UX LEARNING DESIGN IN NUGGET EDUCATION

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Abstract
User experience design (UXD) is part of the human-centred design as well as Instructional Design (ID). Both could be works in synergy. UX designers work for development of services and product closer to the users and their needs. Instructional designers create education and training answering to the learners wishes. UXD and ID have a lot in common. They combine the psychology and design thinking, human interaction and use to understand people wishes and goals.

UXD and ID are focusing on creation of the useful and usable experience. The target users are learners and the services and product they received the knowledge or skills.

In this paper authors deal with the methodology to involve learners in the learning process answering of the users needs. There are few things that have to be design in learning process: necessary knowledge or skills, the way to be achieved and learner motivation.

This paper presents the comparison the authors experience with MSc students’ trainings and the design of nugget education

Keywords: Nugget / Micro Education, Innovation, Cyber Security, Training, personalities.

We are only as strong as our weakest link
How to ensure the weakest link meet the minimum requirements for cybersecurity.

1 INTRODUCTION
Lifelong learning education is part of our digital society based on competencies. Nowadays the interconnection in the cyberspace is continue. How to trust it? How to train the users to be aware of hidden problems? Nowadays users are “lazy”, they have no time to follow complete course. They prefer short video or short instruction to solve their problems. This was one reason for authors to focus on so called nugget education where the learning nugget [1] is a standalone mini learning activity, usually less than 5 minutes in length in order to attain specific learning outcomes. Nuggets should be designed with a particular approach to learning and teaching in mind [2]. The learning happens through a stream of intermittent nuggets which involves a variety of learning-related events as video, presentations, scenarios, reflection questions, assignments, etc. The way of nuggets delivered has to be packed in appropriate for users’ way, i.e. the learner pathway have to correspond to their needs and answer of the UX design requirements. Together with UX design the focus on this paper is training design and nuggets development have to correspond to the Instructional Design issues as well. Both UX and ID design are human-centred design. According them the series of learning nuggets are designed. These series are called learning threads. These could be use in formal and informal learning. It appeals to the learners as it consumes less time and is available to them “just-in-time” of the learning need. [3] The exactly these two features of the learning support the user in their daily informal training.

This paper deals with implementation of nugget learning objectives in Innovation management courses as beginning and design of complete course for IoT security.

2 BEGINNING
Four years ago the Erasmus+ project APIInno: Action Project for Innovation, 2014-1-BG01-KA203-001561 started to design and develop a course in Innovation Management. It was design for the MSc students in Computer Science basically. The specific for these students is that their soft skills are undeveloped in general. The main focus of APIInno methodology is collaboration between university, research and business. The students work on real projects and meet the real business. The problem was how they will present their research on the business. How they use the elevator speech approach
to gain business attention? The tricky in methodology is teams’ competition. The students are divided in groups according their personalities [4]. The competition motivate students to focus their effort to develop soft skills. The best way from authors’ point of view is to use the famous movies in the training process or part of them and extract video nuggets for example to developing of convincing communication there are a good cases in Beauty& the Briefcase and Michael Clayton, or for team working is used the minutes from The Devil Wears Prada, Scorpion (17 episode).

Soft skills developed in this course are: Project management; Critical components of the process; Preparing a basic project management chart; Leading a project that develops innovative solutions to problems; Leadership; Team work; Communicating with others; Negotiating and Conflict resolution in a team setting while under pressure and Visual and Oral Presentation.

3 REMARKS

The nugget education is suddenly being talked about as the next significant approach to train workforce. The crushed content is short bytes and is accessible at any place and time. This type of learning is significant part of an organization’s overall training delivery [5].

Development of soft skills is added value to the Innovation Management course. In last 3 years more than 100 trainees passed the course and the success of the nugget approach was obvious.

The nugget training is focused on continues education. The exponential nature of forgetting (according the Hermann Ebbinghaus’ Forgetting curve) [5] Figure 1, we forget 80% of what we learned in 30 days!

![Hermann Ebbinghaus' forgetting curve](source)

Figure 1 Forgetting curve Source [5].

To be effective and to escape forgetting effect the nugget education has to be easy of used, in environment familiar for the users and accessible any time from any place with guided learning path including the feedback for learners.

The nugget education correspond to the trigger behavioral change in last decades.

4 FURTHER STEPS

After the success of the APIInno approach the next approved Erasmus project is IoTnuggets: Internet of Things security nuggets 2018-1-BG01-KA202-047919. The training in this project is focused on nugget learning objectives for the cyber security area. The consortium develop a competency map for cyber security on four levels: basic, intermediate, advance and manager. The main topics are: Authentication, Integrity, Confidentiality and Privacy [6]. They cover the features of the Internet of things interoperability. The focus group are IoT users. They have to be familiar with the Code of Practice for customer IoT security [7]. IoT products are connected to the internet or home network and associated services. A nonexhaustive list of examples includes:

- Connected children’s toys and baby monitors,
Connected safety-relevant products such as smoke detectors and door locks,
Smart cameras, TVs and speakers,
Wearable health trackers,
Connected home automation and alarm systems,
Connected appliances (e.g. washing machines, fridges),
Smart home assistants.

The message to the learners is to prepare them for the hidden troubles described in more than 200 pages. There is no so many people that read it and as it shown on the "Forgetting curve" remembering is almost close to zero. It is just one example of the field and possible problems.

To motivate users and to give them the powerful tool repeating training the IoT nuggets consortium prepare the learning nuggets and guidelines to complete a level of training.

Before the "nuggets" the main goal of the project consortium is their consistence as a look and scenarios, characters and visual presentation. The same tools will be used for nuggets development. The number and type of nuggets will be define as well. The pathway for each one of levels and topics will be predefine.

The types of nuggets include:

- infographics - visual approach to summarise the key aspects. It leads to recall and retention.
- Interactive Infographics - the interactivity enables everyone to layer information and pack more details
- PDFs – the most common format
- Interactive PDFs - allow longer reams of data to be packaged in meaningful info groups
- eBooks and Flipbooks - multi-device
- video-based
  - animated videos - adapted to create a variety of learning aids
  - whiteboard animation - explaining concepts through pictures
  - kinetic text-based animation – to convey the required message
  - Explainer Videos - to introduce a concept in an easy to understand visual manner
  - Interactive Videos - to create high impact learning experiences.
  - Expert Videos, Webinars - Recorded Webinar

There are and other types of nugget learning objective but the consortium is focused on listed above.

5 CONCLUSIONS
The nowadays learners’ needs new approaches in their dynamic daily life to keep them informed and well prepared for the current and future. The paradigm of user-centred design is significant and nugget education is one approach to the users’ needs.

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