

TEACHING BASIC OF PROGRAMMING WITH THE ELEMENTS OF SCRATCH – EVALUATION OF VBA PROGRAMMING COURSE FOR LOGISTICS STUDENTS

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Abstract:

Digital nations have become dependent on computer applications. One of the most important part of literacy in today's digital and connected world are the basics of computer applications development and usage, but also algorithmic thinking. Programmers, developers, analysts are very wanted resource in business, administration and educational organizations. Job portals contain a lot of well-paid job offers for developers, data scientists, knowledge engineers or robotic process automation developers. Still more and more specialists in these areas are needed not only by IT market but also other sectors of the economy. Therefore, schools and universities introduce many courses concerning process modeling, developing, programming and customizing applications used in management, finance, logistics or engineering. Programming seems to be quite difficult to learn, therefore several educational programming environments and the new easier languages like visual programming languages were developed, so that more people, not necessarily specialists, could create new IT tools and speed up development of the information society. The aim of the article is to present the role of visual programming languages like Scratch in encouraging university students to create algorithms and start programming. The paper presents the characteristic of Scratch visual programming language, the framework of VBA programming course with elements of Scratch. It contains also students' opinions about learning the basics of programming with visual programming language. In the main part of the article the author presents the results of the survey that was conducted at the beginning of 2019 on a group of Polish Master's students (n=119) The author's observation and students' opinions allow to conclude that Scratch is very easy to access and to use. It makes introduction to programming more enjoyable, helps to concentrate on the problem, solution structure, and the flow of the process. Scratch platform is not an ideal tool, however it allows for faster introduction of new elements of programming languages such as variables, loops, code blocks, objects. Finally, visual programming languages thanks to its easiness and quickly visible final effect (working application) encourages students to self-development in the field of computer programming. Performed research indicates also that business students notice the benefits of knowing basics of programming, they would like to attend basic programming classes. Students acquire knowledge and skills mainly performing instructions received from the teacher (86%) and watching video tutorials. The comparative analysis showed also some differences between various groups of students. Therefore, tools like Scratch can be successfully used to develop IT courses for non-majors. Many advantages make Scratch useful in introductory programming courses prepared for business students that frequently had no prior experience in the area of IT applications development.

Keywords: Scratch, logistics education, basics of programming, computer science teaching, IT course, survey, visual programming, introduction to programming, digital society, IT market, VBA, quantitative analysis