The Properties Defining Teaching Materials for English Language Courses for IT Students in Serbia

Svojstva koja definišu nastavne materijale za kurseve engleskog jezika za IT studente u Srbiji

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Abstract— **The results presented in this paper are a part of a much more complex mix-method research on the needs of IT students in ELT. The paper reports on the properties defining the teaching materials suitable for IT students in ELT in tertiary education. Since English language is an essential tool for IT students to gain professional knowledge and to grow into competent individuals in their field, a rather different approach should be utilised in order to fully assess and question their needs in ELT. The paper discusses on the properties of teaching materials for IT students within the framework of English language courses for IT students that has been defined by the research. The authors want to define teaching materials suitable for IT students for mainly two reasons: to help the ones with insufficient language knowledge to reach the satisfying one and to equip the IT students for the target situations in English language that they may find themselves in during studies and upon finding a job. The results presented in this paper can be valuable for all ESP teachers, especially the ones teaching to the students at technical faculties.**

Keywords – *ESP, Information Technologies, tertiary education, the needs analysis, grounded theory, properties, teaching material;*

I. INTRODUCTION (*Heading 1*)

The role of English in the fields of science, engineering, information technology, and business is ever increasing. Consequently, so are the demands on ESP practitioners to serve the needs of students and professionals in these fields to conduct their studies, research, and business in English on an international scale (Porcaro, 2013). Teaching materials are a key component in most language programs. Whether the teacher uses a textbook, materials specially prepared for target group or institution, or his or her own materials, instructional material generally serve as the basis for much of the language input learners receive and the language practice that takes place in the classroom. IT students differ from other technical students in at least three ways: (1) they acquire domain content vocabulary through domain content courses from the very beginning of their studies; (2) they are highly aware of the fact that the whole world is their labour market and some of them enter it during their studies and (3) they love watching and reading various contents in the field of fantasy, science-fiction and techno thrillers. Due to the stated, they deserve special attention concerning learning materials and English language courses framework. In this paper, the features and qualities of ELT and ESP materials will be addressed first, afterwards the research context will be provided pointing out the methods of grounded theory that contributed to the emersion of IT teaching materials properties and gave birth to the taxonomy of IT teaching property materials put in the context of English courses context. In the end concluding remarks will be provided.

II. THEORETICAL FRAMEWORK

A. MATERIALS IN ELT

Instructional materials can take many forms (Richards, 2001:251): (a) printed materials such as books, workbooks, worksheets, or readers; (b) non-print materials such as cassette or audio materials, videos, or computer-based materials; (c) materials that comprise both print and non-print materials such as self-access materials and materials on the Internet. In addition, materials not designed for instructional use such as magazines, newspapers, and TV materials may also play a role in the curriculum.

Cunnungsworth (1995:7) summarizes the role of materials (particularly) in language teaching as: a resource for presentation materials (spoken and written), a source of activities for learners practice and communicative interaction, a reference source for learners on grammar, vocabulary, pronunciation and so on, a source of simulation and ideas for classroom activities, a syllabus (where they reflect learning objectives that have already been determined) and as a support for less experienced teachers who have yet to gain in confidence;

In both materials development and classroom teaching the goal is to develop a sequence of activities that leads teachers and learners through a learning route that is

appropriate level of difficulty, is engaging, that provides both motivating and useful practice (Richards, 2001:262-3). Furthermore, Rowntree (1997:92) elaborates on the qualities of good teaching materials. He states that materials should arouse the learners' interest, remind them of earlier learning, tell them what they will be learning next, explain new learning content to them, relate these ideas to learners' previous learning, get the learners to think about new content, help them to get feedback on their learning, encourage them to practice, make sure they know what they are supposed to be doing, enable them to check their progress and help them to do better.

If a teacher is in a need or in a situation to develop (instructed) material for his/her classes Richards provides a checklist for (low-speaking students) (2001:264). Actually, he developed a check list of the qualities each unit in the materials should reflect: give learners something they can take away from the lesson, teaches something learners feel they can use, gives learners a sense of achievements, practices learning items in an interesting and novel way, provides pleasurable learning experience, provides opportunities for success, provides opportunities for individual practice, provides opportunities for personalization and provides opportunities for self-assessment learning.

B. MATERIALS IN ESP

The primary distinctive feature of ESP courses is that the content taught in the course and the teaching approach used are based on the specific needs of the learners for the particular context in which they are learning. These needs are determined for each course and program through a needs analysis and the results of the needs analysis has a direct influence on the language learning materials used for instruction.

Major challenge for many ESP teachers is that they are often expected to deal with specialized areas of knowledge in which they have not been trained; for example, most teachers who teach medical or legal English are not themselves trained doctors or lawyers. This adds to the challenge of developing meaningful language materials that are both appropriate for language level and relevant to the learning context. Good ESP teachers successfully address this challenge with a thorough needs assessment that includes the analysis of the language typically used in these contexts, as well as by involving content specialists (through cooperation, collaboration, or team teaching) in the design of language learning materials for the specific purposes (Basturkmen, 2010). As Widdowson (1997) has observed, however, what is important is not whether a particular task or text is itself authentic. What is important is whether a learner does tasks or interacts with texts in authentic ways (see also Roberts & Cooke, 2009). The challenge is to identify, create or modify ESP materials that are both accessible to learners and help learners to develop the particular expertise they need to be

fully functioning performers in the contexts to which they aspire.

Dudley-Evans and St John list four reasons for using materials which seem significant in the ESP context area: as a source for language, as a learning support, for motivation and simulation and for references (Dudley-Evans & St John, 1998:170-171). For the context of our research all except the first one seem relevant to IT students. The first one is not relevant due to the nowadays expansion of English in all sources of media and modern communication meaning that English classes are not the mere source of language input for them. Nevertheless, the other three are equally significant. IT students need the given material to provide them with learning support which means that it should be reliable, consistent and to have some recognisable pattern because they can spend more or less time, depending on how much they were instructed, self-studying. Furthermore, materials they are given should stimulate and motivate them; should be challenging but yet achievable; should encourage fun and creativity and should offer new ideas and information while being grounded in the learners' experience and knowledge so that the purpose and the connection to the learners' reality need to be clear. Reference notion concerning materials is important because many ESP learners have little time for class contact and rely on the mix of classes.

The core materials are usually paper-based but, where it is possible, ESP teachers also use audio and video materials, overhead transparencies/projectors, computers and, occasionally, other equipment or real objects. Recent ESP teaching materials that address a wide range of professional areas tend to assume that teachers have full access to various technologies and that students are able to acquire broader language skills outside class although this may not necessarily be true of all contexts (McDonough, 2010). The impact of ICT tools in language teaching is enormous so each teacher should consider and take into account how traditional learner needs may manifest themselves differently in a technologically enhanced environment. With the newer technologies, direct teaching has become even more important. Newer technologies have tended to integrate different forms of environments. Many environments allow video, audio, and textual communication to occur at the same time. Some of the newer communication tools allow participants to conduct backchannel conversations while a speaker is giving a presentation, which has occasionally led to embarrassing situations. While many language learners may be familiar with these technologies, their use for the specific goals of the ESP classroom may not be as familiar. Therefore, directly teaching these technologies may again be necessary. Students and teachers may need to create blogs and Facebook pages, as well as to communicate with each other via Twitter and email, in order to learn the discoursal strategies most suitable for use with these technologies.

III. METHODS

The research was conducted from November 2011 to April 2012 at the IT departments at the following institutions of tertiary education in Serbia: Faculty of Organizational Sciences and Faculty of Electrical Engineering in Belgrade, Faculty of Technical Science, Faculty of Science and Higher Technical School of Professional Studies in Novi Sad, Technical Faculty "Mihajlo Pupin" in Zrenjanin, Faculty of Technical Science in Čačak and Higher Technological School of Professional Studies in Šabac. The aim of the research was to elicit the needs related to four basic skills of IT students in Serbia and to provide a new framework for the organization of English Language Teaching at IT departments in Serbia.

The subsample for the interview included 34 participants (10 professors, 10 assistants and 14 students). The author included these three subsamples in the research because she was interested in gaining different perspectives on the needs of IT students in ELT in Serbia. The findings presented in this paper are just a small part of a complex research that investigated the needs of IT students concerning listening material in English that informants find preferable and useful for language and professional development of IT students.

The author used a structured interview that had seven questions dealing with various needs of IT students in ELT in Serbia in the context of four language skills and English language courses organisation at IT departments. The properties defining teaching materials for English Language Courses for IT Students in Serbia emerged as a 'side product' of this analysis. To analyze them the author followed some of the techniques provided by Kathy Charmaz, one of the followers of grounded theory (Charmaz, 2006; (Corbin & Strauss, 2008). The main techniques used to analyze the interviews were Initial Coding (Line-by-Line Coding), Focused Coding, Constant Comparison and Memos. The categories that emerged are discussed by the means of properties that define them.

IV. RESULTS

One of several contributions of our mix-method research that was set to investigate the needs of IT students in ELT in tertiary education is the list of properties defining the needs of the target population. The list that was formed was further categorized in three sub lists: (1) properties defining the needs considering EL courses organisation; (b) properties defining teaching materials and (c) the properties defining the methodology appropriate for EL courses for IT engineers.

In order to comprehend the given results concerning materials properties the framework for EL courses for IT students in Serbia will be presented (see Figure 1.) and the materials properties will be defined and elaborated in the context of presented course framework (Table 1.). As we can see in the Figure 1., at the very beginning of their studies, students should be tested with the aim of their English level knowledge being assessed that can further determine the path of English courses they should take accordingly. The students having the knowledge at B2 level and higher should start their course in III or IV semester starting with EAP and continuing

to the end with Business Communication course and Professional English course. The students below that level should take one, two or all three intensive courses of General English (A1, A2 and B1) depending on their level.
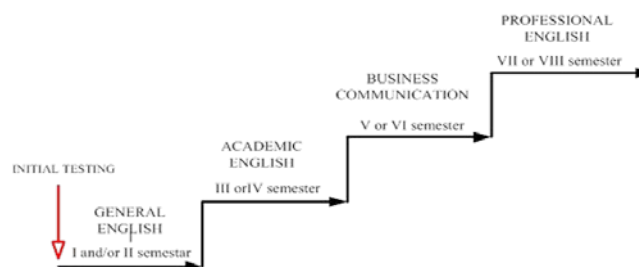

Fig. 1. The Framework of English Language Courses at IT Departments in Serbia

The properties defining teaching materials for IT students that emerged are *availability, domain content, L2 text superior quality, the speed and quality of information, interesting and close topics, various accents and interrelated skills*. In the *Table 1*., these properties are listed altogether with their relevance to the courses provided in the *Figure 1*. (General English Course, English for Academic Purposes, Business Communication Course, Professional English Course).

property	course it refers to
AVAILABILITY	all
DOMAIN CONTENT	BC PE
L2 TEXT SUPERIOR QUALITY	BC PE
THE SPEED AND QUALITY OF INFORMATION	PE BC
INTERESTING AND CLOSE TOPICS	GEC
VARIOUS ACCENTS	all
INTERRELATED SKILLS	all

The properties listed are defined respectively and discussed in respect to the relevant literature.

The property of **availability** refers to teaching materials in all the courses in IT language courses framework. This implication by IT students and their domain content professors and assistants to make as much materials as it is possible accessible anytime, anywhere is not surprising considering the virtual world students live in on their regular daily basis. The preference of non-print to print materials implies that they can access the materials from home, bus, cafes and use it in the classroom in that way too. There is the second layer to this notion of availability and that is self-paced and guided learning that could be offered through blended courses environment for all the listed courses. The notion of availability in education has been present for some time implying flexible and collaborative learning modalities, anywhere and anytime, at the same time ensuring close relationships between learning in the workplace, at home, at school and/or in a community by anyone on any subject as in the Tim Kelly's 4A vision: "anywhere, anytime, by anyone and anything" (Kelly, 2005 in Holotescu & Grosseck , 2011:175, Laurillard, 2007)

The domain content property refers to Business Communication and Professional English courses although it can be applied to some extent to EAP course as well. The Professional English oriented materials should be of domain content what implies that it should address the professional topics students learn and read in their IT subjects. In the context of ESP materials at technical faculties, domain content materials in ESP classroom have been favoured to non-domain ESP materials (Bogdanović & Mirović, 2013). Authenticity is one of the central factors for designing learning materials in ESP. Ellis (2003) advocates that the degree to which the materials reflect the activities in the society determines the authenticity in foreign language education. Previous research (e.g., Field, 1998; Herron, Morris, Secules, & Curtis, 1995) has shown that authenticity in foreign language education improves students' acquisition of foreign language skills. In addition, the use of learners' background knowledge to help them to process information from authentic materials is suggested to have a beneficial effect, especially for listening comprehension (Anderson & Lynch, 1988).

L2 text superiority property relates to two courses Professional English and Business Communication courses. However, as it was the case with previous property, to certain extant this property can refer to EAP as well. Being in the field of Information Technology, whether as a student or as a professor, one has to be well-informed in order to keep up with technology revolution. The experts in IT field, as well as students, point out this superiority property of materials in English. There are two features of these materials they highlight: text organisation and higher level of accuracy and comprehension of the core subject matter than in translated texts (Petter, 2007). However, in our research, professors and assistants report on the problems they face when they give

supplement materials in English to certain number of students due to their poor English. As a consequence, they are not able to comprehend the materials so they have to rely on the limited input of professional texts or textbooks in Serbian (Dabić, Ćirković-Miladinović, & Suzić, 2013).

The property of **good speed and quality** relates mainly to Professional English course and Business Communication course, but it can refer to all the other courses although it was not specified by the informants but just concluded by the researchers. How this property reflects the needs of IT students and specialist can be viewed on the example of online tutorials, which can provide quick guidelines for a new application, software etc. If a student took a paper version, they have to read at least 50 pages to grasp the same knowledge they can acquire via an online tutorial. What is more, watching a video and listening to the explanation enable easier comprehension of the process described as well as longer retention. Furthermore, it can be stated that students first impulse reaction in the case of searching for specific information or way to solve the problem are online written or video contents rather than regular paper books (Dabic, 2014b). These data are not surprising considering the students included in the research belong to the generation of digital natives (Prensky, 2010).

Interesting and close topics property refers to GE courses because the informants described the content of GE courses too plain and not engaging. Although the generations attending faculties these days have been exposed to English language very early throughout various ways/mediums, there are still students that come with poor knowledge that results in a classroom with mixed-ability students. The students entering faculties with poor language knowledge see the roots of their displeasure in their previous schooling explaining they were exposed to traditional ways of teaching oriented towards grammar and translating in that way minimized the possibilities of speaking and writing skills development (Ćirković-Miladinović, 2014; Jerković, 2009; Lazović, 2010; Jovanović, 2012). Some of them state to be experiencing the same situation in their tertiary education (Pinter, 1995; Miškulin-Ĉubrić, 2002). They describe interesting and close topics as a means to help them gain speaking and writing fluency and accuracy. Students with higher level of language knowledge also see the need to develop their productive skills, but they see extra-curriculum activities such as classes where they can talk about topics interesting and close to them for the sheer purpose of maintaining their level of English language or placing it on a higher level. One of the greatest advantages of this kind of materials is that it can be chosen according to students' interest and be watched in their free time and later discussed in the class where it can be analysed, discussed and can generate tasks that incorporate other skills development. Opportunities are numerous. These findings correspond to Krashen's belief (1985) that classroom setting is insufficient and that learner should seek additional foreign language input on their own. It is particularly true for the settings where learners have few opportunities to use foreign languages outside the classroom. In this case, mobile devices, laptops, PADs can be effective in providing additional learning

opportunities (Chinnery, 2006; Naismith, Lonsdale, Vavoula, & Sharple, 2004; Masanori, et al., 2011; Roschelle, 2003).

Various accents property refers to all the courses listed in the framework. Concerning the development of the listening skill in EST course, and generally in ESP, the focus is placed on the development of authentic materials that reflect various accents of English speakers all over the world. Listening to a mixture of accents and different language structures used by non-native speakers can scaffold the understanding of the video and audio contents students follow in order to gain the knowledge from their discipline. Besides the period of attending university, acquiring the skill of comprehending non-native speakers from various parts of the world can be valuable later, when they start working as freelancers or in IT companies, in order to communicate effectively with business partners from all over the world (Badger, 2012; Dabić 2014b).

Interrelated skills property refers to all the courses in the provided framework. The informants in the research, out of all three subgroups, listed activities for the simulation of target situation activities that incorporate and employ more than one skill. For example, simulating work on a group project can be done by: summoning ideas for drafting a project, reading the literature for the project or watching audio-visual materials on the required topic, writing the very project and the documentation for the project, presenting the project to the professors and colleagues and answering the questions posed by the audience (Dabić, 2014b). Besides the specific task-based activities such as a group project it is important to point out the importance of real-time communication that very often employs more than one skill (e.g. note taking and translation) (Đorović, 2011). Furthermore, the classroom that yields results reflects the holism of the whole world language inviting language teachers to remote from a separate approach to developing language skills and apply a wider repertoire of holistic activities with the aim of providing more effective language learning environment (Thomason, & Thomason, 1995).

V. CONCLUSION

The aim of his paper was to list and define the teaching material properties for IT students in the context of the provided framework for English courses organization at IT departments in Serbia which can be applied to a wider context. The properties we have found relevant in this context are: interesting and close topics, availability, domain content, L2 text superiority, the speed and quality of information, various accents and interrelated skills. Having all that has been said and discussed in this paper in mind, the following can be concluded: (1) there are three properties that refer to all the courses (availability, various accents and interrelated skills); (2) only one property refers to General English courses (interesting and close topics) and (3) three properties refer to BC and PE course (L2 text superiority, domain content speed and quality of information).

Despite the fact that we have been able to distinguish the relevance of each property to the courses provided, when we take a closer look at the elaboration and argumentation of the each property, we can see that all of them have an underlying context of the students' need to be adequately equipped for activities required to be done in English for their major subjects and target situations they expect to find themselves in at future job positions.

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