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ICT preparatory structuring

Guidelines for Virtualizing Education in Social Work

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3

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Table of contents

Introduction

These guidelines are the second version on *how to use the ICT platform* and guidelines for course virtualization. After the first version, elaborated when the project's virtual environment was in production, this second version is designed taking into consideration the in-house LMS platforms.

In this occasion the structure of this main document is almost the same as the first version, and we included as ANNEX three new, and more in depth, guidelines focused in teaching (ANNEX I), a detailed guideline for the Moodle platform for students (ANNEX II) and another, more extensive, general guide more focused for teachers and administrators (ANNEX III)

The decision of making this WP as separated documents has one main reason. That this contents can be easily appropriate for each albanian partner and adapt it to each institutional characteristics and include more figures, and/or adapt the existing figures to their specific LMS. All the materials were performed taking in consideration the possibility and opportunity of being adapted to each institution and are available online in editable formats.

1 Definition of online teaching

We understand online teaching as the use of Internet technologies as a way to implement, reinforce or expand traditional teaching. Each of these three possibilities comprises different approaches. Just implementation means to transform traditional teaching using only Internet or electronic means. Reinforcement means to use devices in order to give strength or give another version using those means. Expansion means to facilitate other contents and methods to broaden traditional contents. Each of these items has its own logic. A very defined and structured content could be taught only on line. Most cases where contents and practice are involved require both; traditional and online strategies. Broadening contents using online devices is a good strategy for developing a more sustained learning.

1.1 Levels requiring LMS

In order to have a fruitful LMS system available for Albanian universities, there are three interrelated levels there must be taken into account: hardware, software and content. There must be underlined the existence of different cultural contexts where technology is implemented. It cannot be for granted different technological traditions and needs. So there is the need for able equipment, technical support (technicians) and the creation of content using specific content to support and enforce teaching. Each of those levels require a brief explanation.

1.1.1 Hardware and physical equipment

Clearly it is necessary to count on a minimum physical equipment –hardware, WiFi connectivity, and software able to handle that equipment. Taking into account the size and possible use for LMS in the Albanian universities, that does not require a big investment in equipment. Sometimes systems must be implemented from scratch and sometimes there is a need to update or transform old equipment. Budgetary questions are especially important also. Before buying hardware and

software it is important to realize different items. We began using a Virtual Machine hosted in a well known provider: DigitalOcean. Virtual machines are a good way to begin a quick and reliable test model to be modified and be cloned in a real machine in a short term time. But this is a quick but not definite solution. Hosting outside universities means to lose independence and autonomy. So it is extremely important to have your own material devices and software because they guarantee the freedom to correct, change and adapt according to the user's needs. So purchasing equipment is a key element in that LMS implementation.

After different meetings and discussions with Albanian technical staff the conclusion is this generic list of a basic hardware equipment to begin with a LMS as a mere example:

Item	Products	Quantity
Server	HP DL380 Gen10, (1) Intel® Xeon-Silver 4114 (2.2GHz/10-core/85W), 32 GB RDIMM DR 2600 MT/s (2x 16 GB), 8 Drive Cage, Hot Plug SFF SAS/SATA diskless, P408i-a/2GB, (1) 500W HPE FlexSlot Power Supply,	1
Server HDD	HPE 1.2TB SAS 10K SFF SC DS HDD	2
Wireless antenna POE outdoor	Ubiquiti UniFi AP, AC Mesh Pro	3
Wireless Router	Linksys WRT AC3200 Open Source Dual-Band Gigabit Smart Wireless Router	5
Switch managed POE 24p	Ubiquiti UniFi Switch 24 port	1
Rack	Lande Proline 42U Cabinet, Stand Alone W800 D1000, Flat Pack, Shatterproof Front Glass, Opening Sides, Black	1

Patch Panel	Patch Panel 24xTP, CAT6, 250Mhz, 19", Schwarz Synergy 21	1
	1U Plastic Single Sided Horizontal Cable Manager with Finger Duct	1
Patch Cables	Patch cable RJ45, CAT6 250Mhz, 0.5m grau, S-STP(S/FTP), Syner	
PDU	19 "power strip, 9x socket (CEE7)	2
Holders for the antennas	Lighting pillars	3
Network cable	All-strong Cable, Cat6 FTP, CCAG, 305m/roll	3

Table 1: Hardware configuration example.
Author: Indrit Shkupi (ICT T@SK member)

However, there would be a level of interaction among the three universities in order to save money using common services and procedures. Creating a network can make the LMS more reliable because each university can work as a backup for the other ones. Services can be shared and expertise spread. So it is important to create a consortium to allow synergy and also the flexibility to incorporate new universities in the future.

1.2 Creation of Teaching content

Technicians are a key part of this process and should have an important although definite role implementing LMS. Those are the backbone to maintain, grow and diversify different possibilities offered by LMS. For instance, creating an Open Journal System, setting up repositories for master and PH levels, online surveys and so on expand LMS to a superior level. Social Work teachers do not need to be experts on those possibilities so technical support is crucial. They can open up new opportunities for teachers and students. But teachers and students are the

key actors to create content. Both are required and should be a community sharing a common project and goal. Therefore, OJS and repositories should be a necessary complement for a true LMS. All actors have their place and task and cannot be obliterated.

1.2.1 Virtual Campus

So there are different elements to take into account in order to set up a Virtual Campus. There must be technological support, the creation of a community gathering teachers, technicians and students and the production of contents to be taught and shared. Particular courses are an important part for Virtual Campuses but they are not all.

2 LMS Software

Having a basic equipment and a community as said before, it is important to use the correct software in order to give an adequate service and also the possibility of growing and diversifying services. What to choose determines the future because changing software can require a lot of effort and can be time consuming. So compatibility to existing hardware, flexibility, modularity and capacity to improve should be the key features to decide what software to use.

2.1 Different available LMS

Learning Management System (LMS) comprises the different approaches and software created to expand education on electronic space. Online courses and virtual campuses have expanded considerably in the last ten years. Companies offer a great variety of complete packages easy to implement. But also sometimes a high cost is involved not only at the moment of purchasing software but also involving maintenance and adjustments. But there are free and open software

possibilities that can supply a good learning environment.

Some of privative software are these:

- WebCT: http://homebrew1.cs.ubc.ca/webct/

- Topclass: http://www.wbtsystems.com/

- Lotus Learning Space: http://www.lotus.com/home.nsf/tabs/learnspace

- Canvas: https://www.canvaslms.com/latam/

There are different comparative places with short reviews to decide what system is more suitable such as Capterra[1]. Different reasons should be taken into account in order to decide what software should be implemented such as expertise from users and technicians, budget, available electronic devices and so on. Also pre packaged systems, mainly.

2.3 Why Moodle

There are a set of reasons to adopt Moodle for Albanian university consortium. First, Moodle is the oldest LMS available and has more than 30 years being used all around the world and with a wide range of purposes. So it can be found all kinds of LMS projects that could serve as a model to implement this particular case.

Second, there is a very active community giving support and online aid without additional costs. Online help is easily available, well-structured through specific links and allows future users to begin from scratch. Depth on content and format depends therefore from the user's interests and needs. in fact, physical Moodle Manuals[2] are not very useful. Instead, all resources are available and exhaustively

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[1] https://www.capterra.com/learning-management-system-software/

[2] https://docs.moodle.org/

documented in a wiki[3] mode online. As we will show, this is very useful for all participants -students, teachers, and technicians- because anyone can have all the information freely available through wiki and specific forums. Also, this feature ensures the project's sustainability since there is no licence nor private or expensive manuals.

Third Moodle guarantees an independence from companies, software update and customization. So the software quality and the wide community are the two values that made us choose Moodle. Also EEC politics towards Open Science makes much more sense to use free software for public education.

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[3] https://en.wikipedia.org/wiki/Wiki

3 Considerations on LMS and Social Work

Each subject, career or profession have some features that should be respected when transforming content into LMS. For instance, Social Work (SW) gives a strong importance to face-to-face interaction with users. Privacy is also a strong ethical issue and preserving sensitive data is a deontological question as well. Therefore, and given the kind of teaching, technical resources and technology should be blended with face-to-face teaching. Also ethics and deontology should be strengthened on the digital realm.

For better understanding, in this part we will offer the context, and later, in Annex we will show a course example with different possibilities, resources and links to documentation.

3.1 Learning by doing Moodle

Having decided what hardware equipment to use and having also a test system via virtual machines, it was time to use Moodle and experience what teaching possibilities open up. We consider this way –learning by doing– to approach a LMS implementation more efficiently. New users tend to be scared about technology and reluctant to get involved. So the most efficient way, in our opinion, to teach those courses may be implementing a Moodle course specifically on how to create a Moodle Course. So students enrolled in that course, mainly teachers, have to familiarize with the basics to design a Moodle course. So, it is necessary to have some basic considerations such as the required structure for the course. There are three basic components to take into account. First, there is a professor that creates a course and or manages, second a group of students that attend online, finally a content that should be structured to have use as a pedagogical tool.

3.2 Creating a course

Creating a course requires understanding that for a blended teaching online courses expand or enhance face-to-face teaching. Therefore, digital contents should complement face to face activities. Activities, resources, and grading must have a purpose clear to grasp. There must be a sense, somehow of community: this is a course for specific individuals and specific teachers. It should be a good idea to use a restricted course for three reasons: enhances the idea of community, makes copyright restrictions to be handled better and it is easy to deal with privacy issues. To re-use existing courses should require adjustments according to specific features.

Accessibility is always important for any online course but on Social Work this is a must. Design must be very carefully done to help people with disabilities to be able to follow the course. If possible there should be a reinforcement available for those with specific needs (visual, hearing or motor disabilities). There are Internet web pages offering standards such as the [ADA Compliance for Online Course Design](#)

Students who will participate should be carefully considered in their specific context. For that it is necessary to consider their background, technical expertise, workload capacity, what they lack in terms of resources, for instance. Competences, skills and goals should be present at the beginning of the course design.

There must exist a clear structure easy to understand. Students should know from the beginning where they start and what they are supposed to achieve. Course must be transparent about what contains, what structure shows and how to complete successfully. Students should be aware where they are, how much is left and how long will take to complete the requirements. Narrative sequencing often offers a clear and easy way to understand what is going on.

3.2 Proposed Structure for a Course on Moodle

 In the project's Virtual machine[4] We created a prototype with Albanian students on the basics to how to open a course. Since Moodle offers a very powerful help online, each item is linked to a specific page that allows to understand how it works and how to proceed. The structure was as following: opening, resources, communication, and grading.
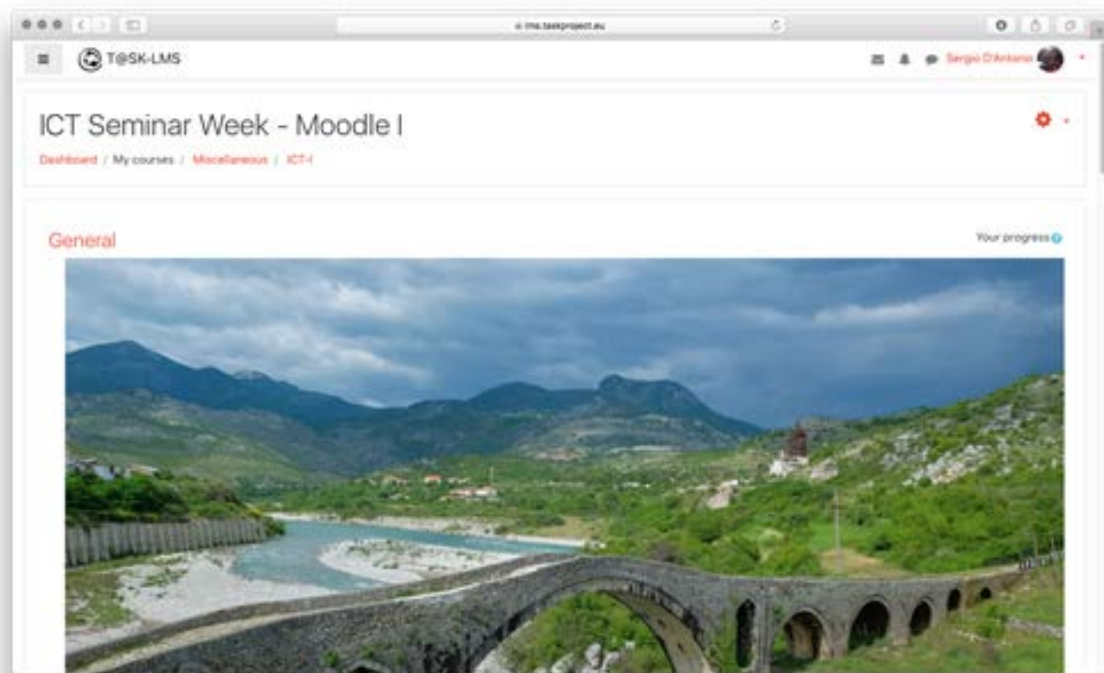

Figure 1: Main Page
Course implemented Skhodra University, Seminar October 2018

3.3 Opening a course; basic items

First of all there is the need to understand what is an administration. According to Moodle:

The role of the admin, creating from scratch or creating a course recycling a

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[4] https://lms.taskproject.eu/course/view.php?id=4

pre-existing one

How to enroll students and assign different roles, how to create a cohort, different types to enroll students such as manual, enrolment, self-enrolment and granting a guest access.

Again, enrolling is more than an administrative procedure, it is how to build up a community so roles should be clearly defined and where and how to interact is also made clear.
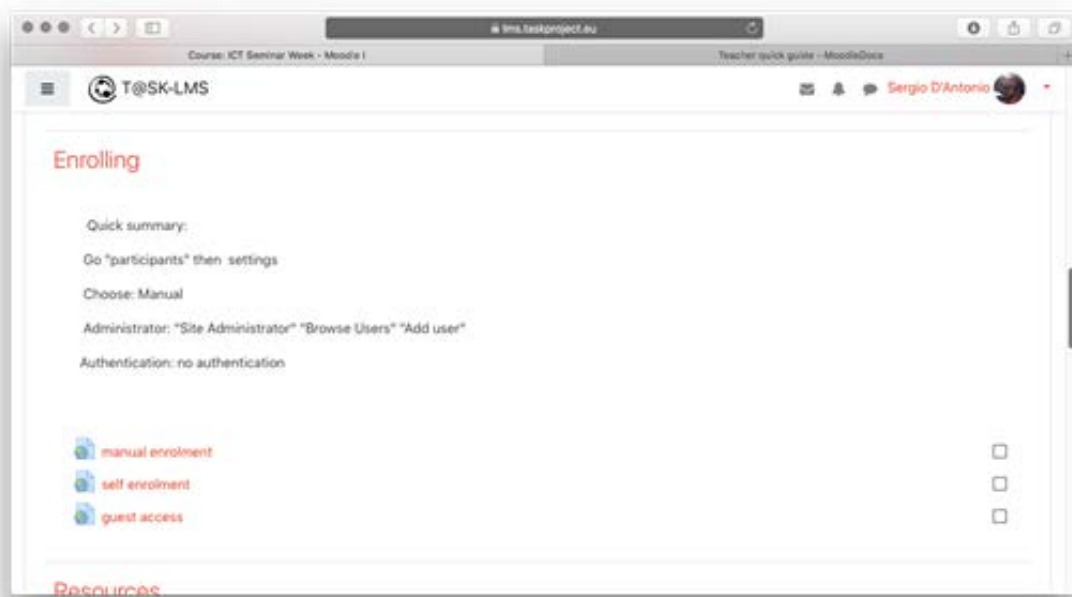

Figure 2: Enrolling options
Course implemented Skhodra University, Seminar October 2018

3.4 Content

Here the basic lesson is how to combine the creation of content by professor and students and using pre-existing materials from other sites. So from a hierarchical perspective, own content should be the main material whereas external material should support, expand or underline specific items from the professor's point of view. Here it is important not to overload content because that could deter students. So it is important to establish a good hierarchy of required materials, complementary readings and expanded readings. Each one should have a mark

of priority from compulsory to voluntary.

Professor's book is a very good tool to begin creating own materials and activities. There is a way to organize in a time based sequence how contents, readings and activities will develop. External links provide also a great possibility to locate materials but must be aware of copyright restrictions as said before. Open science and Open Journals should be the main source to capture external materials.
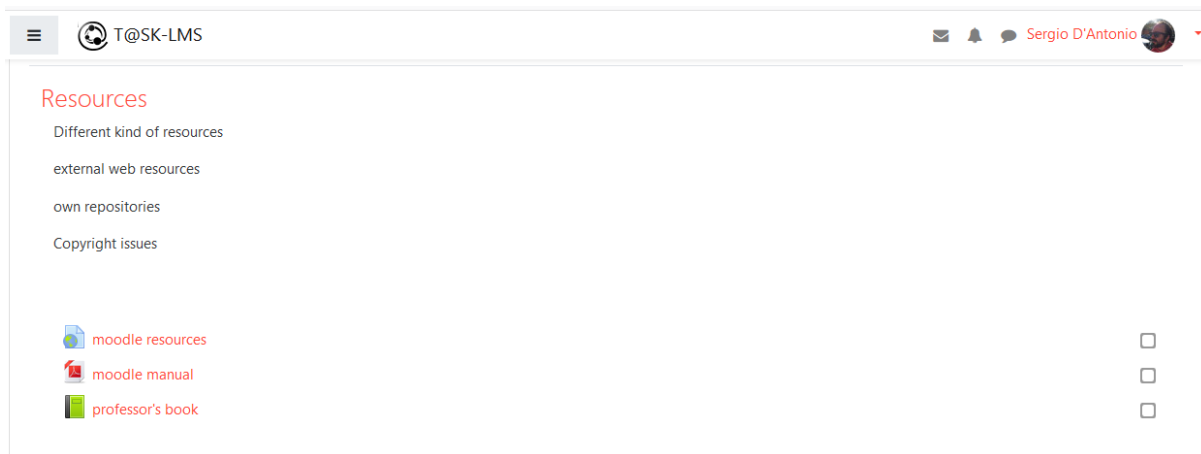

Figure 3: Resource options
Course implemented Skhodra University, Seminar October 2018

3.5 Communication: Chats, Forums, Wikis, Feedback

Again, communication should be a complementary element for face-to-face interaction. But it is possible to understand as an off-classroom activity. Also it can improve that sense of learning community because chats, wikis and forums allow a more horizontal interaction. Feedback could allow to know the general feeling about if the course is developing correctly. Here it is extremely important to introduce norms, rules and procedures to use these interaction tools. Sadly, social media, twitter and other devices have created a wrong way to communicate and can contaminate that course. Also it is important to regulate its use and provide feedbacks in a proportionate way. Immediacy cannot be a rule. Instructors must state clearly how much time and how many answers they will provide to forums,

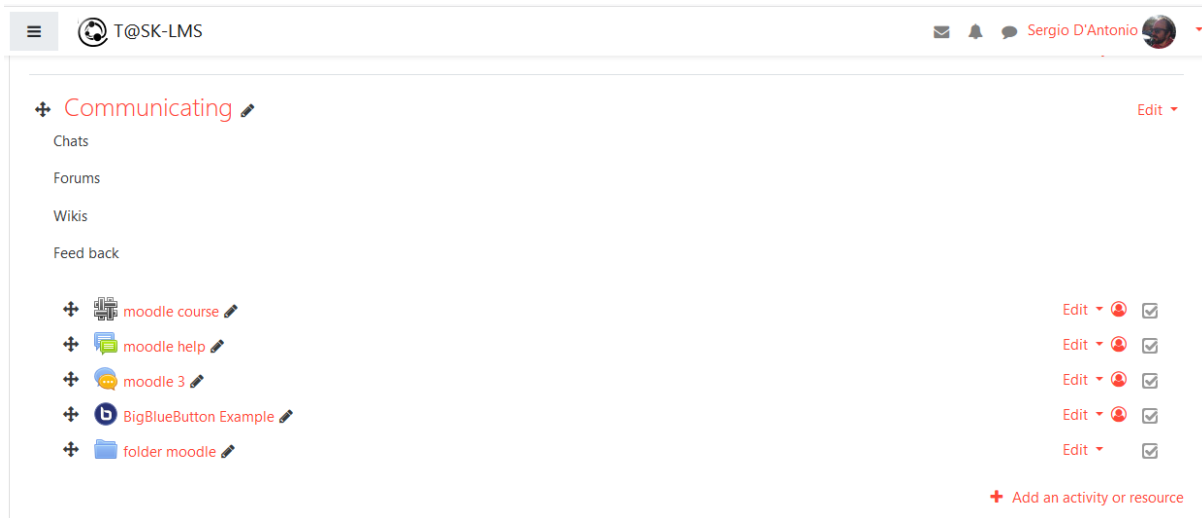students must behave using chats and wikis must be really collaborative.

Figure 4: Communicating options
Course implemented Skhodra University, Seminar October 2018

3.6 Grading

One of the most powerful features for Moodle is on grading. Here the possibility of keeping records of activities, tasks and exams gives a very complete way to follow a student's work and result. Therefore, it becomes easier to grade students for his or her whole work during the course. For students it implies the variety of tasks and activities so that would be more attractive. Statistics are also easy to achieve and explore.

Figure 3: Grading options
Course implemented Skhodra University, Seminar October 2018
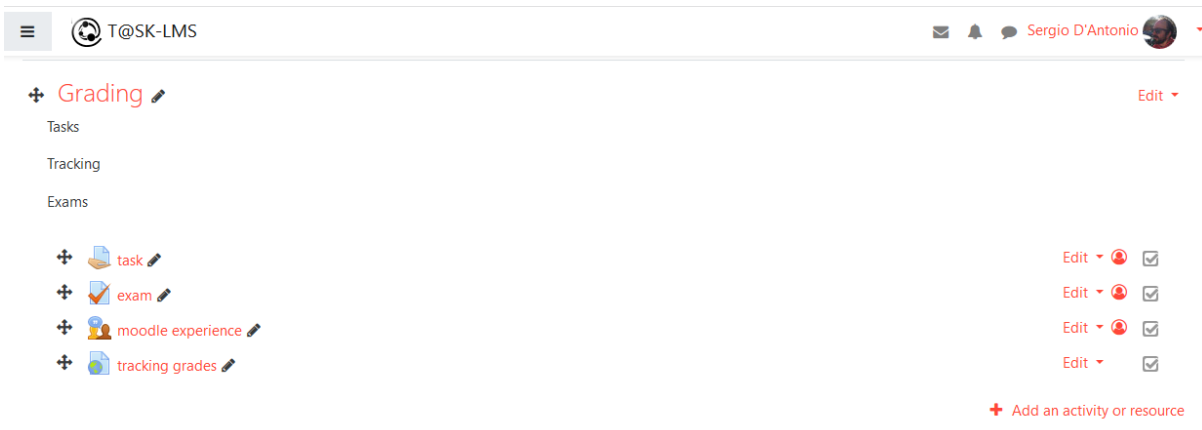
4 Beyond Moodle

Although LMS is a powerful tool to engage teaching in several ways, they are only one tool to improve the ICT infrastructure. It is well known that relying on third-party services can be seen as a good option. In fact there is a whole industry around this service. But it is also very well documented that this lack of autonomy only benefits big corporations on behalf of public knowledge production. In this way, we interpret the European Union directive on Open Science as the opportunity to go beyond Open Access policies and step into what we called a *Free and convivential approach to ICT*[5].

Research and dissemination process involves different aspects rather than teaching, and within the context of the T@SK project the aim of the consortium is to provide this wider range of infrastructure in three aspects: An online scientific journal management system, an electronic repository and an online survey management platform.

4.1 Open Journal System

Open Journal System (OJS) is a widely used and well known software platform for scientific journal online publishing. Is released under the GNU General Public License, which means that it is free-software and free of licence. From a technical perspective can be easily installed and during the last years is becoming one of the main platforms for online publishing, with more than 7.000 active journals in 2018[6]. Being free of use and licence means that Albanian partners will have the

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[5] This approach is explained in the conference *The relevance of an ICT convivential approach in social work. Theoretical framework and results on a study on three Albanian universities*. https://kuleuvencongres.be/ecswr2019/interactive-program

[6] https://pkp.sfu.ca/ojs/ojs-usage/ojs-stats/

autonomy to continue using this platform hosted in their own servers beyond the project time.

Also and as is the case with Moodle, all documentation is freely available online[7], which means that once installed and configured in Albanian owned servers the consortium will have the possibility to make their own and specific documentation adapted to their specific configuration.

4.2 Limesurvey

Quantitative research is a powerful technique in Social Sciences. Learning, teaching, using and exploiting these techniques can be expensive. Providing an online survey platform gives Albanian partners the capacity to improve their skills saving costs and improving autonomy at the same time.

Limesurvey is a worldwide leading open source survey software as a professional SaaS solution or as a self-hosted Community Edition. It is also Open-Source software that can be used as a hosted service or installed in in-house servers. As the other platforms, in this project we decided to opt for installing the platform in the albanian partners servers for several reasons that justify and affects all stakeholders:

- Documentation is freely available online and in several languages: https://manual.limesurvey.org/LimeSurvey_Manual
- Gives full autonomy on the use, customization and modification
- As is a in-house solution, it is respectful with privacy data sharing. In the case of Social Work this is a key feature taking in consideration the kind of research and data commonly gathered. This means that students, teachers, NGOs and different stakeholders will have the possibility of using online research tools that comply with privacy regulations and the principles of the Social Work profession. And in practical terms albanian partners will

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[7] https://docs.pkp.sfu.ca/#appojs3

have the possibility of using professional and state-of-the-art platforms without relying on GoogleForms or similar alternatives that do not comply with the principles of autonomy, privacy and security.

- Provides the capacity for teachers to teach and show how to create, develop and conduct surveys.

4.3 Final consideration

One of the main aims of this project is to build sustainable infrastructure for the albanian partners. With this in mind, this ICT scheme complies and goes beyond the EU directives regarding Open Science.

In the first steps this configuration is obviously more intensive and time consuming, always is easier to buy out-of-the box services. But in that case not only sustainability but also the Albanian added value will be missing, or exploited by some different actors.

With this scheme we provide a full set of platforms that covers almost all aspects:

- An **LMS (Moodle)** for teaching that can be used in and for HEI but also for teaching outside HEI's.
- The **Online Survey System (LimeSurvey)** that can be used to teach students this techniques and also perform profesional research. Researchers from academia and other stakeholders like NGOs or Social Services will be potential users of these platforms also.
- A **Scientific Journal Management and Publication System (OJS)** so the albanian academic production can be performed, managed and disseminated with state-of-the-art platforms without losing autonomy and the particularities of the albanian context.
- An **electronic repository** to transform and upload rough materials into online profesional contents.

So, the main goal is not only to improve the capacities, but also to foster these capacities in a way that gives albanian partners total autonomy and control in the ownership of their production. Not all the extra platforms could be fully

developed but at the end of the project all universities had different levels of deployment. At least two universities had all these platforms installed and in production -or in the way to be in production- in their in-house servers.

Credits and acknowledgements

- Moodle Docs (https://docs.moodle.org)
- OBS Studio Master Class 2017 by EposVox (https://eposvox.com/)
- Zenodo (https://zenodo.org/)
- Practical considerations for making video-lessons: CC-Attribution - NonCommercial - ShareAlike - No additional restrictions explicitly Original Spanish text at: https://www.ucm.es/docenciaenlinea/file/pautas-para-realizar-videolecciones-de-forma-rentable-1

Acronyms

ER: Electronic Repository

HEI: Higher Education Institutions

ICT: Information and Communication Technologies

LMS: Learning Management System

OJS: Open Journal System

SW: Social Work