THE PROJECT LABOUR MARKET IN TOUCH: NEW NON-ROUTINE SKILLS VIA MOBILE GAME-BASED LEARNING

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Abstract: This 2 years project aims to spread an innovative approach enabling new generations of workers from business services SMEs to develop their crucial non-routine skills via mobile Learning. On the bases of the EU recommendations described in the document "New skills for new jobs", the partners will design an ad hoc mobile training environment teaching crucial non routine skills in a labour market, flexible and technological oriented way. The partners will design an ad hoc innovative m-learning kit for working adults about crucial "non-routine" skills, exploiting the new technologies of smartphones for creating open and mobile didactical environments.

Keywords: seriuos games, game base learning, mobile games, mobile phones

I. THE PROJECT INTOUCH

- The project Labour Market in Touch: new non-routine skills via mobile game-based learning
- is implemented from November 2010 until October 2012,
- involves people from 8 project partners in 7 European countries (SE, LT, IT, UK, FR, AT, BG),
- enables nearly 1600 person-days resources,
- involves more then 600 employees in more than 100 SME all over Europe
- is supported by the EC in the Lifelong Learning Programme .

This 2 years project aims to spread an innovative approach enabling new generations of workers from business services SMEs to develop their crucial non-routine skills via mobile Learning. On the bases of the EU recommendations described in the document "New skills for new jobs", the partners will design an ad hoc mobile training environment teaching crucial non routine skills in a labour market, flexible and technological oriented way. On the other side, SMEs consultants will be trained in order to further support the implementation process within SMEs. The new figure of m-Learning facilitator will be able to create open mobile didactical environments, to promote and support change within individual SME client environments.

The innovative aspect of Intouch project stands in its capability to face the problem of adult employees' difficulties, especially if working in SMEs, in developing the new skills for the future. This project will improve the competitiveness of the European system through an acquired capability to encouraging SMEs in promote learning in the workplace environment, through the creation of attractive m-learning games about non-routine skills (the most needed skill for the future) enabling learning everywhere and at any time, and creating the new figure of m-Learning facilitator, able to bring innovation within SMEs.

1.1. Backgrounds of the Project

The Cedefop analysis suggested that in 2020, almost three quarters of jobs will be in services, especially in BUSINESS SERVICES (An expanding labour market, increasingly dominated by the service sector). In the service sector, there is a clear tendency towards the broadening of the required skills portfolio linked to "NON-ROUTINE" tasks. This reflects the growing demand from employers for transversal key competencies, such as problem-solving and analytical skills, self-management and communication skills. (New skills for new jobs)

But the training offer must also consider the new logistical challenges faced by adults seeking further education (place-bound and busy people), spreading the potentialities of MOBILE LEARNING for providing more flexible pathways and an easier access to training offer. m-Learning is beginning to take off in the world of education, making able to learn at any time and place. But its use is limited to the context of formal learning, while SMEs have a huge amount to gain from it: shortness of time and need for pragmatic and immediately useful training. This project aims to spread an innovative approach enabling new generations of workers from business services SMEs to develop their crucial non-routine skills via m-Learning.

1.2. Impact

The partner organisations daily work in the field of training, counting on a network of members belonging to the target of InTouch. Such assumptions guarantee a real sustainability of Intouch. also after project conclusion assuring a real match between SMEs workers' upgrading needs and tools able to properly answer to such urgencies. All the partners will propose the adoption of the tools to the members of their own networks. The web site will be available on Internet also after project conclusion, linking together all the interested actors. Moreover, the web sites of all the partner organisations will contain a link to the InTouch website and to all the available information also after the project conclusion. The long term impact stands in the possibility, for the training and guidance consultants, and for the HR managers to use/adapt the tools to their working realities. Finally, the tools will represent a good practice to which draw inspiration in order to implement integrated company strategies finalised to the lifelong learning of workers.

II. Designing the Game-Models

In the course of the project the top 10 European skills for Competitiveness in the future business service SMEs have been identified. An ebook illustrating the top 10 crucial transversal skills for non-routine tasks management within business services SMEs according to the European employers and managers was issued in April 2011. Such skills will be translated into learning outcomes – defined in terms of knowledge, skills and competence (European Qualification Framework) needed by employees for performing non-routine tasks.

Based on the skills and learning outcomes 30 situational learning cases for competitiveness will be elaborated and a report describing the most crucial non routine tasks for competitiveness (3 for each identified skill) are designed.

2.1. Digital learning games

The reasons for using digital learning games are mostly due to their high motivating factor, which can make learning fun. Moreover, learning through games is consistent with the constructivist way of thinking that learning can only occur through active application of knowledge in task-based situations. Digital learning games can also promote the acquisition of strategic thinking and planning capability and strengthen decision-making skills.

In principle, there are many points of contact between the activities of learning and playing (Döring, 1997; Einsiedler, 1999, Flitner, 2004], which have also lead to intensive research of the potentials of computer and video games for learning purposes (Randel et al., 1992; Amory et al., 1999; Prensky, 2000; Garris et al., 2002; Gee, 2003; Aldrich, 2005). In addition to the advantages of digital learning games, their use in teaching is also associated with some limitations (Kirriemuir and

McFarlane, 2006). For example, it is often difficult for the teacher to assess whether a certain game is suitable for specific teaching material. Due to lack of time, teachers are often unable to familiarize themselves with the game. Furthermore, compared to other commercial computer games, digital learning games often feature too simplistic a design in order to trigger the required attention and intrinsic motivation on the part of learners. Due to the strong concentration of the game's plot on the learning material to be transferred, the playful character can be lost and the game can be perceived as boring. The overall complexity of the learning material is often difficult to transfer to a game. Consequently, digital learning games often concentrate only on the acquisition of one skill and hence fail to support knowledge transfer in its entirety. In conclusion, it must be noted that the use of computer and video games by learners hardly leaves room for cooperation and collaboration (Thomas, 2006), which can also result in a limitation of social competence.

2.2. Advantages of pervasive games

The basic idea is to use the potential of the mobile phone communication channel and combine it with the possibilities of digital learning games in order to create a new and improved learning environment. The concept of pervasive gaming lends itself to this purpose, in that the real world fuses with the virtual world (Walther, 2005). In this context, one can speak of pervasive game learning, an expansion of mobile game-based learning.

Pervasive games take place in the real world, and the player communicates with his fellow players and the remote control system via wireless technologies. Various communication channels are available for this, among them the mobile phone. Additional core technologies needed for pervasive gaming are portable displays, which render the digital content tangible in the real world independent of location, and sensor technologies, such as cameras, through which the status of the player can be ascertained (Benford et al., 2005). These technological prerequisites are fulfilled by modern mobile phones, which therefore offer an ideal medium for the execution of pervasive games.

2.3. Design decisions

Today's mobile phones are one of the few mediums that have high penetration rates for young people, the relevant target group, and simultaneously bring with it almost all technological prerequisites for pervasive gaming. As discussed above, most young people have high-tech phones that feature large color screens, allow digital picture-taking and transmission of MMS, and are Internet-capable. In combination with the existing possibilities for communication via voice telephony and SMS, today's mobile phones thus cover the core technologies of pervasive gaming. On this basis, the following section presents a game concept and its technical system implementation that only requires an MMS- and camera-capable mobile phone from users, i.e., the students. This approach guarantees a high degree of mass appeal in contrast to previously implemented pervasive games and thus has much potential to prove itself in practical use.

III. THE GAME-MODELS

3.1. Game model quizz

Learning goals are decided by the game author:
- Content goals: e.g. Facts (after Prensky, 2001)
- Activity goals: e.g. Questions (after Prensky, 2001)
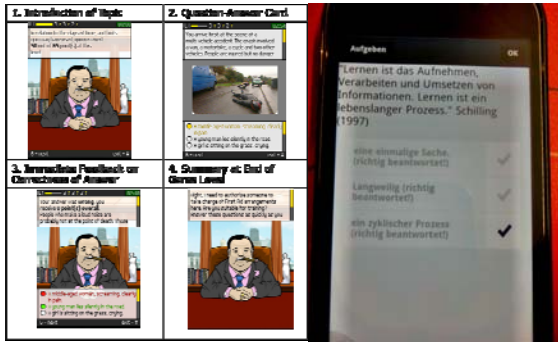- Process goals: e.g. Remember (after Anderson and Krathwohl, 2001)

is inspired by TV formats such as
The Apprentice (i.e. the bad-tempered boss character)
Who Wants To Be A Millionaire? (i.e. multiple choice questions including joker options).

Key objectives of game-play:
• gain points for fast and correct answers

GAME MODEL QUIZZ   GAME MODEL SIMULATION

3.2. Game model simulation

Learning goals are decided by the game author:
- Content goals: e.g. Facts (after Prensky, 2001)
- Activity goals: e.g. Simulation (after Prensky, 2001)
- Process goals: e.g. Decision making (after Anderson and Krathwohl, 2001)

Key objectives of game-play:
- gain points for good, fast, independent decision-making
- learn from the quality of decisions
- reflect on success of one's decision-making strategy.

The player is confronted with a scenario where there are 4 critical cases to deal with.

Decision-making opportunities are sequenced as follows:

1. Prioritise 1 of 4 critical cases – then deal with your prioritised case: select 1 of 2 treatments

2. Return to the 3 remaining cases (they have meanwhile all potentially got worse or improved in some way)

3. Prioritise 1 of the 3 cases – then deal with your prioritised case: select 1 of 2 treatments

4. Return to the 2 remaining cases (they may meanwhile have got even worse – or perhaps have improved slightly).

5. Prioritise 1 of these cases – then deal with your selected case: select 1 of 2 treatments.

6. Return to deal with your last remaining case: select 1 of 2 treatment.

3.3. Game model story telling

The user reads the story and has to take two decisions, in two different moments of the story, by clicking on the answer-button. The feedback is the result of the combination of the two choices:

- selecting first the A answer and then the A or B answers the user goes to the best feedback; instead, selecting the C answer he goes to the second best feedback; - selecting first the B answer, the user can reach all the three feedbacks: the best choosing the A answer at the second decision moment, the second best choosing the B answer and the third best choosing the C answer. - selecting first the C answer, and then the A answer the user can reach the second best feedback; instead, choosing the B or C answer he reaches the third best feedback.
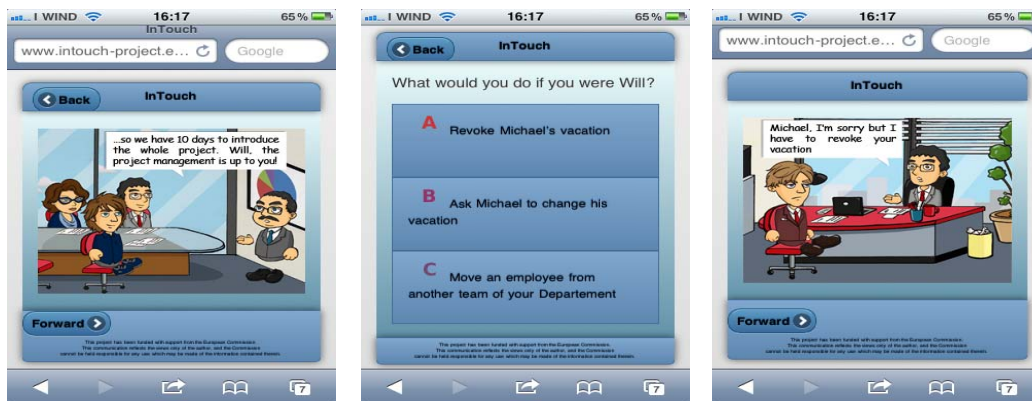

GAME MODEL STORY TELLING

3.4. Game model labytinth

How to play: In the first screen is described a company typical troubled situation. To solve the problem is necessary to talk to different divisions or to other members of the company In the game screen is shown a map which represent the plant of the company with the work positions of the characters. Aim of the game is to find the path to solve the problem by selecting in the correct order the divisions or the characters to talk to. Once found the correct sequence the user can confirm the choice by selecting "Confirm". Feedback and score: There are four types of successions: the best, the intermediate, the mediocre and the worst. The first three have proportional scores while the worst have zero points.
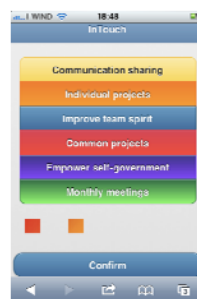
3.5. Game model planning

At the beginning of the game we have the description of the scenario. The user has to help the main character to choose the activities concerned in improving team work among the ones listed. Only four of the six listed activities are actually necessary. To select the activity the user has to click (or tap) on it; a matching color square will appear under the list. The choice can be confirmed by selecting the "Confirm" button. If the user wants to change the items selected can use the "reset" button.

Feedback and score:The score is based on the number of activities correctly selected.
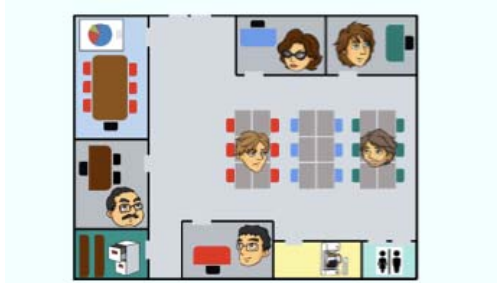
GAME MODEL LABYTINTH   GAME MODEL PLANNING

IV. CONCLUSIONS

The InTouch project shows that it is not always necessary to deploy the most advanced 3D graphics and cutting-edge handsets in order to ensure a good user experience. In contrast, a practical "low tech – high involvement" approach is in many cases much more suitable in the learning context, especially when considering younger people. It is of utmost importance that the systems can be used by all pupils and students and that it does not require special devices, which may not be available or affordable for some target groups.

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