

Communicative patterns for IT professionals as means of mastering communication skills

S V Symonenko¹, N V Zaitseva¹ and V V Osadchy²

¹ Department of Foreign Languages, Dmytro Motornyi Tavria State Agrotechnological University, 18 B. Khmelnytskyi Ave., Melitopol, 72312, Ukraine

² Department of Computer Science and Cybernetics, Bogdan Khmelnytsky Melitopol State Pedagogical University, 20 Hetmanska Str., Melitopol, 72300, Ukraine

E-mail: asimonenko@ukr.net

Abstract. The paper deals with the aspects of English communicative pattern implementation into IT professional training. It is emphasized that the communicative pattern usage enhances prompt and fluent profession-related real-life communication and it is the essential part of education of IT specialists. Peculiarities of communication in the IT environment are highlighted. Considering typical situations and issues of communication the guidebook which contains recommendations and communicative patterns for IT undergraduates both for oral and written communication has been developed. In order to evaluate the purposefulness of the guidebook implementation in IT specialist training, two surveys (among lecturers and among undergraduates) of six universities have been conducted. The guidebook has proved to be suitable for practical classes, independent learning and laboratory works in humanities and profession-related disciplines. The survey conducted among English teachers has proved the increased interest, higher motivation and willingness to participate in communicative tasks crucial for specific employment.

1. Introduction

Ukrainian IT professionals successfully compete with specialists from other countries in the European and world labour markets. Software development, for instance, is a quite complicated process, so software products are rarely created by individual specialists, software engineers have to work in groups and teams [1–4]. In their professional activities IT professionals must ensure communication with customers, colleagues, project managers, board and team members in their own team, directly and remotely, so communication in a native language or foreign languages is an essential part of the productive work of software engineers.

The situations when IT professionals work in an international team, which is formed for a specific project, are quite common. The main grounds for selection of specialists for such a project are not the geographical location of all participants, but correspondence of high qualifications, logic, analytical, mathematics and problem-solving skills, professional knowledge and soft skills of a particular specialist to the project.

2. Peculiarities of communication in the IT environment

Numerous studies on distinguishing features of the current generation of students and young professionals have been presented in many international and national studies: Net Generation



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Survey [5], The Net Generation: A Strategic Investigation [6], Grown Up Digital [7], Nielsen NetView Audience Measurement Survey [8], and Technological preparedness among entering freshmen [9]. Summarizing the results of these studies, R. Berk had identified twenty common characteristics of this generation of students and young professionals [10]:

- technological savvy – the modern generation is quickly mastering new technologies or digital devices; they expect that information will always be at hand;
- dependence on search engines – students begin to search for information using search engines, re-evaluate their skills in finding and evaluating information;
- interest in multimedia – young people are accustomed to entertainment, speed, aggressive sound and visual accompaniment of any information, prefer interactive media to passive television;
- “creators” of Internet content – even schoolchildren and humanities students develop websites, publish blogs with photos and original creative works, upload their own videos to YouTube every day;
- receptivity to inductive teaching methods means that students prefer practice over oral or written instructions;
- multitasking in everything – young people are able to perform several tasks simultaneously;
- “visual” communication involves the total visualization of information and the use of images, animated images, stickers and other features of messengers and social networks to reflect feelings or their own attitude to a particular event;
- emotional openness – students easily express their feelings, they are open to meeting new people, share personal information and publish their stories online on blogs, wikis, social networks, magazines and other social media;
- teamwork and cooperation – representatives of this generation work better in a team compared to representatives of previous generations;
- electronic record keeping – young people work quickly with the keyboard, type notes, messages, essays and term papers on computers, laptops or other digital devices.

Information technology as the least communicative field is rightly considered to be one of the most resource-intensive and complicated professions. IT specialists work not only with the newest technologies, but predominantly they are to interact with numerous people in the company and outside the company (colleagues, managers, customers) to create a successful product. The human factor along with the technical factor often becomes the reason of the low-quality software product [11]. Among other factors according to O. Titova and N. Sosnytska [12] intelligence, creativity, motivation, will, productivity and reflection are basics of engineering profession which is equally implied to information technology.

Since most of communication in the IT environment occurs with the use of information and communication technologies, it is obvious that specialists in such an environment communicate directly (“human – human”) or indirectly (“human – digital device – human”). Indirect communication is commonly more preferable for the IT environment as a specialist has to understand the task and implement it accurately. As we stated in our previous research, almost 90% of communication in the IT environment is indirect, that is, the asynchronous symbolic communication system as opposed to the verbal one is dominant [13].

In case of indirect communication an IT specialist receives a conventional message which corresponds to the corporate ethics and regulations. The response is based on the phrase patterns, which help to describe tasks and errors, get the formalized answer, fix the problem or follow the guideline in the message. In the event of direct communication emotions can prevent quick problem-solving.

Separately, the student vocabulary knowledge progress after scrutinizing the guidebook in the English for specific purposes course has been monitored. The average indices are presented in table 2.

Table 2. Vocabulary knowledge progress (average of 6 universities).

	Receptive knowledge	Controlled productive knowledge	Free productive knowledge
Module test results	78%	74%	67%

While checking receptive vocabulary knowledge students have been given short texts for understanding the meaning of the highlighted English patterns from the context and giving their precise translation. Controlled productive knowledge is tested in close tests and the positive grade means that a student is able to choose one pattern of four that fits the required meaning. Free vocabulary productive knowledge supposes speaking out freely and producing the right grammar and syntax forms in order to express the required meaning.

The second question of the survey has been the guidebook suitability for different learning activity types. Practical classes have been ranked first by 89% of the responders, due to the synchronous and dynamic nature of communication tasks involving the patterns. 82% of the surveyed lecturers have ranked the project activities in independent learning second (when one compiler or team partners deliver their self-study creative product). Laboratory works have been ranked third by 78% of respondents due to the reproductive activity nature when a provided algorithm is followed.

The third question of the survey among the universities’ teaching staff has contained the request to suggest related disciplines where the guidebook (possibly, with the emphasis on the Ukrainian language component) could be implemented. The suggestions included English for specific purposes, business English, English for scientific purposes, profession-related Ukrainian, management disciplines (e.g. the section of patterns for dealing with complaints), psychology and business Ukrainian (e.g. for studying intercultural aspects in professional environment).

The students learning from the guidebook have been asked to participate in the survey, too. The results of the self-evaluation of software engineering, computer science, computer engineering students are presented in table 3.

Table 3. The results of student self-evaluation of the English skill progress.

	Software engineering	Computer science	Computer engineering	Average
Vocabulary knowledge boosting	85%	89%	84%	86%
Spontaneous verbal reaction in profession-related situations	79%	82%	85%	82%
Acquiring new information	97%	96%	98%	97%

86% of all the respondents of the Google-form questionnaire have pointed out their English vocabulary knowledge improvement after completing the communicative pattern guidebook, 82% of respondents indicated increased readiness to spontaneously verbally react in profession-related situations, 97% of respondents pointed out acquiring a great amount of new information about verbal behaviour of potential English speaking counterparts. The student self-assessment results are completely in accordance with the module test grades which confirm the adequacy of the students' vision of the progress in English and awareness of the communication skills necessity in their professional life.

4. Conclusions

Facing the challenges of integrity into the multicultural professional environment current undergraduates in Ukraine are aware of the necessity to intensely improve their foreign language communication skills. This trend is more than urgent for prospective IT specialists who must overcome their psychological and language usage obstacles to communicate their professional intentions. They have to communicate with customers, colleagues, project managers, board and team members in their own team, directly and remotely.

Considering the template nature of professional tasks delivering communicative patterns is the most productive and effortless way of ensuring their verbal and symbolic activities. These patterns are logically complete balanced phrases to control the conversation, the use of a sequence of which leads to the desired result without losing and distorting the content of messages.

The analysis of distinguishing features of the current generation of students and young professionals, the peculiarities and types of communication within an IT environment, the aspects of successful communication has been conducted and considering typical situations and issues of communication the guidebook which contains recommendations and communicative patterns for IT undergraduates both for oral and written communication has been developed. The guidebook has been implemented into IT specialist training at six Ukrainian universities. Successive surveys have demonstrated the significant progress in the communication activities of software engineering, computer science and computer engineering students. The guidebook has proved to be suitable for practical classes, independent learning and laboratory works in humanities, in profession-related disciplines and, most of all, in English, business English and English for specific purposes.

The survey conducted among the English teachers has proved that focusing on the specific communication aspect with students majoring in introverted professions results in the increased interest, higher motivation and willingness to participate in communicative tasks crucial for a specific position. The described in the paper issue of motivating introverted students who prefer and aim at the "human – digital device" professional environment and avoid training people-oriented communicative strategies is a significant concern and an imperative for teachers to consider. Nevertheless, the average indices of all IT students and the current results of computer engineering students confirm the successful implementation of communicative objectives.

The results of the student questionnaire have substantiated the positive effect of training communicative strategies within the English course. More than 80% of all the student respondents have pointed out their English vocabulary knowledge improvement, increased readiness to spontaneously verbally react in profession-related situation and acquiring a great amount of new information about verbal behaviour of potential English speaking counterparts.

Communicative pattern usage for English skill mastering enhances prompt and fluent profession-related real-life communication and thus is the essential part of the productive work of IT experts.

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