

VET4APPS

Trainers manual

(02-A4)

Version 4.0

May 2016

Project acronym: VET4APPS

Project name: Strategic Partnership to develop innovative VET open educational resources for mobile apps entrepreneurs

Project code: 2014-1-FR01-KA202-008702

Document Information

Document ID name: VET4APPS_Trainers manual

Document title: Trainers manual (O2-A4)

Output Type: Intellectual Output 2

Date of Delivery: 23/05/2016

Activity Type:

Activity Leader: UNIVERSITE LYON 1 CLAUDE BERNARD with collaboration of UL-ICT Academy

Dissemination level: Public

Document History

Versions	Date	Changes	Type of change	Delivered by
Version 1.0.	15/07/2015	Initial Document	-	UL-ICT Academy

Version 2.0	30/10/2015	Amendments, inclusion of existing deliverable O2-A4.1 produced by UCBL	Major	UL-ICT Academy
Version 3.0	30/11/2015	To be approved as final	Major	UL-ICT Academy
Version 3.1	27/02/2016	Revision and corrections	MAJOR	UCBL
Version 3.2	23-05-2016	Inclusion of corrections from partners	Major	UL-ICT Academy
Version 4.0	08-06-2016	Correction of formatting issues	Minor	UCBL

Acknowledgement

The persons of UL reviewing this document are Argene Superina and Marko Papić. The persons of UCBL involved in writing this document are Olivier Georgeon, Jean Philippe Farrugia and Catarina Ferreira Da Silva. The person of INSA of Lyon involved in writing this document is Frédérique Biennier.

Disclaimer

The document is proprietary of the VET4APPS Consortium. No copying or distributing, in any form or by any means, is allowed without the prior written agreement of the owner of the property rights. This publication reflects the view

only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Table of Contents

Contents

Table of Contents.....	5
1. Introduction	9
2. Train the Trainers Manual Structure.....	9
3. Items of Lesson Plans.....	10
4. Training with VET4APPS MOOC Business Skills Module	11
4.1 Understanding Business Skills Module	11
4.2 Learning Unit 1: Mobile Application with sustainable revenue.....	13
4.2.1 Targeted Knowledge, Skills and Competencies	13
4.2.2 Lesson plans - Mobile economy landscape	13
4.2.3 Lesson plans – New revenue models.....	14
4.2.4 Lesson plans – Advertising revenues.....	15
4.2.5 Lesson plans – Choosing the revenue model	15
4.3 Learning Unit 2: Mobile Apps core statement and value	16
4.3.1 Targeted Knowledge, Skills and Competencies	16
4.3.2 Lesson plans - Target market	17
4.3.3 Lesson plans – Value chain organization.....	17
4.4 Learning Unit 3: Mobile applications marketing and promotion.....	19
4.4.1 Targeted Knowledge, Skills and Competencies	19
4.4.2 Lesson plans – Organizing a marketing strategy.....	19
4.4.3 Lesson plan – Strategies identification	20
4.4.4 Lesson plan – defining a strategy	21
4.4.5 Lesson plans – Tools	21
4.4.6 Lesson plan – user centric communication.....	22
4.4.7 Lesson plan - Personality	23

4.4.8	Lesson plan title – social media	23
5.	Training with VET4APPS MOOC Design Skills Module	24
5.1	Understanding Design Skills Module	26
5.2	Learning Unit 1: Design according to users’ needs.....	27
5.2.1	Targeted Knowledge, Skills and Competencies	28
5.2.2	Lesson plans – Ergonomics and Design	28
5.2.3	Lesson plan - Design tools.....	29
5.3	Learning Unit 2: Mobile apps usability testing	29
5.3.1	Targeted Knowledge, Skills and Competencies	30
5.3.2	Lesson plans – Designing user experience	30
5.3.3	Lesson plans – Models of User Experience	31
5.3.4	Lesson plan – uX, Design tools.....	31
5.4	Learning Unit 3: Emotional design for mobile apps	32
5.4.1	Targeted Knowledge, Skills and Competencies	32
5.4.2	Lesson plans – Introduction and elements of emotional design	33
5.4.3	Lesson plan – Elements of emotional design	33
5.4.4	Lesson plan – implement emotions in your design	34
6.	Exercises, available in the VET4APPS MOOC Modules	35
6.1	Exercises in Business Skills Module of VET4APPS MOOC	36
6.1.1	Learning Unit 1: Mobile applications with sustainable revenue	36
6.1.2	Learning Unit 2: Mobile apps core statement and value	38
6.1.3	Learning Unit 3: Mobile applications marketing and promotion	39
6.2	Exercises in Design Skills Module of VET4APPS MOOC.....	40
7.	Assessment of VET4APPS MOOC and evaluation of student performance and results.....	41
8.	Organization of teaching, use, and facilitating the VET4APPS MOOC	42
8.1	Preparatory activities	43

8.1.1	Trainers should do the VET4APPS MOOC activities themselves.....	43
8.1.2	Prepare a short bio and introduce yourself to the class	43
8.1.3	Prepare a short welcome video	44
8.1.4	Define the course instance	44
8.1.5	Course announcement	45
8.1.6	Send reminder emails to registered participants	45
8.2	Course performance.....	45
8.2.1	Course introduction - Trainer’s personal welcome email sent to learners	46
8.2.2	Trainer’s personal welcome message on course info page.....	46
8.2.3	Encourage learners to use the discussion forum to introduce themselves.....	46
8.2.4	Trainer initiates activity in forums	46
8.2.5	Course administration.....	46
8.2.6	Paced emails sent throughout course run	46
8.2.7	Release course content	46
8.2.8	Provide forum moderation	47
8.2.9	Provide interactive hangouts.....	47
8.2.10	Ask for learner feedback.....	47
8.2.11	Possible individual tutoring and assessment	47
8.3	Course conclusion.....	47
8.3.1	Send trainer’s personal closing email	47
8.3.2	States availability of course materials for learners	47
8.3.3	Learner survey	48
8.3.4	Generate and send certificates of participation and assessment.....	48

Vet4Apps

 Erasmus+

1. Introduction

The Train the Trainer manual describes possible scenarios for trainers to perform **online** or **in person** training with the VET4APPS MOOC.

Within the document, each of the MOOC learning modules is described and commented upon. Anticipated outcomes, expected knowledge and skills achieved are described. Subsequently, lesson plans are proposed based on the multimedia content and exercises available. Lesson plans take into account different possible pedagogical approaches.

The VET4APPS MOOC is divided into three subsequent modules:

- Introduction to Mobile App Development
- Module on Design Skills for Mobile App Development
- Module on Business Skills for Mobile App Development

The MOOC consists of additional module, named "Training of Trainers". This module comprises guidelines for trainers regarding the use of the VET4APPS learning materials and the MOOC facilitation tools.

It should be stated that VET4APPS MOOC provides a good overview on the Mobile Applications Development subject area, however it does not cover in depth learning units about skills on programming of applications as it extends the scope of this MOOC. Therefore, VET4APPS modules and learning units can be used individually on as needed basis, as they are not directly related to each other. Learning module on business skills has no prerequisites in the module on design skills and vice versa.

2. Train the Trainers Manual Structure

This manual acts as an aid to all educators that perform training (in person or online) about Mobile Applications Development. The manual addresses VET4APPS modules only and does not extend to other topics of interest in the subject area. Its structure mirrors the VET4APP MOOC due to simplified navigation.

Chapters in this manual are divided according to the structure of the MOOC. Each chapter describes MOOC learning units' outcomes, expected knowledge and skills to be achieved. Subsequently, lesson plans are proposed based on the multimedia content and exercises available. Lesson plans take into account two possible pedagogical modalities – training in person (live sessions, laboratory sessions) or online, where suitable.

3. Items of Lesson Plans

Separate topics within learning unit of a specific MOOC module are described with specific lesson plan, if suitable. Lesson plans consist of following items.

Setting: online, in person (classroom) or both

Duration: estimated duration of the lesson

Lesson beginning:

- What meaningful activity will learners complete as soon as they enter the classroom or when starting learning online?

Engage/motivation:

- How could learners' interest be sparked?
- Is there a prior knowledge that should be tapped?
- Is there vocabulary that must be cleared?
- Is there brainstorming that students need to complete before the lesson begins?

Whole Group Instruction (in classroom):

- Focus lessons (explicit teaching/modeling, strategy demonstration, activate prior knowledge),
- Shared reading, shared writing,
- Discussion,
- Writing process.

Evaluate Understanding/Assessment:

- How will trainer know if learners have achieved lesson's objective?

Closing Activities/Summary:

- How will trainer tie up loose ends, reinforce/revisit the objective and connect the lesson to the unit?

Additional resources/Instructional Materials Needed:

- What does trainer need in order to teach the lesson? (Computer Lab, Equipment)

4. Training with VET4APPS MOOC Business Skills Module

The aim of this module is to give an overview of different mobile application business models and to provide learners capabilities to understand them, their economic impact and entire commercialization process.

The learning objectives of the Business Module are:

1. Provisioning a view on **mobile economy landscape**
2. Addressing the methods of **marketing** of an application
3. Training the learners to use **analytics tools**
4. Training the learners to **commercialize** an application

The outcomes correspond to three learning units within the module:

- Learning Unit 1: Mobile applications with sustainable revenues
Addressing mobile economy landscape, different business models;
- Learning Unit 2: Mobile app's core statement and value
Addressing commercialization
- Learning Unit 3: Mobile applications marketing and promotion
Addressing marketing and analytics

4.1 Understanding Business Skills Module

Different types of learners (based on their needs) were anticipated to use this module. Commonly they should all have solid technological background.

First type of learners without real marketing competencies should acquire at least the minimum information to understand the marketing of a Mobile Application.

Second type of learners that want to make money from a Mobile Application (e.g. already in development, or just as an idea) should be able to integrate their technology-dependent Business model and set the cost/revenue balance.

Therefore, the learning strategy of this module first aims to make learners understand the theoretical background, by giving them the basic knowledge and vocabulary. Further more, it also aims at providing a methodological guideline to set a mobile application business model so that this theoretical knowledge can be applied.

In order to provide the competencies about applying the theoretical knowledge, a bottom-up strategy including various use-case based exercises was chosen in this module, so that learners can construct different methodological elements of a guideline to set an appropriate business model.

As already stated, the VET4APPS business module aims to provide a common theoretical background regarding the mobile economy landscape.

It includes information on the mobile market, the new revenue models as well as basic information on advertising models. Based on these elements, the method enactment starts by reminding that a product is designed / built to be sold. This involves that **the learners must understand the market organization, identify the potential audience of an Application by searching for competitors, and identifying how clients can be reached.**

In a practical use-case trainees have to organize the knowledge / search for information and make synthesis. **The important thing is not to make them provide a given solution but to make them integrate knowledge that has been presented.**

Compared to the existing material about the subject matter (as lots of information is available on Internet such as blogs, white papers, reports and books dedicated to a particular field), this curriculum is organized in a holistic

way to integrate marketing and technological knowledge. A particular attention is paid on synthesis and the syllabus can be adapted to the learners' competencies by "by-passing" some basic parts depending on their knowledge. Last but not least, this field continuously evolves so **the learners should update market information on a regular basis.**

4.2 Learning Unit 1: Mobile Application with sustainable revenue

This learning unit is divided into four topics:

- Mobile economy landscape
- New revenue models
- Advertising revenues
- Choosing the revenue model

4.2.1 Targeted Knowledge, Skills and Competencies

Knowledge

- Identify and recognize different revenue models.

Skills

- Analyze and select a revenue model.
- Estimate monetization activity.

Competences

- Present and explain the rationale of the revenue model selection.
- Take informed decisions about revenues based on statistics.

4.2.2 Lesson plans - Mobile economy landscape

Setting:	Online or in classroom
Duration:	Classroom: 45 min Lecture: 20 min; Understanding evaluation: 25 min Online: 55 min Lecture: 30 min; Understanding evaluation: 25 min
Lesson beginning:	Read the introductory
Engage/motivation:	Classroom: explain an example of a real case application; Development issues for iOS/Android

Whole group instruction	Yes
Evaluate understanding / assessment	<p>Online:</p> <p>Individual task: define your own app; checklist slide no.5; start writing in the separate Word document; Optional: provide template to the learners</p> <p>Start new topic in a forum (such as Nestor): ask learners to address value chain for customers</p> <p>Classroom:</p> <p>Individual task: define your own app; checklist slide no.5; start writing in the separate Word document; Optional: provide template to the learners</p> <p>Select some cases, discuss about findings</p>
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs; focus on targeted audience; value chain; other parameters to be taken into account (ecosystem)
Additional resources	/

4.2.3 Lesson plans – New revenue models

Setting:	Online or in classroom
Duration:	<p>Classroom: 90 min</p> <p>Lecture: 60 min; Understanding evaluation: 30 min</p> <p>Online: 120 min</p> <p>Lecture: 45 + 45 min; Understanding evaluation: 30 min</p>
Lesson beginning:	/
Engage/motivation:	Classroom: ask open questions related to the topic, e.g. learner develops an app, customer company is interested in the functionality, wants to buy it; how does the learner sell it? Complete with a code? White label, blue label? Pros/Cons...
Whole group instruction	Yes
Evaluate understanding / assessment	<p>Online:</p> <p>Individual task: define revenue model(s) for your own app; write down answers to questions in Slide 13; write in a separate Word document;</p> <p>Start new topic in a forum (such as Nestor): ask learners what will the customers pay?</p> <p>Classroom:</p> <p>Individual task: define revenue model(s) for your own app; write down answers to questions in Slide 13; write in a separate Word document;</p> <p>Select some cases, discuss about findings</p>

Closing activities / Summary	Provide common feedback in the topic, based on learners inputs; focus on selected revenue models, privacy issues
Additional resources	/

4.2.4 Lesson plans – Advertising revenues

Setting:	Online or in classroom
Duration:	Classroom: 35 min Lecture: 20 min; Understanding evaluation: 15 min Online: 40 min Lecture: 25 min; Understanding evaluation: 15 min
Lesson beginning:	/
Engage/motivation:	Classroom: Show an app using advertising extensively, provide some figures;
Whole group instruction	Yes
Evaluate understanding / assessment	Online: Individual task: select appropriate online advertisement model for your app; based on the checklist slide no.5; write in s separate Word document Start new topic in a forum (such as Nestor): How could they use advertising within the app? If not, why not? What would they need to change in order to use selected model? Classroom: Individual task: select appropriate online advertisement model for your app, based on the checklist slide no.5; Select some cases, discuss about findings
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs; focus on impacts on defined apps and models;
Additional resources	/

4.2.5 Lesson plans – Choosing the revenue model

Setting:	Online or in classroom
Duration:	Classroom: 80 min Lecture: 60 min; Understanding evaluation: 20 min Online: 110 min Lecture: 45 + 45 min; Understanding evaluation: 20 min
Lesson beginning:	/
Engage/motivation:	Classroom: repeat the vocabulary and facts from lesson “new revenue models”; short intro about selected already prepared cases that have flaws in chosen revenue models

Whole group instruction	Yes
Evaluate understanding / assessment	<p>Online:</p> <p>Individual task: Elaborate on the selected revenue model for your app; Change it? Write in a separate Word document;</p> <p>Start new topic in a forum (such as Nestor): how do you plan to make your app visible?</p> <p>Classroom:</p> <p>Individual task: Elaborate on the selected revenue model for your app; Change it? Write in a separate Word document;</p> <p>Select some cases, discuss about findings</p>
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs; focus on differentiation from other similar apps;
Additional resources	/

4.3 Learning Unit 2: Mobile Apps core statement and value

This learning unit is divided into two topics:

- Target market
- Value chain organization

4.3.1 Targeted Knowledge, Skills and Competencies

Knowledge

- Identify successful existing mobile app's core statements.
- Define the identity of the application.

Skills

- Formulate, assess, and rewrite if needed, the mobile app's core statement and value.
- Create the mobile app's core statement in such a way that the app's basic value is easily understandable to users and customers.

Competences

- Independently develop, emphasize and express the mobile app's core statement and value.

4.3.2 Lesson plans - Target market

Setting:	Online or in classroom
Duration:	Classroom: 60 min Lecture: 30 min; Understanding evaluation: 30 min Online: 75 min Lecture: 45 min; Understanding evaluation: 25 min
Lesson beginning:	Read the introductory
Engage/motivation:	Classroom: repeat the theoretical background of the Learning unit 1;
Whole group instruction	Yes
Evaluate understanding / assessment	Online: Individual task 1: <ul style="list-style-type: none"> - Estimate costs of your app (slides 2,5,6,7); - Think of the possible revenues, try to be realistic (use slides 8,9,10,11) – do you think you are on the safe side; Write in a word document; Individual task 2: <ul style="list-style-type: none"> - Design a table, put target users size on one side and revenues on the other – how much revenue do you expect from each user? Write in a word document; Classroom: Group task, moderate: select one case of the students, engage students to estimate costs of the app and revenues on the other hand; build a table, see if equilibrium is reached; Individual task: do the group task individually; Write in a word document; Select some cases, discuss about findings
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs; focus on overall feasibility of proposed apps that can be estimated so far.
Additional resources	/

4.3.3 Lesson plans – Value chain organization

Setting:	Value chain (value, network value model) Online or in classroom
Duration:	Classroom: 45 min Lecture: 30 min; Understanding evaluation: 15 min Online: 50 min Lecture: 30 min; Understanding evaluation: 20 min

Lesson beginning:	/
Engage/motivation:	Classroom: discuss about Porters model into detail; show case; Online: open forum topic, let students watch https://www.youtube.com/watch?v=iFJw8TbFNzw
Whole group instruction	Yes
Evaluate understanding / assessment	Online: Start new topic in a forum (such as Nestor): do you envisage performing of nine activities in your app? Where do you see blank spots? Could you address them with crowd sourcing/funding? Elaborate, if yes, how? Individual task 1: after trainers review of your contribution to the forum, amend the word document with your app spec.; Individual task 2: find interesting resources related to crowd sourcing/funding; Share with your peers on the forum; Classroom: Group task: Discuss about 9 activities based on one example; Individual task: write the way you would address nine activities in the Word document; Select some cases, discuss about findings
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs; let students browse through the crowd sourcing/funding resources gathered; if none are gathered, provide some interesting;
Additional resources	/

4.3.4 Lesson plans – Clients/partners

Setting:	Clients/partners; value analysis Online or in classroom
Duration:	Classroom: 45 min Lecture: 30 min; Understanding evaluation: 15 min Online: 50 min Lecture: 30 min; Understanding evaluation: 20 min
Lesson beginning:	/
Engage/motivation:	Classroom: ask open questions related to the topic, why do they think value analysis is important, did they think of partnership of any kind related to their app development?
Whole group instruction	Yes
Evaluate understanding /	Online:

assessment	<p>Start new topic in Nestor (Forum): identify potential partners, if previously thinking of crowd sourcing, identify partners for your crowd sourcing/funding strategy;</p> <p>Individual task: write your forum contribution in the separate Word document;</p> <p>Classroom:</p> <p>Individual task: write down your crowd sourcing strategy with partners identified into the Word document;</p> <p>Trainer follows the progress, selects one good and one misleading case, discuss about findings</p>
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs;
Additional resources	/

4.4 Learning Unit 3: Mobile applications marketing and promotion

This learning unit consists of two topics:

- Organizing a marketing strategy
- Tools

4.4.1 Targeted Knowledge, Skills and Competencies

Knowledge

- Identify and select suitable promotion mechanisms and tools.

Skills

- Build a fan base to easily promote a mobile app.
- Track and analyze the mobile app activity using analytics.
- Set up social media accounts.
- Create a form to sign up to a mailing list.

Competences

- Independently develop a suitable promotion mechanism for mobile app.

4.4.2 Lesson plans – Organizing a marketing strategy

Setting:	Marketing strategies & plan (intro) Online or in classroom
-----------------	---

Duration:	Classroom: 25 min Lecture (slides 2-6): 25 min; Online: 30 min Lecture: 30 min;
Lesson beginning:	Read and watch the introductory
Engage/motivation:	Classroom: explain an example of a successful case app. What do students think would happen if the marketing plan would be different?
Whole group instruction	Yes
Evaluate understanding / assessment	/
Closing activities / Summary	/
Additional resources	/

4.4.3 Lesson plan – Strategies identification

Setting:	Strategies identification Online or in classroom
Duration:	Classroom: 55 min Lecture (slides 7-16): 45 min; Understanding evaluation: 10 min Online: 60 min Lecture: 50 min; Understanding evaluation: 10 min
Lesson beginning:	/
Engage/motivation:	Online: Watch: https://www.youtube.com/watch?v=Z6U8njoyChA
Whole group instruction	Yes
Evaluate understanding / assessment	Online: Start new topic in Nestor (Forum): Which one of the proposed strategies do you find suitable to tackle in your case and why? Classroom: Group task: discuss about suitability of presented marketing strategies; question students to distinguish between strategies presented;
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs;
Additional resources	/

4.4.4 Lesson plan – defining a strategy

Setting:	Defining a strategy Online or in classroom
Duration:	Classroom: 35 min Lecture (slides 17-20): 20 min; Understanding evaluation: 15 min Online: 40 min Lecture: 20 min; Understanding evaluation: 20 min
Lesson beginning:	/
Engage/motivation:	Classroom: show a case of two, functionally similar apps, one with more downloads, the other with few; tease with reasons for success related to the basic marketing strategy, such as definition/consumer identification of the app, ways of app delivery, use of effective promotion channels;
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Individual task: (re)define your app, look back at the word doc. and rewrite: draw logo, name, choose most important functionality from the marketing perspective; select communication channels; write into the word doc. Online: Individual task: open topic in forum: (re)define your app, look back at the word doc. and rewrite: draw logo, name, choose most important functionality from the marketing perspective; select communication channels; write into the word doc.
Closing activities / Summary	Reply to selected students inputs;
Additional resources	Paper, pencil;

4.4.5 Lesson plans – Tools

Setting:	E-marketing environment Online or in classroom
Duration:	Classroom: 25 min Lecture (slides 2-8): 25 min; Online: 30 min Lecture: 30 min;

Lesson beginning:	
Engage/motivation:	Classroom & online: Watch: https://www.youtube.com/watch?v=jcbnt4Svq9Y
Whole group instruction	Yes
Evaluate understanding / assessment	/
Closing activities / Summary	/
Additional resources	/

4.4.6 Lesson plan – user centric communication

Setting:	User centric communication – key principles Online or in classroom
Duration:	Classroom: 35 min Lecture (slides 9-15): 20 min; Understanding evaluation: 15 min Online: 40 min Lecture: 20 min; Understanding evaluation: 20 min
Lesson beginning:	/
Engage/motivation:	Online: Watch: https://www.youtube.com/watch?v=BpGs_aBVD1A
Whole group instruction	Yes
Evaluate understanding / assessment	Online: Start topics in Nestor (Forum): - Could you use NYPL.org case best practice in your app and how? Write ideas in your Word doc. Classroom: Group task: discuss about NYPL case; show its best practice
Closing activities / Summary	Provide common feedback in the topic, based on learners inputs;
Additional resources	/

4.4.7 Lesson plan - Personality

Setting:	App personality Online or in classroom
Duration:	Classroom: 35 min Lecture (slides 16-21): 10 min; Understanding evaluation: 25 min Online: 35 min Lecture: 10 min; Understanding evaluation: 30 min
Lesson beginning:	Classroom: Students vote for their most favorite app; use arbitrary system;
Engage/motivation:	Classroom and online: Watch https://www.youtube.com/watch?v=ONCO7EtpAQE
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Group tasks: <ul style="list-style-type: none"> - Discuss about case studies presented. - Choose three most rated apps among students and ask them how they perceive the app – fun & playful or solid & conservative personality? Discuss. Individual task: Each student should think of an app that provides buyer personas; Select few and discuss; if none presented have some prepared; Online: Open topics in forum: <ul style="list-style-type: none"> - Find one app that has fun & playful personality and one with solid and conservative; Elaborate; - Find an app that provides buyer personas; Elaborate
Closing activities / Summary	Reply to selected students inputs;
Additional resources	/

4.4.8 Lesson plan title – social media

Setting:	Blogging, interaction, social media networking Online or in classroom
Duration:	Classroom: 60 min Lecture (22-28): 30 min; Understanding evaluation: 30 min Online: 60 min Lecture: 30 min; Understanding evaluation: 30 min

Lesson beginning:	/
Engage/motivation:	Online: https://www.youtube.com/watch?v=bNoFFGCWPaQ
Whole group instruction	Yes
Evaluate understanding / assessment	<p>Classroom:</p> <p>Group task: Discuss about case studies presented.</p> <p>Individual task 1: Select social media for marketing your app. Create accounts;</p> <p>Individual task 2: Define a social media strategy for your app. Write into the word document. Define Facebook communication strategy, blog strategy, other potential social media to be used? Look how competitors do it;</p> <p>Individual task 3: Find mobile apps with geolocation features used for user reviews.</p> <p>Online: Open topics in Forum for following tasks</p> <p>Individual task 1: Select social media for marketing your app. Create accounts;</p> <p>Individual task 2: Define a social media strategy for your app. Write into the word document. Define Facebook communication strategy, blog strategy, other potential social media to be used? Look how competitors do it;</p> <p>Individual task 3: Find mobile apps with geolocation features used for user reviews.</p>
Closing activities / Summary	Reply to selected students inputs;
Additional resources	

5. Training with VET4APPS MOOC Design Skills Module

MOOC Design Skills Module deals with different aspects of mobile applications design, providing students with knowledge necessary to put their ideas into practice, taking into account mobile application users, different possibilities of user interfaces, usability aspects and emotional design aspects.

The module is intended for students with previous general programming skills but with no or little experience in developing mobile applications. This MOOC module also gives an overall theoretical overview regarding design aspects that may be of use to those students that do not intend to program mobile

applications, but to get involved in other necessary activities related to mobile applications development, such as management of projects, sales or marketing.

Design Skills Module does not directly tackle programming, although there are completely explained practical exercises along with the tools that consist of simple programming procedures.

Main learning objectives of Design Skills Module are the following:

1. Understanding **user interface conventions** and how to build mobile applications that immediately make sense to users and implicitly explain their value;
2. Be able to organize and perform **usability testing** against the mobile applications specifications;
3. Be familiar with **experience-centric** details of mobile applications and **emotional design aspects** such as skeuomorphism, readability, experiment with sound, touch responsiveness, animation, humoristic notifications, etc.

Throughout the module background theory tackles user interface and user experience design in order for students to distinguish the difference, as well as to test both with practical exercises.

Trainers have the background theory presented in short, concise and simple to understand manner, giving them enough time to spend with the learners to perform the practical exercises. Two types of practical exercises are provided:

- Open ended questions are available in all learning units of this module. Open ended questions require from users some basic analysis, aggregation and providing answers in the form of open text. Answers are provided to users.
- Walkthrough exercises require from students to perform some basic programming in the GameSalad platform, however, they are explained with answers. These exercises are available in the first learning unit of this module, as well as upon completion of the Design skills Module.

In the following chapter, different lesson plans will be proposed that include working with students solving of these tasks. Lesson plans will be divided

according to the learning units, as they appear in VET4APPS MOOC Design Skills Module.

5.1 Understanding Design Skills Module

VET4APPS MOOC Design Skills Module is organized in 3 learning units:

- Learning Unit 1: Design according to users' needs
- Learning Unit 2: Mobile apps usability testing
- Learning Unit 3: Emotional design for mobile apps

The first learning unit is related to ergonomics. After introduction, in order to distinguish between user interface and user experience, this unit deals with mobile application appearance and is the most "graphical" of all units. The second learning unit is related to user experience, which is not only graphical but applies to satisfy mobile app **usability**. Finally, the third learning unit tackles emotional design, which is about user retention with emotional stimuli.

In the theoretical part of the first learning unit students will be introduced with specific interfaces of mobile applications, quite different from desktop applications. Besides, they are used in a totally different context: in the street, while doing something else at the same time, and often with only one hand on a quite small screen. Therefore, it is crucial for the users to understand rapidly what he/she can do with the application and how. The objective of this module is therefore to provide students with knowledge to design interfaces that meet these requirements. Students should be able to identify mobile interfaces specifics and how to design accordingly. Mobile devices have small screen, multi-touch capabilities, and a handful of usable sensors (accelerometers, GPS, camera)... How to use all this to make a suitable interface?

Additionally, students will learn how to use appropriate tools for designing user interfaces. By this, we meant not only software tools, but design tools and approaches, such as wireframes and mockups as well.

The first learning unit also focuses on understanding the role of the designer in the mobile application development team. More than in any other type of software production, design has a crucial place in mobile development and

should be integrated from the very beginning. Communication between designers and coders is essential.

In the second learning unit, user experience is explained into more detail. Although it is a hard-to-define concept, however, it is central for mobile development. After completion of this module, students should be able to understand what user experience (UX) is in a general context. In some cases this is at the frontier between psychology and design.

Students should also realize that UX is of utmost importance for mobile applications. If the UX is addressed in the right manner, it will be simpler to define the business model behind, as it in most cases depends on UX. A mobile application is generally very cheap and is sustainable only if it is widely used. If users are not satisfied with their usage experience, they will not come back and the application will die. Finally, the second learning unit provides students with knowledge, how to use UX models to predict user reactions. Second learning unit of Design Skills Module sums up previous concepts in order to enable students to design for a better user experience.

The third learning unit of Design Skills module tackles with emotional design as the ultimate step in application design. This concept again, is hard to summarize, but basically emotional design is about retaining the user by provoking emotions with design elements. The objective is to make the users use the application because they want to, not because they have to. After completion of this learning unit, the students should understand their mobile application users and the general audience, be able to try to predict how they react, and design accordingly.

Additionally, students should understand the seminal work on emotional design, apply fundamentals on mobile application design and be familiar with classical patterns to induce positive emotional responses.

5.2 Learning Unit 1: Design according to users' needs

This learning unit consists of one topic:

- Ergonomics and Design

5.2.1 Targeted Knowledge, Skills and Competencies

Knowledge

- Understand user interface conventions.
- Have knowledge of how to design mobile apps that immediately make sense to users and implicitly explain their value.

Skills

- Organize lots of complex information to be contained on the mobile user interface in a way that is simple, user-friendly and elegant.
- Recognize users' needs and try to anticipate users' satisfaction.

Competences

- Design mobile user interface according to design best practices.

5.2.2 Lesson plans – Ergonomics and Design

Setting:	User interface design vs User eXperience design - intro Online or in classroom
Duration:	Classroom: 45 min Lecture (slides 4-12): 30 min; Understanding evaluation: 15 min Online: 45 min Lecture: 30 min; Understanding evaluation: 15 min
Lesson beginning:	/
Engage/motivation:	Online: watch the intro into the Learning unit Classroom: discuss what do students think User interface design is? What do they think User experience design is? Do they think of the difference?
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Group task: Ask questions, slide 12; Discuss answers Individual task: Each student should answer open ended question Exercise 1; Online, Individual task: Open topic in Forum for students to write down answers to questions from slide 12
Closing activities /	Reply to selected students inputs;

Summary	
Additional resources	Computer classroom;

5.2.3 Lesson plan - Design tools

Setting:	Design tools Online or in classroom
Duration:	Classroom: 45 min Lecture (slides 13-25): 30 min; Understanding evaluation: 15 min Online: 60 min Lecture: 30 min; Understanding evaluation: 30 min
Lesson beginning:	/
Engage/motivation:	Online & Classroom: watch https://www.youtube.com/watch?v=T0vt3nLZKks
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Group task: Ask questions, slide 25; Discuss answers Individual task 1: Each student should answer open ended question Exercise 2; Individual task 2: Prepare/install GameSalad environment on students computers or if setting in the classroom already prepared, perform walkthrough exercises 1,2; Online, Individual task: Open topic in Forum for students to write down answers to questions from slide 25 Open topic in forum: walkthrough exercises peer support; Ask students to perform exercises 1,2; if unsuccessful let them give mutual support on the forum; intervene only if students don't provide answers to each other; give incentive to students providing support to their peers
Closing activities / Summary	Reply to selected students inputs;
Additional resources	Computer classroom; If possible with previously prepared GameSalad environment

5.3 Learning Unit 2: Mobile apps usability testing

This learning unit consists of one topic:

- Designing user experience

5.3.1 Targeted Knowledge, Skills and Competencies

Knowledge

- Understand user interface conventions.
- Have knowledge of how to design mobile apps that immediately make sense to users and implicitly explain their value.

Skills

- Organize lots of complex information to be contained on the mobile user interface in a way that is simple, user-friendly and elegant.
- Recognize users' needs and try to anticipate users' satisfaction.

Competences

- Design mobile user interface according to design best practices.

5.3.2 Lesson plans – Designing user experience

Setting:	User eXperience design - intro Online or in classroom
Duration:	Classroom: 45 min Lecture (slides 4-12): 30 min; Understanding evaluation: 15 min Online: 45 min Lecture: 30 min; Understanding evaluation: 15 min
Lesson beginning:	/
Engage/motivation:	Online: watch the intro into the Learning unit Classroom: discuss what do students think User interface design is? What do they think User experience design is? Do they think of the difference?
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Group task: Ask questions, slide 12; Discuss answers Individual task: Each student should answer open ended question Exercise 1; Online, Individual task: Open topic in Forum for students to write down answers to questions from slide 12
Closing activities /	Reply to selected students inputs;

Summary	
Additional resources	Computer classroom;

5.3.3 Lesson plans – Models of User Experience

Setting:	Models of User Experience Online or in classroom
Duration:	Classroom: 75 min Lecture (slides 12-24): 45 min; Understanding evaluation: 30 min Online: 90 min Lecture: 50 min; Understanding evaluation: 40 min
Lesson beginning:	Classroom: before starting with the first slide, ask students if they can give you an example of visually nice or beautiful application; Find it and see – what do they think makes this app beautiful; try more than one example;
Engage/motivation:	/
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Group task: Together with students analyze selected application from the Hassenzhal/Morville model perspective; Discuss answers Individual task 1: Each student should answer open ended question Exercise 2; Individual task 2: let students perform walkthrough exercises 3,4,5 from the previous learning unit; Online, Individual task: Open topic in Forum for students to analyze given app (by you) from the Hassenzhal/Morville model perspective (use slides 32,33) Use opened topic in forum: walkthrough exercises peer support; Ask students to perform exercises 3,4,5; if unsuccessful let them give mutual support on the forum; intervene only if students don't provide answers to each other; give incentive to students providing support to their peers;
Closing activities / Summary	Give students general feedback on their inputs
Additional resources	Computer classroom; If possible with previously prepared GameSalad environment;

5.3.4 Lesson plan – uX, Design tools

Setting:	User eXperience Design Tools
-----------------	-------------------------------------

Online or in classroom	
Duration:	Classroom: 50 min Lecture (slides 26-31): 15 min; Understanding evaluation: 35 min Online: 60 min Lecture: 20 min; Understanding evaluation: 40 min
Lesson beginning:	/
Engage/motivation:	Discuss about already prepared mobile app from students if they participated in the VET4APPS MOOC Business Skills Module; if not, give them five minutes to form an idea; The idea of this learning unit is to beautify the app!
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Group task: Together with students design an alarm clock application, using both models and appropriate tools; engage students with questions; Discuss; Individual task: Each student should write down an idea about which model to use for proposing UX design for his/her own app; Individual task 2: let students perform walkthrough exercise 6 from the previous learning unit; Online, Group task: Form teams of five students; open forum topic; give them a task to design UX of a chosen app (eg. Alarm Clock; Smart Home remote control; Thermometer; Museum guide) according to selected model; Why have they chosen one before another Individual task: let students perform walkthrough exercise 6 from the previous learning unit;
Closing activities / Summary	Reply to selected students inputs;
Additional resources	Computer classroom; If possible with previously prepared GameSalad environment

5.4 Learning Unit 3: Emotional design for mobile apps

This learning unit consists of two topics:

- Introduction and elements of emotional design
- Implement emotions in your design

5.4.1 Targeted Knowledge, Skills and Competencies

Knowledge

- Identify and select appropriate emotional design such as skeuomorphism, readability, experiment with sound, touch responsiveness, animation, humoristic notifications.

Skills

- Use animation, humoristic notifications, etc., to accompany the app.
- Create habits about the use of the mobile app to improve user retention, e.g. gamification, sense of involvement.

Competences

- Develop experience-centric details of mobile apps and emotional design aspects.

5.4.2 Lesson plans – Introduction and elements of emotional design

Setting:	Introduction Online or in classroom
Duration:	Classroom: 30 min Lecture (slides 6-15): 30 min; Online: 30 min Lecture: 30 min;
Lesson beginning:	/
Engage/motivation:	Online: watch the intro into the Learning unit Classroom: Ask students what do they think emotional design represents?
Whole group instruction	Yes
Evaluate understanding / assessment	/
Closing activities / Summary	/
Additional resources	/

5.4.3 Lesson plan – Elements of emotional design

Setting:	Elements of emotional design Online or in classroom
-----------------	--

Duration:	Classroom: 35 min Lecture (slides 12-24): 20 min; Understanding evaluation: 15 min Online: 35 min Lecture: 20 min; Understanding evaluation: 15 min
Lesson beginning:	/
Engage/motivation:	Classroom: Show students an app or web site with elements of emotional design that can be quickly seen; Show functionally similar app with no elements of emotional design. Ask if they can distinguish elements of emotional design; Discuss;
Whole group instruction	Yes
Evaluate understanding / assessment	Classroom: Group task: Together with students discuss about open ended exercise 1; Individual task 1: Each student should draw or describe one first level emotional design element (Norman) for their app.; Online, Individual task: Open topic in Forum for students to answer to the open ended exercise 1; point them not to look at the solution Open topic in Forum for students to describe one first, second and third level emotional design element (Norman) for their app.;
Closing activities / Summary	Give students general feedback on their inputs
Additional resources	Computer classroom; paper, pens; drawing board

5.4.4 Lesson plan – implement emotions in your design

Setting:	Implement emotions in your design Online or in classroom
Duration:	Classroom: 75 min Lecture (slides 26-31): 15 min; Understanding evaluation: 60 (30+30) min Online: 75 min Lecture: 15 min; Understanding evaluation: 60 min
Lesson beginning:	/
Engage/motivation:	App users need to have positive response to the app. How would students induce these positive responses? What are the best feelings to induce? Discuss Classroom: live with whole group;

	Online: open topic in forum
Whole group instruction	Yes
Evaluate understanding / assessment	<p>Classroom:</p> <p>Group task: form groups of up to five students; Let them choose one of their or existing apps; Each group should propose an example of emotional design to achieve: surprise; attraction; Anticipation; Exclusivity; Let them present their answers; Discuss;</p> <p>Individual task 1: Each student should write down answers to exercises on slides 31, 32;</p> <p>Individual task 2: let students perform walkthrough exercise 8 from the first learning unit;</p> <p>Online, Group task:</p> <p>Form teams of up to five students (possibly the same as in the group task of previous learning unit); open forum topic or use existing; Each group should propose an example of emotional design to achieve: surprise; attraction; Anticipation; Exclusivity;</p> <p>Individual task: let students perform walkthrough exercise 8 from the previous learning unit;</p>
Closing activities / Summary	Reply to selected students inputs;
Additional resources	Computer classroom; If possible with previously prepared GameSalad environment

6. Exercises, available in the VET4APPS MOOC Modules

There are different types of exercises available in the VET4APPS course. Some of them are used in the proposed lesson plans, others are available as part of learning unit lectures or as a stand-alone items in the MOOC structure.

Exercises require from students to:

- Click on the correct solution (self assessment quizzes)
- Write down answer as an open text
- Use online, offline tools or to draw on paper diagrams, schemes, pictures (applying concepts into practice)
- To program, using simple programming tools (applying concepts into practice)

Some exercises may be related to each other, enabling students to build and almost complete specific aspects of their own mobile application (e.g. in the Business Skills module).

All exercises have thorough answers proposed, available to students at any given time of their study.

Exercises are pulled from existing Apps depending on the trainees' environment. Exercises include games, localisation-based apps, etc. The key points is to identify and analyse what Apps provide / do... and to make trainees understand the elementary knowledge and appropriate methodological points by organising discussions.

The goal of each exercise is to synthetize the knowledge and to use it "in situ". We organise them as a "mediated discussion with peers" to formalise the methodology. As a consequence, the trainers can select exercises, spend more or less time on each of them depending on the audience background.

6.1 Exercises in Business Skills Module of VET4APPS MOOC

Exercises are organised as "small self-directed use cases". They globally aim at defining an App and its revenue model. This use-case is organised as a set of exercises associated to the different steps of the module.

6.1.1 Learning Unit 1: Mobile applications with sustainable revenue

6.1.1.1 Exercises on the context identification

A first exercise consists of defining an App and its targeted audience. The evaluation will have to focus on the way the App will be defined, i.e. technical and market related elements should be considered at the same time. Trainees will also have to search for competitors to define what they will provide and how they can get some revenue from it.

After this first exercise, they will have to make a synthesis to compare the IOS and Android market to motivate which market they will address. Key points are identification of competitors, and technical and marketing constraints/opportunities associated with these 2 markets.

6.1.1.2 Exercises on the new revenue model

Based on the use-case defined previously by the trainees the goal is to identify pros and cons of the different models according to the targeted App. The key elements of the discussion are to make the trainees aware that the model will have to fit the targeted audience and the value carried out by the App.

Then the second exercise focuses on defining a pricing strategy. Trainees can search for competitors and pay attention to the way they can get some revenue. To achieve this exercise, the group can be split into different subgroups: an App designer will have to convince a potential user. A third trainee will have the role of an observer in charge of writing a synthesis motivating the choice. This synthesis will be corrected and validated by both the "App provider" and the "potential user".

The two other exercises relate to the personal data that is often used as a monetising parameter. The key point of the discussion will focus on the way the App should be modified to motivate personal data collection (exercise 3). A particular attention should be paid on the way this data collection can be motivated to convince the user. The evaluation should be achieved as before using a third party in charge of making the synthesis.

Then the last exercise aims at organising a privacy chart. The trainees will have to collect privacy charts and to criticise them before trying to write their own chart. The user will have to define his requirements and to evaluate this chart whereas the provider will have to assess its impact on the App architecture. A global synthesis that will bring to light the motivations/choices and their impact should be prepared by the observer and validated by the user and the provider. Note that trainees can swap roles depending on the exercise so that they will have to pay attention on the different points of view.

6.1.1.3 Exercises on the advertising models

Based on the use-case defined previously by the trainees we propose three exercises:

1. The goal is to evaluate which component of the App will be impacted by possible advertising. A particular attention should be

paid on the App architecture, on the impact on the user interface, as well as on the way personal information can be analysed to adapt the e-advertising to the user.

2. Based on the App specification, the trainees will have to search for competitors and evaluate how they include e-advertising. After this analysis step, they have to identify the way they can “sell their app and its potential audience” to get advertising revenue. As previously, this exercise can be organised using three roles: App provider, observer, and e-advertising potential client.
3. This last exercise aims at consolidating the different results identified previously to write a global synthesis describing the App’s potential audience, the targeted advertising and evaluate the revenue the App provider can get.

6.1.1.4 Exercises on the way revenue models are chosen

In this part, we propose two exercises:

1. Discuss the pros and cons of the different revenue models that have been presented to select the most convenient for the App. The trainees will have to use the previous synthesis to get background information. The comparison criteria must be explained and result should be presented as a table. These results should be evaluated by other groups
2. In this second exercise, the focus is put on the expected profits. The global costs should be estimated and profit sources must be discussed. Within this exercise, the App provider will have to convince a Business Angel to invest. The observer will be in charge of writing a synthesis.

6.1.2 Learning Unit 2: Mobile apps core statement and value

Exercises are organised in small self-directed use cases. They generally aim at defining an App and its revenue model. This use-case is organised as a set of exercises associated to the different steps of the module.

6.1.2.1 Exercises on the target audience evaluation

Exercise 1 consists of defining the different costs (to design, develop, deploy, sell, and operate) the App defined in the previous module before identifying the revenue to balance the costs. As stated previously, trainees will have to play different roles such as App architect, marketing professional and the observer in charge of the global synthesis.

Exercise 2 aims at identifying the revenue that can be provided by each user and the size of the necessary panel. A particular attention should be paid on the « recruitment costs », i.e. the tasks/efforts to achieve to get new users.

Exercise 3 focuses on the application of Apps statistic to identify the total audience panel.

Exercise 4 consists of consolidating these results to adjust the Business Plan built in the first business module.

The trainer can either let each group continue with the specification of its own use case or (preferably) provide inputs from other groups to achieve these exercises. Paying attention on this last organization, the evaluation should put the stress on the way the business plans are criticized by the trainees.

6.1.2.2 Exercise on the value chain organization

In this part, the use case aims at making trainees organize a synthesis of the background knowledge they got in the different learning units. They have to precise the App organization and define precisely the value chain and its related costs before evaluating the necessary funding. For this exercise, the different groups can evaluate each other by playing either the App provider/App Crowdsourcing provider/App financier. A particular attention should be paid on the way the market analysis will be used to motivate the return on invest rate.

6.1.3 Learning Unit 3: Mobile applications marketing and promotion

This LU proposes exercises enabling the learners to identify, to analyse and to create a social media strategy to marketing and to promote a mobile App.

6.1.3.1 Define a social media strategy for your App

In this exercise, the learners can be divided in groups and each group should select an App and define a social media strategy for this App. For this each group has to look for competitors' social media, define a facebook communication strategy, identify leaders, identify a blog strategy (define the blog name and presentation, the topics to blog on and how to disseminate the blog identification). Then each group should make a presentation (for instance, prepare slides to share with the other groups) and then learners can discuss the results of each group.

6.1.3.2 Select a mobile App and analyse

Students have to select a mobile App and analyse it from a marketing viewpoint. This exercise can also be done within groups. The exercise on this topic (deliverable O2-A1.1) provides some questions, which can be used as analysis criteria. At the end the groups can present their results to the other learners and discuss the results together.

Other complementary exercises, which can be done individually or in groups, propose to:

- Identify and analyse a mobile App which provide buyer personas.
- Identify and analyse three mobile App, which combine geolocation capabilities with users reviews.
- Select the adequate social medias for marketing your app and create account in these social medias.

To do these exercises, the learners should firstly define the criteria they intend to use to analyse the mobile Apps, present and discuss these criteria with the other learners. The final set of criteria should be agreed among all participants. Then they select the adequate Apps and analyse them according to the criteria they have previously agreed. Finally they prepare a presentation regarding this analysis to share and discuss with the other learners.

6.2 Exercises in Design Skills Module of VET4APPS MOOC

The library of exercises is subdivided into three distinct parts, which should be done in the following order:

- First Multiple Choice Tests are here to check good assimilations of primary concepts. There may be more than one good answer. The questions are very basic and the answer is often directly in the course's slides. Although, if the results are bad (less than half answers are correct), precisions should be asked to the course supervisor until all concepts have been correctly assimilated.
- Open-ended tests are more general questions with practical cases analysis. These questions present some situations that the student should carefully analyse, then answer precisely and concisely.
- Open-ended problems based on working files: with these exercises, the student is active in building or correcting an existing interface. He/she should use GameSalad and assets and project files to build a working interface and eliminate any potential issues. He/she should use previously acquired notions and apply them in practical cases. Precise instructions on how to install and use GameSalad are given along the exercises.

7. Assessment of VET4APPS MOOC and evaluation of student performance and results

As already stated, the context of VET4APPS MOOC is of such nature that gained knowledge, skills and competencies can not be measured simply through automatically graded quizzes and tests. According to Kirkpatrick's Four Level Training Evaluation Model, the VET4APPS should be evaluates somewhere at the third, "behavior" level, which is not easy to implement in the general MOOC setting. Additionally, the fact that only parts of it may be used as an OER (Open Educational Resource) to perform in classroom or online adds to the complexity of assessment and evaluation of results.

Open-ended questions and problems cannot be corrected automatically. In a MOOC, the number of attendees is too high to ask the supervisor to review all the answers individually.

The lesson plans therefore propose selection of exercises to be performed and evaluated by the trainer through reading of the results and providing written text feedback.

In the case of walk through exercises, assistance of the peers is proposed. On the other hand, it is suggested, especially in the case of GameSalad open ended problems to proceed with peer reviews: each submitted open-ended problem could be reviewed by at least one another attendee. In addition, an ideally complete correction, done by the supervisor, will be made available to the users after the tests. Cross-references between the reviews and the correction should give a correct overview of the value of the submitted work and should allow auto-correction.

In any case, in order to engage students and provide them with good user experience while attending the VET4APPS course it is strongly advised to use embedded forum extensively and to perform training in the guided manner, so that students will know where they are, what they already completed and what to expect.

8. Organization of teaching, use, and facilitating the VET4APPS MOOC

There are two envisaged modes of use for the VET4APPS MOOC. The first one includes the use of specific sections (parts) of the MOOC to provide learners with additional learning opportunities and resources as a part of a blended learning approach, which includes the delivery of content and instructions through online media. In this case, trainers may follow one or more of the proposed lesson plans to achieve their training objectives. Trainers will gain an insight into the extent of their involvement within the learning process. In the other case, if trainers decide to use the complete MOOC to deliver training in mobile application development, this chapter covers the entire organizational process, providing guidelines and recommendations on how to use and facilitate the VET4APPS online course.

The MOOC training should be divided into three distinct phases:

- Pre-training activities (Preparation)
- Training activities (Performance)
- Post-training activities (Conclusion)

Pre-training activities are very important, as they simplify the subsequent work and enable trainer to respond to changes and unexpected events during the delivery of training.

During the delivery of training, trainers will spend most of the time in moderating discussion, evaluating work assignments and responding to students' questions and inquiries. There will probably not be enough time to adapt the schedule of lessons & activities (performance) during training sessions.

Post-training activities are important for providing students with assessment and evaluation of their work.

This chapter is mainly addressed to VET providers and trainers, who seek to deliver training with the use of the VET4APPS MOOC, as a separate course instance.

8.1 Preparatory activities

Before the MOOC begins, it is important that the trainers complete some preparatory actions, which we list in this section. We recommend that trainers should attend a MOOC and use it in-depth before the start of an instance, in order to understand the experience of being a MOOC participant. Indeed, participating in a MOOC is a different experience from attending a course in presence.

8.1.1 Trainers should do the VET4APPS MOOC activities themselves

It is important that you (the trainer) gain good knowledge of the course material before the course begins. Therefore, you should read all the course material, watch all the videos and answer all the quizzes. You should also follow at least some of the proposed lesson plans and to actually perform the open-ended problems and case studies (at least some of them) in order to know what to expect from MOOC participants.

8.1.2 Prepare a short bio and introduce yourself to the class

You should prepare a short presentation of yourself and an introduction to the course in your own words. An attractive introduction will essentially increase participants' willingness to experience the VET4APPS MOOC and create a sense of

connection between trainer and learners. Trainer's introduction could be embedded into the discussion forum or integrated into the course home page. While the VET4APPS MOOC provides the course material, it is important for the students to have a feeling of connection with their trainers in a particular MOOC instance.

In particular, you should introduce yourself by presenting a short bio, your motivation to teach the MOOC, and your expectations. If there are several trainers, your role should be clarified. You must write an introduction to the course in order to stimulate participant engagement.

It is recommended that your introduction to the MOOC instance should be made public online, sharable by the major social medias and index-able by the major research engines. It constitutes an important element of promotion of trainers or trainers' team particular MOOC instance.

8.1.3 Prepare a short welcome video

Since most of the video material of the MOOC does not feature the trainer of a particular MOOC instance, it is recommended that trainers should prepare a welcome video to introduce learners to the course and help them get used to the structure and format of the MOOC. Such a video will facilitate learners' navigation throughout the VET4APPS online course and will essentially create a connection with participants.

8.1.4 Define the course instance

First, **define your target users** among the possible target groups (experienced programmers wishing to tackle specifics of mobile app development differ from sales professionals knowing nothing about design and usability aspects).

Second, **build your own course syllabus**. You can personalize the generic syllabus provided in the VET4APPS package. Use proposed lesson plans or include personal material and variations on pedagogical resources, learning objectives, goals, and outcomes. You may also apply personal grading and assessment schemes and criteria.

Third, based on your syllabus, **make your own calendar** that will take into account the realistic time needed to perform learning units' material reading and completing work assignments & exercises. The calendar should also include clauses for a reasonable extension of time in case of delays due to poor performance, while trainers need to take into account public holidays, vacations and cultural specifics (e.g. avoid Sundays) when generating the work schedule.

Fourth, prepare the **necessary information about the course**. This material will be needed when announcing and launching the course. The course homepage could be used to introduce learners to the MOOC. In this section, trainers should provide information about the prerequisites for attending the course (e.g. educational background, IT skills) as well as the time required for reviewing learning materials and completing assignments & tests.

8.1.5 Course announcement

Based on the definition of your target group, advertise and announce your particular MOOC instance. We recommend using your university traditional channels and mailing lists, as well as social media such as Twitter, Facebook, and Google+.

The course announcement should link to the MOOC home page, and include all necessary instructions for registration and for getting started with the MOOC.

The registration process can be performed anyway you choose. You could use the MOOC platform system or your own. In the latter case, you need to register users to the MOOC platform. Newly registered participants appreciate if they can get a glimpse into the MOOC look and feel when they register.

8.1.6 Send reminder emails to registered participants

The trainer must send reminder emails to all the registered participants before the course begins. Recommended frame is D-15, D-7 and D-1.

8.2 Course performance

On the first day of the MOOC instance, complete the series of actions listed in this section to launch the course.

8.2.1 Course introduction - Trainer's personal welcome email sent to learners

Use the mailing tool to send a welcome email to all participants.

8.2.2 Trainer's personal welcome message on course info page

Release the course introduction page, with your personal welcome video on course info page.

8.2.3 Encourage learners to use the discussion forum to introduce themselves

It is crucial to initiate online interaction amongst participants. The VET4APPS discussion forum is the place, where learners can exchange view and opinions with trainers, share knowledge and information with other participants, and discuss key concepts and problems associated with the course. In the absence of in-presence encouragement, online interactions are the only human encouragement the participants will receive to keep them motivated.

8.2.4 Trainer initiates activity in forums

To show an example to the participants, all members of the trainer team should present themselves in the MOOC forum.

You shall provide guidelines for the usage of the forum and forum etiquette (what language(s) should be used, is it ok to publish solutions to exercises?).

In particular, the trainer shall post explanations on how to get help with learning issues, and organize forum sections accordingly.

8.2.5 Course administration

Throughout the course, the actions listed in the section are to be taken on a regular basis, following the course pace.

8.2.6 Paced emails sent throughout course run

Announce each lesson through email sent to each participant.

8.2.7 Release course content

Release course content in a consistent manner as laid out in your syllabus. Announce changes ahead of time.

8.2.8 Provide forum moderation

As regards forum moderation, the trainer should become a facilitator and review the dialogues and discussions without intervening. It is sometimes preferable to leave time for other participants to answer questions rather than answering questions immediately. This leverages interactions amongst participants.

8.2.9 Provide interactive hangouts

Video real time streaming (hangout) is a powerful means to generate engagement of participants. You can use Google Hangout freely. Provide a hangout URL 24/7 to generate opportunities for participants to meet each other even when you are not connected. This can generate encounters amongst participant by serendipity.

Schedule sessions in which the training team will answer participants' questions and engage dialogue.

8.2.10 Ask for learner feedback

Encourage learners to provide feedback in forums, hangouts, and emails. There is always something to learn or adjustment to be made based on feedback.

8.2.11 Possible individual tutoring and assessment

While the massiveness of MOOCs implies that individual tutoring and assessment is not due to participant, it may be useful to provide individual tutoring and assessment to keep some participants afloat and maintain the MOOC's dynamics.

8.3 Course conclusion

The actions listed in this section must be taken at the end of the course.

8.3.1 Send trainer's personal closing email

Use the MOOC platform's mailing tool to send a closing email to all the participants.

8.3.2 States availability of course materials for learners

Provide permanent links to course material once the course has closed. You can decide to leave the forum discussions available after the course or do delete

them. Keep in mind that the VET4APPS MOOC will remain active and functional even after the end of the project duration.

8.3.3 Learner survey

Send the final survey to learners.

8.3.4 Generate and send certificates of participation and assessment

Use the arbitrary tool to generate individual certificates of participation and send them to participants.