"In our play we reveal what kind of people we are" - Identity building through gamification and digital badges

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The lifetime of skills and particular knowledge is getting shorter and the new skills for new future positions are being currently obtained as a part of the lifelong learning process. Even if a part of these processes is actually recognized and fixed in a form of degrees, certificates and references, some of these achievements could become obsolete, some of them not useful in current practice and sometimes even weird. Nevertheless, these (learning) goals were reached; the learning process as such could be a fruitful life-lesson and the key factor for the future success.

The huge potential of Mozilla Open Badge Infrastructure (MOBI) - and in general any system that provides digital badges as a kind of incentive or reward - is therefore in collaborative setting that allows comparison with other "players" and mapping the progress "against the others". Without the possibility of comparison, building of e-portfolio becomes much more about storytelling, creating diary or blog and adding a context to selected achievements. Any knowledge provider issuing badges should therefore be able to provide additional information about the complexity of learning environment (incl. statistics), not only short description of criteria as requested in MOBI. This paper further describes opportunities and possible practical usage of gamification and digital badges for stimulation of (lifelong) learning.

**Keywords:** Open badges, digital badges, lifelong learning, gamification, labour market

Current trends

The last few decades we are facing the increased dynamics of knowledge and also the trend of decreasing half-life of knowledge (EC, 2006, p.28). One of the most important identified drivers of these changes is technology. For the future, "technology [still] will be one of the main drivers for changing job structures and requirements, and will thus determine which skills people need to acquire. We can already see that technology changes job requirements and profiles" (IPTS, 2011, p.28). As a consequence, the labour market and education providers changed rapidly, too.

Carnevale (2010, p.110) is reporting that "instead of looking for narrow, industry-specific skills in their new hires, employers instead tend to look for employees with advanced general education and skills. Once employed, then, the new workers receive more specialized on-the-job training". Such a training has to be seen as a part of the continuous lifelong learning, because dynamic environment will continue to rapidly change as mentioned also in IPTS (2011, p.13): "Due to increased labour market dynamics, people will have to assume responsibility for their qualifications and take initiative in developing their professional careers. However, to improve the match of skill supply and demand and to make training targeted, effective and efficient, industry will also need to get more involved in shaping training and encouraging workers to participate in lifelong learning".

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These changes lead directly to more personalised approach and learner-centred approach. "Future of work is about engaging workers more than commanding them. (...) People want to be engaged in work with a purpose, and they want insight into how their work is linked to larger organizational and social goals" (Reeves and Read, 2009, p.6).

FIGURE 1. CONCEPTUAL MAP OF THE FUTURE OF LEARNING (IPTS, 2011)
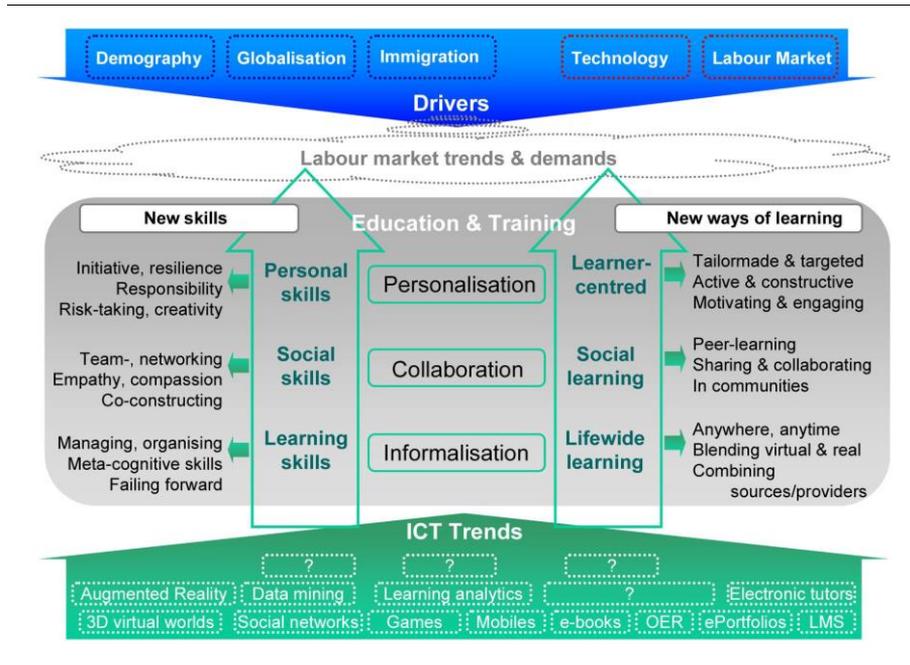
As a result, work in the future will demand more adaptable skills and a greater capacity to learn continuously. Due to expected future high levels of innovation, rapid product cycles and firms are expected to put even more emphasis in the future on new, flexible ways of employing knowledge workers (EC, 2006, p.20). However, for these new occupations and job types, that are going to emerge, probably won't be enough specifically skilled and experienced people. It is obvious, that - as mentioned e.g. by Crosby (2002, p.24) - entry requirements for new occupations and specialties usually would be flexible and most workers in new and emerging occupations would pair basic skills with knowledge or experience in a subject related to the occupation.

But, such a mismatch between supply and demand, between the jobs that will be created over the next decade and the education and training of adult workers (as reported by Carnevale, 2010, p.109) won't necessarily last for a long time. On a one hand, the fastest-growing industries - such as computer and data processing services - are able to stimulate education providers to quickly react. And afterwards, over time, established and well-structured occupations as a whole are steadily requiring more education (Carnevale, 2010, p.13). The strongest growth will therefore continue to be in high skill areas. But hybrid skills (technical, business, creative, interpersonal) will also be increasingly important as mentioned in IPTS (2011, p.28). So called "learning institutions" 'will be characterised by horizontal structures, mobilizing networks and flexible scalability. On the whole, flexibility and diversity will increase.'

FIGURE 2. OVERVIEW OF FUTURE LIFELONG LEARNING STRATEGIES (IPTS, 2011)
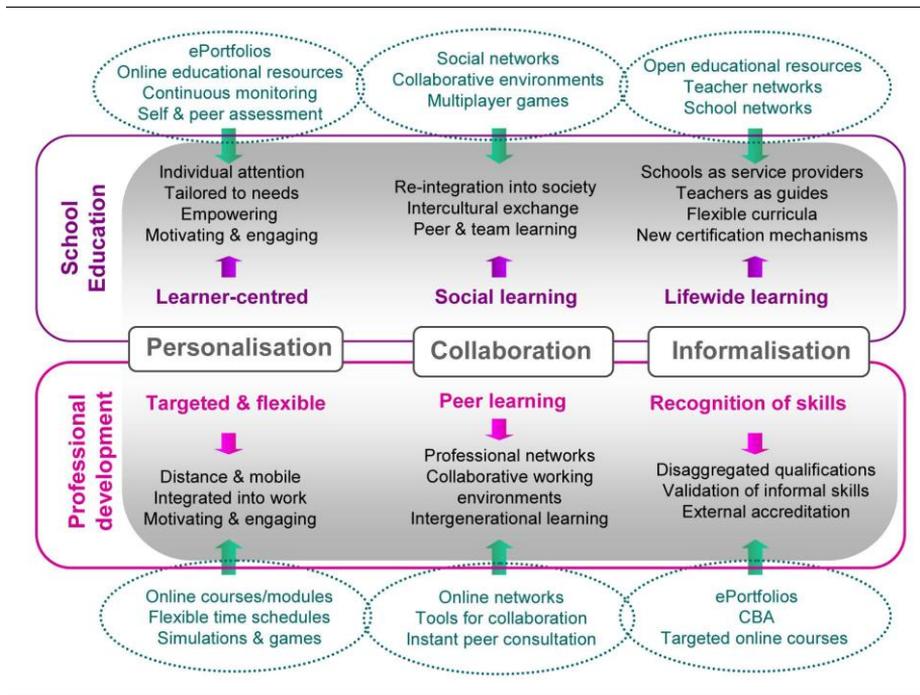
In such a responsive and dynamic learning environment - characterised by networked learners, networked workers, networked Education and Training (E&T) institutions, and information forums promoting public debate - informal learning strategies will become an integral part of learning and will also (need to) be embedded in education and training (IPTS, 2011, p.29).

Digital badges

As reported in many sources (e.g., EC, 2006; EC, 2013; Eurydice, 2010 or Carnevale, 2010), equipping people with the right skills for the jobs of tomorrow means also active approach to recognition of informal and non-formal learning (as defined by the CEU, 2012). For applying for the future job could be increasingly important to provide evidence of any kind to prove the experience. As reported for example by OBSERVAL net (2013) or Eurydice (2010, ppp.33-34) "several countries have implemented educational frameworks which allow a more flexible and transparent transition between the different levels and sectors of education, and especially between vocational and non-vocational paths. Secondly, there has been a general move towards skills- and competence-based frameworks in education and training provision at all levels. Thirdly, several countries have been strengthening and extending apprenticeship schemes to provide more practical and employment-related training for students in vocational and higher education".

However, these initiatives and projects are mostly governed by top-down approach. Bottom-up approach should also be taken into consideration. As an example of such an initiative, Mozilla Open Badge Infrastructure (MOBI) was introduced and currently (June 2013) further promoted by the Clinton Global Initiative via so called "Commitment to Action" with the goal to massively expand access to a new method of academic and technical skills assessment and to improve the futures of two million students and U.S. workers (DMLC, 2013).

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MOBI is based on open metadata structure incorporated into the form of digital badge (picture). Such a file is therefore the independent digital object with encoded information about parameters of reached achievement (title, description, criteria, timestamp, issuer, earner etc.) and it is possible to validate its content. These digital badges could be awarded by any issuer to any receiver (represented by the e-mail).

Digital badges are not a new concept, most of the online communication platforms like discussion forums and definitely video games work with them somehow (e.g. in a form of icons marking "ranks" or "levels"). However, such pictures are not independent, can't be transferred into any other platform without losing context, like MOBI-compliant badges can. MOBI principles could be therefore summarized as a community-driven, credible, distributed, open, interoperable, flexible and innovative solution how to empower the learner (Knight, 2013). In praxis, MOBI digital badges can be easily awarded e.g. in learning management systems, intranet or any online-platform and tend to be used as a gamification component.

Deterding (2011, p.6) explains another aspect of their use: "one of the big promises of today's commercial deployments of "gamified" systems is easy access to more ecologically valid user data on the different kinds of experiences and natural categories that arise from interaction with these systems", which is fully in line with the overall goal of digital badges to fix the informal and non-formal (learning) outcomes. There is also very close connection with so called "activity data" which is a broad term used to describe the record of any user action (online or in the physical world) that can be logged on a computer; and activity streams as a list of recent activities performed by an individual as we know it e.g. from online social networks (Campbell and Barker, 2013).

However, one of the issues we should be aware of, are criteria for badge awarding. There are no predefined rules or methods how to properly set criteria; it is up to any badge issuer. From a one point of view, this approach enables maximum flexibility. From another point of view, criteria could therefore be described too fuzzy to be able to link achieved goals with the competences as a part of the future personal e-portfolio evaluation as a part of the (for example) job application process. Based on the Campbell and Barker (2013, p.5) there is a need to provide sufficient amount of "paradata" which is a form of metadata that records how, and in what context, a learning resource (in this context with respect to the particular process of awarding a digital badge) was used. Criteria should therefore contain e.g. information about the other digital badges of the same type (the same badges) that were already awarded, and maximum possible amount of them, to be able to evaluate how common (or rare) is this badge. In some cases, it could be also useful to know the order of all receivers of such a badge, to be able to distinguish between the first who finished all necessary achievements and some others who could only follow. The more information would be provided, the better. Without such information, context of the badge could be limited to a provided fragment of information.

Conclusion

The new skills and knowledge are being continuously obtained as a part of the lifelong learning process. However, only a few of them will be fixed in a form of some certificate and most of them will never be used again as we are facing the increased dynamics of knowledge and also the trend of decreasing half-life of knowledge. Nevertheless, any evidence that could lead to future recognition of (learning) goals we reached could be important indicator of the social status and labour market position.

The huge potential of Mozilla Open Badge Infrastructure and digital badges comes from their ability to provide authorized evidence and possibly also some comparison with others. All knowledge providers issuing badges should therefore carefully plan what could be relevant for future reviewers and provide as much evidence as possible.

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