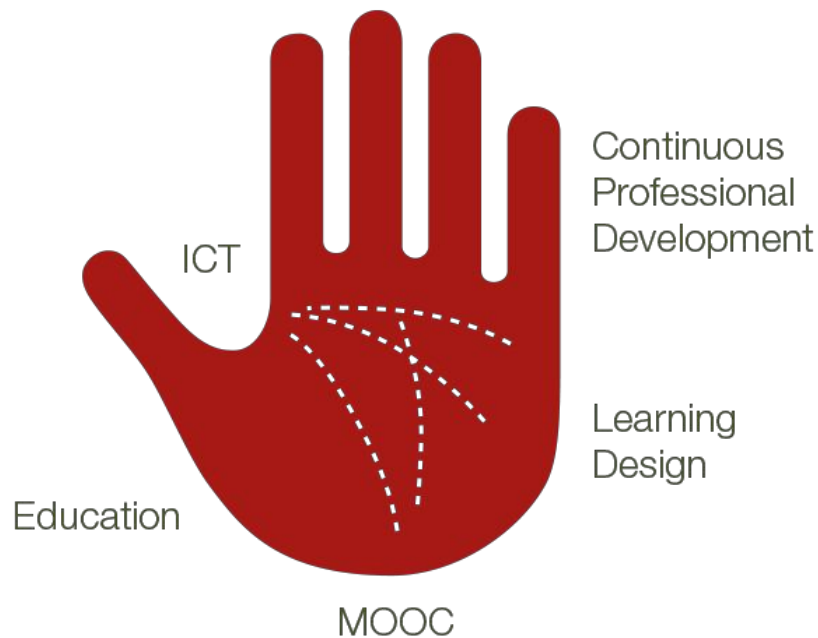


Palm Reading of the HANDSON MOOC



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0. Who is this report for?

This report is inspired on Diana's Laurillard [Anatomy of a MOOC for Teacher CPD](#). We found this document very valuable and decided to adopt the same approach to spread our MOOC experience.

This report presents a MOOC designed to facilitate the inclusion of ICT in education which is part of the Hands-On ICT project; funded by the Lifelong Learning programme. The HANDSON MOOC is a project-based online course for educators of all sectors that lasts 5 weeks. During these weeks, participants design an ICT-based learning activity that is adapted and useful for their students, their context and their discipline.

The HANDSON MOOC is available for download on the project website (<http://www.handsonict.eu/>) and licensed under Creative Commons License 3.0 BY-NC-SA.

The present report fulfills two main goals:

1. Explain the experience of the HANDSON MOOCs; mostly the third edition.
2. Provide guidance to researchers and practitioners interested in running the HANDSON MOOC.

Given these objectives, we think that the present report can be relevant to:

1. Researchers and practitioners in the learning design field.
2. Researchers and practitioners in MOOCs pedagogy.
3. Teacher trainers with a focus on ICT in education.
4. Learning technologists interested in learning about ways to facilitate the inclusion of ICT in education.
5. Experts in the continuous professional development of educators.
6. Individuals or groups interested in MOOCs, learning design, ICT in education, CPD, etc.

We hope you enjoy it!

Do not hesitate to drop us a line if you want to know more, share your experience or use the HANDSON MOOC in your environment: community@handsonict.eu.

1. Executive summary

The present report is an overview of the HANDSON MOOC; an online course that promotes and provides means to include ICT in education and the field of learning design. The MOOC - and its face to face version: the HANDSON Toolkit - is a project-based training tool that walks participants in the process of designing an ICT-based learning activity.

The “Hands-On ICT: Learn, practice and teach creativity and activity” is a project funded by the EU under the Lifelong Learning Programme (<http://handsonict.eu/>).

1.1. Set-up and design

The aim of the HANDSON MOOC was to promote the use of ICT in secondary education, VET and higher education without excluding all other educational sectors (the course was open and accessible to anyone). The course was designed following the Learning Design Studio approach and is project-based: starting from each participant’s educational challenge, they have to design, evaluate and refine an ICT-based learning activity.

The MOOC was implemented twice (Spring and Autumn 2014) with several changes between the two editions. The second edition (from October 27th to November 28th) was run in Canvas, offered in seven languages in parallel and participants received a certificate of participation from the HANDSON project. Also, for some language versions a certificate from a local institution was issued for “designers”; that is those participants that completed all course activities.

The MOOC was extensively advertised through many different sources and communities and was mostly facilitated by volunteers from around world. These volunteer facilitators had previously followed a set of training sessions on the HANDSON MOOC, its tools (Canvas, ILDE, Google Hangouts) and how to facilitate a MOOC.

1.2. Pedagogic value

The rationale while designing the MOOC is that teachers are designers that need to be empowered with design methods and process. Based on the Learning Design Studio approach, the course team adapted it to goals and characteristics of the HANDSON project.

The HANDSON MOOC design assumes that most of the learners have an external learning locus of control, providing little opportunities for those with more internal learning locus of control; it also meant the course was much more like an xMOOC than a cMOOC.

This project-based course is addressed to educators from all sectors. Its design is based on the following set of ‘first principles of instruction’ (more in Stoyanov, Sloep, de Bie & Hermans, 2014):

- Confront learners with a problem, issue, challenge, preferably, a real-life one
- Consider the problem from different (criss-cross) perspectives
- Divide the problem into sub-problems/tasks
- Provide for each task explicit support in terms of background information, examples, procedures, methods, techniques, and tools
- Accommodate learning preferences
- Draw upon learners' experience
- Stimulate learners to reflect on their experience, to share it and discuss it with others
- Practice and create artefacts in a deliberate fashion

In designing the course we also took into account the behavioral patterns that have been identified in MOOCs. We should expect that less than 10% of attendees would complete the course. Some people would only be active in one or two activities. A third group would only download some of the resources. A fourth group would passively be observing what is happening. The evaluation of OLDS MOOC indicates that although less than 10% of the participants finished the course, 80% reported a learning gain, that is, they learned something from the course (Cross, 2013).

1.3. A valuable CPD tool

2,632 people filled in the Join Us form (available as a Google Form from June 2014). This form was the first step to register for the MOOC. 18 participants were returning educators that had already been active in the previous edition of the MOOC.

Via the Join Us form, participants indicated their preferred language and their motivations to follow the MOOC. From these, we can highlight:

- 72,6% had an interest on “improving their knowledge of ICT in education”, which is HANDSON’s main goal.
- The second reason for joining the MOOC was “To learn about Learning Design Studio” (58,4%).
- The largest group was English (971) followed by Spanish (683) and French (503).
- The most prominent sector was Higher Education (34,1%) followed by Secondary Education (25,6%).

Of the 2,632 participants, 1,515 created a username in the Canvas environment of the course mostly (3/4) from Bulgaria, Spain and Greece. Of these 1,515 participants, 867 joined one of the 7 language groups and were active during the first week. Being part of a language group was needed to participate in all the activities of the MOOC.

161 participants completed the first week’s module of activities among which the **92 “Designers”** that eventually completed all the modules of the course and were awarded a

certificate of participation. The Designers represent **6.7% of the initial 1515 participants** (those that created a username in Canvas). Differences between language groups could be observed in the participation evolution throughout the 5 weeks of the MOOC and early predictors of these different behaviors could be identified as soon as the first days of week 1.

The Greek group was the most active and the one that obtained more designers than any other group (28). From this group we can point out that week 1 level of engagement, as estimated by page viewing on Canvas and by the response rate to the MailChimp (<http://mailchimp.com/>) campaigns sent to the groups at the beginning of the MOOC, was the highest.

Besides the Slovenian group, in which no badge was obtained, the 3 lowest completion rates were observed for the English, French and Spanish groups (initially the largest groups). Due to the low activity in the Slovenian group, after the first week it was decided to merge these participants with the English group.

These low rates in the initially largest groups, might be related to the low numbers of active participants in week 1 compared to the Bulgarian, Catalan and Greek groups. It can be hypothesized that such low numbers are insufficient to reach the **critical mass** necessary for good operation of the peer-mentoring activities (especially critical during week 1), for building a sense of community and ensuring engagement of students for the remaining 4 weeks. **25-30 participants** might be a good approximation of the minimum number of participants required to ensure engagement and this was only obtained in 3 groups (the Bulgarian, Catalan and Greek groups).

Two additional hypothesis to explain low completion rates are:

- 1) the largest groups shared a language but not necessary a culture and country, this made the community creation more difficult as well as the promotion of activity among participants; and
- 2) the information about the MOOC arrived from a **common trusted source** in the cases of the Bulgarian, Catalan and Greek groups, as opposed the rest of the languages.

Although the need to log in the two main course platforms (Canvas and ILDE) might have been a drawback for several participants, most of them answered that they felt **confident with ICT** (question from the pre-survey, see Fig. 1), that the comfort level increased quickly (from the weekly surveys, see Fig. 2) and that the MOOC helped them feel more confident with ICT (post-survey). Which at the same time, fits with the expectations they had when joining the course.

Therefore, we see a match between the HANDSON aims and objectives, the expectations by the participants and the acquired skills after the MOOC. We consider this to set the stage for a successful CPD activity for educators.

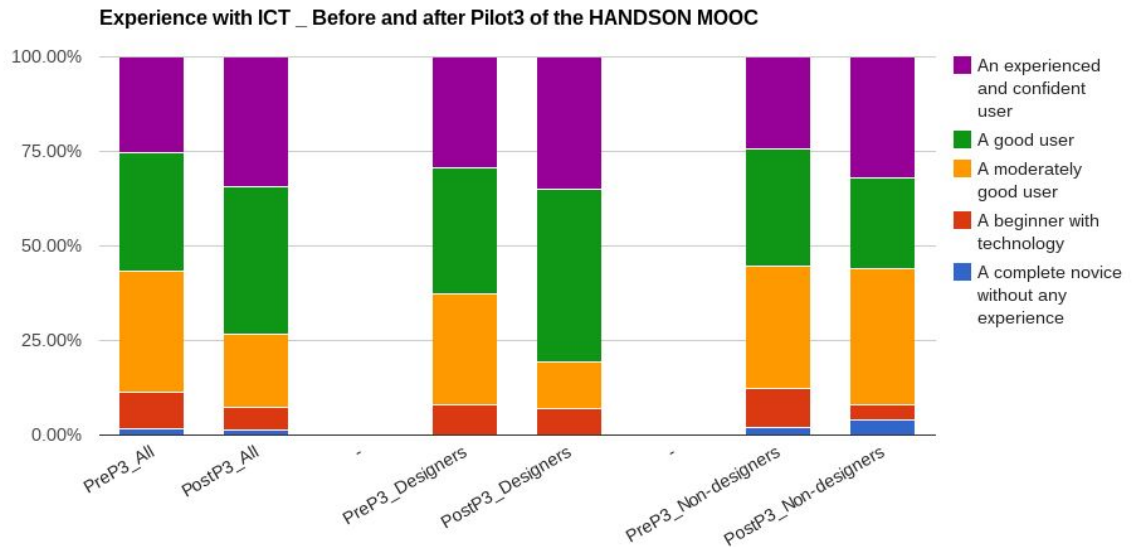


Figure 1. Pre-survey question: experience with ICT

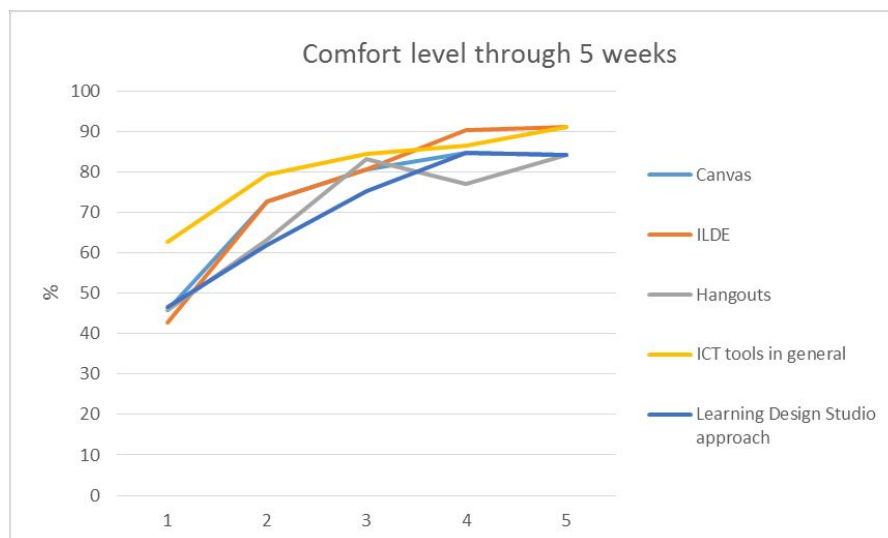


Figure 2. Weekly surveys: comfort level with the MOOC tools and rationale

The MOOC **learning activities** are perceived as highly useful, as in the previous edition. Especially important to assess the success of the MOOC is the response to the question:

“Will you use in your classroom the learning activity you have created during the MOOC?”
95.5% of the respondents answered affirmatively.

This is an increase if we compare it to the response in the previous edition, where 88.5% of the respondents answered affirmatively. This might be related to a lower comfort level in ICT expressed by the first edition participants.

The **Learning Design Studio** approach is very well valued; it is perceived as a useful tool to include ICT in education (see Fig. 3).

PostPilot3 – How much do you agree with the Learning Design Studio statements

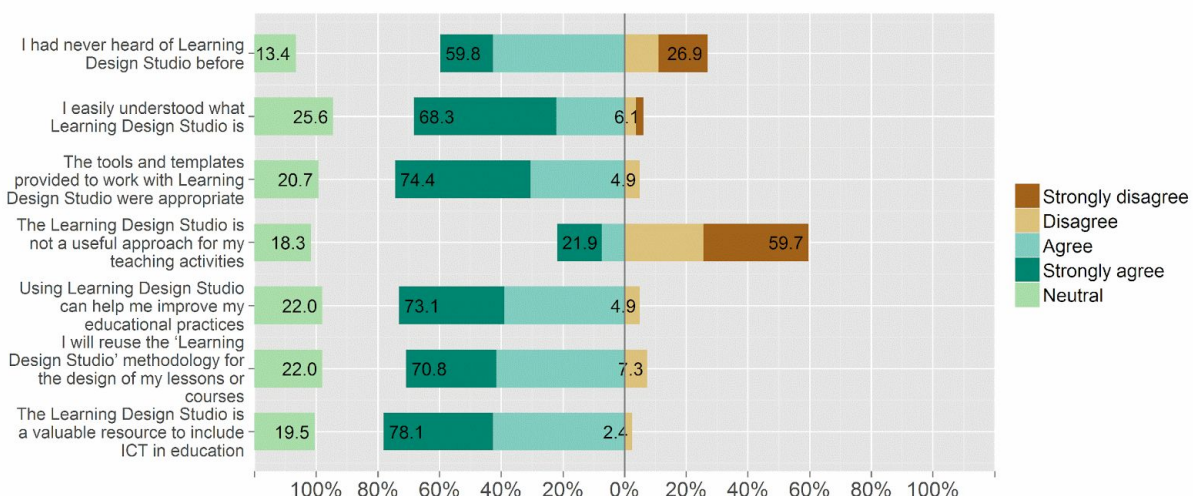


Figure 3. Post-survey question: Learning Design Studio statements)

As seen in the results from the Join Us form, “To learn about Learning Design Studio” was the second highest motivation to register in the MOOC. Therefore, we can also conclude than in this sense the course met the expectations of participants.

Although the number of non-participants was high at 42% (only 1,515 from the original 2,632 created a username in the course platform), most of them said that they would join a new edition of the MOOC and that the main problem for not pursuing it at that point was lack of time on their part.

On the other hand, and similar to Diana's Laurillard statement in her report "[Anatomy of a MOOC for Teacher CPD](#)", we consider "activity in week 1 as a much better indicator of intention to follow the course than 'registration', which is not equivalent to registration on a normal university course". On that account, 161 people actually enrolled. Taking this number as a reference and the 92 people that obtained a certificate for participation, the completion rate was actually very high.

From the data analysis, we can characterize the **designers vs. non-designers** with the following terms:

The average Designer	The average non-Designer
A female teaching at a secondary level, but not at the level of Higher Education who in the past 2 years has completed more than 3 MOOCs and was also actively involved in the HANDSON MOOC. Her current modality of teaching is not e-learning, but face to face with some support of ICT tools.	A male who completed fewer than 4 MOOCs in the last 2 years, was very passive during the HANDSON MOOC. A non-designer dedicated fewer than 3 hours per week to the MOOC and teaches at a higher education level.

1.4. Evaluation

The course received an excellent appreciation from the surveys' respondents, with an overall satisfaction increasing from a 64% to a 90% rating during the MOOC taking into account both designers and non-designers responses. Similarly, the comfort level with the environment (Canvas, ILDE) increased during the 5 weeks.

The highest agreement rates about overall questions were with:

- I plan to reuse some of the techniques I learned during the course (78.1 %)
- I enjoyed being part of a multilingual MOOC (75.6 %)
- I learned about ICT tools that I did not know before (71.9%)

Participants agreed with many statements about the course and its approach, but the highest agreeing rates were with:

- Overall, the course activities have been useful (85.4 %)
- The fact that this course was offered massively to teachers from around the world has been positive (84.2 %)
- The course material were useful (81.7 %)

If we look at the negative side, the highest disagreement rates were with:

- The pace of the course has been adequate (14.6 %)
- The feedback I received from the peers helped me with my learning activities (14.6 %)

- The course has promoted valuable interaction with my peers (11.0%)
- I used the further readings page (10.9 %)

The Learning Design Studio was seen as a useful approach. Highest rates of agreement applied to the following statements:

- The Learning Design Studio is a valuable resource to include ICT in education (78.1 %)
- The tools and templates provided to work with Learning Design Studio were appropriate (74.4 %)
- Using Learning Design Studio can help me improve my educational practices (73.1 %)

These data confirms that the HANDSON MOOC is a valuable continuous professional tool for educators and that it is not a one time course but one that can be taken as many times as the participant wants to design an ICT-based learning activity or course. The MOOC leverages the experience and expertise of peers and the design skills of educators.

1.5. Lessons learned

In addition to reporting on participant experiences, this report provides guidelines as to how a future version of the MOOC should be implemented.

The elements that had been addressed especially between the first and second edition are:

1. **a change of platform:** the change from the Moodle platform used in the first edition has been beneficial and for a future MOOC, the new Canvas-based platform is the preferred choice of the last edition participants.
2. **further development of peer-mentoring:** highlighting important equilibriums that need to be respected for proper peer-mentoring dynamics.
3. **development of facilitator training:** need to be focused on the preparation for the very first days of the MOOC when early signs of disengagement are being detected.
4. **delivery in multiple languages:** the target participants should be considered when deciding whether to translate or not the materials and provide facilitation in several languages. For example, the Greek participants felt comfortable reading the content in English and expressing themselves in Greek; as opposed to the French, Bulgarian and Catalan communities that were more reluctant to work with the materials in English.

In addition to the lessons learned on these 4 main changes, recommendations are provided for **preparing, running** and **analyzing** the MOOC in a new edition:

Planning on running the HANDSON MOOC?
Here are some tips

Recommendations for preparing the MOOC

- Use sources trusted by educators to disseminate the MOOC.
- Consider creating separate communities, one for each educational sector
- Recruit facilitators by asking them to be participants first
- Reduce any superfluous workload for the participants
- Use Canvas for its simplicity
- Avoid more than 1 login
- Check the badge awarding system
- Disseminate explaining the LDS approach
- Allow participants themselves to choose the language for course materials
- Foster the use of Twitter

Recommendations for running the MOOC

- Engage participants from the very beginning
- Display activities progressively (and not all at once)
- Promote peer-mentoring
- Put most of your facilitation efforts at the beginning of the MOOC
- Ensure that groups are larger than 25 participants

Recommendations for analyzing the MOOC

- Make sure you have a clear question (or subquestions) that you want the running of the MOOC help you answer.
- Moderate the use of surveys.

As part of the post-MOOC survey, participants were asked about the themes they would be interested in learning through a MOOC. Their preferences were: “Video in education” and “ICT tools for teaching and learning” (see Fig. 4). This is an encouraging sign for the use of MOOCs in the continuous professional development of educators.

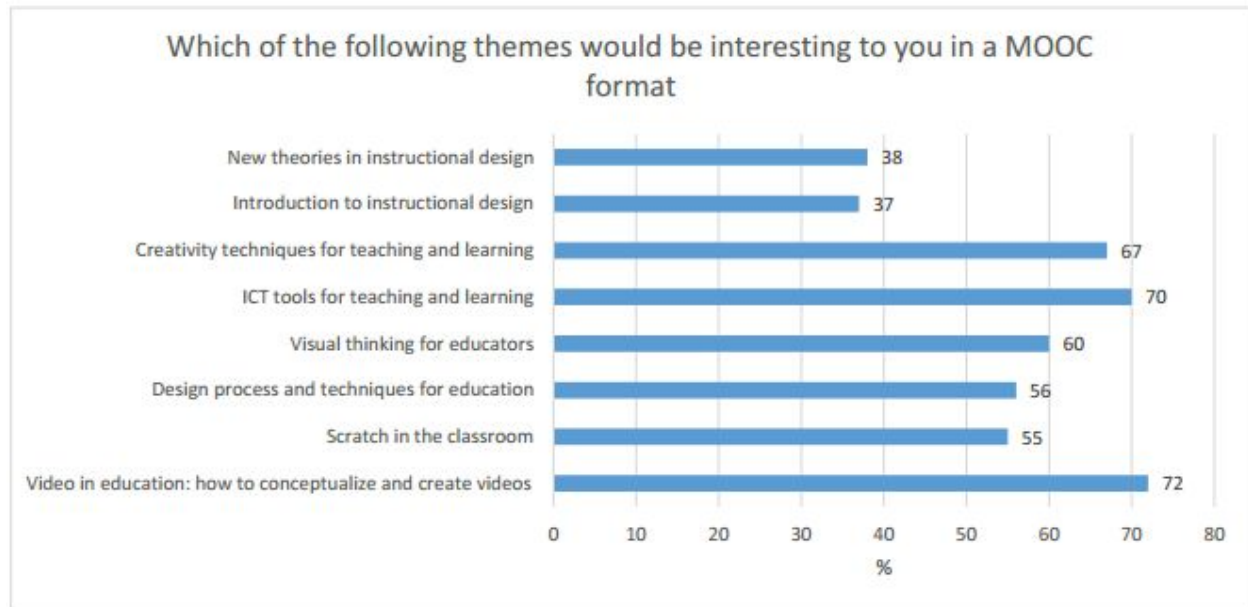


Figure 4. Post-survey question: Interesting topics to learn via a MOOC

2. The HANDSON MOOC background

An increasing body of research on teacher training emphasizes **the role of teacher as a designer** (see Design Science - Laurillard, 2012, 2013; Design-Based Research - Collins, Diana, & Bielaczyc, 2004; McKenney & Reeves, 2013; Design Thinking for Educators – Ideo Riverdale, 2013, <http://www.designthinkingforeducators.com/>). In fact, the recent developments in software engineering design and educational design share the basic idea of a **progressive, spiral refinement through a cyclical prototype development** and the reliance on stakeholders involvement in the design and evaluation of the project's products (Holtzblatt, Wendell, & Wood, 2005; Kuniavsky, 2003; Marsh & Willis, 1995). An approach that tries to integrate these trends is **Learning Design Studio** (Cox, Harrison & Hoadley, 2008; Mor & Mogilevsky, 2013). The basic idea behind this approach is that the teacher is put in the position of a learning designer, that is, s/he identifies an issue within the educational practice to which a solution is needed (e.g. a tool supporting the design of a lesson plan or a learning game), looks upon different theories and good practices to devise solutions, develops design blueprints, mock ups or prototypes, carries out tests to improve them, and implements them into the professional practice.

Besides the Learning Design Studio (LDS) as the framework for structuring the HANDSON course, we also took into account several other sources in order to design the HANDSON MOOC: the results of an online survey to find out about educators' needs in terms of ICT in education, the behavioural patterns of MOOC participants as described in the literature, some theories about adults learners as well as the First Principles of Instruction (Merrill, 2002). All together, these inputs led us to define the HANDSON pedagogical guidelines.

2.1 User needs (online survey results)

An online survey was used to gather the needs of educators in order to guide the development of the HANDSON training framework; which intends to improve teachers' capacities in Technology Enhanced Learning. More specifically, the aim of this survey was to identify, classify and analyse what kinds of support educational staff members across Europe need when they apply technology-enhanced learning (TEL) and creativity techniques.

Educators received a questionnaire to identify their training needs. Questions addressed such topics as educational theories, models and frameworks, ICT tools and creativity techniques. More in particular the following themes were addressed: Confidence/ personal estimations of ICT skills level, Device ownership, Localities of internet access, Device usage and purpose of usage, Opinions on ICT usage, Use of certain applications (e.g. frequency of use for software and productivity tools, frequency of OER use, use of synchronous and asynchronous media), Usage patterns, Knowledge about creativity techniques, Current drawbacks / breakdowns for

the introduction of ICT, Existing levels of support, Mentoring needs and requirements for the future HANDSON environment.

The online survey was conducted in the following languages: Greek, Spanish, Catalan and English. A considerable number of participants (around 11%) came from countries other the five countries that were represented in the consortium. Initially, 677 respondents participated in the online survey. The final sample consisted of 461 respondents, 216 were excluded from further analysis because they did not complete one or more crucial questions.

The demographics of the sample show a decent variety in participant roles, qualification levels, and years of teaching. The biggest response to the online questionnaire was achieved in Spain (26% of the respondents).

The results show that teachers are generally open and positive towards teaching using ICT, they agree that ICT allows for innovations in teaching and that they provide an added value to their professional environment. However many indicate still to lack important abilities and knowledge. Importantly, teachers do not seem to be at all reluctant to acquire ICT skills.

Almost all teachers surveyed report to own a laptop (this is the most popular device with teachers for teaching and work purposes). Desktop computers are less popular, but still almost 80% own one. Tablets are catching up at about 60% ownership (23% of teachers use them for learning purposes), and more than 80% owns a smartphone (still mainly used for personal and entertainment purposes but also for work related communications). To communicate, asynchronous tools are used significantly more often than synchronous tools.

Internet is used by 100% of the teachers when they are at home. Access in the classroom is also at a very high level (at about 90%). In the classroom the internet is mainly used for teaching purposes and to a much lesser degree for work and learning.

A considerable number of respondents label themselves experienced and confident users (48.2%). Respondents mostly indicate that their current modality of teaching is face to face with some added support of ICT tools. Computers are used most frequently for planning lessons and for presentation, with evaluation, assessment and use in classroom with students as less frequent forms of usage. Information searching tools are used most often, but web 2.0 applications are also used to a large degree. OERs are used often for purposes of planning, implementation and course evaluation.

Of all software tools, productivity tools are the most preferred choice. A quite high percentage of respondents know and incorporate creativity techniques in their lessons (42.7%) but their

familiarity with the variety of creativity techniques was low. Nevertheless, most teachers would like to know more about such creativity techniques as Brain-writing (13.7%), Why-Why-Why (13.2%), and Encouraging the learner to create Imaginary excursions (13.0%).

When asked about the barriers and obstacles for applying ICT in education in a coherent, consistent and permanent way, respondents mostly find fault with in-service training or continuous professional development (CPD): reportedly, it is focused solely on tools rather than on the whole pedagogical experience. According to the respondents, there is an abundance of resources (albeit scattered) of information on ICT in education; however, what they claim to need is that **training is not solely focused on the ICT tools but on the pedagogy behind their use, with good collections of training content.**

Help at the institutional level with hardware and software is sufficiently available, although help with mobile access and with access to databases of materials is lacking. Teachers report to be helped mostly by their school; colleagues. Support provided at the institutional level of the school is apparently substandard. Notwithstanding their very diverse support needs, teachers claim to need support mostly for finding digital resources and support in choosing the proper learning tools.

The respondents expect that courses and workshops can help them to expand their knowledge about how to teach in a competent way and how to assess the possibly acquired competences.

What was particularly relevant to the consortium's planned HANDSON environment, is that the respondents clearly indicated to want a platform that is easy to use, that provides extensive community support, a comprehensive help system and a visually appealing interface. They also prefer easily customisable content, to local curricula and to already used teaching methods. It should be applicable within the resource and time constraints of their classes. Support functions would have to be geared towards helping teachers find good digital resources, for choosing the proper learning tools and for the creation of learning activities.

2.2 Educators as learners

Teachers are adult learners who build and reflect upon their experience and teachers' learning preferences need to be accommodated. Experiential learning includes different modes of grasping and transforming learning experience. The theory promotes also the idea of learning styles (see also Kolb's Learning Style Inventory, 1976 and Honey & Mumford learning style questionnaire, 1992), which can be explored to tackle one of the biggest challenges in designing MOOCs, that is, adaptation to learning preferences of MOOC participants, whose number is expected to be high.

An effective and efficient way of accommodating learning styles of participants in MOOC is through structuring the content in such a way as to allow the students select type of learning

resources they feel most comfortable with (embedded adaptation). For each task the participants can get information in terms of (a) theoretical background, reflecting different perspectives – theorist learning style; (b) work out examples or modelling examples of expert performance – reflector learning style; (c) procedures (heuristics, or rules of thumb) – pragmatist learning style; and (d) involving the participants in working on a task or a case – activist learning style.

Although adult learners are assumed to be self-directed learners (Knowls, 1984; Kop, 2011), the literature suggests (Kirton, 2003) that people differ in how much structure they prefer to see in the content and learning activities. People can be positioned on a continuum with at one extreme an external learning locus of control (looking for very structured course and guidance) and at the other one – an internal learning locus of control (proposing as minimal a structure and guidance as possible). This difference in preferences to structure and guidance is not related to level of knowledge and skills people have. A group of skilled learners, for example, can include a range of learning locus of controls. The paradox of knowledge structure (Kirton, 2003; Stoyanov & Kirschner, 2007) states that structure is both enabling and restricting. People with more external learning locus of control would see the enabling part of the structure, while internal learning locus of control would notice the restricting part of it. Apparently we cannot do without any structure, the question is to find a balance – neither too much, nor too little structure, which is a challenge for the instructional designer. This leads to the idea of making different options for students available.

2.3. Pedagogical guidelines

With the hype around Massive Open Online Courses (MOOCs) one issue that has not yet received sufficient attention is pedagogies for MOOCs. Very often the discourse on MOOCs learning designs is restricted to a discussion on the affordances of technological platforms (Sloep, 2014). When it comes to classifications of pedagogies they typically include three categories: cognitive-behaviorist, socio-constructivist and connectivist (Dron and Anderson, 2011). The cognitive-behaviorist approach has been associated with xMOOCs, while social constructivism and connectivism have been linked to cMOOCs. While the debate on xMOOC vs cMOOC is useful on a general level, it is not particularly helpful on micro-level, that is, at the level of how learning activities should be structured to foster effective, efficient and enjoyable learning.

According to Conole (2013) the following elements characterise good learning: encourage reflection, enable dialogue, foster collaboration, apply theory learnt to practice, create a community of peers, enable creativity and motivate the learners. These characteristics fit with Merrill's First Principles of Instruction.

Merrill (2002) explored a number of well-established instructional design theories (e.g. Star Legacy by the Vanderbilt Learning Technology Center - Schwartz, Lin, Brophy, & Bransford, 1999; 4-Mat by McCarthy, 1996; instructional episodes by Andre, 1997; multiple approaches to

understanding by Gardner, 1999; collaborative problem solving by Nelson, 1999, constructivist learning environments by Jonassen 1999; and learning by doing by Schank, 1999) to extract five basic principles that can guide an effective and efficient design of learning activities. These principles are as follows:

1. Learning is promoted when learners are engaged in solving real-world problems.
2. Learning is promoted when existing knowledge is activated as a foundation for new knowledge.
3. Learning is promoted when new knowledge is demonstrated to the learner.
4. Learning is promoted when new knowledge is applied by the learner.
5. Learning is promoted when new knowledge is integrated into the learner's world.

Merrill claims that (a) learning from a given program will be promoted in direct proportion to its implementation of the first principles; (b) the first principles of instruction can be implemented in any delivery system or using any instructional architecture; (c) the first principles of instruction are design oriented or prescriptive rather than learning oriented or descriptive, that is they relate to creating learning environments and products rather than describing how learners acquire knowledge and skill from these environments or product (Merrill, 2001, p. 44). Although not purposely targeting MOOCs, taking the First principles of Instruction as foundation for them could still be a useful approach, as instructional design theories considered provide concrete guidelines for effective course design.

Design guidelines for the HANDSON MOOC

1. Confront learners with a problem, issue, challenge, preferably, a real-life one;
2. Consider the problem from different (criss-cross) perspectives;
3. Divide the problem into sub-problems/tasks;
4. Provide for each task explicit support in terms of background information, examples, procedures, methods, techniques, and tools;
5. Accommodate learning preferences;
6. Draw upon learners' experience;
7. Stimulate learners to reflect on their experience, to share it and discuss it with others;
8. Practice and create artefacts in a deliberate fashion.

3. The HANDSON MOOC implementation

The HANDSON MOOC is a continuous professional development activity for educators of all sectors. It walks its participants through a design process during which they conceptualize, define and evaluate an ICT-based learning activity.

The basics of the MOOC:

- The course platform: Moodle or Canvas (the MOOC is available for both platforms, in English)
- The learning design environment: ILDE (<http://ilde.upf.edu/>). Alternative templates could be used.
- The communication tools: Google Hangouts for the weekly convergence sessions. We also used Twitter, Mailchimp and Mentimeter; but these are optional.
- The web 2.0 tools: up to each participant to select and choose one.
- The role of facilitators: facilitation is key especially during the first days to keep engagement and later on to promote peer-feedback. Facilitators also publish a daily entry into the course journal to summarize the daily activity, answer general doubts, promote peer comments and point to specific examples and sources of information.
- The certificates of completion: the weekly and final badges were awarded automatically via the course platform (and compatible with Mozilla Open Badges). The certificates were issued by Ingots (<https://www.theingots.org/>).

The most demanding element of the HANDSON MOOC is the facilitation. Individuals or groups willing to run this MOOC should be prepared to spend between 4-5 hours a day during the first week of the MOOC and about 3-4 during the rest.

3.1. The MOOC activities

The course is structured in weekly phases with a set of activities per week. Each week also has a specific peer-mentoring activity and ends with a convergence session; which is moderated by facilitators and participants are invited to join and share their experience with the MOOC.

The following table shows the activities structure implemented for the third edition of the MOOC (in Canvas).

Goal for each week's activity	Activities
INITIATE (week 1)	Activity 1: Introduction to the Design Studio for ICT-based Learning Activities!

	<p>Activity 2: Set up your Design Studio Journal. It is a tool for you!</p> <p>Activity 3: ILDE Account and DreamBazaar</p> <p>Activity 4: Peer-mentoring - your dream!</p> <p>Convergence session (Google Hangouts)</p>
INVESTIGATE (week 2)	<p>Activity 5. Get familiar with the persona concept</p> <p>Activity 6. Create your own personas</p> <p>Activity 7. Analyzing context, factors and concerns</p> <p>Activity 8: The objectives of your ICT-based learning activity</p> <p>Activity 9: Revisit your dream and update it</p> <p>Activity 10: Peer-mentoring - Your personas!</p> <p>Convergence session (Google Hangouts)</p>
INSPIRE & IDEATE (week 3)	<p>Activity 11: Define the heuristics for your design project</p> <p>Activity 12. Search for existing ICT-based learning activities</p> <p>Activity 13. Learn about user scenarios</p> <p>Activity 14. Ideate through writing a user scenario</p> <p>Activity 15: Peer mentoring - The objectives</p> <p>Convergence session (Google Hangouts)</p>
PROTOTYPE (week 4)	<p>Activity 16. Prototype your artifact</p> <p>Activity 17. Revisit and update your evaluation heuristics</p> <p>Activity 18. Test your prototype</p> <p>ADVANCED ACTIVITY. Authoring and Implementation (in ILDE)</p> <p>Activity 19. Peer mentoring - Consolidate your prototype</p> <p>Convergence session (Google Hangouts)</p>
EVALUATE & REFLECT (week 5)	<p>Activity 20. Publish your learning activity</p> <p>Activity 21. Peer mentoring - Your learning activity</p> <p>Activity 22. Your design studio report</p> <p>Activity 23. Reflect and share your thoughts!</p> <p>Convergence session (Google Hangouts)</p>

All these activities were created on the Modules page of Canvas, as shown on the following screen capture:

4. Key results from pilot 3

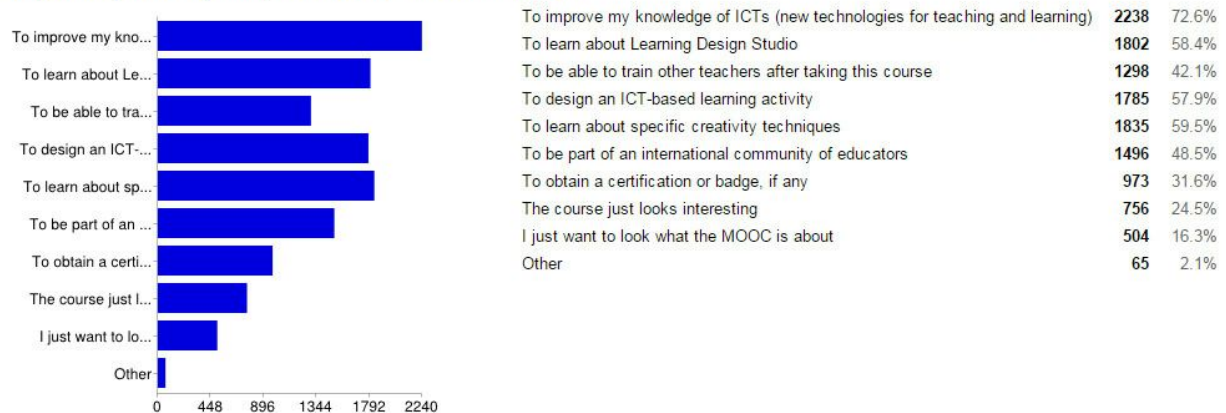
2,632 people filled in the Join Us form (available as a Google Form), required to follow the MOOC. From these, 18 were returning participants that had already been active in pilot 2. From this form, the most relevant data are the language groups (data on participants per language) and their motivations to follow the MOOC (see image below).

From the form, we can highlight:

- 72.6% had an interest on “improving their knowledge of ICT in education, which is HANDSON’s main goal.
- The second reason for joining the MOOC was “To learn about Learning Design Studio” (58.4%).
- The largest group was English (971) followed by Spanish (683) and French (503).

- The most present sector was Higher Education (34.1%) followed by Secondary Education (25.6%). These are two of the three target sectors that HANDSON had foreseen.

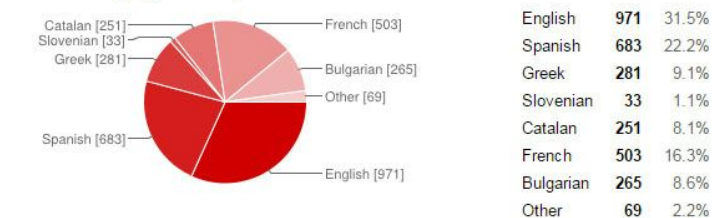
Why would you like to participate in the next edition of the MOOC?



What educational level are you teaching?



In which language would you like to follow the MOOC?



Of these 2,632 participants, 1,515 created a username in the Canvas environment of the course mostly (3/4) from Bulgaria, Spain and Greece. Of these 1,515 participants, 867 joined one of the 7 language groups and were active during the first week. Being part of a language group was needed to participate in all the activities of the MOOC.

Highlights of Pre-Pilot 3 survey filled by 379 participants of the course:

- Middle aged female (2/3 female) from (Spain, Greece or Bulgaria)
- Very well educated

- Experienced and confident users of ICT represent only one fourth of the respondents. 63% are moderately good or good users and the remaining 11% are beginners or complete novices.
- Very good English language knowledge
- On average almost 14 years of experiences in teaching
- Most experiences in teaching at a higher and secondary level
- When it comes to integrate ICT into teaching practices, 75% answer they try to experiment with as many tools as possible instead of waiting for institutional acceptance of technology. This proactivity is not unexpected from a MOOC audience.
- Most of participants (57%) have experiences with face to face teaching including ICT
- For a great majority Canvas is completely new online environment
- Participants joined in average (1.93) MOOC courses in the last 2 years and in average they completed 0.98 courses and having an insufficient MOOC language knowledge (as stated in the survey) was not the cause for quitting MOOC in the past.
- A lack of pedagogical and technical support during the incorporation of ICT tools is the major obstacle to implement ICT in educational process
- Usefulness of materials, up-to-date course materials and facilitators feedback on participants activity are the most important factors when attending an online course
- The course subject and contents is by far most important factor when deciding to enroll in a MOOC, followed by the MOOC instructor and MOOC provider. The 4th most important factor is the possibility of choosing language (learning materials in participant's own language). The least important factor when ranking was the possibility of communicating in participant's own language (writing in the forums, preparing assignments).
- Improving knowledge on ICTs, learning about Learning Design Studio and learning to design more creatively are the main reasons for joining the HandsON
- In average participants are willing to devote 5,56 hours per week to HandsON
- Participants are experienced in reading in English (54.8%) and web 2.0 tools (38.8%)
- Not having enough time to finish the course is the biggest concern regarding HandsON
- Internet was the primary source of introducing the HandsON MOOC to participants

6. Patterns of usage

6.1. Patterns of registration

To register to the course, future participants had to fill the Join Us survey. The only variable impacting subsequent decisions of the 2632 distinct respondents refers to their answer to the following question of the survey: *“In which language would you like to follow the MOOC?”*

Thus, the impact of this language preference on subsequent conversion as a member of language group in Canvas was measured for each of the 7 main language groups of the MOOC.

Language	Language preference in Join US survey		Member of a Canvas Language group	Conversion rate (from Join us to language group)
Bulgarian	258	9%	123	47.7%
Catalan	237	8%	119	50.2%
English	907	32%	198	21.8%
French	438	15%	93	21.2%
Greek	264	9%	96	36.4%
Slovenian	30	1%	16	53.3%
Spanish	635	22%	144	22.7%
Total assigned to 7 groups	/	/	789	27.8%
Unassigned to a group (only Canvas username)	/	/	764	/
	2837	100%	1553	/

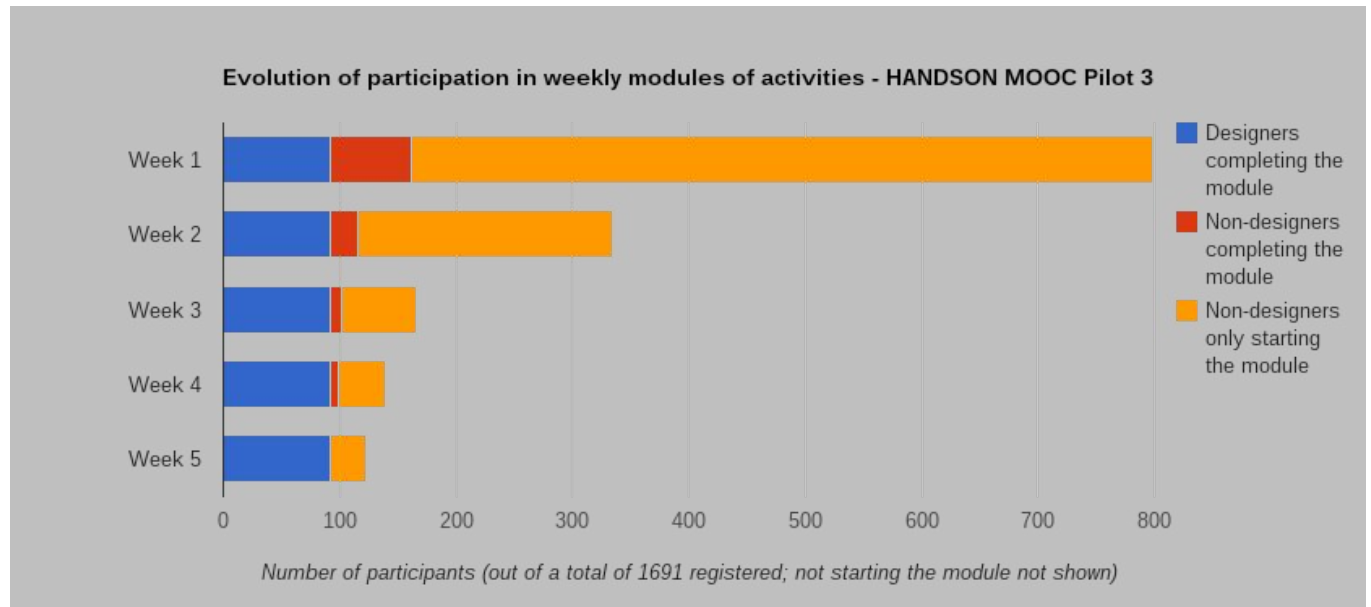
Table 1 - Language groups in Canvas - Conversion rate on nov 3rd, 2014.

At this stage, the Bulgarian, Catalan and Greek groups display already better results than the 3 initially biggest groups (English, French and Spanish).

6.2. Patterns of activity - Progression and completion

161 participants completed the first week's module of activities among which the **92 “Designers”** that eventually completed all the modules of the course and were awarded a

certificate of participation. The Designers represent **6.7% of the initial 1,515 participants** (those that created a username in Canvas). Differences between language groups could be observed in the participation evolution throughout the 5 weeks of the MOOC and early predictors of these different behaviors could be identified as soon as the first days of week 1.



Activity in Week 1 is a good indicator of intention to study as 57% of the participants who completed week 1 module completed the whole course.

The pattern of activity shows a steady fall over the duration of the course.

Patterns differ between group. The Greek group was the most active and the one that obtained more designers (28). From this group we can point out that week 1 level of engagement, as estimated by page viewing on Canvas and by the response rate to the MailChimp (<http://mailchimp.com/>) campaigns sent to the groups at the beginning of the MOOC, was the highest.

Early predictors of these differences could be identified as early as during the first days of week 1: in the response rate to an email campaign and in the viewing of the course page for each language group.

Besides the Slovenian group in which no badge was obtained, the 3 lowest completion rates were observed for the English, French and Spanish groups. Due to the low activity in the Slovenian group, after the first week it was decided to merge these participants with the English group.

These low rates in the initially largest groups, might be related to the low numbers of active participants in week 1 compared to the Bulgarian, Catalan and Greek groups. It can be

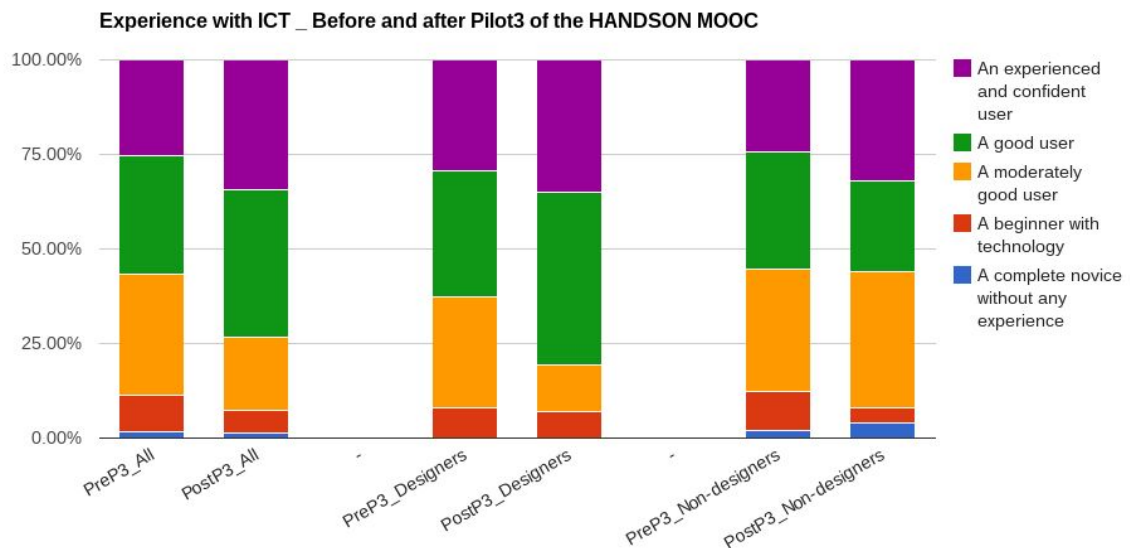
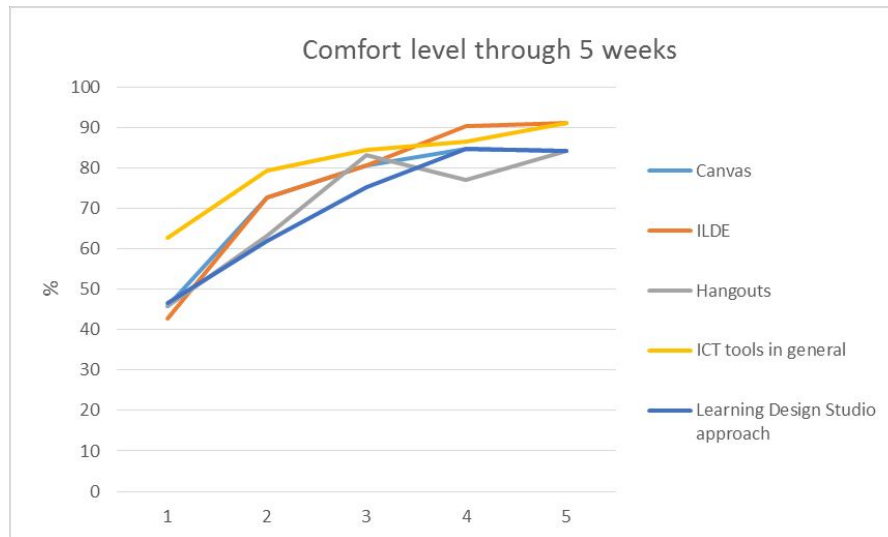
hypothesized that such low numbers are insufficient to reach the **critical mass** necessary for good operation of the peer-mentoring activities (especially critical during week 1), for building a sense of community and ensuring engagement of students for the remaining 4 weeks. **25-30 participants** might be a good approximation for the minimum number of participants required to ensure engagement and this was only obtained in 3 groups (the Bulgarian, Catalan and Greek groups).

Two additional hypothesis to explain low completion rates are: 1) the large groups shared a language but not necessary a culture, this made more difficulty the community creation and the promotion of activity among participants; and 2) they were from different countries and did not share previous connections (on the contrary to the situation of the Bulgarian, Catalan or Greek groups of facilitators, where recruitment to the MOOC was done from **a common trusted source**).

6.3. Some measures of success

The main data available for judging the overall success of the course comes from the post-course survey, which tells us about the participants' experience.

Although the need to log in the two main course platforms (Canvas and ILDE) might have been a drawback for several participants, most of them answered that they felt **confident with ICT** (question from the pre-survey), that the comfort level increased quickly (from the weekly surveys) and that the MOOC helped them feel more confident with ICT (post-survey). Which at the same time, fits with the expectations they had when joining the course.

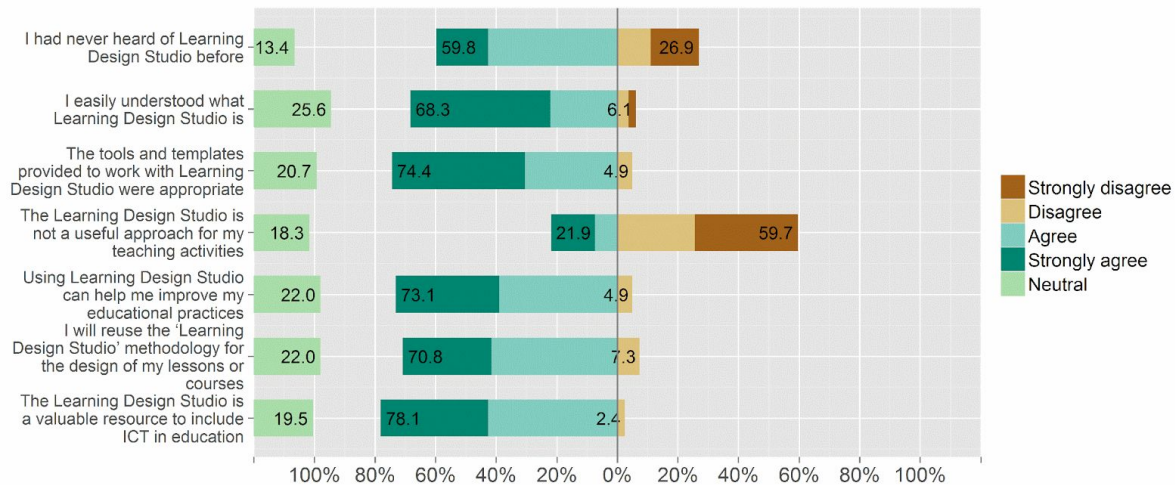


Therefore, we see a match between the HANDSON aims and objectives, the expectations by the participants and the acquired skills after the MOOC. We consider this to set the stage for a successful CPD activity for educators.

The MOOC **learning activities** are perceived as highly useful, as in Pilot 2. Especially important to assess the success of the MOOC is the response to the question: "Will you use in your classroom the learning activity you have created during the MOOC?" 95.5% of the respondents answered affirmatively. This is an increase if we compare to the response in pilot 2 where 88.5% of the respondents answered affirmatively. This might be related to a lower comfort level in ICT expressed by pilot 2 participants.

The **Learning Design Studio** approach is very well valued and perceived as a useful tool to include ICT in education.

PostPilot3 – How much do you agree with the Learning Design Studio statements



As seen in the results from the Join Us form, “To learn about Learning Design Studio” was the second highest motivation to register in the MOOC. Therefore, we can also conclude that in this sense we met the expectations of participants.

Although the number of non-participants was high (of the original 2,632 only 1,515 created a username), most of them said that they would join a new edition of the MOOC and that the main problem for not pursuing was lack of time on their part. However, similarly to Diana’s Laurillard statement on her report “Anatomy of a MOOC for Teacher CPD”, we consider “activity in week 1 as a much better indicator of intention to study than ‘registration’, which is not equivalent to registration on a normal university course”.

5. The HANDSON Toolkit

The HANDSON toolkit is an immersive activity for educators meant to experience a learning design process in as short time as possible. This project-based format is an opportunity to touch on the pillars of learning design – empathy, iteration, rapid prototyping, reflection – without going into the theory and methods behind this approach.

Key facts about the HANDSON Toolkit
<p>The HANDSON Toolkit is...</p> <ul style="list-style-type: none">• It is a different type of training activity.• It is immersive, agile and hands-on.• It is about empathy, rapid prototyping, evaluation and reflection.• It is refreshing and its aim is to empower educators as designers. <p>Why would you run a HANDSON toolkit workshop?</p> <ul style="list-style-type: none">• Do you believe that technology is a resource that needs to be integrated based on the teaching and learning goals?• Do you believe that educators need design skills to better create learning activities?• Do you believe that iteration is a good way to improve often the learning activities or any design task you do?• Do you believe that technology can have a bigger role in education?

Learning design is an instructional design approach that places a role of designers on educators. The design activities include the definition of the educational challenge, the design of

the learning activity and its implementation, evaluation and refinement all with a focus on the students and their contexts.

Learning design builds from disciplines such as user-centered design, design thinking or service design to bring a process and a set of methods for the conceptualization of educational products. It also leverages the expertise and experiences of peers to provide feedback and enhance these products.

The selection of ICT-tools. The goal of this immersive and hands-on activity is that educators design an ICT-based learning activity following a learning design process. Thus, the focus is not on the ICT tool but on the students/ end users and the context in which the learning activity is going to be implemented.

The last task of the activity is to select the ICT tools. Since these vary depending on the context, facilitators need to provide the list of tools. This will ensure that the tools are there to be used by the educators and students. Say your LMS is Moodle, a commercial tool or Google apps, then show a list according to the availability of tools in these environments.

The following image is an example of ICT-tools list for participants (more at <http://project.handsonict.eu/2015/05/01/a-list-of-web-2-0-tools-for-the-handson-toolkit/> and <http://project.handsonict.eu/2015/04/13/the-handson-toolkit-and-the-ict-tools/>)



Do you want to run a HANDSON toolkit workshop? Here are some tips.

<http://project.handsonict.eu/2015/05/07/some-tips-for-running-a-handson-toolkit-workshop/>

(English) and

<http://project.handsonict.eu/2015/04/30/handson-toolkit-tips-para-facilitadoresas-personas-indispensables-en-el-proyecto-handson/> (Spanish).

You can also use the ICT-based learning activity template to distribute among your participants so that they can finalize the activity:

<http://project.handsonict.eu/2015/04/26/handson-toolkit-in-uk-finalize-your-learning-activity-with-this-template/>. Also available in Spanish:

<http://project.handsonict.eu/2015/04/15/finaliza-tu-actividad-de-aprendizaje-con-este-template/>.

Before going ahead and planning your workshop, we suggest you read the feedback from the previous HANDSON toolkit workshops:

- In Glasgow: <http://project.handsonict.eu/2015/05/06/handson-toolkit-in-glasgow/>
- In Athens: <http://project.handsonict.eu/2015/04/29/%CE%B7andson-toolkit-in-athens/>
- In Sevilla: <http://project.handsonict.eu/2015/04/16/taller-handson-toolkit-en-sevilla/> (Spanish)
- In Madrid: <http://project.handsonict.eu/2015/04/17/impresiones-de-los-participantes-a-los-talleres-del-handson-toolkit/> (Spanish)

Using a presentation to run the workshop is up to you. If you want to have a look at one of yours, check this post:

<http://project.handsonict.eu/2015/05/04/a-presentation-example-for-the-handson-toolkit-workshop/>.

Once you've run the workshop, you can claim your Hands-On Toolkit badge! (<http://project.handsonict.eu/2015/05/05/claim-your-h-o-t-mentor-badge/>)



Claim your badge at
community@handsonict.edu

Comments from previous HANDSON toolkit facilitators

- **Ana Rodera – UOC, The Project:** “A fresh and agile methodology, to connect with people offering personalization”
- **Israel Conejero – UOC, HANDSON Project Manager:** “A two hours of real adventure for educators interested in designing ICT-based learning activities. Keywords: engaging, useful, fruitful, customization”
- **Mireia Leg – UOC:** “a method that provides the necessary tools to reflect, build and design, from sharing experiences”.
- **Gema Santos – UOC:** “The HANDSON toolkit creates an useful and practical learning design framework, which lets educators to think about their teaching and how improve skills-based learning of their students”
- **Dimitra Dimitrakopoulou – EA:** “An educational tool that enhances collaboration and shared knowledge”
- **Xanthie Chouliara, Greece:** “A revolutionary reflecting new tool of creating, collaborating, editing and sharing content online or/and offline for participants and trainers”
- **Ania Rolinska – University of Glasgow:** ‘a really hands-on approach introducing educators to the learning design framework and encouraging them to apply it to their own context and challenges right from the first minute of the workshop’

6. Lessons learned

This section summarises the findings from the course development process, and from the course analytics, participant data, and evaluation surveys.

The main lessons learned from Pilot Round 3 are summarized and recommendations are made for future utilization of the HANDSON MOOC.

Taken into account that we had in pilot 3 returning participants from pilot 2, that pilot 3 participants expressed high interest in a new edition of the MOOC and everything that we have learned from these two pilot rounds, we have now all the ingredients for an even greater version of the MOOC. This 4th edition would not only benefit from the knowledge acquired during pilot 3, it would also be more prepared for adjusting all the required elements in a timely manner and for selecting a better period of the year - which could not be done during the HANDSON project. The feedback received from participants and our own reflexion point towards July as likely the most convenient month to offer the MOOC again.

Below we have summarized the main lessons from Pilot Round 3 organized following the chronology of their recommended implementation. These are the lessons we have gathered from the pilot analysis. The overall lessons on the experience of designing, running and evaluating a MOOC will be part of a public report of the project.

6.1. Course preparation and planning

Recommendations for preparing the MOOC

Dissemination: Use trusted sources by educators to disseminate your MOOC.	Initial characteristics of the participants, such as pre-existing community ties, may have a significant impact on the subsequent building of the sense of community during the MOOC and therefore on the level of engagement in certain communities, suggesting possible new strategies of recruitment for all other communities.
Educational sectors: Consider creating separate communities depending on the sector	Mostly teachers from Higher and Secondary Education showed a great interest in improving their knowledge of ICT in education. However, Secondary Education participants had a higher engagement in completing the learning activities and their higher involvement in giving positive feedback at the end of the course.
Recruiting facilitators: ask them to be participants first	A training close to the real participants experience and a pre-existing teamwork consolidation are also factors worth

	considering when trying to impact in a positive manner on the participation in each language community.
Reduce workload	Since lack of time was the biggest obstacle to complete the MOOC, another important avenue for improving participation is to find ways of reducing the workload. There is a discrepancy between the duration of the course (5 weeks) and the number of learning activities (23). The number of learning activities needs be reduced or duration of the course increased.
Canvas is a good option for its simplicity	The course environment largely based on Canvas was very well received, including better than the Moodle-based one used in Pilot Round 2. Still it had some negatives aspects. For example, it may have had an adverse early impact on participation. Its login system was not found straightforward by many participants and should be simplified or made clearer to avoid possible dropping out of the course at its very beginning.
Avoid more than 1 login	Having to login to the second main course environment represented by ILDE for realizing the learning activities was found too complicated for many participants. Therefore, these two environments should be somehow better integrated for avoiding multiple logins.
Check the badge awarding system	Once Pilot Round 3 completed, it was found that the Badge awarding system integrated in Canvas is not automatic as some participants thought. It would be useful to change that so that no participant is left without due certification of participation.
Disseminate explaining the LDS approach	The main approach of the course, namely its methodology based on the Learning Design Studio (LDS) was found a useful and appealing course format. Overall, the course activities have been useful. The fact that this course was offered massively to teachers from around the world has been positive. The course materials were useful.
Language choice for course materials	If you offer the MOOC in another language, consider also translating English materials into local language. It is a clear plus for fostering interactions with the course reading resources.
Foster the use of Twitter by helping participants with this tool if you want to promote its	Given the growing role of Twitter in creating connections between learners, it would be worth in a future edition to emphasize the potentialities of Twitter in teacher training by

usage	creating new opportunities of using this tool during the MOOC, whether during warm-up activities as in Pilot 3 or during more frequent, weekly activities as well.
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6.2. Course support

Platform

The change from the Moodle platform used in Pilot Round 2 has been beneficial. Although not known to the great majority of participants before Pilot Round 3, Canvas was perceived easier to learn than Moodle. The environment was not cause for dropping out of the MOOC. Only 8 % of participants dropped out of the course because of the platform. The comfort level with Canvas rose through all weeks.

For a future MOOC, Canvas is the preferred choice of Pilot Round 3 participants. Besides the training for facilitators that was found insufficient on Canvas, a second window of opportunity for improvement is in the integration of the login systems. Some participants complained about difficulties when logging to different tools. Login process should be better explained and integrated in the future MOOCs. Participants also expressed the wish of having more freedom to move between language groups to explore and/or contribute to discussions in other languages (especially the english one as second group).

Peer-mentoring

Respondents were satisfied with peers' activities. But not all participants liked being a peer as 17% would like to avoid being one in the future. So it could be considered dividing participants into 2 groups according to their willingness to peer review. Care should be taken though as mentioned above to avoid creating groups too small, of less than 25 participants, that would not allow for proper community dynamics. It is also worth to explore in the future work the ideas of automatic formation of teams in MOOCs for collaboration purposes and learning analytics for personalization.

On recruiting and training volunteer facilitators

Overall, facilitators answers suggest that the training that they received can be improved. In particular, participation to the diverse sessions is not very high, and only 6 of the 15 facilitators (the 15 who answered the survey of the 32 initial volunteers) declare having a clear idea of her/his role as facilitator. Only 5 feel comfortable answering questions about the Canvas or ILDE environment. Still, all were satisfied and would repeat the experience with the HANDSON MOOC. Similarly, participants were satisfied with the facilitators role and only 2% dropped out due to facilitation. Facilitator involvement seems to have had a positive effect on the quality of the participant experience. However, it does not seem to have had an impact on course completion as significant as other factors mentioned previously such as most importantly the pre-existence of a sense of community or reaching a sufficient number of week 1 participants as

observed in the most performant language groups. This does not disqualify facilitation as a critical element of a future edition of the MOOC, but instead suggest that the effort of facilitation should be better focused on being prepared for interventions during the very first days of the MOOC when early signs of disengagement are being detected.

Multilinguism

HANDSON MOOC's participants were mostly from non-English speaking countries. Although they had a high level of English language knowledge and having the MOOC reading materials in English did not represent a major obstacle, a great majority found very helpful having facilitator in their own language and enjoyed contributing in their own language.

In the future, when 34% of participants would like to do the MOOC in English, 55 % would like to do it in another language. It would therefore make perfect sense in a future edition to provide participants with facilitation and materials in their own language.

Recommendations for running the MOOC

Engage participants from the very beginning	Owing particularly to the distribution of participants in 7 distinct language groups, we have been able to observe and learn about interesting patterns of engagement as early as the first days of the MOOC. Early interventions to improve participation, such as additional actions of facilitation in groups showing poor level of engagement during the first of the 5 weeks of the course is key to increase completion rates.
Display activities progressively	Although the use of Canvas Modules was helpful for organizing the course in modules of activities and awarding badges based on the completion of these modules, modules presentation should be improved. The number one factor for dropping out of the course "I did not have enough time" might have been exacerbated, at least in part, by the presentation of all the content of the course in a single Module page. 23 learning activities might had seemed as an overwhelming task to some or many.
Promote peer-mentoring	The feedback received from peers could be made more helpful by promoting more valuable interactions. Promote peer-feedback and qualitative and constructive comments among participants.
Place your efforts at the beginning of the MOOC	The effort of facilitation should be better focused on being prepared for interventions during the very first days of the

	MOOC when early signs of disengagement are being detected.
Ensure groups are larger than 25 participants	Merge small groups into bigger ones, since our analysis suggests that a group size of at least 25 participants is necessary early on to promote peer-mentoring during the first week and consolidate the engagement in the learning community for the remaining of the course.

7. It's your turn!

We hope that you have enjoyed this report and are interested in running the HANDSON MOOC or Toolkit or both!

Go to the project website (<http://www.handsonict.eu/>) to learn more about them, the project and download the learning materials. The MOOC is available in English (for Canvas and Moodle) and Russian (for Canvas) and the toolkit is available in Bulgarian, English, Greek and Spanish.

Do you have any questions? Contact us at community@handsonict.eu.

