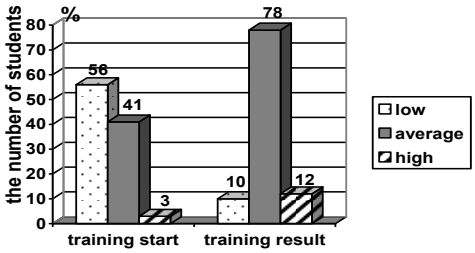
Students are able to:

- to derive the meaning from the text structure and wording;
- to develop assumptions and predictions;
- to sum up the key points and evaluate the obtained information for further usage;
- to use experience and background knowledge related to the topic;
- the proper use of dictionaries and reference books;
- to distinguish facts from opinions;
- to understand the logic of the author's material presentation;
- to reject or accept the information provided by the source;
- to make a conclusion, charts, abstracts, summaries, and etc.;
- to comprehend and discuss the implicit information.

3.5. Variations in informational parameter of functional literacy formation

The dynamics of functional literacy reflects the degree of intellectual skills formation by the end of laboratory teaching. The results of the laboratory study demonstrate the positive dynamics of intellectual skills formation to read and understand professionally marked texts.

The undergraduates studying at Bauman Moscow State Technical University (or BMSTU) were tested in 2018-19 and 2019-20 academic year. The involved students studied the following specialist areas as Machine Tools, Tool Engineering, Industrial Processes, Metal-Forming Technologies, Rolling Technologies, Casting Technologies, Welding Technologies, Materials Science, Electronic Technologies, Laser Technologies, Material Processing Technologies. A total of 284 students studying at the Faculty of Mechanical Engineering Technologies took part in the experimental learning. The average data on quality and quantity derived from the empirical data are represented in the following table.



Positive learning dynamics of intellectual operations in the course of experimental training students to understand occupational texts

Table 1 The results of experimental learning

Criterion	Average indicator	Opening section	Intervening section	Final section
Qualitative	range of completeness and accuracy of comprehension (%)	41	58	89
Quantitative	the amount of time spent on a written task (min)	33	26	21
	rate of writing (character/min)	32	38	45

4. CONCLUSION

Teaching students at a technical university on the basis of educational IT technologies ensures adaptation of young specialists to modern conditions on the labor market. Well-shaped cognitive and intellectual skills are to be developed in ESP course. They are necessary for their successful professional activity. IT tools stimulate intellectual activity of students. Multimedia interactive assignments facilitate language acquisition and save time for productive activity in the classroom. The analysis of the laboratory results confirmed our assumptions that teaching engineering students to read and understand professionally-oriented texts will be more effective if the training is based on the basis of a functional approach aimed at mastering information competence and the formation of intellectual skills.

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Review research paper

RAISING ENGINEERING STUDENTS' AWARENESS AS REGARDS THE IMPORTANCE OF IMPROVING THEIR PROFICIENCY IN ENGLISH

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Abstract. *This research paper presents the results obtained after analysing the answers given by a number of 170 engineering students to questions referring to the current role of English, both in engineering education and in engineers' professional activity, especially when that activity is carried out in multinational companies. In addition, it emphasizes the importance of presenting students, during the early stages of their academic education, with the advantages provided by a good command of the English language. First, because employers in the field of engineering, especially those representing multinational companies (and such multinational companies are present in Oradea) need employees with a good grasp of English. Second, because academic education often involves the use of English for conducting research and/or for presenting the results of research.*

Key words*: language skills, engineering students, questionnaire, multinational companies, acquiring language skills*

1. INTRODUCTION ENGLISH AS A GLOBAL LANGUAGE AND THE IMPORTANCE OF TEACHING IT IN UNIVERSITIES - PARTICULAR CASE OF ENGINEERING STUDENTS

Nowadays, English has become a global means of communication. People are interacting in different contexts (while travelling, working, doing business or searching for information) making use of English to achieve their specific goals. Most statistics rank English first among the languages used throughout the world today, with a total number of 1.132 billion users (Ethnologue, 2019). It is among the official languages adopted by both The United Nations and the European Union and is considered the main language of communication among professionals from the fields of science, technology, business, tourism, medicine, banking, diplomacy, where employees across the globe need to cooperate in order to solve various tasks. Within the academic environment, research is often carried out and conveyed in English.

The development of information and communication technology has generated a revolution as regards the possibility to find employment across the world. Employers in different domains, including engineering, are interested in offering jobs to graduates who demonstrate not only technical knowledge, but also at least basic knowledge of English.

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The requirement to have good communication skills in English rises with each level in the hierarchy of organizations, since many professional projects are now planned and carried out across different countries or regions of the world.

There are a few places in the world where engineering courses are taught in English, for instance Technical University of Denmark or Technical University of Budapest, which presents, in our opinion, a major advantage for graduates. A solid knowledge of English would definitely facilitate graduates' access to jobs in the field of engineering.

The importance of acquiring English language skills, in the case of engineers, was highlighted in studies such as those published by (Reimer, 2002), (Narayan, Pahari, Awasthi, 2015), (Thaky, 2014), (Paraveen and Prasanatha, 2019), or (Latha, 2019). These authors also insisted on the general lack of appropriate communication skills (especially in English) demonstrated by graduates of engineering colleges and on the demanding action of devising syllabuses that are suited to the needs of the job market internationally.

Given the context presented above, we, as teachers of English at technical faculties, decided to help our students understand, from the beginning of their academic education, how important English might be for their future careers. Based exclusively on our subjective perception and experience in teaching English for more than 20 years, we can say that students put little effort in learning English (outside the English class) unless our requirements are very strict, despite the fact they accept that English is important in their development as engineers. Though many students seem to use English in different forms of entertainment (especially games and communication with friends from abroad) – which are excellent ways of improving their linguistic skills, few of them show interest in extra-curricular activities such as the Erasmus program or participation to international projects, if these are not part of compulsory forms of evaluation. In this way, the use of English in more formal contexts is given little practice.

We associate this reluctance to put effort in learning English in formal contexts with students' quite busy schedule at the Faculty of Electrical Engineering and Information Technology. English, being a complementary, though compulsory discipline, is not perceived, in our opinion, as a priority subject. In addition, students seem to slightly disregard the concept of appropriacy and use informal language in all situations. Thus, we feel that it would be a major advantage if we managed to motivate our students to improve their accuracy in using English. At the same time, it would be excellent if we drew the attention of our colleagues upon the important role of teaching English in universities. Starting from such considerations, we decided to highlight the advantage of making use of any context in which our students could practice English. By means of a questionnaire, applied to them during their first semester at the university, we tried to see how students perceive English, its role in the activity of many professionals. We also presented them some of the contexts in which their skills in English might be practiced and developed. We also offered them a description of the requirements (in terms of proficiency in English) expressed by the major employers from Oradea.

We also try to motivate them to take an active part in the activities presented at the English class and presence at these courses. Though we agree that it may be regarded as a rather controversial motivating technique, the use of rewards, in the form of grades, for the activity at each class, has definitely caused a more active and frequent participation of students to all classroom activities (Abrudan & Sturza, 2017).

In order to attain our goal, we began by asking major employers in the field of engineering from Oradea about the skills they expect to find in a candidate as regards the proficiency in

English. Our discussions proved to be fruitful ones since they also helped us figure out what parts of our current syllabus we should expand, or what new topics we might include. We realized that the knowledge of technical vocabulary is not the primary requirement, but rather the good command of English, which would allow an employee to interact efficiently in different communication contexts. Thus, we understood that we must give more space to communication-based activities, reproducing the real-life situations in which an engineer or a technician might be involved as part of his/her professional activity.

In addition to considering the future career of our students, we also decided to insist on the importance of developing their English skills in the perspective of getting a scholarship abroad or becoming Erasmus students.

The main purpose of this paper is to show the steps we took towards attaining our goals. Our first aim was to emphasize the importance of mastering communication skills in English in the case of engineering students, in order to improve both their academic performance and the chances to pursue a career in the field of engineering. Secondly, we intended to highlight the importance of teaching English in universities.

The following sections of this paper will present:

a. Contents of the current English course at the Faculty of Electrical Engineering and Information Technology, University of Oradea;
b. Language skills required by several major employers of engineers in the region of Oradea;
c. The results of a questionnaire, applied to the first year students of the Faculty of Electrical Engineering and Information Technology, University of Oradea, with the view of increasing their awareness of the important role of English for their future careers as engineers;
d. Our conclusions, based on the results obtained.

2. Background of the Study

2.1. The content of the English course at the Faculty of Electrical Engineering and Information Technology, University of Oradea

At the University of Oradea, Faculty of Electrical Engineering and Information Technology, the students have the opportunity to study English during the first two years of undergraduate studies (four semesters, one hour per week in most cases). Otherwise, English is not used as a medium of communication in the lectures, seminaries, laboratories or tutorials related to engineering subjects. English is a compulsory subject in the curriculum, but it is defined as a complementary discipline.

The materials we use are mostly the result of our collaboration with colleagues who are experts in different subjects taught at the Faculty of Electrical Engineering and Information Technology, which resulted in the publication of books addressed to the students who take part to our English course. We also use other published materials.

As regards the contents of the course, the emphasis is placed on teaching vocabulary related to the field of engineering in general (during the first year of study) and to the specialization chosen by the students (Computer Science, Information Technology, Control Systems, Electrical Engineering, Electrical Systems, Applied Electronics, Software and Networks for Telecommunications, Economic Engineering). At the English courses taught

during the first year of undergraduate studies, the vocabulary is introduced in three main ways:

(a) before reading/discussing contexts in which technical vocabulary is encountered (the terms may be written on the blackboard and explained and translated, presented as part of a glossary or presented in sample sentences while students are encouraged to explain them);

(b) while reading texts (the concepts may be defined as part of the text itself).

The reading sections are followed up by exercises in which technical vocabulary is repeated when students complete fill-in exercises, answer text-related questions, interpret graphs, figures, or other forms of visual information. Students are also encouraged to use the technical concepts discussed during the class in sentences of their own or to try to explain in what practical contexts the theoretical aspects discussed in the reading section can be encountered. Each class ends with an exercise in which students have to role-play a situation that relates to the application of the technical issue discussed in real life.

During the second year of undergraduate study, the English classes focus on concepts related to students' chosen branch of engineering, and the activities rely more on listening and speaking.

The presentation above shows that little class space remains available for discussing grammatical issues or focusing on communication in real-life situations. Another problem relates to lack of uniformity (within groups of students) as regards students' ability to use basic English. In our opinion, these are major drawbacks, to which we try to find efficient solutions.

In this study we shall focus on our perception that the syllabus of the English course, taught at the Faculty of Electrical Engineering and Information Technology, University of Oradea, should be reformed and adapted so that students might become better prepared for meeting the demands of the current job-market in the region of Oradea. The first step we made in this respect was to contact the members of the Human Resources Departments of the following multinational companies: Celestica, Inteva, Plexus and Nidec. In Oradea, engineering students are invited, from the very first year of their academic education, to visit some of the multinational companies located in the Industrial Park of Oradea. The students of the Faculty of Electrical Engineering and Information Technology, University of Oradea, usually do their practice, internship stages or get jobs in multinational companies such as Celestica, Plexus, Inteva, Comau, Nidec, and Faist Mekatronic. We sent an e-mail informing them on our intention to improve our syllabus and adapt it to their requirements. In two cases, we received prompt answers and established a basis for future collaboration. We shall present below the result obtained.

2.2. Language skills required for employees by some major multinational companies in Oradea

Though employees of most multinational companies referred to in the previous section operate with technical concepts in their activity, knowledge of technical jargon is not considered crucial for employment. This is due to the fact that the acronyms or concepts used may be learned quite easily if employees have a good command of general English. Thus, knowledge of at least basic English is considered a necessity, starting from the level of technician, and increasing as positions go higher in the structure of the company.

Generally, for the level of production operator, English is not a requirement since only simple **commands** and answers would involve the use of English by an employee. However, communication with production operators during audits would be more efficient if even at this level the employees would be able to use English efficiently. Thus, A1 level of knowledge of English represents an advantage during the employment process.

For technicians, A2 level of proficiency in English is required. In their case, interactions within the job-related environment would include answering customers questions, communicating with suppliers, answering questions raised during audits.

Engineers are required to demonstrate at least a C1 level of using English since their activity encompasses extensive communication with customers, co-workers or persons from outside the company. An engineer might be required to demonstrate ability to understand long, context-related texts and recognize implicit meaning, express ideas fluently and spontaneously, produce clear, well structured written or verbal discourse. Activity generally includes reading procedures and documents, writing reports, writing letters, communicating (in writing or verbally) with co-workers or visitors from within or outside the company, providing information during audits.

In conclusion, English is used for formal or official communication (the headquarters of the above-mentioned companies are abroad). Employees need to prepare various kinds of written documents (letters, reports, proposals, make presentations of products and components.

Effective oral communication skills include: presentations, negotiating, conflict resolution, knowledge-sharing: Their writing skills might help them produce efficient reports, proposals, instruction manuals, memos, official correspondence.

3. The Results of the Questionnaire Applied to the First Year Students of the Faculty of Electrical Engineering and Information Technology, University of Oradea

3.1. Language skills required for employees by some major multinational companies in Oradea

As indicated in the previous sections of this paper, our intention is to improve our efficiency in teaching English for the engineering students studying at the Faculty of Electrical Engineering and Information Technology, University of Oradea, so as to increase their chances of obtaining a good job in the field. The first step towards the materialization of our intention was our attempt to increase students' awareness as regards the important role played by the English language during the process of their employment as technicians or engineers in the multinational companies in Oradea. We started from the assumption that students might not be aware of the important role played by English in their future career as engineers. By raising their awareness in terms of the importance of English for their future career, we also wanted to increase their motivation to participate actively at the English classes.

As a result of our assumptions, we devised a questionnaire, which was applied to the first year engineering students at the Faculty of Electrical Engineering and Information Technology, University of Oradea. We chose the students of the first year because we wanted to increase their motivation to learn English. In addition, as part of our collaboration with the multinational companies that offer training programs to our students, we wanted to

draw their attention, as early as possible, upon the benefits of improving their English skills. However, the fact that students are still during an early stage of their academic education might mean that they are not very familiar with the academic context and thus have not understood yet how important it is to take advantage of any opportunity to learn and develop, which is offered to them as part of their academic education.

The questionnaire was applied in December 2019 and not at the very beginning of the academic year, since we wanted to give students time to become familiar with the syllabus of the English course, the development of the classes, and the contexts in which they might use English outside the English class. A number of 170 students agreed to answer the questions. The questionnaires were distributed to students and they had one hour available to give their answers. The students did not write their names on the papers.

3.2. Results interpretation

The questionnaire we devised included 10 items. It started with a general question, challenging students to define a global language (Q1. How would you define a global language?), and continued with an item in which they were invited to agree or disagree with the idea of English being a global language, and explain the reason for it being so, in case they chose the positive answer. The second item was a yes/no question type (Q2. Do you think that English might be considered a global language? a. If yes, explain why. b. No.)

In terms of the definitions given by students to a global language, most associated it with a large number of active users all over the world; it was also defined as a language that is used in many domains, so as to facilitate communication across countries and nations.

To the second question, all students interviewed choose the first answer alternative, defining English as a global language for reasons such as its accessibility (you can hear it spoken almost everywhere, it is taught in most schools across the globe). Some students considered it a language that is easy to learn (it is used in so many contexts and situations that somehow people are quite familiar with some words and structures, even if they do not study it). In addition, they associated its statute of a global language with the fact that it is the official language in the USA or Great Britain, two strong economic powers. Other students indicated the fact that technology unites the world today and since most technological explanations are in English, this situation contributed even more to increasing the number of users across the world. Music, movies, games and other forms of entertainment are some other means that help/motivate one learn English.

The following five questions referred to students' involvement in activities that would make them use or improve their skills of communicating in English. They were meant, in addition to elicit answers from students, to draw their attention upon those situations that might provide them with opportunities to use English actively. Thus, question 3 (another yes/no question) asked students whether English is used as a means of communication outside English classes (during other lectures, laboratories, or projects) - Q.4. While being a student at the University of Oradea, have you used English as a means of communication for any lecture, seminar, laboratory or project – **other than the English class?** a. Yes - 141 students; b. No - 29 students.

As seen from the numbers above, most students agreed upon the fact that English is used as a means of communication for different activities they do - lectures, seminars or laboratories. However, at least as far as we know, English is not used for conveying information during class activities at the Faculty of Electrical Engineering and Information

Technology, University of Oradea. We assume that, in giving an answer to these questions students considered the fact that since much software or commands (when using the computer) are in English they have been using English during other lectures, laboratories or project-related activities. We should point out here that most subjects taught at our faculty relate to learning the use of computer software for different applications, in the fields of Electrical Engineering, Telecommunications, Electronics and Computer Science.

Item 4 (While being a student at the University of Oradea, have you employed English in order to do research - have you watched tutorials in English/read materials written in English/communicated with peers or specialists in the field, using English?) was another yes/no question. Most students said they use English for research-related activities, though it was a yes/no question, some of them added to the 'yes' answer that most of the material they read/view/listen to for doing further research in the field is in English. From among the ones who chose the negative answer, some explained that they are only in the first year and thus they have not done much extra research, or explained that they do not know English very well and so they did not use it for research. As indicated previously, one of the limitations of this study relates to the fact that students are only at the beginning of their academic studies and probably are not very familiar with the way they should do research. To this question 153 students replied affirmatively and 17 students replied 'No'.

Question 5 asked students whether they accepted any challenge to use English while being a student at the University of Oradea. If they answered yes, they were asked to explain when they used English. The other answer alternative was No. Q.5. Did you accept any challenge to use English while being a student at the University of Oradea, Faculty of Electrical Engineering and Information Technology? a. If yes, in what context? (Give details) b. No. Though prior to starting answering the questions, these were explained the students, it seems that this question was not formulated clearly enough and we did not emphasize those other contexts. For these reasons, some of the answers were not so relevant, in our opinion. Some students merely opted for the yes/no answer, without explaining their choice, or when the affirmative answer was chosen, students did not write about the contexts in which they were challenged to use English, but rather their opinion that accepting possible challenges to use English would definitely be helpful to them. The answers are as follows: 108 students replied positively, 62 students replied with a negation.

Since the students are in their first year at the university, many of them did not have opportunities outside the English class to use English. Of the 62 students who answered negatively, 11 associated their negative answer with their lack of confidence in using English, while the rest of 51 students mentioned the lack of opportunity to use English.

From among the 108 students who chose the affirmative answer, 6 chose the yes answer without giving any argument. Two respondents mentioned presentations of projects while being students at another faculty. One student mentioned the use of English during an interview. Twenty students spoke of interactions with Erasmus students. Twenty eight students associated their use of English either with their faculty-related subjects (such as programming, for instance), or with talking with their colleagues about technology-related things. Finally, there were 30 students who mentioned using English while making presentations or giving arguments during the English class.

Question 6 inquired about students' interest in studying abroad, which would also require them, in most cases, to be able to use English in an academic context. Based strictly on personal observation over time, we have seen little interest on the part of the Romanian students in relation to this aspect. The first explanation in this respect would

be lack of confidence and unwillingness to accept the challenge, followed by the idea that students do not have enough money to support their attempt, and third, students mentioned their inability to use English in an academic context. The answers given by the students who answered our questionnaire show, nevertheless, quite a high interest in learning in another country. Total of 119 students gave an affirmative answer, meanwhile 51 students replied with a negative one.

As regards their interest in standardized tests, students at the Faculty of Electrical Engineering and Information Technology presented much interest during our class conversations, though few of them have actually taken such tests, as shown by the results obtained at question 7 - Q.7. Did you take up any standardized test in order to demonstrate your proficiency in English? a. 61 students replied 'yes'; b. 109 students replied 'no'.

We believe that the number of students at the Faculty of Electrical Engineering and Information technology having passed standardized tests may be even lower, based on our conversations with the students, at the beginning of our classes. We assume that some students might have considered their school leaving examinations (where some of them were evaluated at English) as standardized tests, which is not accurate.

However, in terms of interactions with peers, or as regards the use of English as part of students' social life, it appears that a large number of students actually use this language. At question 8 - Q. 8. Do you use English as part of your student's social life?, most of the students who took part to the survey chose the positive answer, namely 132 positive replies and 38 negative replies.

The last two questions were aimed at evaluating students' perception as regards the importance of knowing English, in the perspective of a future career in the field of engineering. Question 9 - Q. 9. For my future career as an engineer, English is: a. Very important; b. Important; c. Quite important; d. Not very important; e. Not important at all, looked at the degree of importance attributed by students to the knowledge of English in the context of a possible career as engineers. Their answers reflected that most students perceive English as having an important role to play in their future career. Thus, 92 students considered English as being very important, 61 students appreciated it as being important and 17 students regarded it as quite important. No student considered that knowledge of English is not very important or not important at all for their future career.

Question 10 looked at students' expectations as regards the contexts in which English might be required if they would become engineers, especially if they got employed in a multinational company - Q. 10. In what types of verbal/written interactions you expect you might be involved if you got a job as technician/engineer in a global company. Most students said they would expect to use both written and verbal English in activities such as: reading technical explanations (16 students) and using technical concepts (8 students); making presentations (19 students); team work and collaborating with colleagues (peers or CEOs) (20 students); explaining processes and giving instructions (9 students); during the process of getting a job (3 students); while using different software (3 students); during the process of negotiation (2 students); making phone conversations (3 students); communicating with customers from abroad (6 students); during audits (3 students); while writing e-mails (12 students); writing reports (2 students).

After completing the questionnaire, the students were presented with a description of the communications skills generally required by the multinational companies offering jobs in Oradea, included in section 2.2. of this paper. Thus, they could correlate their answers to question 10 with the suggestions expressed by the representatives of two major multinational

companies in Oradea. Our aim was to draw their attention upon the expectations of employers in the field as regards their proficiency in English.

4. CONCLUSIONS

This paper aimed to emphasize the importance of mastering communication skills in English in the case of engineering students, in order to improve both their academic performance and the chances to pursue a career in the field of engineering. In addition, we wanted to highlight the importance of teaching English at universities and of adapting syllabuses to the ever-changing international job market.

In order to attain our aims we started from analyzing the content of the English course at the Faculty of Electrical Engineering and Information Technology, University of Oradea, and continued by correlating it with the requirements of the major employers of engineers, located in or around Oradea. As a result of our collaboration with the Human Relations specialists from companies such as Celestica and Inteva, we realized that we should include more communication-based activities that would help our students role-play real-life contexts. Such contexts might include: taking part to an interview, talking to co-workers or superiors, answering questions during an audit, describing processes and designs, describing technical functions and applications, discussing technical problems and/or technical requirements, writing reports, letters, e-mails, making effective phone-conversations.

In order to help students function more efficiently in the academic context, it would be helpful to insist on presenting them with efficient methods of filling in application forms, discussing vocabulary related to the academic environment, developing skills of structuring an argument, planning and completing a piece of writing, analyzing data.

As regards the evaluation of the questionnaire, it emerged clearly that most students agree upon the important role of English, which has become a lingua franca in many domains of activity, including that of academic research. They also agree that good command of this language would open them better possibilities to get a scholarship or work in a multinational company. However, they are still rather passive in terms of using it. Most of them use it especially in contexts when they are required to do so (during English classes, or when having to interact with foreign students). Though some of our students argue they feel at ease when using English, many others are still unsure about their capacity to express themselves freely and do not look for opportunities to use it.

We believe that by using questionnaire with students, and by presenting them with the requirements of the major employers in the field, we fulfilled our aim of increasing their awareness as regards the need to put effort in improving their skills in using English and develop positive attitudes towards learning this language. We also understood how the syllabus might be adapted so as we can provide students with the opportunity to develop communication skills in English that are in accordance with the requirements of the employers in the field of engineering.

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Review research paper

A STUDY ON ALBANIAN STUDENTS' PERCEPTIONS OF THE ESP COURSES CONTRIBUTION TO THEIR ENGINEERING/ARCHITECTURE KNOWLEDGE ACQUISITION AND COMMUNICATION COMPETENCE

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Abstract. *Currently, soft skills mainly communication skills of engineering/architecture graduates have been considered as essential as their hard skills for the 21st century competitive global market. Given the cramped curricula of engineering/architecture programs, the research examines the beneficial impact that ESP undergraduate courses have on the tailored communication of engineering/architecture students at a case study analysis - EPOKA University in Tirana, Albania. In order to obtain feedback and unbiased perceptions on the tangible improvement in advanced English communication skills and disciplinary content knowledge acquisition, a questionnaire survey was conducted with the undergraduate students of EPOKA University at the Faculty of Architecture and Engineering upon successful completion of the two mandatory ESP courses at undergraduate level. A mixed method was utilized to collect the statistical data from questionnaires and the semi-structured interviews with students of engineering majors and architecture at the Faculty of Architecture and Engineering of EPOKA University who took English for Academic Purposes and Engineering English during 2018-2020 academic years. Research findings revealed the growing appreciation and high interest that students are placing into ESP courses as significant contributors to knowledge acquisition and soft skill betterment alongside the classic disciplinary courses of their disciplines.*

Key words*: engineering/architecture major, ESP courses, needs analysis, students survey*

1. INTRODUCTION

This research presents a case study investigation obtaining students' feedback on the role of English courses to their professional development and academic accomplishment at EPOKA university, an international English-speaking university in Tirana the capital of Albania. It is a student -centered research to grasp the linguistic needs and perceptions of students through a Needs Analysis survey. Participants in the survey study were students who successfully completed the two obligatory, *English for Academic Purposes* taken first semester and *English for Engineering* taught at the second semester of first year undergraduate studies at the Faculty of Architecture and Engineering at EPOKA University in Albania. Thus, the study follows the most contemporary pedagogical and

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curriculum design approach of putting the courses to the tangible needs of the students rather than students fitting into a given mandatory course by the teacher. Nunan points out that 'in a learner-centered classroom decision about what will be taught, how it will be taught, when it will be taught, and how it will be assessed will be made with references to the learner' (Nunnan, 2013). This study pursues the contemporary curriculum design approach of curriculum courses which considers students' evaluation of their needs and learning inputs, goals and objectives set up by a university class.

Brown argues that needs analysis is 'the systematic collection of, and analysis of all subjective and objective information necessary to define and validate defensible curriculum purposes that satisfy the language learning' requirements of students within the context of particular institutions that influence the learning and the teaching situation' (Brown, 1995). Moreover, reputable proponents of English for Specific Purposes such as Hutchinson and Waters accentuate the importance of a needs analysis in order to receive the genuine attitudes of leaners as an advantageous point of the ESP versus the General English where in ESP the learner is aware of the existence of specific needs for language (Tom Hutchinson & Alan Waters, 1987). The importance of needs analysis in course design and syllabus compilation has been early emphasized by regional researchers like Stojkovic and Zickovic while shifting from GE to ESP by gathering the necessary details to prepare ESP courses in technology to boost the technical English and upgrade the engineering knowledge of adult learners (Nadezda Stojkovic & Sladana Zivkovic, 2013).

This academic endeavor represents a novel priority in Albanian academia to establish the dignified status of English curriculum at a faculty of applied sciences where there is no tradition of research on the impact of ESP courses into the qualification of future engineers/architects in the global market. Likewise, elsewhere, English for Specific Purposes has not gained a status of high recognition *vis a vis* other scientific majors in regional and international academic community. ESP proponents are determined to reveal the deserved professional and academic values of ESP courses even versus General English Learning supremacy at all three cycles of education (Stojkovic, 2019).

2. METHOD

A mixed qualitative and quantitative research method has been adopted to reach original findings from this research. Original and unbiased data were collected through a questionnaire delivered to undergraduate students who had already successfully completed the two ESP courses offered at undergraduate level at the Faculty of Architecture and Engineering of EPOKA university during academic years 2018-2020.

2.1. Participants

A google form questionnaire accessible at https://forms.gle/pWuR2fnAGqpX3fis5 asked students to evaluate the effectiveness of the ESP courses to their soft skill improvements. It was addressed to 300 students enrolled in such ESP courses respectively in two consequent academic years for the first time at the faculty during 2017-2018 and 2018-2019; the author of this research is the ESP lecturer at EPOKA University carrying out the survey in person. Since the google form questionnaires and the survey as such were conducted during the pandemic months of Corvid -19, out of 300, 231 students accepted to participate in the survey. These students were mainly from Computer engineering department (150) as the

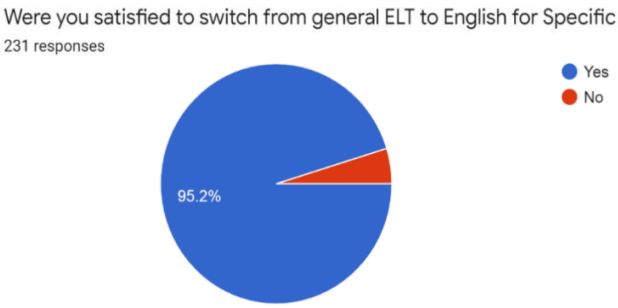
largest one of the faculty, the second in number were the students of Architecture (58) to be followed by Civil engineering and Electronics programs with the least number of enrolled freshmen at faculty level. Students were all freshmen of age 18-20 and therefore, to have their independent feedback on the impact of language courses to their academic and professional growth was a novelty at an applied science faculty where students devote many years of advanced preparation to hard sciences like mathematics and physics; apparently the foreign language course program had never been given any attribute for further career prospects.

2.2. Research instruments

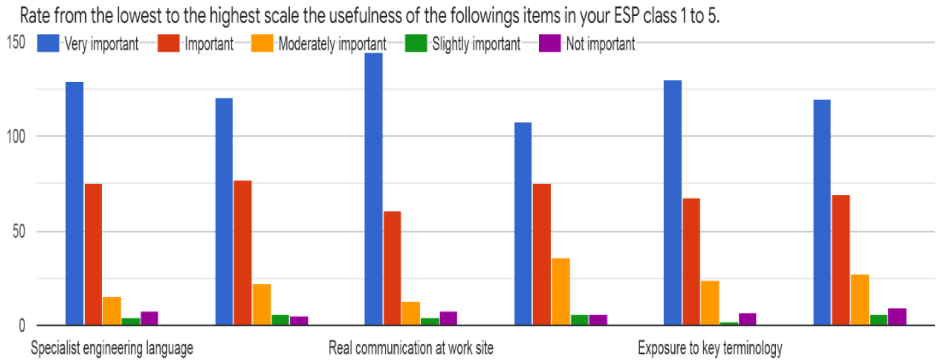
Data were gathered through a questionnaire prepared in google form and delivered only to students of EPOKA email domain enrolled in computer engineering, civil engineering, electronics and architecture program. The questionnaire was prepared in Likert Scale from the least to the most important or significant value, combined with some close YES or NO questions; some semi-structured interview questions since the author in pandemic conditions could not interview students in person but intertwined the face to face questions at point 7 of this online questionnaire.

3. Discussion of Findings

Question 1.



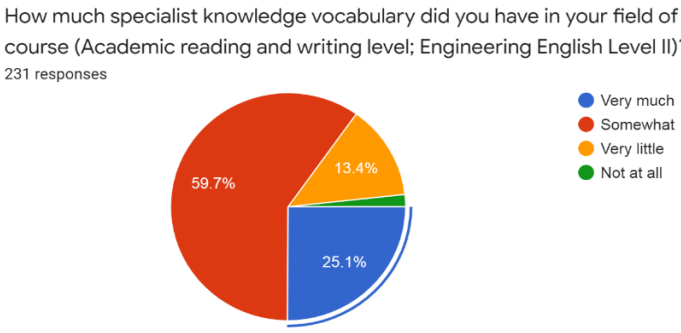
The first question was deliberately put to have a precise reaction of students themselves whether they had realized the need to move from General English to tailored courses of Advanced English. A strong confirmation of 95.2%, i.e. 220 students out of 231 respondents were satisfied to be offered such a new type of English course versus a negative of 11 students. This indicator is significant to demonstrate the appreciated status of ESP by university learners. As a typical ESP approach, the major responsibility of the ESP lecturer is to diagnose the needs, the strengths and weaknesses of their leaners. Moreover, Celik points out that learners' awareness of the need in language is the starting point of a researcher (Celik, 2017). Therefore, the starting point of the research is a strong positive reply of students by having self-reflected on the necessity to switch from the General English mainstream of high school to specific professional content driven courses at university studies. This ESP needs analysis approach will also serve as a good practice to other curricula courses of specific discipline in terms of improving their efficacy and achieving the learning outcomes and fulfilling the objectives set by the instructor.



Regarding the second question put in Likert Scale with seven mini sections to be ranked in order of importance by students. The first variable to be checked for question 2 was the usefulness of ESP courses to specialist engineering language with 129 students scoring it very important; 75 students considered it important; 15 students scored moderately important; 4 students considered slightly important; and only 8 students out of total of 231 marked the ESP courses at EPOKA as not important.

Sub variable	Very important	Important	Moderately Important	Slightly Important	Not Important
Specialist engineering Language	129 students	75 students	15 students	4 students	8 students
Authentic Communication	121	77	22	6	5
Real Communication at Work Site	145	61	13	4	8
Soft skills improvements in pair tasks	108	75	36	6	6
Exposure to Key terminology	130	68	24	2	7
Exercises/tasks to problem-solving scenarios	120	69	27	6	9

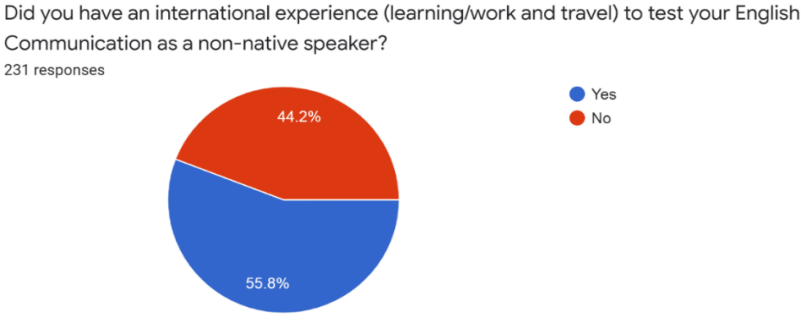
Moreover, the table with the statistics shows that 145 students scored as very important the contribution of ESP course to their real communication at Work site; 108 responded positively to its contribution to soft skills improvements through pair tasks; 130 scored maximum to very important support in exposing them to key terminology along with 120 scoring maximum to problem-solving skills improved by task-based exercises. This confirmative feedback of students themselves comprises a convincing evidence of the valuable contribution of the ESP courses to building social competence at work and university. Soft skills and solving problem capabilities are issues that have been largely explored and investigated by language curriculum designer such as Stefanowicz-Kocol & Pociask arguing that social competences belong to transversal skills which can be practiced in language courses (Anna-Stefanowics-Kocol &Monika Pociask, 2017).



Question three makes a more specific point on the knowledge prior to taking ESP courses in order to check the beneficial inputs and outputs of the EAP and Engineering English courses. It was found that only 25.1% claimed of having had very much knowledge in technical vocabulary of advanced English, whereas a majority of 59.7% admitted that they had somewhat knowledge and thus the courses were of great help to further lexical enrichment in the major of study.

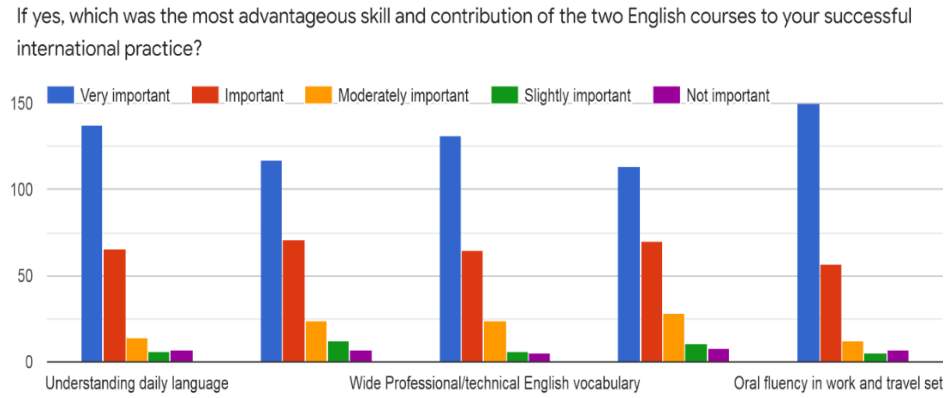
Very much	25%	58 students
Somewhat	59.7%	138 students
Very little	13.4%	31 students
Not at all	1.7 %	4 students

Moreover, this feedback highlights the need to use authentic materials with key terminology to the field of study. The fact that only 25% out of total confirmed of having very much professional linguistic vocabulary, reveals the necessity to expose them to professional terminology through ESP course materials as a bridge to further understanding their disciplinary content courses. Authentic materials originating from students' self-perception of vocabulary needs is another major attribute of ESP teaching program and, of the ESP teacher by selecting the right authentic materials in advance as safe tool box (Vesna Stankovic & Dusica Milosavljevic, 2017).



This question aims at gaining direct information from students who have participated either in *Work and Travel* program in the USA or *Erasmus+ Students mobility programs* in English language. These two programs are coordinated and endorsed by EPOKA university.

It goes without doubts that English has become *the lingua franca* of internationalization among educational institutions but, precisely this attribute goes to ESP due to its specific features for specific disciplinary programs. Out of 231 total, 102 students making 44.2% had already had an international experience using English as non-native English speaker. Meanwhile, 129 students had not yet had such an international practice to test their communicative competence in English abroad.



ESP Courses contribution	Very Important	Important	Moderately Important	Slightly important	Not important
Understanding Daily Language	138	66	14	6	7
Cultural/Social Integration in Foreign Society	117	71	24	12	7
Wide professional Technical English	131	65	24	6	5
Written Communication	114	70	28	11	8
Oral fluency in Work and Travel Setting	150	57	12	5	7

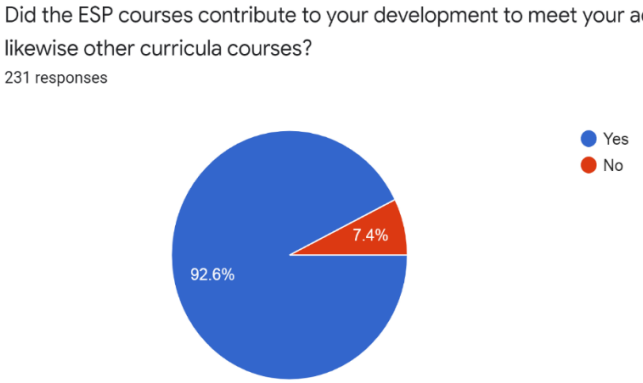
This set of semi-structured questions comply with the contemporary role and responsibility of an ESP lecturer who, according to Chmelikova and Hurajova must possess "solid English language competence, adequate knowledge of the related HEI disciplines, awareness of specific needs of stakeholders in question as well as experience with cultural issues of the current international environment" (Gabriela Chmelikova & Ludmilla Hurajova, 2019). The driving power of ESP for further internationalization in education and science has been acknowledged and endorsed by European institutions and EU agencies such as the *Visegrad + Funds Agency* by supporting financially ESP regional project. For instance, the latest project in the *Visegrad+ Scheme CLIL-HET (CLIL-Higher* Education *Teacher*) increases interdisciplinary cooperation at regional level though ESP didactic training and practice dissemination. Therefore, this question reflects the added value of ESP class to successful international working and/or educational experience. It is a very

enthusiastic finding that 150 out of 231 in total responded with the highest score to having achieved spoken fluency at work and education through ESP class. In addition, 138 out of 231 confirmed the wide technical vocabulary of the class as having been very important to their successful international experience.

Question 6: Potential of ESP Courses- Rate the English skills that the ESP courses improved to your general English potentials

Potential of ESP Courses	Very important	Important	Moderately Important	Slightly important	Not important
Providing knowledge content in Engineering	126	76	13	8	8
Listening to authentic situations	111	80	24	11	5
Writing technical and academic genres	133	66	20	8	4
Familiarizing with different rhetorical functions of scientific English	127	66	21	13	4
Acquiring interpretative and study skills including library and internet reference skills	133	63	18	9	8
Getting trained in organized academic and professional	139	59	18	10	5
Developing oral competence and fluency of learners	127	74	17	9	4
Achieving proficiency in the effective use of language, in various authentic career-related situations	152	54	13	6	6

This set of sub-structured variables are in line with a detailed needs analysis survey for an ESP course evaluation. It exhibits the high importance students gave to each of these sub variables of ESP potential contributions to their linguistic and professional development. These questions incorporate both the four dimensions of English learning – reading, listening, writing, speaking and, in addition as an ESP course taught to adult learners it depicts specific contribution to social competence and professional development in the future thought tailored Engineering courses. It is very significant finding that 152 students out of 231 pointed as *very important* contribution of ESP courses to achieving proficiency in the effective use of language, in various authentic career-related situations. Also, 133 participants assessed as very important the role of ESP courses to acquiring interpretative and study skills including library and internet reference skills.



This question was originally placed by the author of this research given the vacuum in research on the status of language courses to overall development of engineering major likewise other already acknowledged courses in the discipline. It is a very motivating and enthusiastic answer of a strong 92.6% of high appreciation of English courses alongside other disciplinary courses. This final question of the questionnaire shows the validity of the ESP programs expressed by the voice of the students themselves; hence, this represents a most convincing model of a curriculum focused and tailored by the learners to satisfy their linguistic needs in a foreign language with very clear-cut goals of the teaching/learning process. Inclusion of students in preparing the class content, aims and teaching tactics is the most essential distinctive quality of a learner-centered curriculum (Gozuyesil, 2014).

This last question aimed at clearly making a strong point through convincing and concrete evidence about the tangible contribution of the ESP courses to learning by comparing the level at the beginning and end of the courses. At the beginning of enrollment to courses, only 39 students claimed of having excellent knowledge and level skills whereas at the end of the courses 100 students claimed excellent mastery.

4. Conclusion and Recommendation

This research discussed a case study examination at the Faculty of Engineering and Architecture at EPOKA University in Albania where 231 undergraduate students participated in a questionnaire survey to assess the contribution to their language learning, communicative competence and professional terminology of mandatory ESP courses *English for Academic Purposes* and *Engineering English*. The questionnaire was based on Likert scale of significance per questions as well as some closed questions to identify the need for switching from General to Specific English Courses. The questionnaire was designed based on Needs Assessment analysis for a typical ESP class but also some original questions were put to fill in the vacuum of the domestic Albanian context of neglected research in language courses at applied sciences university programs. Predominantly, all variables examined in the survey showed high appreciation and positive feedback from students on the beneficial influence of the ESP courses to their communicative competence and major-tailored knowledge. The findings exhibit positive reaction concerning the necessity to have ESP courses rather than general English courses for further academic and career opportunities. Moreover, those students who had been involved in international experiences were testimonies of the benefits that the engineering vocabulary taught in class had been very useful to them in daily practice and professional engagement. The most essential finding of the study is that students themselves do admit that language courses have a status of importance to them equal to other curricula courses thus, restoring the worthy position of ESP in their squeezed curricula and respecting its attributes. This pilot research with its motivating findings gives us further stimulus to systematically carry on diagnostic measurement of the linguistic needs and course content of ESP university programs in Albania and the region for more effective language competence.

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Original scientific paper

LEARNING BEHAVIOUR IN AN EXTRAORDINARY SITUATION

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Abstract. *Closures of higher educational institutions and cancellation of in-person classes caused by* COVID-*19 made ESP teachers in Montenegro find alternative ways to transform the serious emergency into an important opportunity to foster innovation in the area of teaching ESP online. Doing so, the teachers sought to enhance the experience already in place in many countries round the world. This paper deals with students' responsiveness to employing new teaching methods aimed at increasing learner autonomy in virtual environment during COVID-19 pandemic, which inevitably encouraged the use of technology. The study focuses on two groups of students (19 second-year students of the Faculty of Visual Arts and 43 third-year students of the Faculty of Information Technology, University Mediterranean Podgorica, Montenegro) and their response to the alternative methods of teaching ESP, as well as the results they achieved in mid-term and final exams. The results are compared to those that the same group of students achieved in the previous semester, providing a comparative analysis of an impact of online teaching on students' learning behaviour and accomplishments in the extraordinary situation.*

Key words: *extraordinary situation, COVID-19, performance, academic participation, learning behaviour*

1. INTRODUCTION

Since 11 March 2020, the COVID-19 pandemic, one of the most severe global crises in our history, has exerted the most devastating direct physical impact and economic effects worldwide, with the new upsurge of violence, particularly affecting Europe (Žižek 2020). The pessimistic reports on the effects of the crisis on the education system confirm the disastrous effects of the school closures, stating that it has been "the largest disruption of education systems in history" (United Nations 2020, 2) having impacted 94 per cent of the world's student population. On the other hand, global cooperation and solidarity spurred by the crisis and the innovations in the education sector stimulated by the need to enable education continuity speak in favour of the positive effects of the pandemic.

Despite difficulties that might arise from online teaching (poor preparedness for the usage of Learning Management Systems, theoretical online content, the lack of practice and effective learning, the lack of community, low-quality course content, technical problems, differences in learner's capability, willingness to adapt to online teaching, their confidence

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level and time management), the advantages of online education in any extraordinary situation vastly outweigh any disadvantages (Dhawan 2020). In addition to the benefits usually associated with online learning (accessibility, affordability, flexibility, its potential to increase the learning potential of students and promote life-long learning), crises bring other benefits and strengths of online teaching into focus such as: the potential to cater to the needs of a wide audience, student-centeredness, collaborative learning environment and a huge variety of content aimed at producing a human touch to the lectures and providing immediate feedback (Dhawan 2020). As "*the panacea for the crisis*" (Dhawan 2020, 7), online teaching has become a necessity for all academic institutions. New distant learning solutions have brought about the change in teaching-learning approach, but have also raised our awareness of the crucial role of teachers in delivering quality online education (United Nations 2020).

The purpose of this paper is to explore whether and to what extent different teaching approaches employed in the virtual classroom (online teaching) during COVID-19 have brought about the positive changes in students' learning behaviour.

2. Online Learning During COVID-19 At Higher Education Institutions in Montenegro

On 13th March 2020 the Government of Montenegro proclaimed the first set of measures related to COVID-19 crisis. All educational institutions were temporarily closed for 15 days, and the situation became a challenge for the whole educational system. Higher education institutions offered students an electronic service for enabling quick access to email and online lectures through Moodle platform. It was recommended that the teachers at these institutions organize classes in several ways: 1) by uploading the teaching material on the official website, 2) by uploading multimedia presentations on the Moodle platform, and 3) by using Zoom application.

On 26 March, the teaching staff at the University "Mediterranean" Podgorica, was given the first set of teaching and learning instructions to be used during the confinement. They were instructed to adapt to a certain extent to the changed study policies, modify their courses to suit the virtual environment, that is apply different teaching approaches and modes of assessment, and were encouraged to use the Zoom application for learning experience in synchronous environment, i.e. one which enables students to attend live lectures, have real-time interactions with instructors and other learners as well as an instant feedback (Dhawan 2020). Most of the teachers and students found it quite easy to use Zoom, and quickly took advantage of its tremendously useful features including: a) video sessions for at least 50 students, b) screen sharing during a call, c) the possibility of recording the lectures, d) on-screen whiteboard, e) live video chat to keep the sessions dynamic, e) the possibility to join from any device, etc. Given that the University has been using Moodle learning platform as a form of asynchronous learning environment in which "learning content is not available in the form of live lectures or classes", but "at different learning systems and forums" (Dhawan 2020, 7) since 2008, some University departments found it quite easy to shift to this mode of teaching, looking for ways of using it more extensively. However, there was a huge imbalance between the departments in terms of the extent and methods of using the platform, both students and teachers in different departments have had different habits and experiences in using it.

In addition to using Moodle and Zoom, the teaching staff at the University was allowed to use other VoIP applications (Google Classroom, Skype, Viber).

3. Recent Studies on E-learning during COVID-19 Pandemic

Measures taken to prevent the spread of the coronavirus disease (school and dormitory closures, physical distancing, confinement, quarantining, travel restrictions) have dramatically affected the lifestyle and well-being of student population worldwide. Recent findings on the impact of the lockdown on the mental health of university students show "an increase in stress levels in the later stages of physical distancing" (Hyseni Duraku and Hoxha 2020, 13) and emphasize the interaction between stress and students' learning skills, time management and student procrastination. Hyseni Duraku and Hoxha's research into the motivation for online learning during the pandemic shows great differences among students: some students enjoyed studying online, while others reported the "lack of motivation and negative attitudes towards learning online" (ibid., 2). As expected, the results confirmed that there was a direct proportion between the level of stress caused by the changes in students' lives due to preventive measures against COVID-19 (e.g. change of residence, confinement, interruptions, family environment, different learning format) and the level of motivation for engaging in online learning: "students who reported that they were not at all motivated to engage in online learning also reported high (moderate to severe) levels of psychological distress, as opposed to students who reported being highly motivated to attend classes online" (ibid., 3). For this reason, students' attitude to online learning during COVID-19 vary. For some students, as confirmed by Hyseni Duraku and Hoxha (2020), online learning is a great opportunity: 1) to save time and money and devote more time to studies, 2) to actively participate in classes and thus increase their level of motivation and their capacity for self-organization which contributes to effective learning, and 3) to draw the attention away from the pandemic and get emotional support from teachers. Other students report on their negative experiences in online learning, most important being: 1) lack of attention due to a change in lesson format and to their psychological state; 2) fluctuation in the level of motivation (higher levels in the first two weeks); 3) heavy workload; 4) distraction by family members; 5) increased use of technology, and 6) bad time management and the procrastination in the learning process (ibid.).

The results of the study by Gonzalez et al. aimed at exploring the effects of COVID-19 confinement on students' performance in higher education confirm that there is "a significant positive effect of COVID-19 confinement on students' performance" (Gonzalez, et al. 2020, 21) even though the courses taught during the confinement implied the same teaching methodology, teachers and the assessment process (the same format of online tests) as in the period before COVID-19. The main reason for the significantly better students' performance was the new learning methodology during the confinement which does not refer to the same/uniform learning methodology adopted by the students during the confinement but to the "general change in the autonomous learning process" (Gonzalez, et al. 2020, 22). As further explained in the study, the confinement period was a completely new scenario which imposed different motivations (rewards) for continuous learning that led to better performance: in order to be sure they are following the course correctly and not missing any important content, or make sure they do not miss the academic year because of the confinement, some students felt the need to work continuously; while for the others, it was their intrinsic responsibility (to contribute to solving the problem the higher education was facing at the time) that made them work harder. The results of the study also indicate positive future trends in students' performance due to a real improvement in students' learning during COVID-19 confinement.

4. RESEARCH CONTEXT AND DESIGN

4.1 Teaching approaches at FIT and FVA during COVID-19

English for Specific Purposes (ESP) courses at the University "Mediterranean" are taught during the second (Faculty of Visual Arts – FVA) or the third study year (Faculty of Information Technology – FIT), after the completion of the General English course (B1-B2 level).

In both departments, a number of activities introduced in the ESP course are aimed at encouraging learning autonomy (e.g. creating a video, a wiki, a blog, a website; presenting a portfolio, etc.). As technology is either students' major subject field (FIT students) or an indispensable tool for design software programmes (FVA students), these students are digitally literate which helps them easily acquire the four Cs of the 21st century learning skills: critical thinking, creativity, communication and collaboration. By the time the pandemic started, the students of the FIT had already got used to using Moodle regularly, as support to their classroom learning or part of blended learning. On the other hand, the students of the FVA had not had any experience in online form of teaching: well accustomed to 'art' methods of teaching, i.e. practical individual work aimed at helping students master the skills of using classical and modern digital tools, and to the in-person consultations with the teacher who monitors learners' progress, these students were not familiar with Moodle, nor with any other learning platform.

Regardless of the students' experience or the lack of experience with learning platforms or blended learning, both groups of students were expected to show high attendance at the online classes held via Zoom. At the beginning, we noticed that almost the same students who had attended classes in the real-life classroom were also attending Zoom sessions. Bearing in mind a possible decline in students' motivation due to stress and anxiety caused by the preventive measures against COVID-19, we wanted to encourage students to take a more active participation in virtual classrooms. Before the pandemic, all the teaching materials had been provided by their teacher who had also helped them choose appropriate tools and applications and led them through learning. Now, under the new circumstances caused by the shift to online mode of teaching, these students had to be stimulated to learn more autonomously.

The new, virtual environment imposed a number of changes at the classroom/course level, such as those in the seating arrangement, or those that involve new teaching methods and activities for making teaching more learner-centred, which are usually used to positively affect students' motivation (Anthony 2018). In the new environment, students were allowed to actively participate in Zoom sessions while sitting comfortably on their sofas, or lying in bed instead of sitting at their desks, and were using different online tools and experimenting with new presentation technologies (such as moving from a whiteboard to different applications), which, as an alternative mode of teaching, helped students engage more actively in the teaching process (Dhawan 2020). The social interaction enabled by Zoom, used to create a synchronous learning environment and thus similar to real-life classroom, was another important factor that contributed to improving students' motivation for learning. In order to ensure more intense students' attentiveness and concentration during Zoom sessions, as suggested in an overview of the instructional strategies for online learning (Mahmood 2020), we divided our bigger lectures into smaller building blocks such as smaller units, class discussions and multiple small tasks and had shorter Zoom sessions (40 minutes long). Furthermore, we made sure the

students were provided with online class recording in case a student missed or did not understand well parts of the lecture.

Bearing in mind that "motivation does not remain constant during the course of months, years or even during a single lesson" when it comes to learning a foreign language and that it "ebbs and flows in complex ways in response to various internal and external influences" (Dörnyei and Ushioda 2011, 6), we tried to implement some of the learning strategies for improving students' motivation suggested by these authors: making learning stimulating and enjoyable (e.g. enriching virtual lessons with topic-related audio/video clips and more engaging class discussions); setting specific learner goals (e.g. improving presentation/ writing skills in 3 weeks); promoting cooperation among the learners (e.g. encouraging better students to work with weaker and give group presentations); creating learner autonomy and promoting self-motivating learner strategies (e.g. allowing students to choose their own topics to be explored and further discussed in virtual class or develop their own ideas for homework assignments related to what is being studied in class).

Despite the differences in the teaching approach, we observed the learning behaviour of our students during the lockdown and noticed that in the same extraordinary situation they reacted differently, probably due to their differences in coping with the new circumstances: some of them were highly enthusiastic about the participation in classes, and some of them, even when they were physically present, showed no willingness for active participation. The enthusiasm mostly came from the feeling that they were attending classes from their homes. On the other hand, students felt they were overloaded with extra work assigned by other teachers, and/or time they had to spend online, which caused their dissatisfaction.

By the time the lockdown started, the students of the FIT had already started doing an independent assignment, i.e. writing wikis, which is the first step to their final task – designing a website. They had also done their first mid-term exam. During COVID-19, the students were encouraged to actively participate in Forum which was used for further discussion on the topics mentioned during the Zoom meetings, to collaborate in the group projects and use peer review during the Zoom sessions. The students were reminded of due dates for all assignments via email and News on Moodle.

In order to encourage a more autonomous approach to learning during the lockdown, the students of the Faculty of Visual Arts were asked to do their own research on the topic they thought was relevant for the real-world context and their future working environment, but also present the topic to the group (through Zoom) and create the accompanying glossary. Peer review of the oral presentations given during the Zoom sessions ensured a more collaborative work and social interaction. Active engagement in class discussions, autonomous research and the increased number of homework assignments (twice as big as in the period before the crisis) meant earning more points. Before the lockdown started, the students had also done their first mid-term exam.

The most challenging part of the teaching process, however, was assessment and evaluation of students' progress. Taking into consideration Anthony's claim that "within a course, learners may feel strongly motivated if the instructors directly address issues on a high-stakes test that they must take later" (Anthony 2018, 132), our greatest effort while teaching ESP classes was aimed at providing an ongoing assessment, but also ensuring task-based learning and dealing with the issues students might find useful in some of the high-test takes they might take later (job interviews, master programme entrance examination, etc.). Therefore, we tried to give priority to formative assessment (quizzes, questioning, assignments, peer assessment of the presentation skills against the checklist; class discussion

on students' essays against the sample formats, self-assessment of listening skills, etc.) with the purpose of proving constant feedback and ensuring ongoing learning. Though aware of the need to redesign the evaluation test formats to suit the virtual environment, we were concerned about how to create fair testing and ensure students not to cheat in the exams. Online tests were conducted by means of Moodle and Google Classroom which offer a wide range of question types. In order to simulate classroom environment and monitor students' work, we set timing for the test and asked students to be on Zoom during testing. In addition to this, we extended the desktop and asked students to share their screens. This way we were able to follow students' behaviour during the testing on one screen, and their work on the other. We randomly picked students and monitored their actions and writing.

The final exam was done in the classroom, as the situation related to COVID-19 noticeably improved, but also because the Law on Higher Education does not stipulate any other option.

5. CASE STUDY: LEARNING BEHAVIOUR DURING COVID

This study aims to explore students' learning behaviour (defined as students' academic participation, students' attitudes and students' performance) in relation to the learning situation (before COVID-19 or during COVID-19[1]). Students' academic participation refers to students' attendance, student engagement in in-class activities and completion of out-of-class assignments. Students' performance refers to students' results in mid-term tests and final exam. The purpose of the study is to explore potential differences in responsiveness and performance of the same groups of students in different learning environments (before COVID or during COVID). The differences would be determined by comparing students' participation and performance in regular (non-Covid) and extraordinary (during-Covid) situation. By exploring the differences this study aims to give insights into whether virtual classroom provides better environment for continuous learning and better students' performance.

These aims led us to the following hypotheses:

H1: Students' academic participation in virtual environment is higher than in traditional environment due to a different teaching approach, forms of assessment carried out in virtual environment and students' positive response to confinement.

H2: Students' performance in the mid-term test and final exam during the lockdown (spring term 2020) is higher/better than their performance in the mid-term test and final exam during the period before the lockdown (autumn term 2019).

5.1. Data and feedback collection

In this study, we adopted a mixed research method approach known as the sequential explanatory design method. Mixed research method is a research design that combines strengths of both qualitative and quantitative approaches. The sequential explanatory design method comprises a quantitative phase followed by a qualitative one. For the quantitative phase, we collected data on students' academic participation and performance,

[1] The terms "before COVID" and "during COVID" shall be referred to as non-COVID and COVID, respectively, in this paper

while for the qualitative phase, open-ended questions were conducted and analyzed to explore students' attitudes and to reflect on the numerical results.

In this manner for each student we collected the data presented in Table 1.

Table 1 Data included in the analysis

Variables	Hypothesis	Data set
Student id	H1 & H2	Students' identification number
Participants	H1 & H2	COVID (spring semester) and Non-COVID (autumn semester)
Faculty	H1 & H2	FIT and FVA
Students' attitudes	H1 & H2	Interview answers
Student academic participation in COVID and non-COVID period	H1	▪ Attendance and in-class involvement (COVID and non-COVID period) ▪ Discussion in classes (COVID and non-COVID period) ▪ Forum (COVID) ▪ Presentation (COVID) ▪ Homework (COVID and non-COVID) ▪ Wiki (COVID) ▪ Blog (non-COVID) ▪ Video (non-COVID)
Mid-term 2 results	H2	Mid-term exam results in form of score (out of 20)
Final-exam score	H2	Final exam results in form of score (out of 20)

5.2. Results and discussion

This study gathered 62 Bachelor students of the FIT and the FVA, University "Mediterranean" Podgorica, Montenegro. All data extracted were analysed using the IBM SPSS tool. Based on the assessment of the data normality, for measuring differences among groups (H1 and H2) parametric (Paired-sample t-test) was used. The significance is measured at a level of 5% (p-value<.05). The qualitative analysis was performed by means of interview. Sixty-two students participated in the research, 19 from the FVA and 43 from FIT. Twenty-four of these students took part in the interview.

5.3.1. Data analysis

In order to check the H1, we conducted paired-samples T-tests. A paired-samples t-test was conducted to compare academic participation in COVID and non-COVID environment. Paired-sample test showed that there were statistically significant results and that during COVID time students had higher academic participation M=5.69, SD=4.17, than during non-COVID M=4.56, SD=3.09, MD=1.12, t(61)= -2.453. p=0.17. According to the results, we can conclude that H1 is confirmed.

In order to test H2, paired-samples T-tests were conducted. A paired-samples t-test was conducted to compare performance in COVID and non-COVID environment. Paired-sample showed that there were statistically significant differences in the final test but not in the mid-term exam. That is why H2 is partially confirmed. The results are presented in Table 2.

Table 2 Results of the quantitative analysis

		Mean	Std. Deviation	t(61)	p
Pair 1	Mid-term exam 2 (autumn)	8.05	1.541	.586	.560
	Mid-term exam 2 (spring)	7.94	1.199		
Pair 2	Final exam (autumn)	8.69	1.615	2.237	**0.029***
	Final exam (autumn)	8.29	1.750		

5.3.2. Qualitative analysis and reflection on quantitative

For the purpose of checking the results of the quantitative analysis and explore students' attitudes we also conducted interviews with 24 students. The questions were divided in two sections: one referring to the academic participation and the other to the performance.

Table 3 Students' answers from the interview

ACADEMIC PARTICIPATION		Analysis
Q1	"What motivated you to actively participate in online classes of English Language?"	▪ All students agreed that the positive factors of online learning were: saving time and money, comfort of learning from home, availability of recorded lectures at any time. ▪ The students agreed on the following negative factors: lack of interaction with the teacher and other students, technical issues, distraction by family members, lower concentration, worse understanding during the online sessions.
Q2	"What was the workload in English Language course?"	▪ All students agreed that they had almost the same workload as in the traditional environment and explained that the teachers' approach helped them complete all the assignments.
Q3	"Were you more active in online classes?"	▪ Different answers: ▪ Most students (19 out of 24 found traditional learning more appropriate due to better interaction with a teacher and due to the fact they were more used to the traditional learning environment. ▪ 3 students did not see any difference in active participation ▪ 2 students were more prone to online learning (one of them said it was easier to participate and the other student, who stutters, said he was not exposed to other students and was more comfortable in online sessions and the atmosphere was more relaxing).

PERFORMANCE		Analysis
Q1	"What are your attitudes to online testing?"	The students agreed on the following: ▪ Advantages: simpler, lower pressure, saving resources, comfort of working from home ▪ Disadvantages: technical problems (power cut, bad internet connection), distraction by family members during the test, inability to access the platform and send the tests, the system may bug and the students' answers may be lost, more demanding)
Q2	"Is online testing better suitable form of assessing online learning"	▪ 22 out of 24 students said it was not. The explained that classroom testing was better because they prefer the classroom environment, they have live interaction with a teacher and online test format is not adequate for checking their real knowledge ▪ 2 out of 24 students answered they found it more suitable and easier as the learning is carried out in virtual environment
Q3	"Was it possible to cheat in online exams?"	▪ 22 students agreed they were aware of the possibility for cheating but they do not know whether some students cheated or not

6. Conclusion and Discussion

The extraordinary situation caused by COVID-19 imposed new challenges for both teachers and students. The teachers in all educational institutions were forced to find different ways to adapt to new circumstances and find opportunities to get the best out of themselves and the students. At the end of the lockdown, we conducted a research on 62 students of the FVA and the FIT, University "Mediterranean" Podgorica, Montenegro, to check whether the alternative modes of teaching and assessment applied during the COVID-19 period produced a positive change in the students' learning behaviour. Therefore, we focused on comparing two areas, students' academic participation and performance, in two semesters (before and during COVID-19).

Based on the presented results we came to the conclusion that students' participation was significantly higher during the COVID-19 period. Even though we noticed certain fluctuation in active participation of some students in the Zoom classes, as confirmed by the interview with 24 students (see Table 3), the results show that the students' overall academic participation measured through attendance, in-class and out-of-class engagement and completed assignments, was on a much higher level than in the previous semester (before COVID-19). Despite the occasional lack of motivation that some students experienced during the lockdown, the reasons for the positive response might lie in: the teaching approach which urged autonomous learning, continuous work, ongoing assessment, the comfort of working from home, as well as the fact that most of the students, despite the different attitudes to online teaching, wanted to take advantage of the situation by spending their time during COVID-19 more efficiently and successfully, but they also feared they might suffer the consequences for not completing the tasks (they

might fail exams, miss the study year, etc.). The reasons for the positive response are also indicated in the interview (see Table 3).

As for the students' performance, the results showed that there were statistically significant differences in the final test conducted during COVID-19, but not in the mid-term exam. This means that the students achieved better results in the final exam in the spring term (COVID-19) than in the autumn (non-COVID) term. On the other hand, their mid-term exam results in both semesters were similar. The reason for better results in the final exam might be the fact that the learning process was conducted in online environment with adapted teaching approaches which encouraged greater academic participation and continuous learning, but also the fact that the final exam was done in the traditional environment. This fact is confirmed by the students' answers in the interview (see Table 3) in which the traditional classroom is described as a much more suitable, reliable and comfortable environment for students' evaluation. Almost the same results obtained in mid-term tests in both semesters may be explained by the fact that despite the greater students' participation in COVID-19 period, which was supposed to lead to better results than in the non-COVID period, the students in COVID-19 period were generally repelled by the online test format, virtual environment and the lack of interaction with the teacher during the evaluation.

Given the fact that this research is based on a small corpus analysis and therefore considered a case study, we believe that the observations presented may be used as a starting point for further research on learning behaviour in extraordinary situation.

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Review research paper

CAN CLOSE COOPERATION BETWEEN ESP/CLIL EXPERTS AND DISCIPLINARY TEACHERS IN HIGHER EDUCATION LEAD TO FOSTERING ENGLISH EDUCATION ENVIRONMENT

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Abstract. *Current challenges and issues are so complex that without a close, interdisciplinary and multidisciplinary cooperation it is very difficult or even impossible to solve and find innovative approaches to them. We are living in the era of big data, artificial intelligence and also virtual reality which are changing the paradigm of all our living including education. As far as communication within multidisciplinary and multinational working teams is concerned, English has become a preferable language that is used worldwide including academia and research. In non-English speaking countries Higher Education Institutions (HEIs) have faced very similar challenge how to foster establishing English Education Environment (EEE). Most of their students speak different language and their level of English competence differs. Likewise, disciplinary teachers' (DTs') English competence and readiness to teach their courses in English vary. This contribution describes the project (Visegrad+) of HEIs from Slovakia, Hungary, Poland, Albania and Serbia, intended to study if Content and Language Integrated Learning (CLIL) and close cooperation between ESP/CLIL experts and DTs can result in effective English learning-teaching environment. The main project outcome – web platform for ESP/ CLIL and DTs communities is presented. Finally, as far as interdisciplinary teacher cooperation is concerned, some observations during COVID19 pandemic are illustrated.*

Key words*: English Education Environment (EEE), interdisciplinary cooperation, internationalisation of Higher Education (IoHE), CLIL in Higher Education*

1. INTRODUCTION

The issue of the internationalisation of higher education has been resonating across the academic sector for several decades. The growing pressure of globalization has even accelerated this process across the world. The internationalisation of the higher education environment enables institutions to meet the set goals. Higher education institutions (HEIs) have been operating in different social, geopolitical or educational contexts and therefore the goals of internationalisation differ. The internationalisation of higher education is demonstrated in various forms such as: student and staff mobility, internationalisation at home, off-shore campuses, dual degree study programs, network international cooperation, project collaboration, international research centres and the others.

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Kolesnikov et all (2019) also describe and study the growing phenomenon - international university research ventures (IURV). HEIs also differ in their motivation to internationalize the processes. Some of the universities might be driven by revenue, others by prestige, building an international environment for sharing knowledge and experience or by diversifying the educational environment. Building an international environment in various forms also assumes a common communication base. Currently, English is the hegemonic language tool used for this purpose. It can be said that the setting of the international environment in the already mentioned areas is the same as to set up an English educational or cooperative environment. This paper focuses on internationalisation at home, where HEIs try to set up an international education environment for students whose mother tongue is not English. Fostering internationalisation at home requires dealing with the students who have applied for programs taught not in English and they do not have to be willing to study in English and be an active part of English Education Environment (EEE). Harrison (2015) states that "home students across the world are often found to resist intercultural group work and generally to avoid contact with their international peers, leading to concerns about unequal access to transformative experiences and powerful knowledge".

In Slovakia, most universities provide study programs in the Slovak language. Some medical and business study programs are offered and provided in English in the environment with real international students. In a quick survey conducted at MTF STU 3 years ago, we investigated the students' willingness to study disciplinary courses in English. Most of the students declared their natural fear of English and were more diligent to study the courses partially taught in English. Therefore, we started considering CLIL (Content and Language Integrated Language) as a potential approach for setting English Education Environment to foster the process of 'internationalisation at home' at our faculty. CLIL application into disciplinary courses requires a close cooperation with disciplinary teachers in HEIs, as ESP/CLIL experts cannot cover professional fields so deep as disciplinary teachers do. However, disciplinary teachers can be lost without any didactical and linguistic assistance of ESP/CLIL experts in delivering English education environment effectively. Using CLIL approach means to have essential knowledge how to implement its main dual principle – teaching and developing content and language at the same time. It seems that disciplinary teachers and ESP/CLIL experts are entirely dependent on close cooperation. How such cooperation can look like and if it brings the required results is the focus of investigation in one Visegrad+ project called "CLIL-Higher Education Teacher" (CLIL-HET) that will be described and explained in this contribution.

2. CLIL IN HIGHER EDUCATION

The EEE setting varies from country to country, and even from university to university. Some HEIs offer full study programs in English and require an appropriate level of language competence. Level B2 according to the Common European Framework Reference of Languages (CEFR) is the minimum for admission to these types of universities, but most of them require C1 level of the English language competence. Most of such HEIs are established in English-speaking countries or their offshore campuses around the world. They have enough many teachers who speak English as native users. The students applying for these types of HEIs are motivated to study in English, as these are mostly prestigious schools. Diplomas

from these schools open up opportunities for better paid and more attractive positions on the labour market. In these case English is used as a communication tool/medium for educational process. Can CLIL foster accelerating the process of internationalisation, in other words, setting up EEE in the artificial conditions of HEIs, where most students do not speak English to the required level - so that they can study entire study programs in English? At the same time, some disciplinary teachers miss sufficient level of English as well. Last but not least, most academic staff do not have the didactic-pedagogical education needed to implement CLIL. Close interdisciplinary cooperation sounds as a solution, doesn't it?

2.1. Dual principle of CLIL

The above-mentioned dual principle is the most crucial principle of CLIL approach in the effectively set CLIL environment students should develop disciplinary knowledge and language competence at the same time. Historically, the first teachers who started using CLIL in their lessons were language teachers. They were those proactive professionals, who saw the potential of this approach. First pilot projects were mainly done on primary and secondary level of education. Many research studies have been conducted on CLIL and its impact on students' language improvement both in the subjects and in the language used within CLIL lessons. Other studies dealt with teachers and their trainings how to implement CLIL into lessons effectively. We could see some attempts to have a unified procedure for CLIL implementation into the education, however, as we have found it out in our ERASMUS+ project, it is not possible, as there are many variables that should be taken into account. Education systems vary around the world and even there exist many differences on regional, local, institutional levels.

2.2. Disciplinary teachers in CLIL environment

Although language teachers (ESP experts) seem to be pioneers in CLIL application into their lessons in higher education utilising content from specific disciplines in their classes, they usually do not have sufficient degree of knowledge in any subject that are taught by disciplinary teachers. Moreover, they naturally focus on linguistic features of language, so dual principle of CLIL is not in balance. On the other hand, disciplinary teachers are experts in their own fields, but a few of them are also experts in English didactics or CLIL approach. Setting an effective CLIL environment (in another word EEE) requires either teachers with double degree (in discipline and in English didactics) or close cooperation between ESP/CLIL teachers and disciplinary teachers in the institutions. Contero et al. (2018) stated some uncertainty of disciplinary teachers they expressed in their study, specifically in linguistic awareness and scaffolding in CLIL lessons. They were not sure if they set the dual principle of CLIL in a perfect balance, if the language was integrated in their lessons effectively.

2.3. Interdisciplinary cooperation

To have dual principle of CLIL in balance close cooperation is requested. Morgado et. al (2018) studied and described "in-tandem" teaching, which can bring novelty into students' learning and also contributes to the developing teachers' teamwork, collaboration and solving problem in English. Reitbauer et al. (2018) suggest using the cognitive load theory while CLIL is implemented into education and recommended language specialists guide

disciplinary teachers to help them accept the fact, that every teacher in some way can be a language teacher. They think "CLIL integration will become more effective and lead to better learning outcomes, since awareness of the respective teaching methodologies for content and language, as well as proper understanding of the functions of language and the human cognitive architecture." Wilkinson (2018) reflects several contributions on English as a Medium of Instruction (EMI), ESP/EAP (English for Specific Purposes, English for Academic Purposes) and CLIL/ICLHE (Integration of Content and Language in Higher Education) in his paper. He perceived collaboration between subject specialists and language teachers as "one of the more challenging aspect of course design, implementation and assessment". He also called for "explicit training in methodology of teaching content through English" and emphasized that EMI programmes reshaped teacher identity. Leshchenko et al. (2018) declare that "pure CLIL is not enough sufficient without ESP support." They highlighted two possible solution for designing an effective CLIL environment: close collaboration between content and language teachers in higher education and combination of CLIL classes with ESP classes for students.

2.4. CLIL trainings for academic staff

As far as teachers in higher education are concerned, most of them have no knowledge of branch didactics or general pedagogical education. Despite this fact, one of their main tasks is education. They often become good teachers after many years of practice. Regarding the need of special CLIL trainings for disciplinary teachers, we should also consider some didactics and pedagogical issues. Bucker et al. (2013) in their study about a two day seminar "Academic Teaching" for doctoral students say that "every university teacher has to come to conviction how he wants to place himself with regards to his research and teaching duties. It should be the mission statement for centres of didactics to deliver the message that neither the teaching should be neglected to strengthen research, nor that research should be abandoned in the favour of teaching."

Disciplinary teachers should have the opportunity to be educated not only in CLIL approach but also in general didactics and pedagogy while they are preparing for CLIL application into their classes. Hillyard (2011) introduced models for CLIL trainings and what should be taken into account while a CLIL course for beginner teachers is being designed.

3. CLIL – HET PROJECT

We have been investigating CLIL approach in different educational contexts for several years. After finishing the ERASMUS+ project called "Transnational exchange of good practice among European Educational Institutions". One of the findings was the fact, that CLIL application differs depending on the level of education, national or local education systems, school management support, teachers' willingness to implement CLIL approach and others. However, one crucial condition must be met while CLIL is being applied – following the dual principle of CLIL - setting an educational environment that supports the development of content knowledge and language competence at the same time. There is no unified methodology on how to do that. The observations of CLIL lessons were done in primary and high schools. Since the end of the project, we started considering CLIL a potential approach for enhancing English education environment in

HEIs. The initiative for fostering the process of internationalisation using CLIL and close interdisciplinary cooperation came from ESP specialists at MTF STU, who addressed the colleagues in other countries (the Czech Republic, Hungary, Poland, Serbia and Albania) and submitted the project CLIL-Higher Education Teacher (CLIL-HET) in 2019. After approval, there was the plan to finish it till June 2020, yet due to COVID 19 pandemic it has been prolonged till June 2021. Therefore, we cannot provide any project findings in the contribution. Nevertheless, we will describe our aims, planned outcomes and features of the web platform clil-het.eu that has already been built.

3.1. Project Aim

The project CLIL-HET is aimed at building an online space for grouping two communities of specialists: disciplinary teachers (DTs) and ESP/CLIL experts. The space is provided within the web platform www.clil-het.eu. One of the objectives is to support close cooperation between these two communities not only on the national level but also on the international one. The international cross-institutional cooperation between DTs and between CLIL/ESP experts is fostered as well. The platform offers the space for sharing knowledge, experience and best practice in setting EEE in V4 countries and Western Balkan countries. The platform is open for the experts from all HEIs who are willing to contribute to the process of internationalisation specifically – 'internationalisation at home'.

3.2. Project Outcomes

The project CLIL-HET comprises three major outcomes: Open Source Digital Platform (OSDP), Didactic programme for disciplinary teachers (DP-DTs) and Identifying linguistic weaknesses (ILWs). One project event is planned with the current date in January 2021. It will be the seminar "ESP and CLIL – current drivers of HEI internationalisation" for both communities (DTs and ESP/CLIL experts).

3.3. OSDP - web platform

Open source digital platform (www.clil-het.eu) offers online space for DTs and ESP/ CLIL experts to collaborate locally, nationally and transnationally to foster internationalisation process of HEIs in V4 and WB (Western Balkan) countries that enables incoming and outcoming mobility to increase. The platform consists of several sections: *project corner, didactic corner, research corner and community corner*, all with their own features. The didactic corner is divided into two subsections that are devoted mainly to DTs. The Didactic programme for disciplinary teachers (DP-DTs) was designed to provide essential knowledge on CLIL approach, English didactics and CLIL lesson planning. The DP-DTs is the result of the close cooperation of ESP/CLIL experts from all project partners. The second subsection is the place for uploading teaching materials for CLIL activities/seminars/lectures from various disciplines. This bank of sources is being built currently. There will be a guide on how to set English education environment (EEE) to assist DTs at setting such an environment effectively.

Community corner meets the objective of building a place for the networking of two communities (DTs and ESP/CLIL experts). Each member has their profile with the information about professional specialization and can search for someone who would like to cooperate with within the communities using and setting the filter features.

Research corner offers the latest contributions to current research in the field of internationalisation of HEIs, CLIL implementation in higher education, ESP/CLIL and

disciplinary teachers' cooperation. The monograph with the project results and some recommendations for setting EEE in higher education using CLIL will be an integral part of the Research corner. This corner also consists of the items of the project outcome ILWs.

3.4. ILWs – Identifying Linguistic Weaknesses

The process of delivering the project outcome ILWs has been started. ESP/CLIL experts involved in the project have designed the language diagnostic test for DTs, and the questionnaire has been uploaded into the web platform. DTs, at all partner universities, have been addressed to go through the test and the questionnaire to collect the data on their readiness for setting EEE from a language perspective and also their perceptions on teaching in English. CLIL lessons/activities are being planned by the DTs who participate in the project. It is being done with the assistance of CLIP/ESP experts. The CLIL lessons/activities will be observed during the current term either in an online or offline environment according to the regulations that are relevant to the COVID 19 pandemic situations in each partner institution. The data gained from the questionnaire, the language diagnostic test and the observations will be processed and interpreted in the findings report which will be a part of the research section in the OSDP. The results achieved from the ILWs outcome are planned to be used for the next international project with the aim at designing linguistic, supportive programme for DTs and for students to soften their natural fear from teaching and being taught in English and at the same time to assist them in improving their language competence.

5. Conclusion

Enhancing internationalisation process in HEIs in which there are mostly non-English speaking students and academic staff, is based on setting EEE effectively utilising human sources with their language competence and their willingness to participate in this process. CLIL /ICLHE seems to be an appropriate approach to start the process of EEE settings. The main stakeholders in the process come from two communities: ESP teachers and disciplinary teachers. Their close cooperation can soften the doubts of disciplinary teachers in their linguistic readiness for setting EEE. It can enable them to understand essentials of English didactics. The interdisciplinary cooperation can flourish if there are also some CLIL experts who can design courses for disciplinary teachers to assist them to set EEE effectively. Mutual cooperation can bring benefits not only for those experts involved in setting EEE but also for students, who can study and develop English in ESP courses and in CLIL classes from various disciplines. Alhasani and Stojković (2017) believe that ESP and CLIL classes, these "two English teaching approaches can complete one-another and finally guarantee effective and rapid English language acquisition tailored for all disciplines without further cramming the university curricula."

CLIL/ICLHE is seen as not only a gate for enhancing the internationalisation of HEIs, but also for managing education in multilingual environment. (Mammadova, 2016; Wilkinson, 2018). Cooperation and shift in teachers' roles in CLIL environment are the necessities (Hurajová & Luprichova, 2015; Hurajová, 2015; Hurajová, 2016).

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