EKFI project
Intake application on learning & research material, focused on the content of the application based on the EQF recommendation

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Abstract: The purpose of this proposal is to develop a conceptual methodology about the intake application based on the instructions defined by the European Qualification Framework (EQF) that aims to link the qualification systems and frameworks in the European Union together.

Keywords: levels of qualifications, framework, learning outcomes, competences, education, evaluation

1. Introduction

The main objective of the project EKFI is to create an Exchange platform to facilitate the availability of innovative learning and research material, map the competence needs and match those needs with the appropriate learning/research module(s) on the web-based platform. The uploading process of the material will be supported by the Intake application (O2) where the learning/research material will be described and meet educational standard/formats in order to pass the initial requirements.
The purpose of this proposal is to introduce a conceptual methodology to integrate the learning outcomes defined in the EQF with the learning material uploaded to the web platform.
The remainder of this proposal is organized as follows. In Section 2 the background topics and the general theoretical background are described. In section 3 we show the overview of the process and introduce our methodology. Finally, in section 4 we discuss a proposed method for evaluating the material.

2. Preliminaries

2.1 The European Qualification Framework EQF

On 6th May 2008 the European Qualification Framework of lifelong learning, or EQF was established by the European Parliament Recommendation 2008/C 111/01/CE (European Parliament Council, 2008). The EQF can be described as a meta-framework or a 'translation device' that extends other frameworks since different national frameworks already exist. A comparison between the different qualification systems and frameworks of different countries in Europe is also essential for further development of the main framework (Raffe, Gallacher, & Toman, 2008).
Three were the main reasons for the creation of the EQF: international transparency among all members; the possibility to recognize internationally the professional qualifications obtained in different countries of the European Union; the ease in the mobility of the students. The primary purpose has been to connect all different frameworks and make them compatible. An analytic designation of the qualification levels should be included in the framework describing with clarity the relations and conditions for international consolidation (Guillén, Fontrodona, & Rodríguez-Sedano, 2007).
The EQF is divided into eight levels, starting from primary education to doctoral level equivalents. A level of achievement is assigned for any qualification. Each level consists of three components of, respectively knowledge, skill and competence, the latter being concerned with the qualification holder's exercise of autonomy and responsibility in work situations (Brockmann, Clarke, & Winch, 2009).

2.2 Lifelong learning

The basic premise of Lifelong Learning is that it is not feasible to equip learners at school, with all the knowledge and skills they need to prosper throughout their life. Lifelong learning is also primarily collaborative rather than competitive (Sharples, 2002).

2.3 Learning Outcomes

A set of knowledge, skills, and competencies an individual has acquired and can demonstrate after completion of a learning process, either formal, non-formal or informal. The term can also be defined as statements of what a learner knows, understands and can do on completion of a learning process, which is defined in terms of knowledge, skills, and competence (Cedefop, 2014).

2.4 Competences

In the context of EQF, competence is described in terms of responsibility and autonomy. We follow the definition of the European Centre for the Development of Vocational Training or CEDEFOP in which competence is "the ability to apply learning outcomes adequately in a defined context (education, work, personal or professional development)", or "the ability to use knowledge, skills and personal, social and/or

methodological abilities, in work or study situations and professional and personal development" (Cedefop, 2014).

3. Method

3.1 Overview of the process

The material uploaded through the Intake application will be identified in a standard manner using the European Qualification Framework. The EQF uses eight reference levels based on learning outcomes. The framework shifts the focus from the input (lengths of a learning experience, type of institution) to what a person holding a particular qualification knows and can do. By shifting the focus to learning outcomes, it helps to:

• support a better match between the needs of the labor market (for knowledge, skills, and competencies) and education and training provision

• facilitate the validation of non-formal and informal learning

• facilitate the transfer and use of qualifications across different countries and education and training systems

The eight reference levels of EQF relevant to knowledge are listed in table 1. In the context of EQF, knowledge is described as theoretical or factual.

LEVEL	LEARNING OUTCOMES (KNOWLEDGE)
Level 1	Basic general knowledge
Level 2	Basic factual knowledge of a field of work or study
Level 3	Knowledge of facts, principles, processes and general concepts, in a field of work or study
Level 4	Factual and theoretical knowledge in broad contexts within a field of work or study
Level 5	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge
Level 6	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study
Level 7	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields
Level 8	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice

Table 1. 8 Reference Levels of EQF relevant to knowledge

A learning outcome is defined as a statement of what a learner knows, understands and can do on completion of a learning process. Learning outcomes are usually specified in three categories – as knowledge, skills, and competence (Liu, Bridgeman, & Adler, 2012).

The main challenge of the Intake application is to secure and maintain the quality of the learning/research material to fulfill the requirements stated previously. Therefore, quality criteria and quality management should be further examined.

A blended scenario is an educational proposal that defines all its elements, from the author's identity to the completion of the script, describing them with metadata. It is an available plan that can be used by the teachers or students to aid their work. (Derntl & Motschnig-Pitrik, 2005).

In this proposal, we suggest that the intake application should be developed using blended scenarios with metadata. In this way the data entered will be predefined and quickly evaluated. In the web form to be filled drop-down menus along with text areas and radio buttons should be used, as shown on image 1.

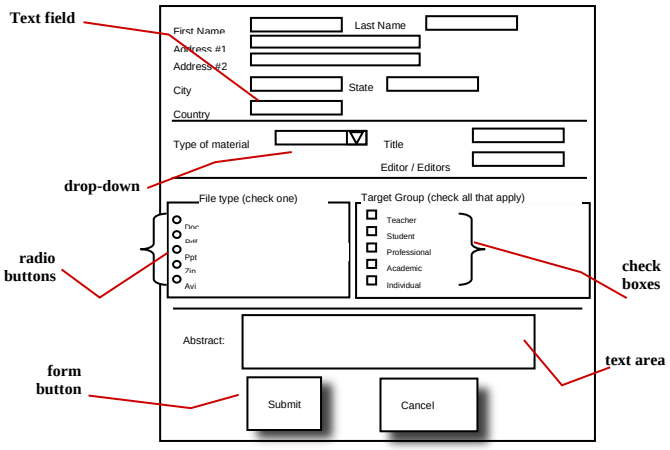

Image 1. Upload Form mockup

In this way, a first audit can be executed, before the human evaluators decide whether the material is suitable for the platform or not.

This particular method creates custom scenarios using a modular answer system but also gives additional information on the content. The evaluators will then quickly evaluate the scenarios, as the information is already predefined and then at a second level they can decide if the material is suitable or not.

The scoring of the metadata can also be pre-defined. If we have implemented the keywords and predefined the scoring table of the metadata, it will be easier for the search robot to find matching results. Thus, meta keywords and metadata together combined will provide the search robot a more natural way to search.

3.2 Detailed Description of the procedure

The design of the thematic fields should take into account issues such as different roles, pedagogical goals, general learning attributes and defines metadata as an element of the EML (Educational Modeling Language) modeling language through which reference can be made in learning objects (Koper, 2001). The resources will be described with metadata. The essential parts are listed in table 2.

METADATA	TYPE
1. Title	*Text field*
2. Learning Outcomes (knowledge)	*Drop down list including text field* ***More***
3. Target Group	*Text area*
4. Type	*Drop down list*
5. Skills	*Drop down list including text field* ***More***
6. Abstract	*Text area*
7. Estimated Study Time	*Text field*
8. Required Software	*Text field*
9. Distant Education	*Yes/No*
10. Teacher Oriented	*Yes/No*
11. Origin	*Drop down list*
12. Extended Description	*Text area*
13. Included Exercises	*Yes/No*
14. Bibliography	*Text area*
15. Editor / Editors	*Text field*
16. Competencies	*Drop down list including text field* ***More***
17. Copyright	*Yes/No*
18. Type Of File	*Drop down list*
19. Size Of File	*Text field*
20. Includes Subfiles (zip)	*Yes/No*

Table 2. Form Important Fields

In Table 3 details of each category of metadata will be provided

List of metadata fields
Title: this field will introduce the title of the material in a free text format but within a certain number of characters. The data contained in this field will be included as keywords in the search form.
Learning Outcomes: the user will be able to choose from a list of predefined options related to the eight levels defined by the EQF. For ease of use, the titles of each level, will not appear as options, but their content (e.g., basic general knowledge). This will make filling easier as there will be an explanatory text. If the user wants to add something extra, there will be a free text field (More) to enter more information. The data contained in these fields will be included as keywords (or list option) in the search form.
Target Group: in this field, users will complement the target groups in which the learning material can be used. The field will be a free text type, but help text will also be provided (via link) so that users know what they can fill in. The data contained in this field will be included as keywords in the search form.
Skills: the user will be able to choose from a list of predefined options related to the eight levels defined by the EQF. For ease of use, the titles of each level, will not appear as options, but their content (e.g., necessary skills required to carry out simple tasks). This will make filling easier as there will be an explanatory text. If the user wants to add something extra, there will be a free text field (More) to enter more information. The data contained in these fields will be included as keywords (or list option) in the search form.
Abstract: in this field, users will fill out a summary text about the content of the uploaded material. This particular field will have a free text format, but a certain number of characters will be allowed. The data contained in this field will be included as keywords in the search form.
Estimated Study Time: in this field, users will fill in the required amount of time for a learner to study the material. The data contained in this field will be included as keywords in the search form.
Required Software: in this field, users will complete the details of the software programs necessary for the study of the learning material. The data contained in this field will be included as keywords in the search form.
Distant Education: in this field, users will choose whether the learning material meets the requirements of distant education. An explanatory text will also be provided (via link) so that users know what to choose. The data contained in this field will be included as an option in the search form.
Teacher Oriented: in this field, users will choose whether this training material is intended for use by teachers or not. An explanatory text will also be provided (via link) so that users know what to choose. The data contained in this field will be included as an option in the search form.
Origin: in this field, users will select from the list of predefined options the country from which the material originates. The data contained in this field will be included as an option in the search form.
Extended Description: in this free text field, users will enter a detailed description of the material uploaded to the platform. The data contained in this field will be included as keywords in the search form.
Included Exercises: in this field, users will choose whether the learning material also includes exercises.

The data contained in this field will be included as an option in the search form.
Bibliography: In this field, users will fill in information about the bibliography of the learning material. The field type will be free text as there will be no specific text input format. The data contained in this field will be included as keywords in the search form.
Author/Authors: in this field, users will fill in information about the authors of the learning material. The data contained in this field will be included as keywords in the search form.
Competencies: the user will be able to choose from a list of predefined options related to the eight levels defined by the EQF. For ease of use, the titles of each level, will not appear as options, but their content (e.g., work or study under supervision in a structured context). This will make filling easier as there will be an explanatory text. If the user wants to add something extra, there will be a free text field (More) to enter more information. The data contained in these fields will be included as keywords (or list option) in the search form.
Copyright: in this field, users will choose whether the educational material is copyrighted or not. The data contained in this field will be included as an option in the search form.
Type of File: the user will be able to choose from a list of predefined options related to the type of the file including paper, video/webinar, game/simulation, powerpoint, pdf, facilitator guide/teacher's guide, syllabus. The data contained in this field will be included as an option in the search form.
Size of File: in this field, users will enter the exact size of the file they have uploaded. The data contained in this field will be included as keywords in the search form.
Includes Subfiles: in this field, users will choose whether the file they uploaded contains more files (in case the file is zip). The data contained in this field will be included as an option in the search form.

Table 2. Thematic fields details

4. Evaluation of the learning/research material

After completing the form, the data will be forwarded to a scientific team to evaluate them. Through the method of completing metadata in the form, there will already be the first grading, so that the work of the specialists will be faster.

In the backend, it will be possible to add scores for each metadata as well as its subcategories. This will support the abovementioned possibility to make a first evaluation of the material automatically. The chief editor can dynamically change individual rankings after approval by the Scientific Committee. The need for evaluation by a special Scientific Committee is to confirm that the data entered into the form is correct, and the material fully meets the required specifications.

After the specialists evaluate the content of the material and either confirm the original score or re-evaluate, a new list will be created containing their materials and rankings. Materials whose score will not exceed the allowed limit will be discarded, and users who have uploaded them to the platform will automatically be notified with feedback and improvement suggestions. These users will then be able to download the material again by choosing the right metadata options or uploading new material that meets the specifications. The procedure of evaluation is shown in image 2.

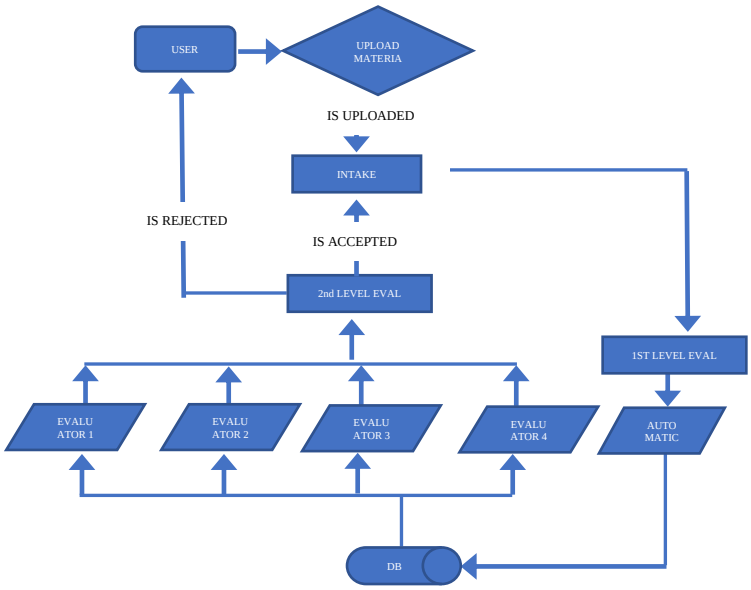

Image 2. Evaluation Procedure

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