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EnhAnced Government Learning

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Objective 8.2 Technology-enhanced learning;

Target outcome c): Holistic learning solutions for managing, reaching and engaging learners in the public administrations

Deliverable [no. 7.2]

CONTEXTUALIZATION TOOLS

WP no. 7 – Localization
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Glossary

FP7	Seventh Framework Programme
EC	European Commission
EAGLE	EnhAnced Government Learning
EU	European Union
WP	Work Package
OER	Open Educational Resources

This icon marks a description (source: D3.1.).

This icon marks the time for completion (source: **Wikimedia commons**)

This icon marks how and which tool supports an adaptation strategy.

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Executive Summary

This Deliverable is a plan on

1. **how to use tools** with regard to culture barriers
2. how to integrate tools during contextualization steps
3. how tools support collaboration and community building

Need for the Deliverable

The tool library developed in D6.4. and D6.8. have outlined why tools were selected with regard to several evaluation criteria. While culture factors were included, this deliverable maps the match of selection criteria with culture factors. How and which tools support EAGLE users during adaptation processes is shown. Since collaboration and community is crucial for success of open learning platforms (public employees tend to have fear to isolate when learning online), the deliverable provides some core ideas and resources how to proceed.

Objectives of the Deliverable

With the help of this deliverable, we want to make sure that selected tools enable prospective EAGLE users to conduct the following activities:

- collaborate to reach a common goal (share ideas, create shared resources, communicate, coordinate activities),
- build communities (sense of belonging, open and private groups),
- conduct a needs analysis (what to learn and which OER to choose),
- evaluate and adapt OER according to own learning means (conduct a contextualization process).

Outcomes

Chapter 5 documents how to integrate tools into everyday administrative work. Illustrations indicate how to use the tools. A description, illustrations or links to templates provide guidance, how to proceed step by step.

We will **facilitate integration of EAGLE tools** for authoring and adapting resources, creating groups in communities and collaborating by

- **Templates**: This deliverable as well as the EAGLE platform provides templates (for wiki, blog entries, a needs analysis, etc.) which can be used for orientation or as a starting point to create own resources.
- **Tasks**: The templates contain questions, answers and tasks which motivate prospective users to perform and get familiar with activities elaborated in this deliverable.
- **Masterclasses**: DHWB and HRW conduct Masterclasses. The courses are dedicated to support public to familiarize with, learn to create and contextualize OER and related activities. The deliverable contains both tasks and illustrations which public employees will complete for learning means.

Next steps

This deliverable is going to be a **point of reference** for the **updated tool library**. OER templates describe **tasks for future Master-classes. T**he deliverable content (mapping culture factors to adaptation strategies) will be **validated with public employees in workshops during January-March 2016**. (Due to anticipated submission of D7.2. [M24 instead M27] validation workshops will follow the submission. A summary of results will be provided to reviewers in April 2014.

1 Introduction

The deliverable D7.2 aims at identifying and integrating tools regarding culture-related adaptation and contextualization. It contributes towards the tool library developed in D6.4. and D6.8. The deliverable maps culture adaptation challenges to selection criteria and selected tools. Adaptation and contextualization activities addressed include idea sharing, collaborative idea development, brainstorming and conceptual clarification.

To understand why tools were selected for adaptation and contextualization, the second chapter provides the background on culture contextualization (oriented on D7.1.). Chapter three provides the methodology for selecting tools, mapping tools to challenges and providing guidance for contextualization. Chapter four provides an overview of selected tools. Guidance for using tools is defined, subsequently, in chapter five. The discussion is outlined in chapter six. The main points are resumed in chapter seven.

2 Background: Culture and Contextualization

The following sections provide the background for understanding culture contextualization and the model developed for EAGLE in D7.1.

2.1 Culture Contextualization

Culture and context of public administrations is often summarized under the buzzword bureaucracy or “red tape”. This simplified view does not help to identify which basic assumptions, convictions, behaviour and artefacts (culture according to Schein 2010) challenge the use of OER. However, there is no doubt that there is a strong organizational culture specific to public administrations which also varies strongly between institutions, regions and countries. In the classic e-learning domain, only few studies elaborate which factors in public sector are shaping the use of open learning systems. Eidson (2009), Chen (2014) and Bimrose et al. (2014), for example, outline that time is a critical factor for learning at the workplace. Conradie and Choenni (2012) outline that fear of making false conclusions, financial concerns, role of ownership of data are further barriers to data release among others. To enable public employees to make the most of open learning, it is important to have a ***process*** which enables public employees to identify cultural barriers, strengths and suitable (re-)use strategies of OER.

Contextualization is such a process which aims at identifying cultural barriers and recommending strategies for adaptation. There is a myriad of contextualization models (see D7.1). Overall, they share the following steps:

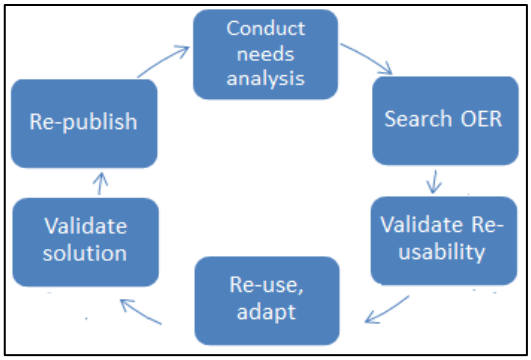

FIGURE 1: CONTEXTUALIZATION PROCESS (STOFFREGEN ET AL. 2016)

The figure is to read as follows. A learner conducts a **needs analysis** which tells what kind of OER, what format and learning approach and format he or she prefers. Subsequent to this reflection, she performs a **search** and gains a set of potentially suitable OER for her learning means. Then, the learner **validates reusability** of the OER. This is done by checking whether OER characteristics such as topic, format, and learning approach matches the initial needs analysis. Depending on the match or mismatch of a learner's preferences and the OER, one can infer **adaptation & re-use_**strategies. Based on the adapted OER, the learner uses the OER and **validates** whether her knowledge need is met. Then, in the final step, the learner **re-publishes** her OER and allows others to avail of the knowledge resource for personal learning means.

In D7.1 this contextualization process is further discussed (see chapter 7). Core point which is crucial for EAGLE to consider is that, yet, no contextualization model is developed for the public sector. While the contextualization process can be generalized – such as the search and validation step, the factors challenging success vary across contexts. Hence, there is no model which informs which cultural factors are most important to address in EAGLE. A cultural model responsive to needs and usage goals of EAGLE and future public administration users was developed to address this gap.

2.2 Culture Contextualization Model in EAGLE

The culture contextualization model in EAGLE was built with regard to the requirements engineering phase in EAGLE (D2.2.) as well as further expert validation (documented in D7.1). The following nine factors and assumptions can be posed based on the feedback of experts.

One set of factors is associated with the **internal group system,** for example *openness in discourse*. Depending on assumptions to innovate routines and discuss errors at the workplace or not, public employees will get involved in the exchange of OER. Another factor is *group identification*. Depending on the match of work domains, geography and language (terminology), the exchange of OER will succeed. *Learning at the workplace* is another factor. Depending on assumptions about responsibilities for selecting learning resources for adaptation, OER are used. Another factor is the perceived *support of superiors*. If superiors do not support public employees actively, the exchange of OER will remain on a low level.

Looking at **technology structures**, one culture factor is the *spirit of open learning platforms*. If public employees perceive the platform as a monitoring tool for superiors, the engagement will be low. Another factor is the *format of media*; both content (abstract / applied) and diversity of an OER accommodated to match expectations of public employees to facilitate re-use and adaptation.

Concerning factors in the **organizational environment**, a first one is *regulation*. While it is not essential where rules are located they are required to empower employees and inform how to perform adaptation and exchange. Last but not least, *environmental artefacts,* such as internet infrastructure and tools to engage in the adaption of OER, have to be provided.

Overall, the factors have different dimensions. Either a person has the culturally shaped preference for superior support or not. Either a public employee can learn with multiple media-formats or not. Either learners prefer to exchange knowledge with (geographically) closely located public administrations or they prefer to seek to exchange knowledge beyond country borders.

Depending on the cultural preferences, a learner gains a culture-profile; a representation of his or her likes and dislikes. The profile represents the culturally shaped preferences of a learner for success in learning and sharing knowledge in an open learning platform. Based on the profile (likes and dislikes),

a learner can validate the re-usability of an OER for his learning means and culture profile. Questio come up, such whether the original author of an OER is (geographically) closely located, whether the content provides a checklist or rather an abstract theory and whether the OER requires a large bandwidth.

In the following, the dimensional view of the profile is depicted.

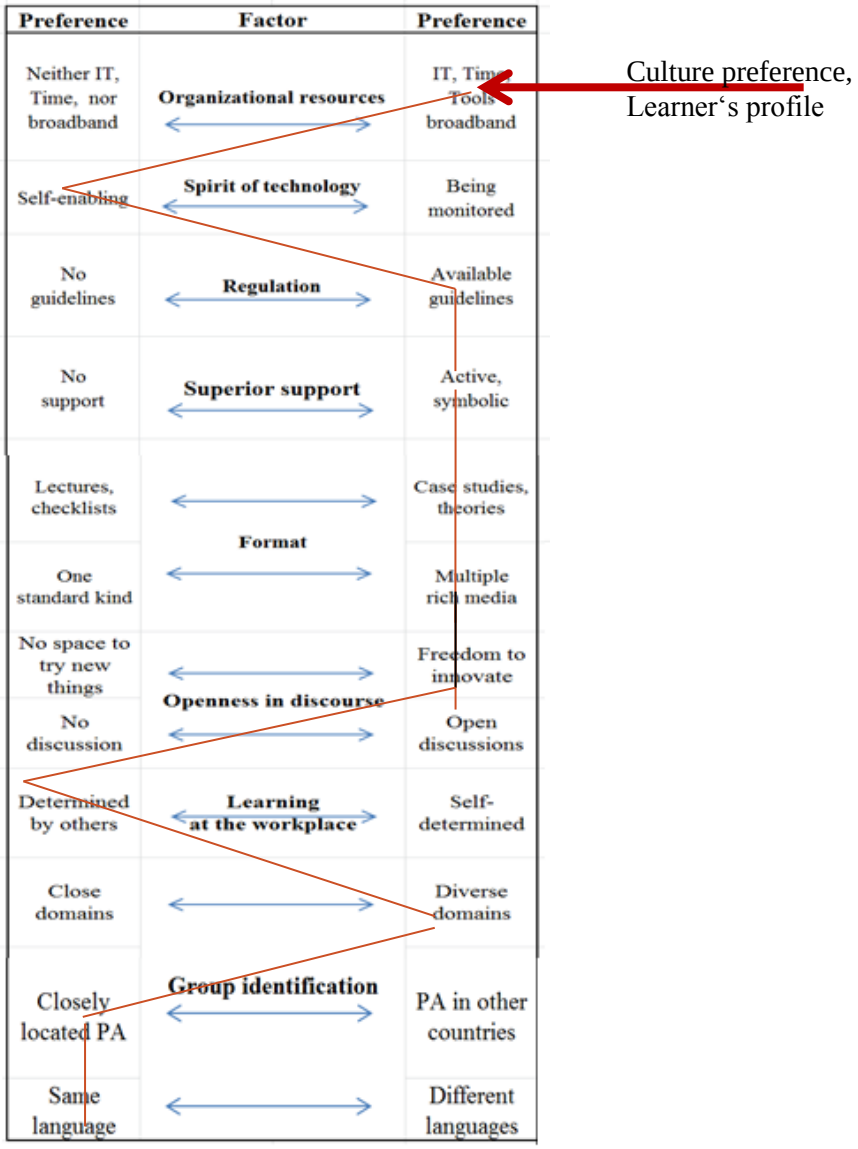

FIGURE 2: CULTURE PROFILE ILLUSTRATION

Depending on the match and mismatch of a learner profile and the OER, adaptation strategies can be recommended by the system. The set of adaptation strategies developed in D6.4 and D6.8. are summarized for convenience of the readers in the following table.

TABLE 1: ADAPTATION STRATEGIES

Category	Kind of adaptation	Index
Translate	**Versioning:** Implementing specific changes to update the resource	**S1**
	Translating: Restating content, idioms and expressions from one language into another language	**S2**
Localize	**Re-authoring content:** Transforming the content by adding an ***own*** interpretation, reflection, practice or knowledge	**S3**
	Re-authoring structure Adapt structure, format, or layout of the resource	**S4**
	Re-illustrating: Changing content or adding ***new factual information*** in order to assign meaning, make sense through examples and scenarios	**S5**
	Personalizing: Aggregating tools to match individual preference, context and performance	**S6**
	Discussing: Discussing with peers or superior to settle a meaning of the content	**S7**
Modularize	**Summarizing:** Reducing the content by selecting the essential ideas	**S8**
	Repurposing: Reusing for a different purpose or alter metadata, tasks and abstract to make more suited for different learning goals or outcome	**S9**
	Decomposing: Separating content in different sections, break content down into parts	**S11**
Originate	**Remixing:** Connecting the content with new media, interactive interfaces or different components.	**S12**
	Assembling: Integrating the content with other content in order to develop a module or new unit	**S13**
	Redesigning: Converting contents from one form to another, presenting pre-existing content into a different delivery format.	**S14**
	Developing anew: Developing your own OER, taking reference to existing ones	**S15**

The strategies are further discussed in D6.8. Also, how to infer from the culture profile to the adaptation strategies is elaborated in D6.8. D7.2. will focus on how the profile, adaptation strategies and selected tools work together. To facilitate reading, the next chapter will briefly resume the tool evaluation process with particular regard to culture factors.

3 Selection of tools in EAGLE

The chapter provides an overview of the tool selection process and maps how culture barriers relate to the tool selection criteria.

3.1 Overview of the selection process

The selection process of authoring and contextualization tools for the EAGLE platform was defined in D6.4. and D6.8.. Basically, a set of core "must have" criteria were defined, such as accessibility, possibility to rate contents, follow others and communicate with others. Based on these criteria, tools identified in D6.4. were ranked and selected according to the highest scores. Further selection concerns for the EAGLE tool library were:

- To have a small set of tools which meets as many criteria as possible
- Direct integration of selected tools into the platform
- List non-integrated tools (by link) and provide further information in a tool description

A set of culture evaluation criteria was defined for the selection as well. In order not to duplicate deliverables, only culturally relevant criteria (which are corresponding to culture challenges in EAGLE defined in chapter 2.2.) are defined in the following.

3.2 Culture related selection criteria

A set of culture criteria was identified for the selection of tools as well. To avoid duplication of deliverables, next is an outline of how culturally relevant factors in EAGLE correspond to culture challenges defined in chapter 2.2..

TABLE 2: MAPPING CULTURE FACTORS AND EVALUATION CRITERIA

Cultural Factor	Corresponding evaluation criteria (separated by columns)
Openness in discourse	Communication criteria (*sending private messages to known and unknown EAGLE users*), social media criteria (*reciprocal and indirect connections*), text production criteria (*tracking of changes*), aggregation criteria (*share the work done)*, culture criteria (*do no display of errors*); forum criteria (*rating of contents*).
Learning at the workplace	Community building, social media and group communication criteria, culture criteria (technical language issues).
Format for exchange	Formats (*as much formats as possible*)*, text production criteria, aggregation criteria.
Spirit of open learning platforms	Group communication criteria (*private and open chat for exchange*).
Superior support	Group communication criteria; wiki, note and blogs for reflection.
Background of collaboration partners	By profile information, OER projection.*
Organizational resources	Technical criteria (such as operates in mobile devices, optimizes GUI).
Regulatory frames	Forum criteria, culture criteria (e.g. different languages), accessibility criteria.

The table shows that the culture factors in EAGLE have more than one selection criterion. Instead, a cultural factor such as openness in discourse is revealed by communication, forum, and social media among others. The reason behind is clear, namely, both ends of the cultural factor need to be served: on the one hand the interest to discuss with others and evaluate or rate their contributions, on the other hand an interest to learn alone without the pressure to collaborate. Representing culture criteria in EAGLE with multiple selection criteria allows that users with different learning and knowledge exchange processes are served; they have the choice to avail of a range of.

The detailed deliverable on the selection process and outcome is provided in D6.8 and D6.4. For means of space and solid base of argumentation in this deliverable, however, the list of selected tools will be outlined in the following.

4 List of selected tools

Subsequently, specifics concerning the use for contextualization in EAGLE will be outlined.

4.1 Overview of selected tools

The tools recommended and selected in D6.4. and D6.8. are outlined in the following. As authoring tools, the platform **Liferay / Vaadin** has performed best for allowing users to author OER. It allows users to develop forums and groups, blogs, wikis, network/meet-ups.[1] As specific support tools, the evaluation has outlined that **H5P**, Freeplane, and Screencast-O-Matic perform best. H5P allows creating, sharing and reusing HTML5 content and applications' (h5p.org). **Freeplane** is a brainstorming tool which allows single and collaborative editing of mind-maps. It is a free and open source software application that can be installed on any system that runs Java. **Screencast-O-Matic** is a tool which allows users to record their desktop as well as voice. As basic tools, calendar ce, messenger suc and aspose ranked high. **Calendar CE** is a planning tool for single and multiple users. It is a portlet dedicated to the Liferay Portal and contributes to manage learning and collaboration online. Messenger SUC allows two users to communicate. Similar as other communication tools, **Messenger SUC** appears as a set of three icons in the lower, right handed side of the Liferay website. Aspose succeeds the built-in tool "jodconverter" which transforms any file into a HTML-compatible format. Finally, **Etherpad** and **Mitzuli** were identified as multi-lingual tools on the H5P and Liferay platform. Etherpad is an online synchronous text collaboration tool. It provides multiple services including translation. Mitzuli is a mobile device app for Android. It allows translation of spoken and written words into multiple languages. An overview of the tools is provided below. For further information, please refer to D6.4. and D6.8..

[1] EAGLE tools are based on Liferay – in the following, we propose tools which are currently integrated in the EAGLE solution, further (also external) tools are considered as well for future integration or simple use in the contextualization process.

TABLE 3: SELECTED TOOLS

Kind of tool	Selected tool
Authoring tools	Liferay / Vaadin (EAGLE platform)
Specific authoring support tools (incl. contextualization)	H5P, Freeplane, Screencast-O-Matic
Base tools	Calendar CE, Messenger SUC, Aspose.
Multi-lingual tools	H5P and EAGLE platform, Etherpad, Mitzuli

4.2 Selected tools and contextualization

How do the tools enable contextualization processes? How, for example, does H5P support EAGLE users in the needs analysis (NA in the following)? Which tool is to use at which step? In the following mind-map, it is outlined how and which tool can support a contextualization process.

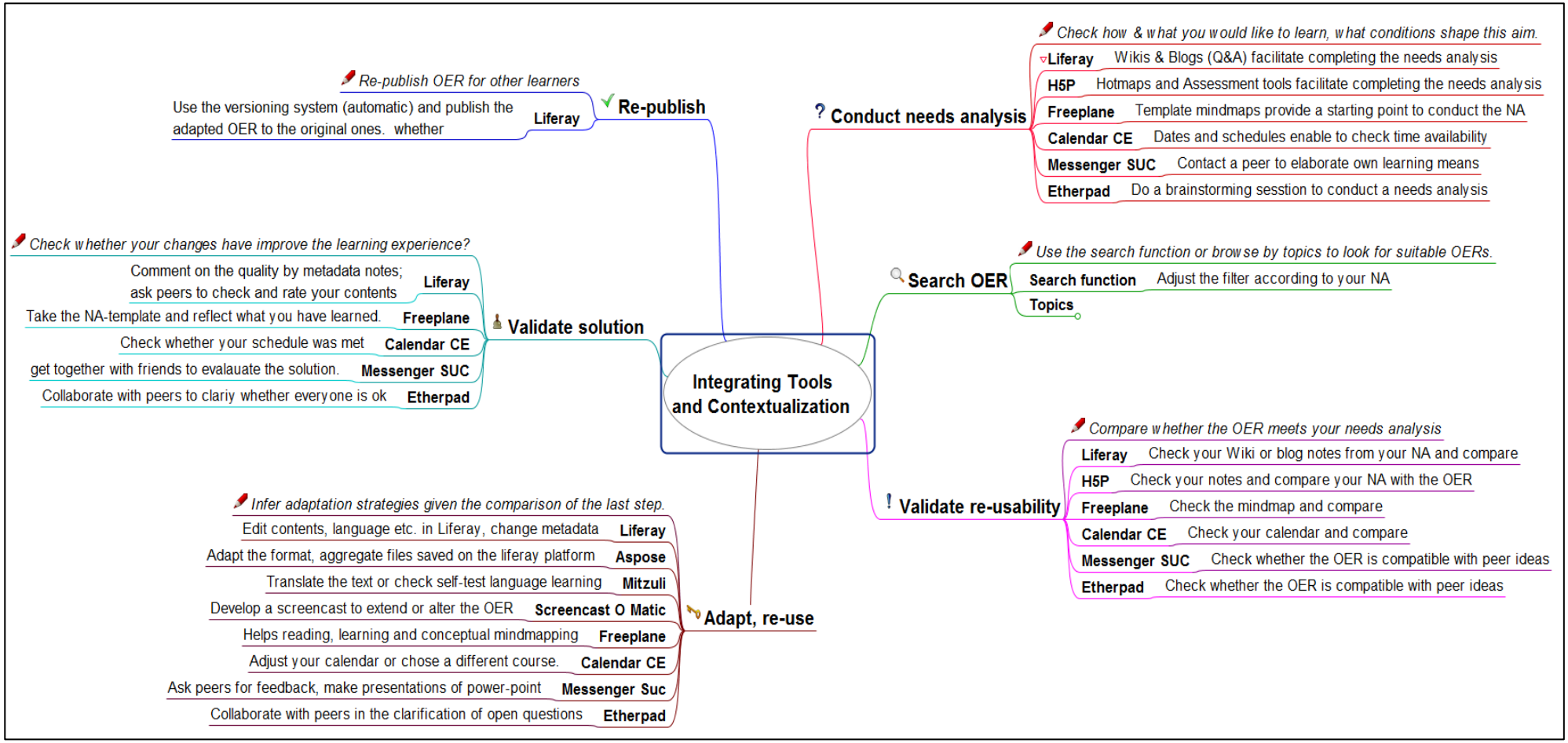

FIGURE 3: MIND-MAP - FROM TOOLS TO CONTEXTUALIZATION STEPS

The mind-map only provides an idea which tool to use when and for which contextualization step. In the following chapter, steps how to integrate tools in adaptation and contextualization will be more clarified.

5 Integrating tools in adaptation and contextualization steps

The following chapter describes how tools enable users to contextualize OER for personal learning means. The contents are prepared as OER which are available at the EAGLE platform. All steps outlined in Figure 3 will be addressed. Parts of the text origin from the deliverable D7.1. An additional section is dedicated to community building and collaboration.

5.1 Conducting a needs analysis

Brief description of the step: Needs analysis

The learning needs analysis is the first step in a contextualization process. With the help of a few questions, a learner specifies his/her main goal, her/his cultural learning preferences and contextual constraints. Later on, these notes will help to evaluate whether the OER suits or whether the adaptation was useful.

In the initial mind-map, the set of tools suggested to use for conducting a needs analysis are Liferay[2], H5P, Freeplane, Calendar CE, Messenger SUC and Etherpad (see following figure).

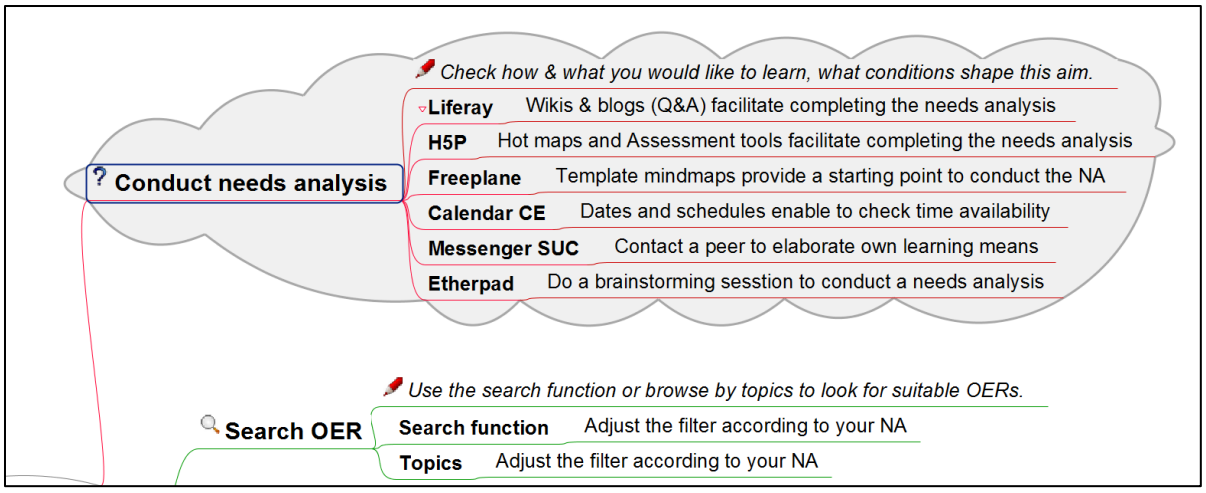

FIGURE 4: MIND-MAP CONDUCTING A NEEDS ANALYSIS

[2] See footnote 1 for further information.

The learner conducts a needs analysis to specify what he or she would like to learn and what conditions and challenges shape this aim. Exemplary questions that help a learner to specify these learning needs and challenges are, which topics to learn, which formats to use and which media are favourable to my learning style.

A brief description how to get to the tools and use them is prepared in the following table. It provides links to templates EAGLE users can use when starting to contextualize OER.

5.1.1 Liferay[3] Wiki

Title: How to conduct a needs analysis?

Introduction: The wiki entry provides some questions which help to reflect what OER may suit your personal learning means. Go through the questions and create your profile[4]. You may take notes on paper or you may adapt the notes, for example, by adding more questions and deleting others.

Text / Questions: 1: What is the topic that you are searching for? 2: What parts of the topic should an OER present? 3: What information / knowledge do you want to have acquired in the end?

Text / Culture profile: The survey to conduct is provided online in the EAGLE platform

Links: The following link provides an example wiki entry with the questions and culture profile: http://eagle-portal.fokus.fraunhofer.de/wiki?p_p_id=54_INSTANCE_6SMhngev21nt&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_pos=1&p_p_col_count=3&_54_INSTANCE_6SMhngev21nt_struts_action=%2Fwiki_display%2Fview_page&_54_INSTANCE_6SMhngev21nt_redirect=http%3A%2F%2Feagle-portal.fokus.fraunhofer.de%2Fwiki%3Fp_p_id%3D54_INSTANCE_6SMhngev21nt%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_pos%3D1%26p_p_col_count%3D3%26_54_INSTANCE_6SMhngev21nt_nodeName%3DMain%26_54_INSTANCE_6SMhngev21nt_struts_action%3D%252Fwiki_display%252Fview_recent_changes&_54_INSTANCE_6SMhngev21nt_nodeName=Main&_54_INSTANCE_6SMhngev21nt_title=How+to+conduct+a+needs+analysis%3F.

5.1.2 H5P- Hot maps

Title: Spot barriers and solutions I and II

Text: The H5P hot maps are two pictures which illustrate everyday life of public employees. If you have difficulties to consider what cultural challenges you are facing, you may browse the hotspots and get some inspiration. The hotspots outline challenges that you may elaborate by doing the cultural profile in Liferay. By checking whether or not the described challenge is applying to you, corresponding adaptation strategies are recommended. Hence, the hotmaps are intuitive and quick-analysis solutions for conducting a needs analysis. The following figure provides a screenshot to illustrate a hotmap.

[3] See footnote 1 for further information.
[4] In WP5 it has been suggested that a context / culture profile should be included in the EAGLE platform. While it is currently not implemented, it is considered for future implementation in the user profile.

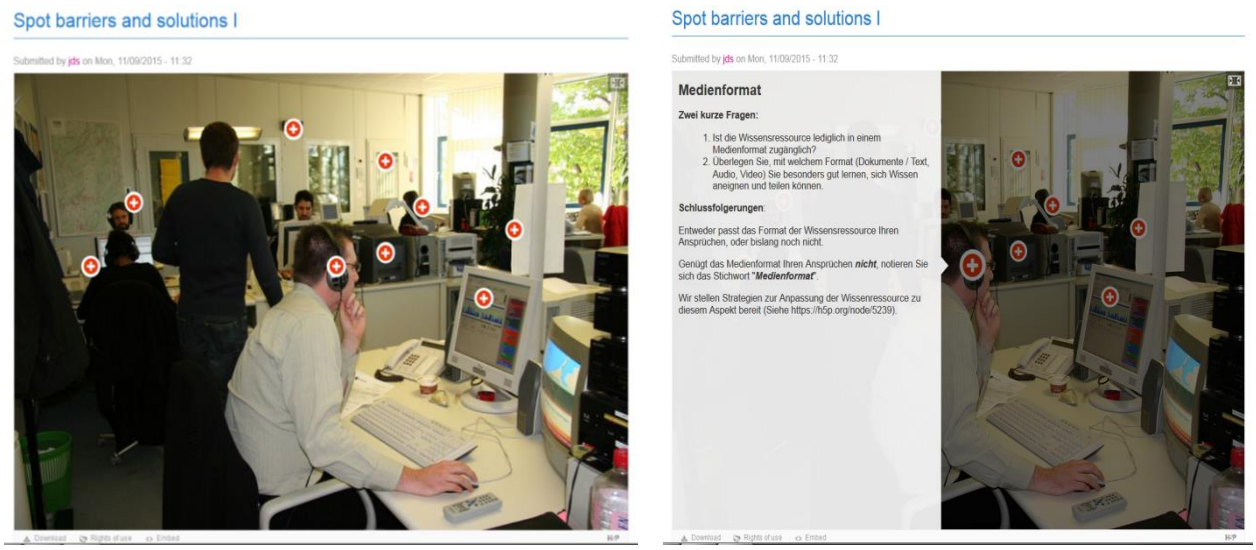

FIGURE 5: HOTMAP ILLUSTRATION

Links: The following links provide the illustration in Figure 5 above **https://h5p.org/node/5236** and another example **https://h5p.org/node/5240.**

5.1.3 Freeplane

Title: Mapping potential challenges

Text: Freeplane is a mind-mapping tool which provides a good overview of potential cultural challenges. Unlike hotspots in H5P, public employees view and may open the branches of the map directly. The mind-map can be used as a template. It can be adapted to create a personal culture profile[5] and learning needs analysis.

5.1.4 Calendar CE

Title: Timing self-regulated learning

Text: Calendar CE can be used as a general calendar. The tool allows to schedule deadlines, dates and to structure time periods for completing tasks. The calendar can be shared with peers as well. For the needs analysis, the calendar enables to elaborate how much time is available for learning as well as how to schedule learning time. To learn how to schedule and elaborate on calendars, two OERs are provided in the next paragraph (links). They can be used for orientation and adaptation.

Link **http://www.wikihow.com/Create-a-Study-Schedule** and **https://www.examtime.com/blog/how-to-create-a-study-plan/.**

[5] See footnote 4 for information about the general user profile in EAGLE.

5.1.5 Messenger SUC

Title: Analysing the personal learning needs with peers

Introduction: The messenger SUC enables to conduct a needs analysis with peers. If a public employee has difficulties to find an answer to questions, he may instantly contact a friend or superior to get clarification. Since “culture” is often group specific, the mutual agreement about a profile characteristics (such as discussing about errors is needed to learn) may increase the robustness of the analysis. A screenshot of the application is provided in the following.

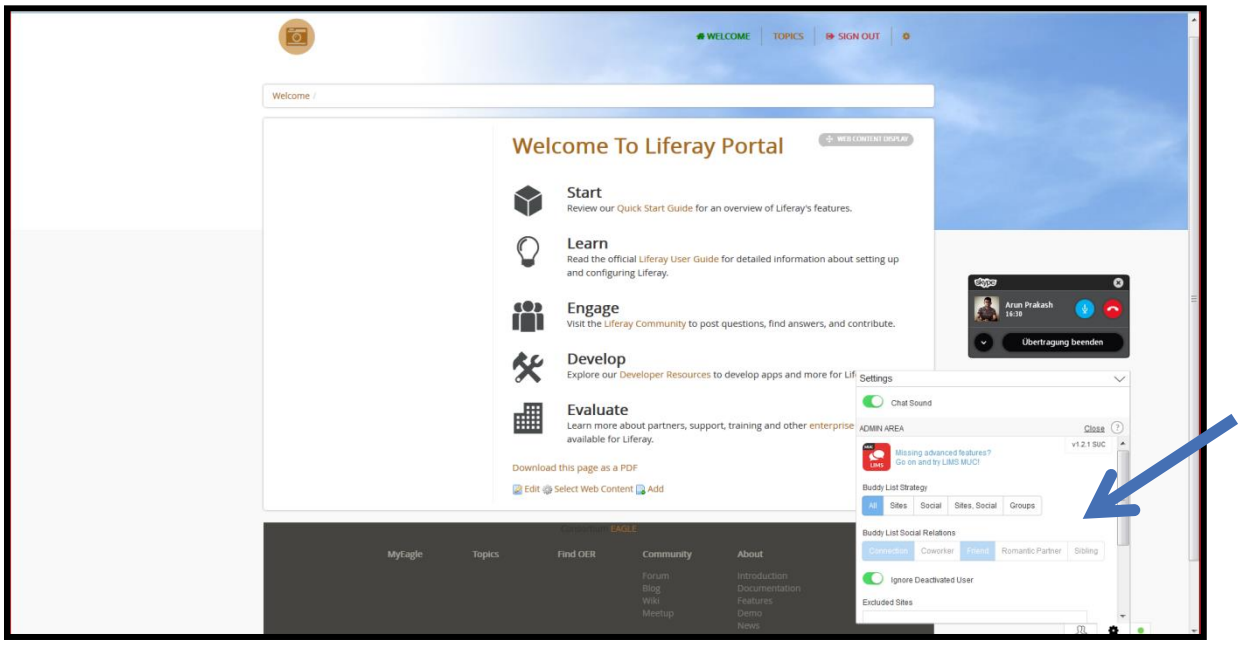

FIGURE 6: SCREENSHOT OF MESSENGER SUC

5.1.6 Etherpad

Title: Collaborating during the needs analysis

Introduction: Etherpad is a collaboration tool. It allows multiple users to create a document synchronously. It supports multiple languages and thus allows various users to communicate. For conducting the needs analysis, etherpad enables a group to create a shared or multiple cultural profiles. As indicated in the description of Messenger SUC, culture is bound and defined by a given group. If it is a learning group, the needs analysis will allow them to get organized for their group work.

The following figure provides an illustration.

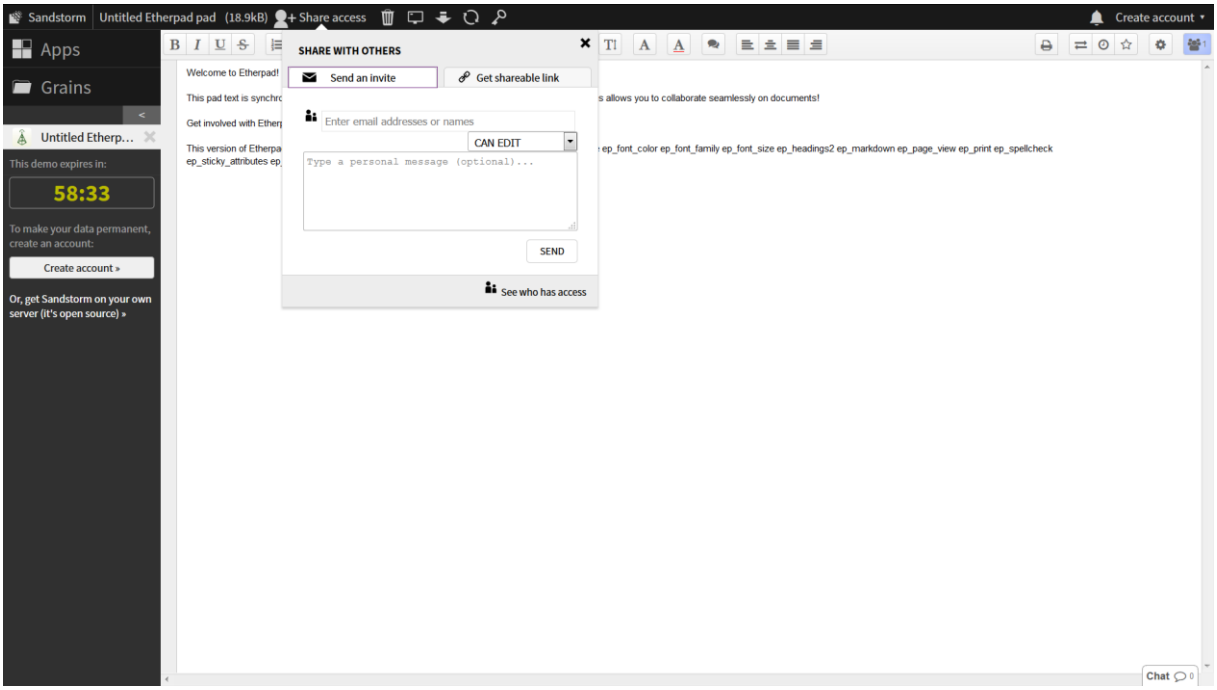

FIGURE 7: ILLUSTRATING ETHERPAD

5.2 Search

Brief description of the step: Search

The step “search OER” is the second step in a contextualization process as long as you do not already have a resource you want to use. If you have a resource, you can skip the second step and continue with the step “validate re-usability”.

As indicated in Figure 4, the search can be processes either with the dedicated search function or the topic map. How may a search process be contextualized? Based on the needs analysis, a learner knows about his preferences, such as the origin of the OER, topic and media type, for example. In the EAGLE platform, the search can be tailored to these preferences. In this respect, the search is contextualized to the culturally shaped preferences of the learner.

5.3 Validate re-usability

Brief description of the step: Validate Re-Usability

The third step “validate re-usability” requires that learners have a resource (any document) that they want to use or which they want to evaluate concerning its re-usability as a learning resource. The step guides through evaluating whether and how to adapt the open educational resource.

As indicated by the initial mind-map, several tools may support the validation of re-usability.

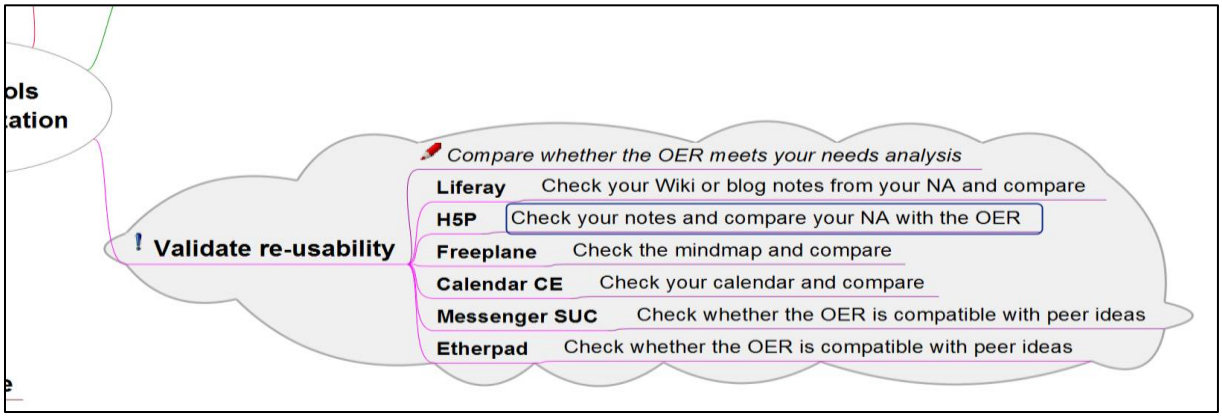

FIGURE 8: MIND-MAP ILLUSTRATION OF THE STEP VALIDATE RE-USABILITY

On the one hand, users should use the tools taken for the conducted needs analysis. In this way, they can review their preferences and how the OER suits the needs. On the other hand, whether or not an OER has particular characteristics needs to be elaborated. Similar to the needs analysis, some questions may be posed which help learners to judge about the content of the OER. To avail of examples, you may open the templates / document linked in the previous section 5.1. .

5.4 Re-use, adapt

Brief description of the step: Re-use, adapt

The fourth step “re-use, adapt” is one of the most crucial activities during contextualization. Based on the comparison of that, learners have a resource that they want to use or which they want to evaluate concerning its re-usability as a learning resource. The step guides through evaluating whether and how to adapt the open educational resource.

As indicated in the mind-map, several tools can be used to re-use and adapt an OER.

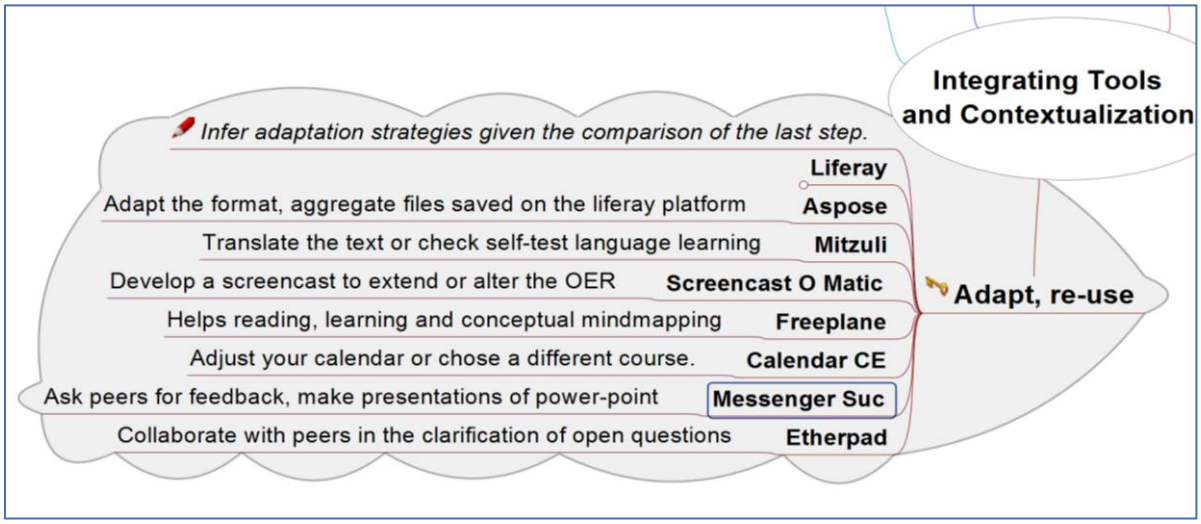

FIGURE 9: MIND-MAP: ILLUSTRATION OF THE STEP ADAPT, RE-USE

In chapter 2.2., a set of contextualization strategies have been outlined. Due to space, it will be outlined for each strategy how and which tool may support the process. The following icons help to run through the guidelines quickly.

brief description how & which tool time needed for completion[6]

5.4.1 Liferay for versioning

Versioning stands for the update of specific data such as the date of a presentation, particular titles or similar. Versioning requires that the new version has a different identifier than the original resource.

For every resource such as wiki, blogs etc., Liferay has a versioning function. Either, the resource provides a *history* which documents who, what and when changes were made. Otherwise, the resource is saved by Liferay under a subsequent name which allows to trace the parent resources.

Versioning does not require much time, as long as only few specific changes have to be made. However, it is important to check whether every detail was considered. Thus, not much time but attention to detail is needed.

[6] Please consider that the description is subjective; it provides only an approximate idea how long it might take to adapt an OER with a given strategy. Yet, this impression is helpful for learners and indicates what to expect.

5.4.1 Mitzuli for translating

Translating means to restate the content, idioms and expressions from one language into another language.

Mitzuli provides a field where to enter words or a copied text. Also, content can be filled in by speech. Although several languages can be translated, there is not yet a function to save the translated content. Thus, changes need to be noted somewhere else in the laptop or mobile phone.

The time needed for translations depends on the amount of text to convert as well as the complexity of the content. For example, simple bullet points and small sentences can be easier translated than prose. Also text needs to be transferred back to the EAGLE OER.

5.4.2 H5P for re-authoring structure

Re-authoring structure means to adapt the content flow of a resource, change the layout or format of a resource. This can be done by simple re-arranging of presentation slides, for example. Yet, re-authoring a structure for own learning means requires to pay attention to flowing transitions.

H5P provides several templates for re-authoring content. Depending on the type of content, such as assessments, hot-maps or presentations, contextualization can succeed by uploading a content and adding hotspots, questions among other assessment or notification functions.

The time needed for re-authoring the structure of a resource is low, depending on the amount of changes to be done. There are several ways how to restructure a mind-map- beginning from the order of branches, over colours and other illustrating aspects.

5.4.3 Freeplane for re-authoring content

Re-authoring content means to adapt information contained in the resource with own interpretations, additional learning tasks or own interpretations.

Freeplane is a mind-mapping tool which allows to aggregate a resource into logically sections, aspects and comments. By help of a mind-map, a learner can add his own interpretation and reflection questions for learning means.

The time needed for re-authoring the content with Freeplane is medium. On the one hand, a logical structure for the content needs to be defined and created. Furthermore, interpretation needs to be made and added.

5.4.4 Screencast-O-Matic for re-illustrating

Re-illustrating means to add ***new factual information*** in order to assign meaning, make sense through examples and scenarios, for example.

Screencast-O-Matic facilitates illustrations by recording the screen while completing a task, reading or else. For example, a technical manual can be put on the screen and the learner adds a demonstration how to realize the steps at the laptop.,

The time needed for re-illustrating an OER is medium high. Depending on the proficiency of the learner, it takes some time to plan a screencast recording, review and edit it and finalize the re-illustration.

5.4.5 Aspose for personalizing

Personalizing means to adapt the layout, make small changes like annotations by tools to match individual preference, context and learning style, for example.

Aspose is a tool which enables to convert files from one into another format.

The time needed for using aspose and convert a file is minimal.

5.4.6 Messenger SUC for discussing

Discussing means to communicate with peers or superiors to settle a meaning of a resource or clarify concepts, for example.

Messenger SUC is a chat tool in Liferay which allows EAGLE users to communicate.

The time needed to contact someone with Messenger SUC is minimal. But the time that a discussion can least cannot be calculated. If the person is not online, a learner can leave a message. The contact person will receive a notification respectively.

5.4.7 Etherpad for summarizing

Summarizing means to aggregate the content by selecting the essential ideas to learn, forward and communicate a topic.

Etherpad enables groups to collaboratively develop a text document. During group discussions at the workplace, for example, everyone in the group can take notes about the discussion to keep hold of the essential ideas. Another example is a long text-document, video or audio-resource that two people collaboratively summarize.

	Etherpad is easy to use. While one administrator has to download the open source code, others can simply open the link to a session and start writing. Again, the time to open the tool is minimal, but the time for summarizing depend on the content that need to be summarized and the way how the summary is performed.

5.4.8 OER creation in Liferay for re-purposing

	Re-purposing means to re-use a resource for a different purpose or alter metadata, tasks and abstract to make more suited for different learning goals or outcome topic.
	Liferay provides an embracing set of metadata which allow specifying the learning means. It allows to change the content of resources and remove, add or complement tasks included in OER.
	The time needed to change metadata is minimal once familiarity with metadata is gained.

5.4.9 H5P for decomposing

	Decomposing means to separate content in different sections, break content down into parts
	H5P provides several standard decomposition functions. For example, hotspots can be added, as well multiple choice questions, quizzes, and games such as guess the answer. By adding the decomposition functions, the flow is interrupted and sections can be created.
	The time needed for decomposing a resource depends on the length and complexity of the resource. Learning how to add decomposing functions in H5P is easy wherefore, overall, the expected time needed for decomposing is medium.

5.4.10 Freeplane for remixing

	Re-mixing means to connect the content with new media, interactive interfaces or different components.
	Freeplane allows creating a general mind-map which indicates how documents are connected. At each branch a link can be set to a particular resource or topic. While freeplane does not allow mash-up content, the meta-structure and thus understanding of the mix can be facilitated.
	The time needed to create a mind-map is medium. A link to resources is easy to set.

5.4.11 Liferay for assembling

	Assembling means to integrate the content with other content in order to develop a module or new unit.

	Liferay allows adding different media to all basic resource kinds, such as blogs, forums, and wikis. Consider that a forum about a certain topic aims at assembling different resources for exchanging knowledge in the community of practice. .
	The time needed to upload and assemble resource and media in the EAGLE Liferay platform is minimal.

5.4.12 Aspose for re-designing

	Re-designing means to converting contents from one format to another, presenting pre-existing content into a different delivery format.
	Aspose is the tool to convert a resource into another format.
	The time needed to use aspose in minimal..

5.5 Validate solution

Brief description of the step: Validate solution

The step “validate solution” is the step following the use of the adapted OER. Learners are asked to reconsider whether their learning goal was reached and whether the adaptation was successful.

The mind-map shown in the following figure (also see figure 10) indicates that several tools support the contextualization step “validate solution”.

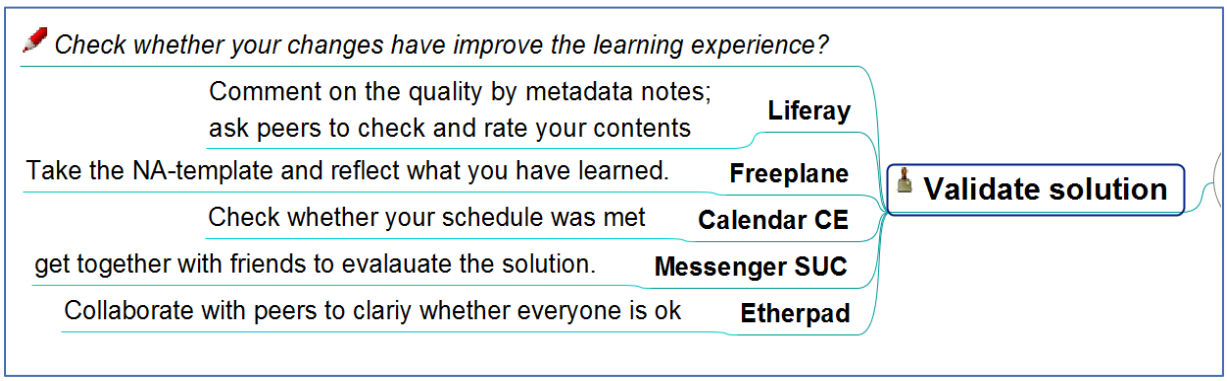

FIGURE 10: MIND-MAP: ILLUSTRATING THE CONTEXTUALIZATION STEP "VALIDATE SOLUTION"

Similar to the needs analysis, some questions may be posed which help learners to judge about the content of the OER. To avail of examples, you may open the templates / document linked in the previous section 5.1.

5.6 Re-publish

Brief description of the step: Re-publish

The step “re-publish” is the last step of a contextualization process. The learner has reflected his learning experience and adaptation success. The resource is used and updated. Then, the learner re-publishes the resource online, assigns re-use licenses and, for example, recommends the resource to others.

The following mind-map (Figure 9) indicates that several tools support the step “republish”.

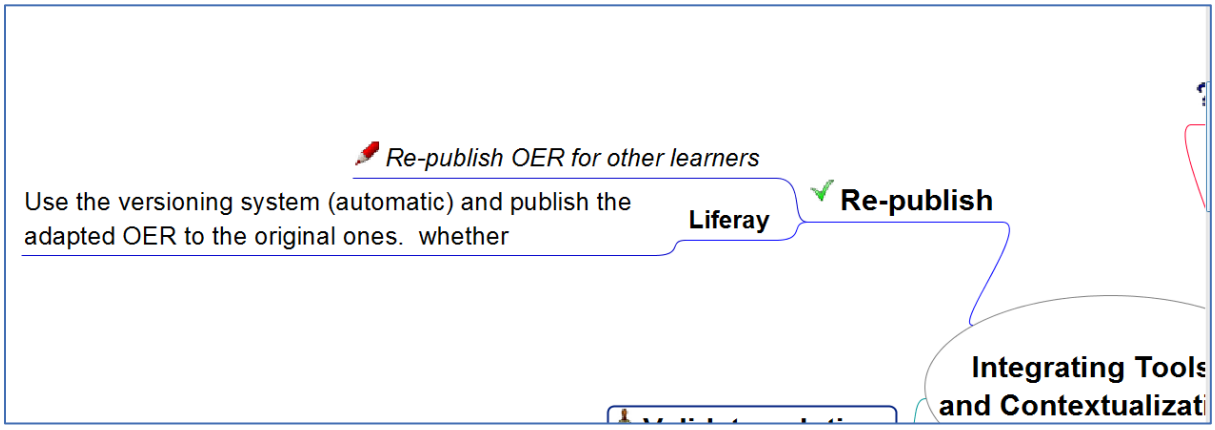

FIGURE 11: MIND-MAP: ILLUSTRATING THE STEP "RE-PUBLISHING"

Re-publishing OERs can be well supported by Liferay. It provides several functions to upload media and resources. Metadata can be attached to the resource and last but not least, the update is displayed in the news and can be forwarded to other EAGLE users.

5.7 Community building

Brief description of the activity: Community building

The activity “community building” is crucial for the EAGLE platform. Community building means to get to know others, learn and exchange knowledge with peers and get a sense of belonging and trust. Public employees have fear to lose personal ties when learning online in classical e-Learning settings. Thus, learning together in a group and gaining a sense of community is crucial for success of the EAGLE platform. Also the pedagogical concept for EAGLE takes care about this point (see D4.4.). How can tools support activities?

The following mind-map (Figure 10) depicts activities which contribute to community building. The activities are aligned with the pedagogical concept (D4.4) and thus suitable for prospective EAGLE users.

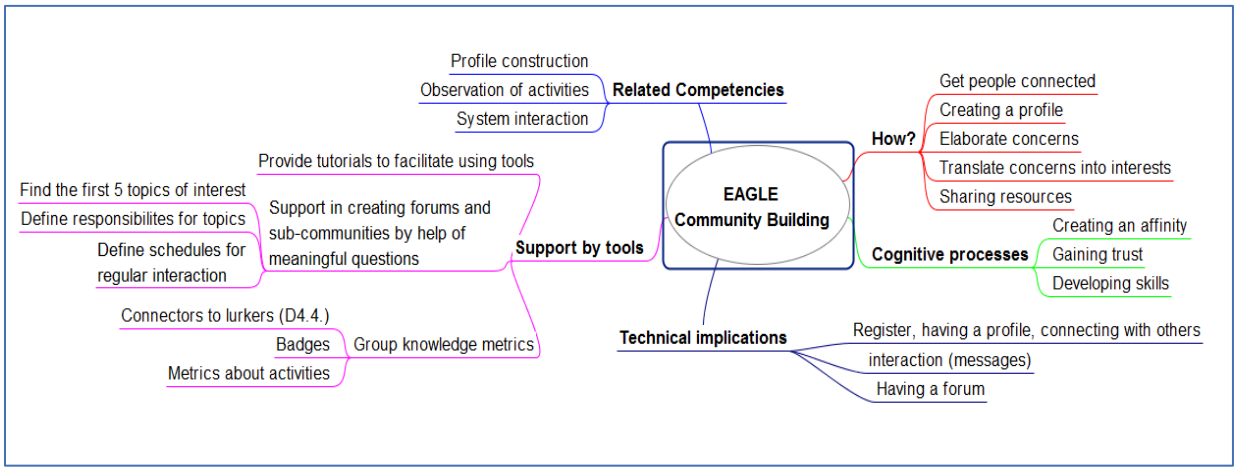

FIGURE 12: MIND-MAP COMMUNITY BUILDING (SELF-MADE ON BASE OF D4.4. , WP7 AND WP3)

How can tools support community building? Liferay, for example, provides several programs which allow getting in contact and exchanging knowledge. Some of them are described in the following.

5.7.1 Forums in Liferay build communities

Forums enable to post a topic and get together with interested peers and experts. Forums in Liferay can be branched so different facets of a topics are elaborated. Working out a topic in forums collaboratively creates a sense of identification, a sense that peers in the forum share a same interest and contribute to each other's knowledge acquisition.

Forums are a general functions on the EAGLE platform and can be easily found in the community section. Everyone who is logged in can contribute to a forum and group forum. Everyone can create a new forum entry. Administrators and users can create groups which have access restrictions. Everyone can enter after request.

Time needed to create a forum entry is minimal. Yet, to create a flowing forum and build a community requires much effort- such as posting questions, engaging peers to participate and taking care of the quality of contributions.

5.7.2 Calendar CE in Liferay build communities

Calendar CE allows to create a shared calendar, i.e. to include someone's calendar in the own schedules. The shared view on available dates, meetings and other schedules creates a sense of trust and belonging. Learners who share calendars indicate to be available whenever they have nothing on schedule. It also allows in an initial stage to set synchronous

activities (chats or webinars) or to publish events and invite people to them, either off or on-line, this is also a way to create sense of community.

Calendar CE is implemented generally in the EAGLE platform. To share a calendar with peers, Liferay offers a simple search field where to enter names of peers to be added..

Time needed to share the calendar with peers is minimal.

5.8 Collaboration

Brief description of the activity: Collaboration

The activity "collaboration" is crucial for the EAGLE platform. Similar to community building, collaboration means to get to know others, learn and exchange knowledge together with peers for a shared goal[7]. Public employees have fear to lose personal ties when learning online wherefore collaboration might be the crucial key to succeed.

The following mind-map (Figure 11) reflects the description, barriers and activities which belong to collaboration.

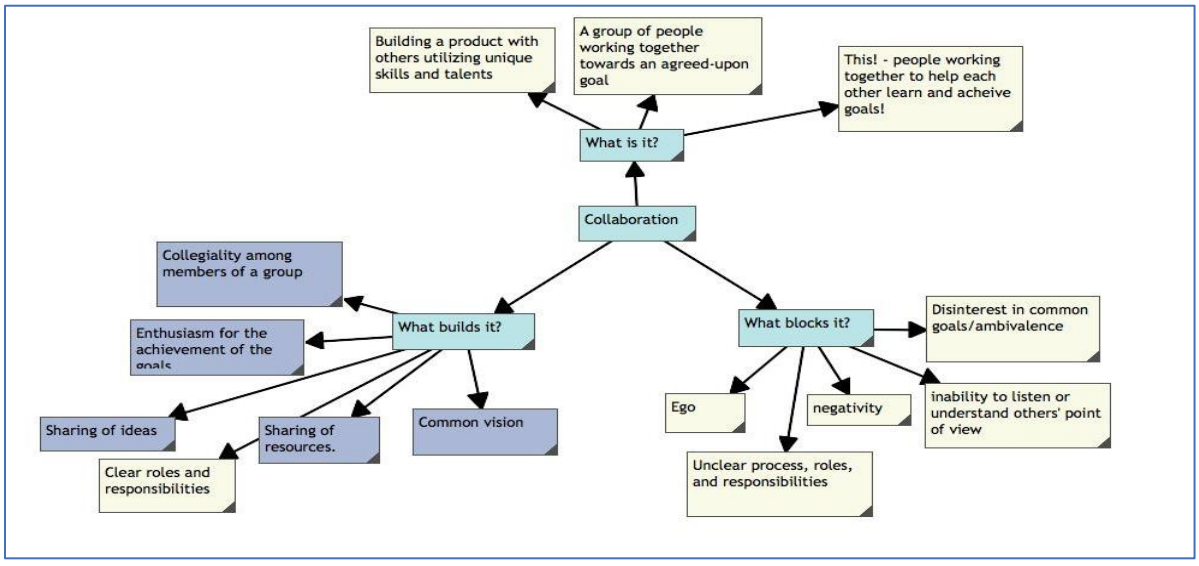

FIGURE 13: MIND-MAP: ILLUSTRATING THE TOPIC "COLLABORATION" (BOURGEOIS, 2009)

[7] https://en.wikipedia.org/wiki/Collaboration.

How does the EAGLE portal support collaboration? In the previous sections, the tools Etherpad, Liferay and H5P among others were introduced with functions that allow working together. An overview is provided in the following.

5.8.1 Liferay for sharing resources

Forums enable to post a topic and get together with interested peers and experts. Forums in Liferay can be branched so different facets of a topics are elaborated. Working out a topic in forums collaboratively creates a sense of identification, a sense that peers in the forum share a same interest and contribute to each other's knowledge acquisition.

Forums are a general application on the EAGLE platform and can be easily found in the community section. Everyone who is logged in can contribute to a forum and group forum. Everyone can create a new forum entry. Administrators can create groups which have access restrictions. Everyone can enter after request.

Time needed to create a forum entry is minimal. Yet, to create a flowing forum and build a community requires much effort- such as posting questions, engaging peers to participate and taking care of the quality of contributions.

5.8.2 Messenger SUC for sharing ideas

Mesenger SUC is a real-time communication tool. Peers can easily communicate and coordinate their activities online.

Messenger SUC is regularly implemented in EAGLE and can be easily used.

Time needed to use Messenger SUC is minimal. If the contact person is not online, she will receive a notification.

5.8.3 Freeplane for a common vision

Freeplane is a mind-mapping tool which allows to sketch ideas and visions, draw connections and develop a shared idea about what is to come, goals or a topic.

Once downloaded, all freeplane files can be opened and re-used by others. While no real time synchronisation is provided, a group of learners can coordinate and develop a shared resource.

Time needed to create a mind-map is medium. It requires a complex set of competences and skills to reduce the time needed. Not only digital ones, but leadership, analysis and synthesis among others. In a group, someone has to take the lead and align different ideas and contributions.

5.8.4 Blogs for reflecting what blocks you

Blogs in the EAGLE portal are available for individual learner. The content of a blog can be made public but can be shared with others as well..

Depending on the learning goal, blogs can be easily created. A standard template asking for the title, access rights, attachments etc. is provided, which helps users to create a blog..

Time needed to create a blog entry is minimal.

6 Discussion

The deliverable has provided identified tools regarding culture-related adaptation and contextualization. The deliverable has mapped culture adaptation barriers to selection criteria and selected tools. Apart from contextualization steps, also activities related to community building and collaboration were addressed.

The elaboration provides a description of crucial activities, how and which tools support them including the related effort. While most of the sections provide examples (and links to online resources), not all of the activities have been translated into online resources. This limitation shall be overcome by future EAGLE users. For example, Masterclasses[8] can be used

With regard to deliverables D6.4. and D6.8., this deliverable extends the tool library with further use descriptions and explication of the links between the tools, culture and contextualization processes. For means of completion, the wiki entry in EAGLE about the tool library, will be extended with the presented content.

7 Conclusion

The deliverable D7.2. has presented the integration of tools related to culture contextualization. The selection of tools has been reflected with regard to culture factors and activities related to community building and collaboration.

[8] Masterclasses is an initiative of DHBW. Public employees will gain support how to use the platform and create knowledge resources online.

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