Game-based Training of Communication Skills in Requirements Engineering

Maris Dargis, Rolands Koncevics, Andris Silamikelis, Marite Kirikova

Institute of Applied Computer Systems, Riga Technical University, 1 Kalku, Riga, LV 1568, Latvia
{maris.dargis; rolands.koncevics; marite.kirikova}@rtu.lv

Communication and cooperation among stakeholders and developers is a critical factor for success in requirements engineering [1], [2]. Usually studies in this field just point to the problems, but a comprehensive set of tools or techniques for improvement of communication skills is not given. This study contains summary of research in which the authors use serious games approach [3], [4] for structuring the learning content for strengthening communicational aspect of requirements engineering skills. The Myers-Briggs Type Indicator® (MBTI) is used for stakeholder personality analysis in order to form basis for learning – how to improve communications and overall productivity in requirements engineering. The MBTI instrument is based on the theory of personality types described by Carl Jung and Isabel Briggs Myers and Katharine Briggs [5]. This theory states that many of the valuable differences between people are a result of natural preferences that everyone has for different ways of perceiving, or taking in information, as well as for different ways of judging and making decisions. If these natural differences can be understood and appreciated, working relationships can be improved. Theory can help with:

- Better understanding how people communicate with each other
- Identifying possible sources of misunderstandings
- Resolving or avoiding communication conflicts
- Developing a more productive working relationships

In synthesis of MBTI with serious game framework a tool can be developed for training communication skills in requirements engineering [6]. Military and emergency services were the early adopters of serious games for training. Nowadays serious games as training means are used in many different industries and are also utilized in universities and schools [4]. While the characteristics of common computer games and serious games are quite different, they both incorporate common game attributes, namely, backstory and storyline. Every game has a backstory upon which the game is based, and a story line that it follows, which can be referred as the rationale for the game play. Serious games offer an additional value to traditional learning materials and methods by allowing the student not only to learn, but also to apply the learnt skills in practice.

We propose the following concept of the game. The content on particular requirements engineering issues, such as knowledge to be acquired during business or systems analysis tasks can be incorporated in the backstory of the game. Different distributions of this knowledge among the virtual actors can be enriched by specific MBTI

categories-based knowledge delivery (speed, completeness, truthfulness), externalization, visualization, and structure patterns. These patterns can be incorporated in the storyline (see Fig. 1).

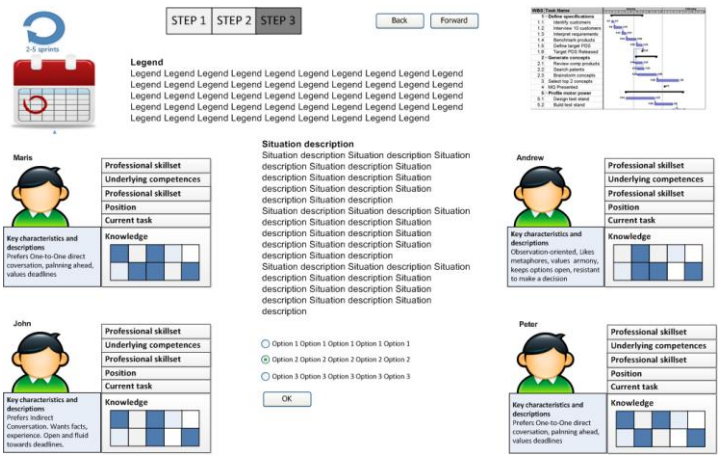

Fig. 1 Knowledge to be acquired distributed among different stakeholder personalities

Thus the game may help to train the skills to choose right approach for specific actor types (pure or combined categories), to recognize actor types, and choose appropriate requirements engineering approaches in a given situation. The game corresponding to this concept is intended as a tool for improving communication skills of business and systems analysts, and thus can be useful in training requirements engineers. Currently the game is at its conceptual development stage; the practical implementation of the game is a matter of further research.

References

1. Layman L., Williams L, Damian D., Bures H.: Essential communication practices for Extreme Programming in a global software development team, Information and Software Technology 48(2006), pp. 781-794 (2006)
2. Segal J. Software development cultures and cooperation problems: A field study of the early stages of development of software for a scientific community, Computer Supported Cooperative Work (CSCW) 18, Springer, pp. 581-606 (2009)
3. Serious Games: Online Games for Learning, Adobe Systems Incorporated, 2007.
4. Michael D., Chen S.: Serious Games: Games That Educate, Train, and Inform, Thomson Course Technology, PTR, 2006.
5. Hammer A. L.: Muers-Briggs type indicator work styles report, enhancing two-way communication in organizations, available at https://www.cpp.com/pdfs/smp261182.pdf (2011)
6. Niesler A, Wydmuch Gr.: User profiling in intelligent tutoring systems based on Myers-Briggs personality types, IMECS, pp. 144-149 (2009)