

Emotional Ownership Process and Tools

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1. INTRODUCTION

This deliverable extends the conceptual foundation for Open Educational Ideas and Innovations-project. Sharing educational ideas is a collaborative process that in principle is nothing completely new. Educational institutions and educators in general do collaborate when it comes to teaching, course development and network building. However, the collaborative practices in open education movement are close to non-existing. The deliverable aims to provide new ways of sharing for the open education domain to finally increase the amount of collaborations and joint efforts and solutions in the domain. OEI2 focuses especially on those early collaborations when OER and learning offerings are still at an idea stage. The deliverable provides a clear overview of the Emotional Ownership Process which is an essential part of idea sharing.

There have been two versions of the deliverable. The initial deliverable D2.1 was based on the initial awareness workshops, interviews and validations. The final deliverable that you are reading (D2.1b) incorporates the perceptions from the empirical validations where more sophisticated OEI2 collaboration space and methods have been in use.

The deliverable contains of the following parts discussed previously in D2.1:

1. State of the art: As part of the conceptual development, the project will provide an overview of state of the art development regarding innovation and collaboration processes for open education – in particular we will focus on approaches for early sharing of ideas for education.

2. OEI Lifecycle / Model: The model provides a blue-print of processes and activities how to create emotional ownership and how to embed OEI into design and development processes of educators. The model includes a clear description which tools can be used for idea sharing. This section has been extended to version D2.1b.

The deliverable discusses several processes and considerations when and how idea sharing can be successful. The following two life-cycle models represent approaches for collaborative OER creation and to facilitating idea sharing in a collaborative manner. The deliverable discusses these approaches. The key findings of the report include the considerations for successful idea sharing. Educational idea sharing is not yet a common

practice. However, the findings discussed in this report can shed a light on the factors that enable it to become a more frequent mode of developing open educational resources and open educational practices in a collaborative manner.

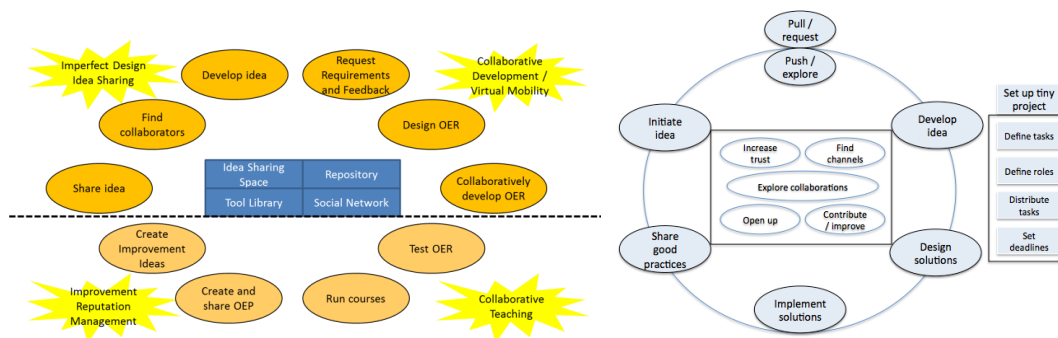


FIGURE 1 PROCESSES FOR CREATING OPEN EDUCATIONAL IDEAS COLLABORATIVELY

The deliverable is structured as follows: First, the theoretical background is build and the key concepts are highlighted. Secondly, the OEI2 approach and methodology is explained to find out how educators are likely to collaborate and how OEI2 could help them. Finally, the initial idea sharing process is proposed based on the empiric investigations within the project. The process includes key tools people are willing to adopt as well as reflection on the barriers for idea sharing. D2.1b extends these views by elaborating on the actual use of the Idea Space (<http://idea-space.eu>) platform.

The deliverable concludes with some of the key considerations about educational idea sharing and emotional ownership based on the rich data the consortium has collected in the past two years.

2. COLLABORATION AND IDEA SHARING IN OPEN EDUCATION

Open Educational Ideas and Innovations projects links tightly to the Open Education movement which has been discussed on many different levels. A key component of Open Education is **Open Educational Resources (OER)**. UNESCO defines OER as “open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes” (UNESCO, 2002). We define OER as “Any digital object which can be freely accessed, (re-)used and adapted for educational purposes”. This broad definition includes a lot of different objects, such as digital learning objects, software tools like wikis or authoring systems, simulations or animations, electronic textbooks, but also lesson plans or experiences shared. The main aspect is that the object is usable and can be modified / adapted to improve education. Existing research on OER has focused on how to make learning objects (specific digital objects created for learning purposes) available and re-usable for educators and learners (Hylen, 2006).

Another commonly discussed and overlapping concept in open education is **Open Educational Practices (OEP)**. Educators are highly dependent on successfully planning and designing their learning experiences – this class of resources includes access to instructional designs, didactical plannings such as lesson plans, case studies or curricula. It also includes one of the most valuable resources: sharing experiences about materials and lessons between colleagues. Various approaches have been proposed for co-creation or co-production of OER (OPAL, 2011) that aim at including educators as well as learners in a collaborative development process.

In the next section we will look at collaborative practices on developing OER.

2.1 Collaboration on OER development

While OER itself has been discussed for more than 10 years, the collaborative practices around OER are not that well developed. Many initiatives in the field of OER have seen the potentials of co-creation of OER and proposed ways to use, apply and re-use OER. The focus of OpenScout was to give out a large pool of OER on management education and to open up a tool library to foster further collaborations and adaptations of OER (Ha et al., 2011). Similarly, the Open Discovery Space project gives out OER and has a strong focus on community spaces where teachers and students can share OERs and develop their own lesson plans and even, further OERs (Sotiriou et al., 2013).

As an outcome of similar projects, a set of guidelines and best practices have emerged on the re-use, adaptation and co-creation of OERs. Some of the guidelines for collaborative OER creation include:

- Colearning-collaborative learning through OER and social media (Okada et al., 2013) – Describes the use of social media when reusing OER for different purposes
- Steps to successful OER re-use (Pirkkalainen & Pawlowski, 2010) - Guideline for OER re-use with step-by-step explanations
- Inacol practical guide for OER collaborative development (inacol, 2013) – Describes a best practice for OER collaboration, steps to take and issues to consider.

What needs to be stated about the guidelines above is that many of them are crafted based on an ideal process and basic assumptions for creating OERs rather than actual, conducted collaboration. OEI2 will learn from these best practices and has adapted the questions for the initial needs analysis within awareness workshops and interviews (WP1) based on many of the considerations above.

However, many of the collaborative experiences on OER have resulted in reported case studies. These include:

- Collaborative design of OER in South Africa (Sapire and Reed, 2011) – Implementing a mathematics teacher education project with nine institutions. Investigating whether collaborative work on OER design can improve the quality of the resources. Arguing how the networking and collaborations can lead to extended partnerships and the senior management support is necessary for teacher educator participation in co-creation of OER.
- Cross-institutional collaboration on OER (Educause, 2013) – Elaborating on the key benefits for joining efforts on OER development: Return on investment, student success and retention, faculty collaboration and professional development, allowing innovation to take place.

The case studies above highlight the need for clear benefits and long-term collaborations within the collaborative OER development. OEI2 needs to facilitate upcoming collaborations in a way that the benefits and partnerships become evident before the actual collaboration initiates.

Many of the presented guidelines and case studies have a strong focus in preparing OER for differing contexts. In such situations language issues, cultural differences and local educational requirements come into focus. The following present examples of such processes and case studies that elaborate on these issues in specific:

- Internationalization/ localization process for OER (Pirkkalainen et al., 2010) - Guideline for internationalization with issues to consider and steps to follow
- Contextualization of OER in Asia and Europe (Pawlowski et al., 2014) - presenting three case studies and according best practices how to prepare OER in Asian and European collaboration
- Contextualization of OER in Himalayan community technology centers of Nepal (Ivins, 2011) – Describes how localization practice can be put to practice, why it's needed and how it can be improved to offer better support for rural communities in developing countries.

The list of previous is not and does not intend to be exhaustive. However, each of the examples argues for opportunities and benefits for co-creation and re-use of OER. As stated above, these highlight a best practice and optimal ways of collaborating on OER in national and international settings. While being exemplary cases, the collaborative efforts in open education are not yet a common practice. In the next sections we aim to clarify why that is.

2.2 Idea sharing in Open Education

When analyzing existing adoption and re-use practices of OER in educators' planning and development process, two aspects on the application of OER can be argued:

1. **OER are used in the late design and development phase** (e.g. when developing a new course). When an educator has developed the initial course structure, she might be looking for potentially fitting resources. It is important to note that all of the resources in repositories are already fixed and complete, so they have to be adapted towards 1) curricula, 2) context, 3) design, 4) didactics by educators using them.
2. **OEP are used in the development phase** when looking for potentially good learning designs. In particular, the approach focuses on sharing practices: which resources and practices worked and which did not work.

This means that OER and OEP are mainly applied during or after the planning process. The character of current sharing processes is therefore focused on re-use and adaptation of complete materials, resources or scenarios (e.g. lesson plans): Materials and resources that do not easily allow co-creation and experience exchange during the development process.

The initiatives on OER still seem to struggle getting users active and to reach sustainable communities (Ochoa and Duval, 2009). Several recent studies have looked into OER barriers and uptake. Clements and Pawlowski (2012) have identified some of the key barriers.

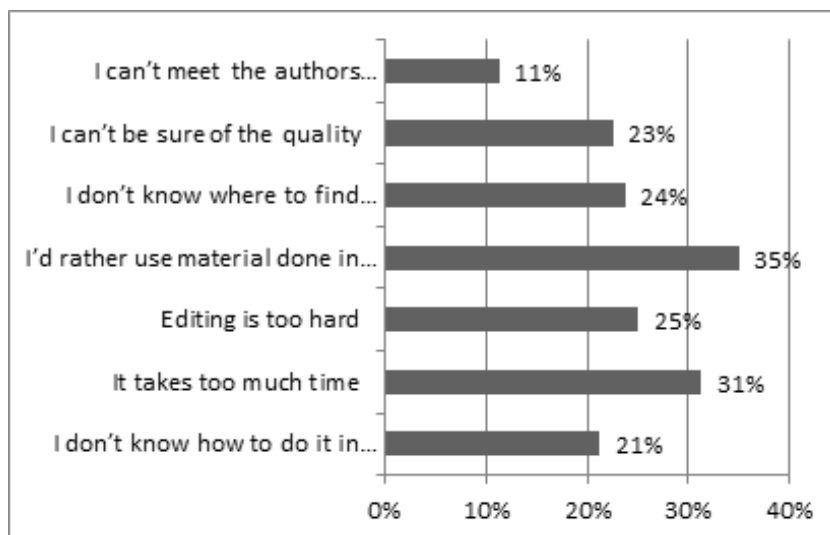


FIGURE 2 BARRIERS TO OER RE-USE (CLEMENTS & PAWLOWSKI, 2012)

This study gives already an overview of issues why OER have not been used widely yet. Another recent study by Pirkkalainen, Jokinen & Pawlowski (2014) shows further barriers, amongst them several personal and motivational aspects:

- Lack of motivation to share resources or information around those resources
- Lack of time for production and localization of OER
- Need for Rewards and Acknowledgement
- Lack of contextual information for the resources – how can be used or modified
- Open content do not fit the scope of the course / Curriculum
- Lack of trust towards unknown authors or systems where resources retrieved from

- “Not invented here” notion. Hesitation to receiving knowledge someone else has created
- Hard to assess the quality and relevance

The key barriers are on the individual level, in particular motivational aspects: Users tend not to re-use as they have not created it themselves – or as one user states in the above study: “we look at the materials and then we re-build the resource ourselves”. What is clearly lacking is a feeling that learning opportunities have to be created by educators themselves. Thus, the not-invented-here syndrome seems to be even more relevant in the educational domain.

Our approach is not to share fixed, contextualized resources but start the exchange in the idea creation process. Therefore, stakeholders do not have to re-use completed resources but they are involved in the development process. A similar approach is discussed from a design perspective by Treviranus (2010) described as the Wabi-Sabi principle. This principle aims at designing resources in an imperfect way that later adopters have certain space to incorporate their own design / pedagogical / technical ideas. Therefore, stakeholders can be involved in an early stage and build new OER.

It is not only the commitment and emotional ownership in the design and implementation of the resources that matters. Research related to affective commitment in organizations has shown how willingness to collaboration increases in organizational context when employee feels stronger emotional attachment to the team or organization, costs that he feels with leaving the organization are substantial and to the perception of obligation towards the organization (Allen & Meyer, 1990). Not all of these antecedents and factors hold in the open education movement but OEI believes and will validate whether the emotional attachment and commitment toward the collaborators does keep in this context as well.

The main idea of OEI builds on the concept of Emotional Ownership: “the degree that individuals or groups perceive that knowledge or resources belong to them”. This means that a personal relation is established in a creation process (e.g. a family establishing a business, an individual creating an artefact, a group creating an innovation) (Pawlowski, 2012). The importance of the concept is that there is a much stronger binding to the artefact (in our case OERs) than to other resources which are just downloaded and / or used (such as a picture taken from an internet search). We aim at building strong relations to both, collaborators as well as the artefacts they create (such as an OER).

As a summary, we can state that OEI will allow stakeholders to start sharing ideas and innovations before the resources are complete and hard to adapt. OEI will create an affective binding towards resources and practices (“emotional ownership”) by involving educators stronger in an early stage of a participatory, generative and creative process.

3. METHODOLOGY: PROOF OF CONCEPT

WP2 Conceptual Development in OEI2 project works tightly with WP1, WP3 and WP4 to 1) gain an understanding on educators’ sharing practices, 2) to find new sustainable ways of sharing educational ideas and innovations and 3) to validate the OEI2 approach and provide proof concept for idea sharing. The following figure explains the connection to other WPs.

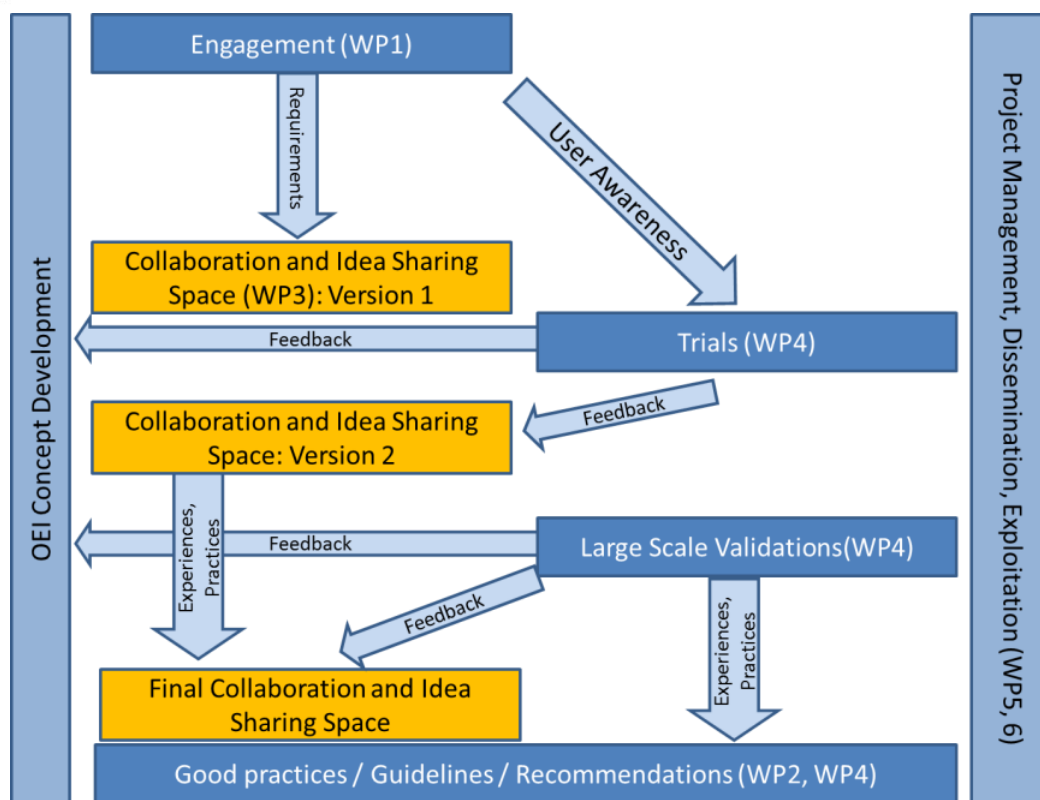


FIGURE 3 OEI2 WP RELATIONS

Deliverables D1.1 and D4.1 explained the approach for awareness building and validation and thus, will not be repeated here. However, WP2 has provided the basis for awareness activities and the portal development.

As the practices around idea sharing are explored by the project and not set in practice, the consortium saw it necessary to base the initial awareness building activities to study the possibilities around such idea sharing. The basis for the empirical investigation were set in cooperation with WP1 and WP4. The main aims for building the conceptual foundation were:

- Identify how educators are currently cooperating and to which extent they use OER
- Who would they share their educational ideas with?
- In which situation would they share ideas?
- How would they share the ideas with?
- Which tools would they prefer?
- What is the best way to express new ideas and innovations?
- How would they structure the collaboration process?

The investigation was separated initially to two parts. 1) Awareness workshops and 2) interviews

The awareness workshops were organized as focus group sessions to build an initial foundation for OEI2. Focus groups can be seen as a group interview that focuses on exploring the knowledge and experience of the participants (Kitzinger, 1995). Within such sessions, the approach taken for documenting the discussion becomes crucial and the success highly depends on the organization of the sessions (Kitzinger, 1995). The interviews were to enrich and dig deeper to each aspect. However, the further validations within the project with an actual collaborative space (WP3) will provide the proof of concept. The further validations might therefore show that idea sharing should be done somewhat different to what is proposed within this document.

A total of 6 workshops were organized within March 2014. The workshops were organized by each partner in the consortium. The workshops were mainly focused on the higher education context while some of the examples were given for school context within the event lead by University of Jyväskylä.

The interviews were organized similarly by all partners. The entire methodology was explained in D1.1.

The work in WP1 was also to explain context scenarios for OEI. The deliverable D1.1 lists the initial context scenarios that were derived from previous collaboration attempts on OER. The context scenarios describe a flow of actions that provide a structure for the entire collaboration process from idea development to creation of OER. Those steps and stages can be viewed as initial processes for OEI collaborative development. This deliverable will explain how those context scenarios will be utilized in the collaborative environment and finally, adapted to support different types of user processes.

4. OEI2 APPROACH FOR IDEA SHARING

The key findings can be categorized to topic areas. Even though D1.1 reports on the results of both the awareness workshops and interviews, the focus here will be in relation to conceptual foundation to idea sharing and creating emotional ownership.

4.1 How to build emotional ownership through collaboration

The perceptions of the educators in the higher education context point out that sharing ideas is highly dependent on the work environment and field you work in. We can differentiate organizations that are by *policies and strategies* set towards openness and transparency. When a certain practice is part of everyday work (paid for doing so) and rooted in the sharing culture of an organization, it is likely to be followed. Such examples are organizations that e.g. provide all of their educational materials openly for wider publics, attached with a creative commons-scheme.

The feedback from the interviews tells a similar story that idea sharing is not well rooted to educational institutions and many boundaries and barriers must be overcome to reach an improved situation. The collaboration on developing an OER is typically driven by three factors; (1) workload balance, (2) working with leading people in the field, (3) reaching otherwise restricted resources. However, these factors are typically not enough for educators to get engaged in more open initiatives with other educators they do not know. Typically, educators practice the exchange of ideas with other educators in a closed, more or less protected environment and very often just verbally. Our participants emphasized the necessity of having dynamics and diversity in the networks of involved educators when creating resources that will be opened in the future.

Situations when educational ideas are most likely to be shared can be identified. The approaches incorporate *push* (idea you want to create movement around) or *pull* (crucial question or request that creates movement).

Preferable conditions for responding to the request could be expected when the request comes from 1) trusted colleague or 2) a respected person known by a good reputation. The actual collaboration will differ in both settings as in case no. 1 actors are familiar with each other and are likely to collaborate on an open manner. Educators are also more likely to join collaboration if there are *immediate benefits*.

When sharing educational ideas, educators are most likely to *start the sharing process in a trusted environment with existing personal relationships*. From the idea sharing practices inspected within the focus groups, sharing in a safe and close community with close colleagues was a practice that everyone were engaged in already. Such sharing *only takes place if all the actors within such environment can be seen trustworthy*. Someone whose *reputation and merit stands for itself might qualify for such trusted network* as well. Only more experienced people on open education saw that sharing ideas with the relevant community would be done directly from the start. Others saw the need to initiate in a closed environment.

What educators actually share, and what they *could imagine sharing* varies quite a lot. Most common purpose for collaboration was seen to be the creation of learning resources and OER in general. However, educators were not too engaged with such activities currently. They also could see extending these collaborations which would increase their willingness to start such OEI practices. The type of an idea will form the basis for networking as well. *"If I have an idea and need money I'm going to look for the sponsor and we do it together, but if you have great idea, that is relevant for the community, then why do you need to keep it?"* – Educator

Y, Lithuania. Accordingly, *levels for openness should be the main approach for idea development process*. Some parts might be closed while some relevant for a wider community.

Key issue for increasing emotional ownership is to build on OEI *similar to collaboration in projects*: Trying to find motivated partners that will keep the collaboration ongoing. While *community feedback and development were seen beneficial* in the later stages when ideas mature, *the role of students and industry were seen crucial* as well, especially when discussing teaching and skill development where students are the ones targeted. There are multiple ways how educators would see idea generation to happen. *Approaching idea generation as a project* and learning from other domains such as open source development were seen beneficial:

“Collaboration should be organized to involve the relevant stakeholders, specifically educators and learners.” – Lecturer - Finland

“Looking at a process of participative inquiry and peer production in and outside educational organizations, process in which users collaborate with each other and interact with OER in an iterative cycle of design and evaluation.” – Researcher, Sweden

For such collaboration or a project around an idea, *participants should be able to enter the collaboration at any time of the process*. Even late entries to collaboration might be successful, as people might still contribute a lot. However, idea sharing should not be seen as an open-ended process. *People do need deadlines*, otherwise the collaboration and engagement is always postponed. The idea sharing was seen to possibly develop from early ideas (discussions) to drafts and elaborated outcomes and courses. In such collaboration, one needs to get different types of contributions for each phase and *someone needs to have a holistic overview (Leader) how to proceed and keep in the timeframe*. In such collaboration, there needs to be some form of an *agreement what one is expected to do*. When discussing openness, *contributions from small to big can be beneficial*: commenting, providing peer-review for different phases when ideas develop and mature to actual educational artifacts, defining outlines, leading the collaboration and so on.

“Think about sharing in Facebook, like you ask people and they give two hundreds like buttons, but none of them will deliver anything for you” – Professor, Germany

“..in many scripts or slides I read, you can absolutely see that more than one person was involved in it. And it is a problem to take something from the script if it is not align or fluent.” –Lecturer, Germany

Key arguments for collaboration around educational ideas and movement towards openness were especially *developing partnerships and long-term collaborations*. As facilitators of such movement, the participants saw the *bottom-up approach* in a key role - *educators leading by example*. However, the role of projects and initiatives as builders of awareness were seen important as well. Such issues are crucial for building emotional ownership to the resources created and making collaboration sustainable.

4.2 Key barriers for OEI2

The analysis highlighted **barriers** to collaborative practices on OER but also to creation of emotional ownership. Many of the challenges relate to the higher education context itself. The *educational landscape* is mostly still very *competitive and knowledge and fresh ideas are often kept to oneself*. The interviews showed that corporate policies and regulations represent the main obstacles against collaborative development of OER. Some respondents reported that their knowledge and experience are often based on practical experience in the world of work, and they are not willing to share that in an open environment.

Also, educators might wonder *“why prepare a joint course or mutual development in general?”* or *“why to take part in such a process initiated by someone else?”* Many of these concerns and perceptions are influenced by the educational settings where collaboration and openness are not common practices. Many educators felt that colleagues would fear criticism from peers if they would share their course materials openly. Either they expect comments such as *“your material is outdated - or scientifically low standard”*. *Fearing losing ones original ideas* is another concern to collaborative work; *“we do not know who will use our own idea just for his own personal benefit*. *Lack of Information literacy skills* with educators was seen as one general theme and too often students are ahead of their teachers. The participants elaborated whether a teacher can nowadays

survive without being a digital scholar. Teachers' need to move with the societal changes and update their practices. Can they actually survive in a longer run without being open to share?

The interviews pointed out the key barriers to mainly be about lack trust and personal relations, and lack of awareness of open educational opportunities and advantages. Idea owners prefer collaborating with trusted, reputable, and experienced partners.

To overcome some of these barriers *knowing the person the idea is developed with would reduce reluctance to knowledge sharing. Taking the lead in the process boosts motivation as well. Collaborative course development could be useful in order to support different pedagogical perspectives for collaborative development of course curricula etc. One of the great opportunities was seen in the possibility for extended collaboration that is more than just sharing few ideas here and there – Strategic partnerships.* The participants of the workshops elaborated how educators have to be open one day and how personal development and learning requires getting fresh perspectives and innovative ideas from the community. Peer-reviewing ideas and providing feedback in each step that you take is a matter of quality and can be very beneficial in a long run.

"...once you open your own content you need to be prepared for another persons review, feedback. And if you have an idea and have already introduced to others it is already in a peer review process, as you are now offering the idea" – Educator Y, Lithuania

"We do take ideas from others, that's why we are going to the conferences, to hear something new from others." – Educator Z, Lithuania

4.3 Tools and networks for idea sharing

While the detailed requirements for OEI2 are discussed and presented in D1.1, few key tools and networks can be specified to be most relevant.

It becomes clear from the opinions and perceptions of the educators that sharing ideas is extremely demanding to initiate on a larger scale. **Sharing of initial and rough ideas might not be technology-mediated.** Rather than putting rough ideas on display for online communities, idea development, whether it is about a new course or a new service, is most likely to take place *firstly in discourse with close colleagues.* Technology might not play a role within such step at all but at the same time can be crucial for facilitating the collaboration. The place for *sharing ideas was often seen to take place face-to-face or in informal discussions where the discourse shapes our thoughts and leads to new ideas.* Typical location for such is at the office coffee break or an evening out with colleagues.

Based on the topic and context, **idea sharing can initiate in an academic or non-formal online network as well in Research Gate, Google+, Twitter, Facebook, LinkedIn and so on.** This depends highly on the *level of publicity and awareness you want to reach.* Posting an idea and announce it to a large audience of unknown people is not suitable for most participants. The key factor was seen in *utilizing tools and networks that your collaborators already use.* However, for an environment to build on ideas, **educators are not expecting one-single-solution that can handle everything** but a good way to *bring the components together as there are already applied tools for different purposes and tasks.*

In the idea sharing process, the collaborative environment of OEI2 must be open at every stage and allow people to join in early stages or later on during the collaborative effort.

And essential part of a collaborative environment in the context of OER is **an authoring tool.** OEI2 should ensure an intuitive content development tool is a part of the collaborative process and can be easily accessed and applied during different phases of the collaboration. The respondents saw that *ideas could be presented simply as textual descriptions, outlines or drafts but highly depending on individual preferences.* Some prefer mindmaps while another enjoys questions that trigger ideas. Educators would like to learn and would embrace the concept of *valuable failures*, while such are not commonly shared.

“It’s important to share something that can be easily contributed by the kind of person. So if it’s a teacher, something she can simply enrich upon. And fast. Something that is already well structured and not too abstract.”
– Lecturer, UK.

As elaborated earlier, educators and researchers are not used to expressing and initiating collaborations in an online environment. **The requirements they have are not on the level of detailed tools as they have no prior experience.** This is why the following pilots and validations are important for specifying the types of tools supporting idea sharing.

4.4 Initial idea sharing processes

Based on the investigations of OEI2, several recommendations could be given to foster idea sharing. These recommendations are initial structures and processes for idea sharing and will be adapted and modified during the project run-time through validations.

Firstly we can identify how sharing of educational ideas relates to OER. Idea sharing process precedes OER development and sharing but should not be inspected as an isolated set of steps as the collaborative efforts could lead to various types of artifacts and educational solutions, such as OERs. Reflecting the findings of the awareness workshops, Figure 4 represents how the iterative idea development can lead to outcomes and solutions in the domain of open education.

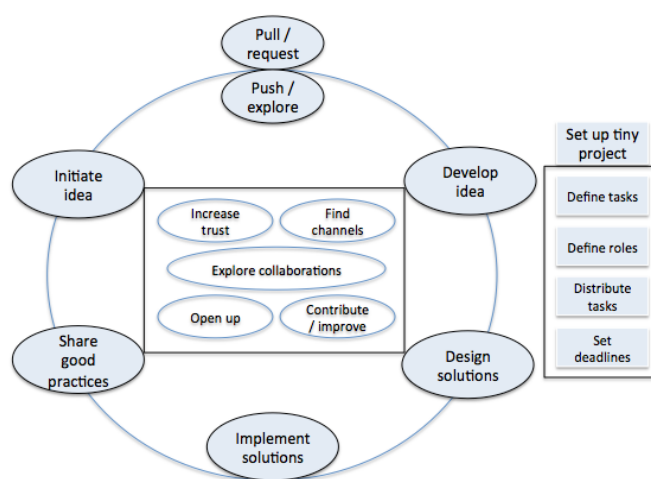


Figure 4 Open Educational Ideas life-cycle (Pirkkalainen & Pawlowski, 2014)

The life cycle model was based on the findings from the awareness workshops. The interviews supported the model and added further explanations on how idea sharing has and could take place. The model shows how the collaboration needs to be reciprocal with clear responsibilities and tasks that really provide added value to the stakeholders professional and personal lives. Otherwise, emotional ownership is not reached and collaboration will not take place.

As part of the recommendations, the process can be turned in to a best practice for idea sharing that takes into account the challenges and success factors mentioned before.

Table 1 Recommendations for the idea sharing process (Pirkkalainen & Pawlowski, 2014)

Main activity	Tasks	Issues to consider
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Initiate idea	<ul style="list-style-type: none"> -Set the basis for your idea -Decide form of initial collaboration (push/pull) 	<ul style="list-style-type: none"> -Is your organization already open and transparent? -Should you find external contacts for the very first ideas or stick with your closest ones? Build a foundation with a trusted network. -Discuss the overall plans and aims with all actors
Choose channel(s)	<ul style="list-style-type: none"> -Consider scale (exploring and publicity or directed requests and specific expertise) -Select the key networks and services 	<ul style="list-style-type: none"> -Simplify both your public invites to collaborate as well as the contributions you make (much easier to contribute in an online context) -Explain benefits and aim towards reciprocity (to overcome “what is it in for me” barrier) -Aim for personal relationships -Decide what type of contributions are minimum. Simplest contributions might have their place
Set your tiny project	<ul style="list-style-type: none"> -Define tasks, roles and deadlines related to your ideas so far -Discuss and agree on everyone’s contribution 	<ul style="list-style-type: none"> -Don’t call it a project! Make it as informal as you can -Taking lead boosts motivation, give everyone a chance to shine -Not all will be active and people should be able to do only what is interesting for them. -Iterate! Find new people, open new doorways
Design and implement your solutions	<ul style="list-style-type: none"> -Keep it organized -Extend the collaboration to industry and students if relevant 	<ul style="list-style-type: none"> -What ever your idea develops to, define one key place for managing your collaboration, no matter which tools and services you use -Levels of openness are crucial. Ideas can lead to many directions, what is discussed in a closed setting can be later opened -Not all has to end up being Open. Explore other business opportunities and collaborations
Increase visibility	<ul style="list-style-type: none"> -Make noise on your collaboration -Distribute good practices -Share the artifacts and solutions you create -Explore and extend partnerships 	<ul style="list-style-type: none"> -Personal collaborations might enable cross-institution opportunities, shared learning offerings or projects. -Lead by example -Bigger movement will happen slowly and you will come across resistance - Iterate! Discourse leads to new ideas

The next steps of the project focus on concept validation that takes place through the pilot activities in WP4 with the use of the collaboration environment (WP3). Through the concept validation the previously presented views on processes are extended especially with matching tools to different phases of idea sharing.

4.4 Deriving OEI processes through context-scenarios

The work in WP1 was to explain context scenarios for OEI. The deliverable D1.1 lists the initial context scenarios that were derived from previous collaboration attempts on OER. The context scenarios describe a flow of actions that provide a structure for the entire collaboration process from idea development to creation of OER. Those steps and stages can be viewed as processes. The detailed scenarios were described in D1.1 and will not be replicated here.

The first context scenario on collaborative course development is now implemented as a template to the collaboration environment (Figure 5). The activities are visualized in the left side of the screen as steps that users can go through.

OEI2

Home

Search

Create

OER Repository

Language: English

avidal

Photography course

started by avidal

Post Artifact

Activity

Admin

Initial Ideas (5)

Description

Target Group

Course Objectives

Prerequisites

Constraints / Standards

Outline (4)

Course Objectives

Learning Outcomes

Didactical Concept

Course Plan

(Course) Development (1)

Course Development

Evaluation (2)

Experiences and Feedback

Follow up

Description


Posted by avidal 2 days ago

Initial Ideas

What is the course all about. What is the broad topic, what are the main aspects to be covered?

Start collaboration

test



from KenRockwell.com

<http://www.kenrockwell.com/nikon/d80/images/d80-top-950.jpg>

tester 2 days ago

start from here

reply

hejupirk 2 days ago

Thanks. Will do!

reply

pitsbill 2 days ago

idea owner (creator) can edit/remove idea items

reply

vpitsilis 2 days ago

@pitsbill

It means idea owner can a) remove completely item from category or b) edit item title and description. Collaboration ("start collaboration btn") space is accessible for all collaborators.

reply

Comment

please type your comment

Post comment

Edit

Delete

Target Group

Posted by avidal 2 days ago

Initial Ideas

Briefly describe the characteristics, requirements and preferences of the target group

FIGURE 5 USING A TEMPLATE FOR COLLABORATION

The steps for a collaborative course development could be explained to consist of the following stages.

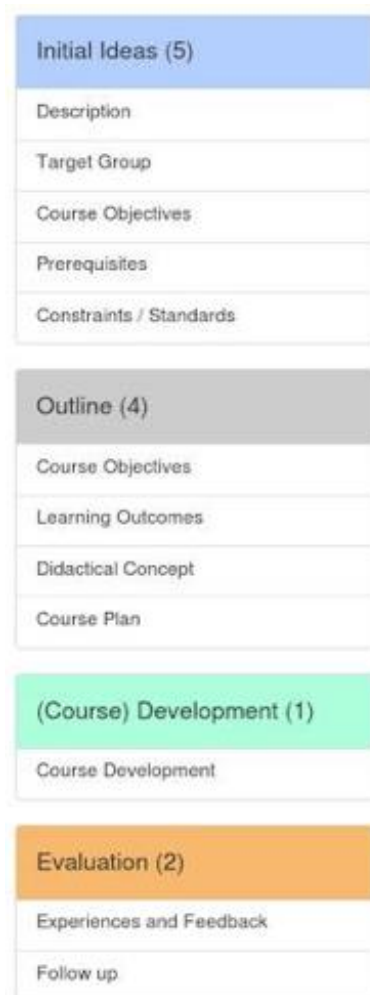


FIGURE 6 COLLABORATIVE COURSE DEVELOPMENT PROCESS

While each process can differ in reality, the following stages were seen as crucial in our previous analysis from the data extracted from WP1.

5. VALIDATED OEI2 PROCESSES

The piloting phase informed us how educators feel about the initial processes that they would fit their collaboration in. In the second phase of validation we extend these processes towards the real collaboration of educators and validated our initial processes and models. This part was crucial not only from the conceptual side but for the entire project. That is why the validation perspectives were clearly linked to WP4 activities to steer engagement activities of OEI and also the development of the collaboration environment.

5.1 Barriers and considerations revisited

5.1.1 Methodology and approach

During our 2nd validation phase, we launched a survey on top of the qualitative study reported in D4.2. The survey looked into various aspects of idea sharing. The objective was to study preferences and conditions for engaging to exchange of ideas in virtual communities such as in the Idea Space. We looked in to the following in specific:

- Previous knowledge sharing experience
- Future sharing intentions
- Emotional ownership of ideas
- Affection and emotional attachment to communities or groups
- Preferences to sharing early ideas and to engaging to emerging communities
- Outcome expectations of idea sharing
- Organizational support for innovative actions in virtual communities

The items of the questionnaire were based on the results of the 1st validation phase and further enriched by related knowledge sharing studies. We especially looked at the theory of social capital by Nahapiet and Ghoshal (1998) and the theory of strong and weak ties (Granovetter, 1973) to learn why individuals exchange knowledge with people beyond their closest networks. The interviews during validation phase 1 (see validation report) lead to refinement of our approach and preparation of the survey.

The survey (Annex 1) was distributed to potential idea space users ranging from educators and students to workforce in companies. The decision to include companies in the survey was made as the findings of the first validation round indicated that collaborative work on educational ideas requires inputs from multiple stakeholder groups. Some of the potential users pointed out how well such a platform fits situations when new educational projects are being planned. Such settings often bring together members of both academia and industries. Thus, we selected to collect impressions from workforce beyond Universities and educational institutions.

The first validation round results showed that collaborative development of OERs as idea sharing in the world of professionals is not a common practice in online environments. Thus we decided to collect feedback from also potential users of the idea space, even if they do not have background in working with OERs.

A total of 241 responses were collected to our survey on idea sharing.

TABLE 1 QUESTIONNAIRE STAKEHOLDER TYPES

Stakeholder type		Count in total 241
Researcher or teacher		135
Student		40
Professionals	from	61
companies		
Other:		5
Designer, Trainee etc.		

Of the 241 responses, 111 were female (46%) and 130 were male (54%). The respondents were between 20 and 68 years of age while over 60% of them were between 27 and 47 years old. The responses were collected mostly in Europe while responses from Asia and America were welcomed as well. Approximately 80% of the responses were from Germany, Lithuania, Finland, Greece and other European countries.

The descriptive findings of the survey are discussed in detail in the phase 2 validation report. We now move to discuss some of the predictors of intentions to exchange open educational ideas in specific.

To summarize the descriptive analysis results of our survey, we can see that educators and professionals in general do see the value of engaging to idea sharing online. Technology use and adoption literature does

indicate that individual's preferences and even intentions do not necessarily come out as actual usage behavior. In the case of OEI2, this would be, using the Idea Space for idea exchange. This is why we need to look at the data we have collected about the potential and actual users of Idea Space as a whole to really understand how sharing of educational ideas could be further supported. D4.2b looks in to this in specific.

5.1.2 Predictors of intentions to exchange open educational ideas

In order to do study the preferences and intentions of the educators and professionals further, we conducted a factor analysis in SPSS to apply variance analysis. This could help explain the predictors of intentions to exchange open educational ideas in virtual communities.

The intention to exchange open educational ideas was operationalized consisting of the willingness to build OER collaboratively, to co-create educational practices and to share educational ideas online with the community.

We firstly deleted students from our sample, including only educators and professionals (N= 201) who have a work contract in an organization. This was done as we measure to which extent the organization's allow or restrict sharing of knowledge beyond contractual obligations, in online networks. As our sample consisted of potential and actual collaborators of open educational ideas, we selected only those educators and professionals who had experience with OER for the remainder of the analysis (N=126).

To study the predictors and influence factors to educators intentions, we needed to develop latent variables that could be utilized in the analysis. We did an exploratory factor analysis (principal axis factoring). We tested different extraction and rotation methods to confirm the robustness of the factor structure. As we had measured both intentions and preferences to exchange of ideas in general and regarding open educational ideas, further division of the resulting factors was foreseen. The results of the factor analysis is presented in Annex 2.

The intention to exchange open educational ideas was separated for further analysis from the intention to exchange ideas in online communities. The latent variables were counted as the mean of the variables. The descriptive statistics are presented below. Internal consistency (Cronbach's alpha) was expected to exceed .70.

TABLE 2 DESCRIPTIVE STATISTICS OF THE CONSTRUCTS

Construct	N	Cronbach's Alpha	Mean	SD
Intention to engage to exchange of educational ideas - INTOER	126	.921	3.61	.852
Intention to exchange ideas - INT	201	.931	3.63	.824
Previous co-creation experience - EXP	201	.943	3.06	1.12
Emotional ownership - OWN	201	.804	3.70	.742
Affective community commitment - ACC	201	.913	3.47	.897

Organizational innovativeness - ORG	179	.805	3.69	.765
Organizational innovativeness on OER - ORGOER	126	.792	3.44	.857
Outcome expectations - OE	201	.821	3.83	.658
Preference to collaborate on OER development - PREFOER	126	.924	3.59	.794
Preference to co-create on early ideas - PCC	201	.901	3.49	.862

Linear regression

As our sample also included participants who do have previous experience in working with OERs, we ran a further analysis to identify which aspects could predict the intention to exchange educational ideas in online communities. After screening and deleting the incomplete answers, the sample finally consisted of 110 participants.

The results of the linear regression show that preference to work collaboratively on OERs, preference to co-create on early ideas, previous co-creation experience and emotional ownership are significant predictors of open educational idea exchanging intentions. the amount of variation explained by the model was $R^2 = 64\%$ Interestingly, the increase in emotional ownership of ideas seems to reduce the willingness to exchange OEI.

Interestingly, the support from the organizational practice wasn't significant from either of the perspectives that were: organization allowing innovative actions in online networks and organization supporting OER sharing and development. Also it seems that the commitment to the collaborators online does not seem to influence intentions to exchange OEIs.

TABLE 3 PREDICTORS OF INTENTIONS TO EXCHANGE OPEN EDUCATIONAL IDEAS

Model	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	Beta			Lower Bound	Upper Bound
1 (Constant)		1.421	.158	-.220	1.333
ACC	.048	.674	.502	-.094	.191
ORG	-.034	-.482	.631	-.194	.118
PREFOER	.306	3.872	.000***	.160	.495
OWN	-.175	-2.308	.023**	-.405	-.031
OE	.130	1.586	.116	-.043	.383
PCC	.256	3.181	.002***	.097	.419
ORGOER	.053	.765	.446	-.085	.193
EXP	.337	4.133	.000***	.140	.399

Note. Dependent variable= INTOER, N=110, * $p < .01$. ** $p < .05$. *** $p < .001$.

What can we infer from the results? The emotional ownership as a barrier to exchanging OEI was surprising. It could mean that once we get attached to our ideas, we also become more protective about them. This does not mean that we wouldn't exchange our ideas with our close colleagues and in trusted environments. But it could explain why many professionals and educators are hesitant to take part in the exchange of ideas during our validations. One further explanation coming from open innovation studies is that the most innovative ideas will stay inside the house until the benefits are reached. Any further ideas that are not needed, could then be shared with the community. While further research is needed to confirm it, we believe similar tendency could exist in open educational idea sharing.

The results regarding the preferences to exchange early ideas and to work collaboratively on OERs could be expected. The results also showed that previous knowledge sharing experience, even if it does not relate to sharing OERs, does have significant influence to sharing intentions of educational ideas. The finding could explain why OEI was able to reach certain educators easier than others and create movement in the idea space. It also can help explaining why in many cases it is extremely difficult to generate active communities around educational ideas when educators and even professionals in companies are not used to the kind of behavior.

Sharing ideas versus sharing open educational ideas

The most unexpected result was that the outcome expectations of idea sharing does not seem to have a significant influence to exchanging open educational ideas. The findings of the qualitative data we have collected have indicated that the benefits for engaging to exchange of ideas online must be fully evident. We ran a further analysis with the intention to exchange ideas as the dependent variable instead of exchanging open educational ideas to see whether the results are similar.

When we did such a switch of the dependent variable we witnessed that outcome expectations are a strong predictor of intentions to exchange ideas ($B=.235$, Sig. .001). In this case also the emotional ownership was not barrier, not having any significant influence. Otherwise the significant predictors were the same. What does this mean?

Outcome expectations not significant for exchanging open educational ideas

The difference in these findings would imply that when sharing educational ideas, the outcome expectation (that taking part in sharing increases ones ties in the network, increase reputation and give a sense of accomplishment) would not be a critical factor. For exchange of ideas in general such expectation is a critical predictor of sharing intentions.

The result implies that such network-related benefits are not as important when working collaboratively on OERs and OEPs. Increase in the position in the network or how one might be viewed in terms of reputation do not seem to be essential. However, in the exchange of ideas in online communities in general, such outcome expectation seems to be highly important.

Emotional ownership barrier to exchanging OEI but not to sharing ideas in general online

The findings indicate that educators are especially protective toward their knowledge. But, why is there a difference between sharing educational ideas (e.g. about own courses, new practices) to sharing ideas in general in online communities? This aspect requires further research that our data does not give answers to.

Next we will review the proposed OEI processes and lifecycle models in the light of the data we have gathered.

5.2 Updated OEI processes

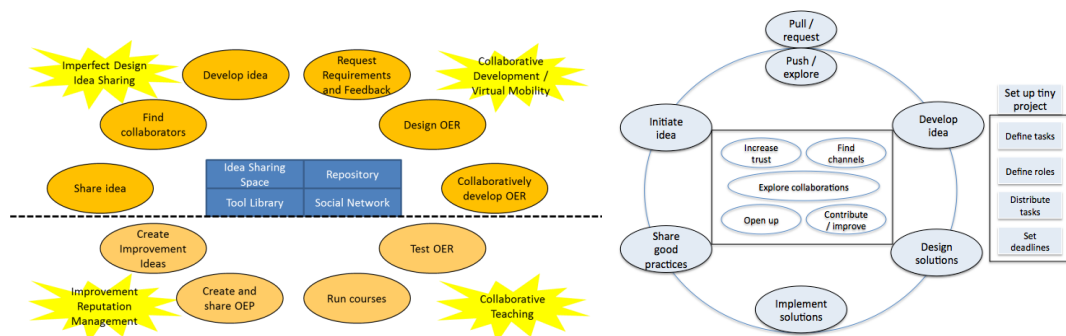
The validation phase 2 consisted of several activities where the online behavior of educators, students and other professionals were observed. See further information about the methodology and approach from D4.2b.

We will firstly review three approaches that were guiding the work of the project within year 1:

- The OEI processes from DoW
- The initial OEI lifecycle created through validation phase 1
- The initial templates from idea space that followed OEI processes

5.2.1 The OEI life cycles reviewed

Based on the findings from two round of validations, we can say that ideal cases in the real world could take place as shown below in the two different types of life cycle models. They are likely to happen but there are certain conditions:



Condition 1: Lead users lead the way

What we have learned from the validations, especially looking at the usage data (see validation report) is that there are certain lead users who are extremely active in collaborating on ideas. These lead users are also usually the initiators of that idea space. In such case it is very obvious that such person has the strongest motivation to develop that idea further.

Condition 2: Online environment not the place where all magic happens

Many of the stages above incorporate a combination of F2F settings and online collaboration. During the validations that took place in the two phases we have learned that fully distributed idea sharing projects do not exist. Many of the projects had some F2F events where some of the collaborators get together and some were even on-site collaborations where the online environment is mainly used for storing and managing knowledge.

Condition 3: Educators can be protective toward their ideas

As shown in our analysis of the predictors of idea sharing intentions, educators can also be protective toward their ideas when they feel those are “their own”. This can turn out in a way that one does not take part in idea sharing. Our validations show differences between educators’ practices and preferences. It seems for some who are passionate about the ideas they have themselves created or in collaboration with others this protective behavior does not exist.

We believe some of the differences can be explained by those who see that education should be open and transparent in comparison to the ones who do not think high of the open education paradigm. This is one of the key points why sharing of educational ideas cannot become mainstream in an instant. Like for OER and OEP, it is a gradual process. Another reason for the protective behavior might be also explained by the personality of the educators. Not all enjoy exposing their knowledge and “potential weaknesses” to others to comment on.

Condition 4: Find the motivated people who have experience as well

Our analysis and the validations in general show that shared passion is critical. Setting up collaborations where not all participants are devoted, is unlikely to take off. Similarly, the participants need to have previous experience in working collaboratively in ICT environments. This does increase sharing intentions.

Condition 5: Contributors change

We have seen in the validations that while the lead users and contributors often remain, contributors (both in offline and online settings) tend not to remain from the early idea setting to the diffusion of ideas. This is why it is beneficial that several online networks are utilized throughout the process to keep an ongoing activity and discussion up and running. Ideas that stop, even for days, often remain untouched and unchanged. This is when great ideas remain as ideas and do not come out as OERs, practices etc.

Condition 6: Preferences matter

One of the lessons learnt early in the OEI project was that educators have very different types of attitudes and behaviors and even hidden agendas to technology use and further to contribution behavior online. These attitudes and behaviors are unfortunately very hard to detect except afterwards when idea sharing should have taken place. One of the most critical factor to sharing open educational ideas is the preference to collaborate on early, not-so-fully-thought-through ideas. The second issue is whether educators appreciate to brainstorm (both asynchronously and synchronously) on these early ideas with professionals they do not know well, even by their reputation.

Condition 7: Objectives and goals change

What might start as an idea toward a new course or course material might result in a national or even international project. Not all projects set in idea space even have a clear outcome in mind but the process and common ideas will be pursued further. This has further implications on the templates used in the idea space. See the next section.

Condition 8: Benefits need to be clear while increase in status or reputation do not play a big role in OEI sharing

Our analysis shows that outcome expectations regarding increase in reputation and position in a certain network are not influencing the sharing intentions of educators. This does not mean the benefits for sharing should not be evident. On the contrary, our validation results indicate that the benefits for sharing need to be perfectly clear for both short-and long-term.

Condition 9: Use emotional ownership as an enabler

While educators can be protective towards their ideas, the findings of our studies in the last two years have shown the importance of interaction between educators and the benefits they get from the rich contributions of others. Thus, start the online collaboration in a private mode with the peers you are comfortable sharing your ideas with. Gradually see whether including wider networks could be useful. When that time comes and you are already collaborating in idea space, turn the privacy setting of that project to public, not before.

5.2.3 The initial templates reviewed

The work on the context scenarios in WP1 and the feedback during year 1 resulted in a number of pre-selected templates the users could build on in Idea Space. Those are presented in the Figure below.

Can the workspace be viewed by everyone?

Yes

Structure of the workspace

Start from Scratch

Use this one to collaborate on idea freely, using no structured template

Course Development

You can use this template to collaboratively develop an idea for a course and related learning material

Open Research

You can use this template for working on a common research effort

e-Handbook

You can use this template for creating an e-handbook

Educational project

You can use this template for planning and creating an educational project

Add the workspace

First of all, the validation in year 1 indicated educators appreciate structure in idea sharing. The developed templates all have unique processes the users could follow when building their ideas towards new solutions.

As elaborated above for condition 7, the objectives and goals might rapidly change during idea sharing process. This is only natural as a potentially good idea can become a great idea when the focus is slightly adapted. This is one of the reasons the process for idea sharing should not be restricted too much. This leads to further elaboration that idea sharing might relate to:

TABLE 4 DIFFERING FOCI TO SHARING IDEAS

Focus	Outcome	Implications for processes
Exchanging thoughts to find a seed idea that will be further collaborated on (loosely defined approach)	Outcome not fixed. (e.g. educators sharing shared passions and want to work together toward a new project, the topic and the context explored during idea sharing)	Cannot define a clear goal and most likely a fixed process would only complicate collaboration
Exchanging ideas to overcome a certain problem (problem-based approach) similarly to above the approach this identified intervention or interventions will be collaborated on	Problem identified, outcome not fixed	Hard to fix a process

Exchanging ideas when goal is clear (objective-oriented approach)	Outcome fixed collaborating	before	Collaborative process that can be most likely followed by a workflow (template in idea space)
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SUMMARY

As discussed in D2.1a, educators do see the benefits and need to be engaged to collaborative actions on developing educational resources and activities, even on a global scale. Our two-stage validation approach shows that sharing educational ideas in a collaborative manner in many cases can be successful. Similarly, the qualitative, quantitative and log data from the portal show that idea sharing is hard to sustain in an online environment. Our findings clearly point out differences in attitudes, opinions, preferences and thus, idea sharing behaviors.

In the first phase of validation we saw that rather than giving tools for collaboration and expecting the community to act, collaborations on educational ideas should learn from open source community and build the collaborations as tiny projects. Depending on the interests of people and the aim for the collaboration, wider networks might be relevant from the start but at the same time it has to be acknowledged that collaborations and idea generation will most likely initiate in closed environments as an outcome of discourse of with trusted peers. As an outcome of the second validation we can see that we can also learn from the open innovation movement by looking at various innovation processes. Our users have also elaborated that the Idea Space platform could be easily used for other types of idea generation processes in companies and even beyond educational domain.

The elaborations after first validation “the online mode will likely be the greatest opportunity and limitation for collaborative idea sharing as it has been for OER and also for MOOCs” was rather accurate. The online mode is not a common practice. We managed in the second round of validations to understand what such conditions and influence factors could be that explain at which situations idea sharing can succeed.

In the next phases of Open Educational Ideas it is vital that the idea sharing practices are embedded to differing processes and systems. For example repositories should have inbuilt support for collaborative working on OER where idea space could be used. Also, idea sharing has to be to some extent and in certain situations hidden from a wide community. Allowing diligent and sensitive collaboration in a closed manner before the ideas are opened up (like Idea Space does) is a practice to pursue further.

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ANNEX 1

Survey

Demographics

1) Where are you from?*

2) Gender*

☐ Male

☐ Female

☐ Other: _____

3) How old are you?***4) What is your role?***

☐ Researcher

☐ Student

☐ Teacher

☐ Professional

☐ Other: _____

About your line of work**5) Are you involved in research?***

☐ Yes

☐ No

6) Do you teach or give lectures?*

☐ Yes

☐ No

7) Have you used Open Educational Resources in your work?*

☐ Yes

☐ No

8) Do you agree that there is a strong demand for OER in your work environment?*

☐ Strongly agree

☐ Agree

- ☐ Neutral
- ☐ Disagree
- ☐ Strongly disagree

9) Do you have a work contract in a company or in academia?*

- ☐ Yes
- ☐ No

Organizational Openness

- ☐ Strongly agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly disagree

10) My organization encourages employees to engage in cross-organizational business opportunities*

11) My organization puts much value on taking risks even if that turns out to be a failure*

12) My organization encourages employees to start new collaborations with external stakeholders and organizations*

13) My organization encourages employees to develop their competences as they see best*

14) My organization encourages employees to actively promote the organization on the internet*

15) My organization encourages employees to use OER*

16) My colleagues generally accept OER*

17) My institution has established common practices for working with OER*

About your previous engagement in Open Professional Virtual Communities

- ☐ Very frequently
- ☐ Frequently
- ☐ Occasionally
- ☐ Rarely

☐ Never

18) I share and discuss my experiences with others in virtual communities*

19) I exchange ideas in virtual communities*

20) I engage with virtual communities to learn how to do things*

21) I share my thoughts with my peers in virtual communities*

22) I search for relevant OERs for my purposes*

23) I adapt OERs to my own local conditions*

24) I share good practices for using OER in virtual communities*

25) I share OERs with relevant virtual communities*

Commitment in Open Professional Virtual Communities

☐ Strongly agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly disagree

26) Feeling like a “part of the group” is important for me in virtual communities*

27) Emotional attachment to the group of collaborators encourages me to share knowledge online, even outside my contractual obligations*

28) Feeling a strong sense of belonging is important for me in virtual communities*

29) Feeling a strong connection to other members of the virtual community is important for me*

30) I get emotionally attached (e.g feeling proud, sense of ownership) to the resources I am creating (writings, products, services)*

31) I expect to be emotionally attached to the ideas I am sharing in open professional virtual environments*

32) Feeling a strong ownership of the ideas and resources being created in the virtual community is important for me*

33) It is important to me that I know who my collaborators are in an open professional virtual community*

34) I prefer to collaborate only with peers I know from before in an open professional virtual community*

35) I do not mind exchanging ideas with peers unfamiliar to me in an open professional virtual community*

36) It is easy for me to get to know other members in open professional virtual communities*

Early engagement in Open Professional Virtual Communities

☐ Strongly agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly disagree

37) I enjoy brainstorming online with my peers on how to turn raw ideas into real solutions*

38) I enjoy online collaboration on ideas that haven't matured*

39) I enjoy engaging in collaborative settings online when ideas are still raw*

40) Being involved with the virtual community when the group is being formed increases my activity*

41) I want to be included in the virtual community when I can best influence the direction of the ideas being exchanged*

42) I prefer engaging to collaboration with the virtual community when idea sharing has matured and concrete outcomes and activities are foreseen*

43) I enjoy building OERs in a collaborative manner*

44) I enjoy building OER in a collaborative manner with my peers in professional virtual communities*

45) I enjoy turning ideas into OERs with online community of peers*

46) Sharing my knowledge can build up my reputation in the open professional virtual community*

47) Sharing my knowledge in an open professional virtual community will give me a sense of accomplishment*

48) Sharing my knowledge will strengthen the tie between other members in the open professional virtual community and me*

49) Sharing my knowledge will enable me to gain better cooperation from the outstanding members in the open professional virtual community*

50) I plan to engage in open professional virtual communities to exchange ideas with my peers*

51) I intend to engage into exchange of ideas provided I have access to a relevant virtual community*

52) Given that I had access to relevant virtual communities, I predict that I would engage to exchange ideas*

53) I will share my knowledge with others in open professional virtual communities related to my work*

54) I plan to engage in open professional virtual communities to share my educational ideas with peers*

55) I plan to engage in open professional virtual communities to collaboratively build OER*

56) I plan to engage in open professional virtual communities to create new open educational practices*

ANNEX 2

TABLE 5 FACTOR ANALYSIS

Pattern Matrix^a

	Factor								
	1	2	3	4	5	6	7	8	9
66: I will share my knowledge with others in open professional virtual communities related to my work 0.923									
65: Given that I had access to relevant virtual communities, I predict that I would engage to exchange ideas 0.872									
67: I plan to engage in open professional virtual communities to share my educational ideas with peers 0.849									
69: I plan to engage in open professional virtual communities to create new open educational practices 0.834									
64: I intend to engage into exchange of ideas provided I have access to a relevant virtual community 0.767									

68: I plan to engage in open professional virtual communities to collaboratively build OER	.717								
63: I plan to engage in open professional virtual communities to exchange ideas with my peers	.682								
26: I share my thoughts with my peers in virtual communities		.850							
24: I exchange ideas in virtual communities		.850							
23: I share and discuss my experiences with others in virtual communities		.816							
25: I engage with virtual communities to learn how to do things		.709							
34: Feeling a strong sense of belonging is important for me in virtual communities			.908						
35: Feeling a strong connection to other members of the virtual community is important for me			.901						
32: Feeling like a "part of the group" is important for me in virtual communities			.821						
16: My organization encourages employees to start new collaborations with external stakeholders and organizations				.915					
14: My organization encourages employees to engage in cross-organizational business opportunities				.739					
18: My organization encourages employees to actively promote the organization on the internet				.662					

17: My organization encourages employees to develop their competences as they see best				.643					
55: I enjoy building OER in a collaborative manner with my peers in professional virtual communities				.915					
56: I enjoy turning ideas into OERs with online community of peers				.772					
54: I enjoy building OERs in a collaborative manner				.693					
36: I get emotionally attached (e.g feeling proud, sense of ownership) to the resources I am creating (writings, products, services)					.948				
37: I expect to be emotionally attached to the ideas I am sharing in open professional virtual environments					.567				
38: Feeling a strong ownership of the ideas and resources being created in the virtual community is important for me									
21: My institution has established common practices for working with OER						.788			
20: My colleagues generally accept OER						.663			
19: My organization encourages employees to use OER						.633			
59: Sharing my knowledge in an open professional virtual community will give me a sense of accomplishment							.726		
60: Sharing my knowledge will strengthen the tie between other members in the open professional virtual community and me							.689		

58: Sharing my knowledge can build up my reputation in the open professional virtual community								.616	
49: I enjoy online collaboration on ideas that haven't matured									.715
50: I enjoy engaging in collaborative settings online when ideas are still raw									.694
48: I enjoy brainstorming online with my peers on how to turn raw ideas into real solutions	.431								.496

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 9 iterations.