

Deliverable 4.1 and 4.2

Content provision and common content guideline



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1. Introduction

Work package No. 4: „Content collection & production“ is generally consisting of three stages. The present report is covering two stages: the availability check of required contents for the modules and a guideline for the preparation and production of all needed contents for the curriculum.

Based on the results of the market framework analysis and the curriculum development the first step in WP 4 is to collect and assess already existing material and documents for the development of the pilot training. Furthermore it is also an instrument to find out which contents have to be produced in the case, that there is no material available for certain chapters required in the curriculum.

The common content guideline is regulating, how existing contents, as well as contents which are going to be prepared, shall be treated to meet the requirements of the curriculum.

2. Method

In order to perform the availability check it was necessary to elaborate a standardized questionnaire for information collection. The information which had to be collected is defined by the structure of the curriculum.

The standardized questionnaire was elaborated as a MS Access database with defined criteria for the contents to be collected. For entering the requested information into the database, an input form for each module was designed. Figure 1 is showing the input form in case of module 1. Principle and structure of the other input forms are identical to the given example, they only differ in title and color in order to ease the thematic attribution of contents to the modules.

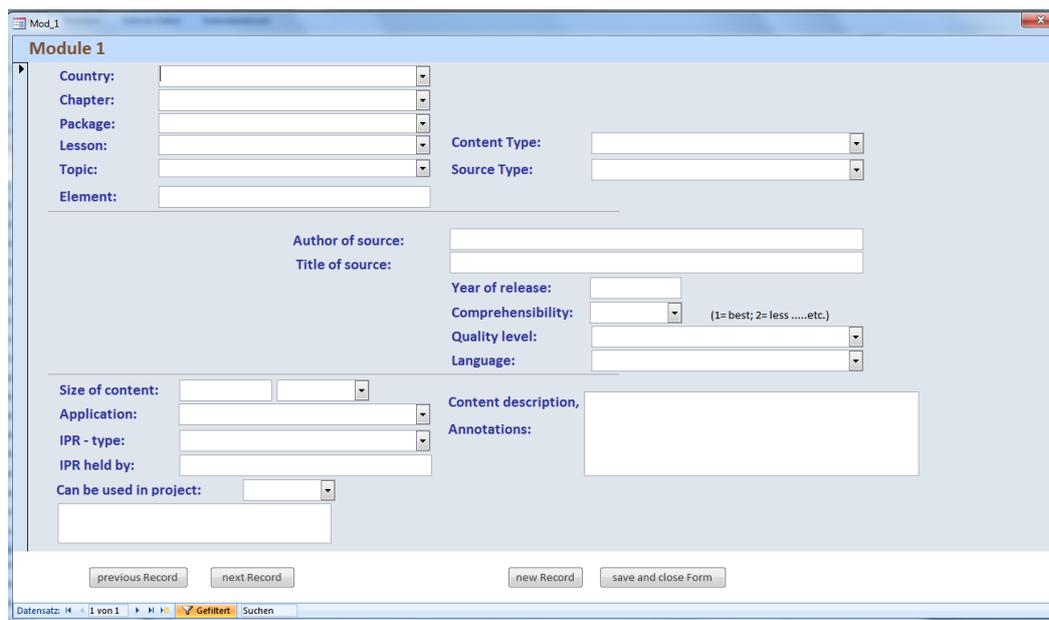


Figure 1 : Example of data input form



All information is written into one main data table, so the main table of the database is containing all information entered through the input forms.

For the final evaluation all collected data from the project partners were merged into one database. By means of queries, the information on available contents according to the curriculum's structure could be checked and analyzed for:

- General availability or lack of content

The most important information is, if a required content is generally available or not. This is particularly of importance for contents which are containing information on national level. Common contents, as for example most contents of module 2, can be collected independently in every country, because they are valid everywhere. Contents on national statistics, national agriculture and forestry, national legislation and funding etc. need to be collected individually by each project partner in order to fulfill the requirements of the curriculum, when information on national level has to be provided in the training course.

In the evaluation this was done with a simple yes/no check against the background of the curriculum.

- Type of content and type of source

Contents are generally taken from sources, published as data files, printed publications etc. and need to be extracted from these sources. The type of source is determining the kind of content extraction (copy/paste, screenshot, scan, transcription etc.) and thus the effort for the provision of the required content. The content itself can be classified as pure text, tables, images or the combination of all these elements. Contents can also be audiovisual material or animations to clarify processes or contexts, as well as items or charts to point out certain characteristics.

In the evaluation the types of contents and sources were tested for their frequency in the already specified classes of types and their share in the total spectrum of classes.

- Author, title, language and year of release (up-to-dateness)

Different contents can be extracted from one and the same source, if the source is covering a couple of learning packages or chapters of a module. Collecting author, title, language and date of release is on one hand simply a method to make an inventory of sources. On the other hand it gives the possibility to check the contents for up-to-dateness, general usability for all project partners and aspects of the reliability of the source.

In the evaluation there was only made a check for up-to-dateness, which is essential concerning matters like legal framework, statistical data etc. but less important for contents like fuel properties or established conversion processes. The check was made by testing the frequencies of release dates (year classes from 2003 to 2013)



and one release date class earlier than 2003), converted into shares of the whole release data spectrum for the report.

- Quality of content (reliability and comprehensibility)

The quality of the contents is determined by the reliability of the source and the comprehensibility of the content itself. The reliability can be assured by the source's educational level (if the source is used by schools or universities), by an expert check of the content's accuracy or if the source or content is released by an approved institution as universities, scientific institutes, statistical offices etc. Comprehensibility was not analyzed by a standardized structure of parameters for exact determination (this would have been going far beyond the purpose of the acquisition), but by a simple subjective impression of the person doing the data collection. The rating was comprising a scale between 1 (very good to understand) to 5 (very hard to understand).

The evaluation of reliability and educational level was done by frequency counting of response possibilities and converting them to shares. The same method was used for the comprehensibility evaluation.

- Size

The question of size turned out to be a relative one, because most contents are deriving from data files, pdf files or e-books. The size of data files depends on the resolution and quality of their components. A file having the size of some megabytes can contain less information than a file of some hundred kilobytes. Nevertheless the file size may matter in case of the provision of online contents for self study.

In the evaluation the consideration of size of contents and sources was skipped

- Possibilities of application (self study, presence lessons etc.)

The possibility of application of the collected contents is one of the main questions of the data collection, because it touches the practical part of the education. Some of the contents are preferably to use in presence lessons, other contents may be useful in self study or project work or even in every part of the education.

The evaluation was done by testing the frequency of responses in the specific categories.

- IPR questions and restrictions in use

Questions around IPR and content use restrictions are the core point of content provision. Using images, graphs, schemes, tables, but also direct text excerpts is always touching intellectual property rights. All examples given above are a matter to copyright and the use of such material is permitted only by a license, granted by the owner of rights to the user. The permission of use is normally, but not necessarily, bound to a license fee. The holder of the copyright needs to be contacted in any case.



Copyright does not cover ideas and information themselves, but only the form or manner in which they are expressed. In this way, IPR have certain nuances in the use of intellectual property by other persons. Contents which are public domain, as for example the laws of thermodynamics, are no matter to IPR, even if they can be found in a copyrighted publication.

Another form of IPR is the creative commons license. Creative Commons licenses do not replace copyright, but are based upon it. They replace individual negotiations for specific rights between copyright owner (licensor) and licensee, which are necessary under an "all rights reserved" copyright management with a "some rights reserved" management, employing standardized licenses for re-use cases where no commercial compensation is sought by the copyright owner. The result is an agile, low-overhead and low-cost copyright-management regime, profiting both copyright owners and licensees. Wikipedia, for example, uses one of these licenses.

In the evaluation the contents were checked for the type of IPR and the holders of rights by counting class frequencies.

- Usability of contents

The usability of a content is on one hand depending on copyright licenses, but also on their form and manner, which probably needs to be adapted, maybe also in accordance with the author. Thus, the usability is not strictly a matter to IPR issues but also to creative configuration and composition.

In the evaluation the collected contents were checked for probably existing conditions which would impede or limit their use. Quoted conditions for the use of a content were first gathered into response-classes and then checked for frequency.

- Content description and annotations

Content or source descriptions are giving an overview on the elements which can probably be used in presence lessons, for self study or for project work. The more detailed a description is, the easier it is to assess if, or how far, the content or source is containing the needed information.

In the evaluation the collected contents were checked for existence of descriptions and for their elaborateness.



3. Progress

There have been two steps of content collection.

In the first step, the questionnaires had been sent out to the project partners after having received the reports on the market framework analysis and the report on the curriculum development, in week 16 of 2013 by EEE GmbH and once again, together with a file of the draft curriculum in week 18 by BFI Steiermark. The last completed questionnaire was returned in week 20. The evaluation of the returned questionnaires was done in week 21 of 2013 and the first version of deliverable 4.1 shortly after that.

The second step of content collection was started in week 27. The second step took place because of the essential effect of the change of the educational level and thus, the change of the curriculum, in the course of the project meeting in Budapest in June 2013. The new structure of the training requested a new collection of contents. The questionnaire, provided as MS Access database, was sent out in week 31. The last completed database returned in week 34. The evaluation started in week 35 of 2013. The new, adapted draft version of D 4.1 deliverable was submitted for the first revision to the project partners in week 38 and for revision of the updated version (due to comments of project partners) in week 43.

The document was finalized in week 45.

4. Results

The results of the evaluation of the returned questionnaires regarding available contents are described in the following paragraphs. The description and analysis of contents is following the structure of the curriculum. The returns were containing 87 datasets, 82 of them could be used. The eliminated 5 datasets did contain very few data without a logic coherency or with the main information, regarding module and chapter, missing.

Table 1 is giving an overview on the entirety of the returned data:

	A	DE	HU	PL	Total	Share
Module 1	12	-	2	5	19	23%
Module 2	24	-	7	4	35	43%
Module 3	7	7	3	4	21	26%
Module 4	1	5	1	-	7	9%
Total	44	12	13	13	82	
Share	54%	15%	16%	16%		100%

Table 1: Quantity of returned datasets by module and country

Most contents could be collected by the Austrian project partners and for module 2. Regarding the fact, that contents have mainly to be provided by EEE, and that module 2 is more or less the core of the training, these results are fulfilling the expectations on content collection.

Content inputs from the project partners in Germany, Hungary and Poland are needed in the modules 1 and 3, where data on national level are required.

More than the half (51,2%) of the returns are suggesting, that the available material can be regarded as contents which can be used directly in the educational program. They have to be seen rather as a source for contents. This means, especially for the face to face teaching units, that contents need to be produced, preferably out of these sources. In any case they can be regarded as additional learning material for self study.

The following paragraphs in chapter 4 are giving an overview on a descriptive level.

A closer and more analytic discussion on the results will be given in chapter 5.

4.1.1 Types of contents and sources for module 1

4.1.1.1 Contents (M1)

Table 3 is showing the types of collected contents for module 1 by number and share. Figure 2 is a graphical visualization of the table's content.

Type of content	Number	Share
Text/Tables	5	26%
Text/Images/Tables	7	37%
Text/Images	3	16%
Text	2	11%
Table	2	11%
Other	-	0%
Item	-	0%
Image	-	0%
Film	-	0%
Chart	-	0%
Audio	-	0%

Table 3: Collected types of contents for module 1 by number and share

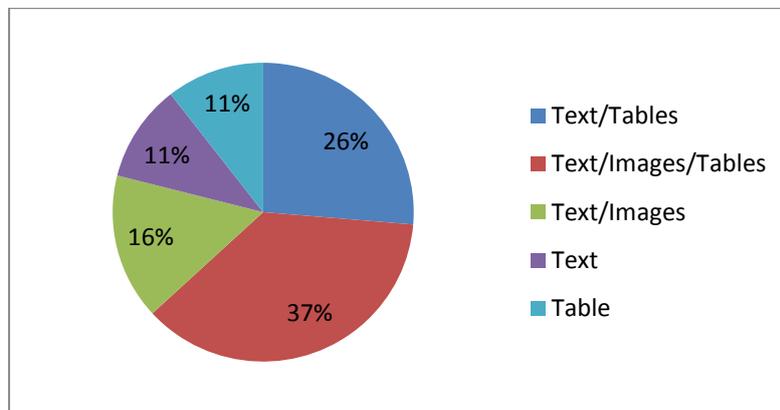


Figure 2: Collected contents for module 1 by type and share

4.1.1.2 Sources (M1)

Table 4 is showing the types of collected contents for module 1 by number and share. Image 3 is a graphical visualization of the table's content.

Type of source	Number	Share
Article in learned/professional journal	0	0%
Audiovisual	1	5%
Data file	13	68%
E-book	5	26%
Item	0	0%
Personal experience report	0	0%
printed publication	0	0%
Slide presentation	0	0%
Web based tool	0	0%

Table 4: Types of content sources for module 1 by number and share

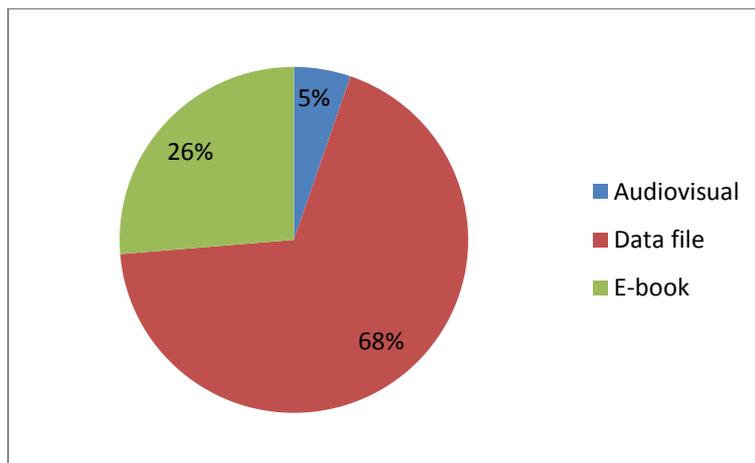


Figure 3: Types of content sources for module 1

4.1.2 Up-to dateness of contents (M1)

63% of the contents are carrying a release date younger than 5 years before the collection, 32% are older, in one case the release date is unknown. Figure 4 is giving an overview on the frequency of release dates.

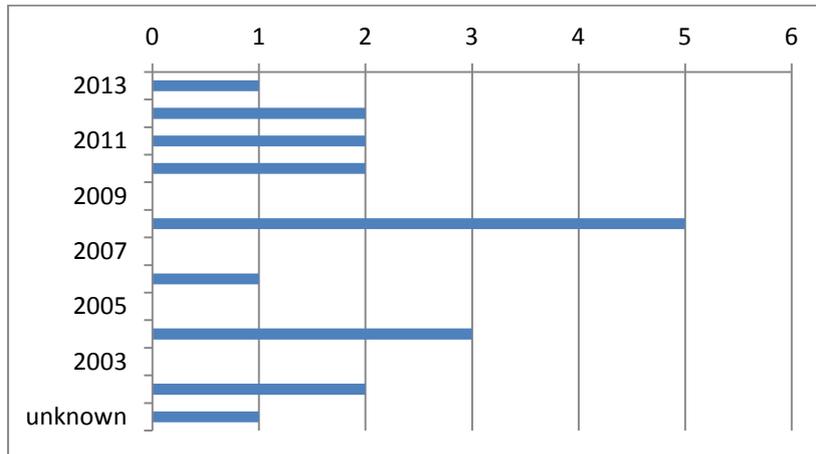


Figure 4: Frequency of release dates of contents for module 1

4.1.3 Quality issues (M1)

Figure 5 is giving an overview on the educational level of contents and the reliability check.

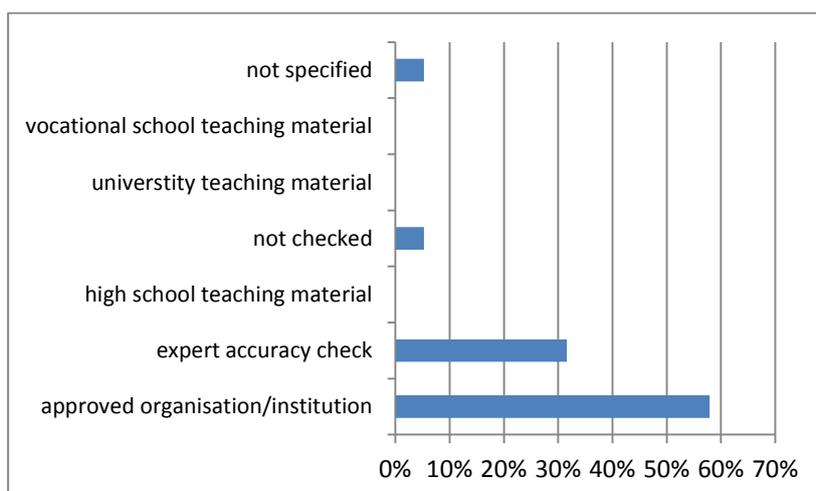


Figure 5: Educational level and reliability check of contents for module 1

Figure 6 is giving an overview on the position of collected contents on a (subjective) comprehensibility scale from 1 (easy to understand) to 5 (hardly to understand).

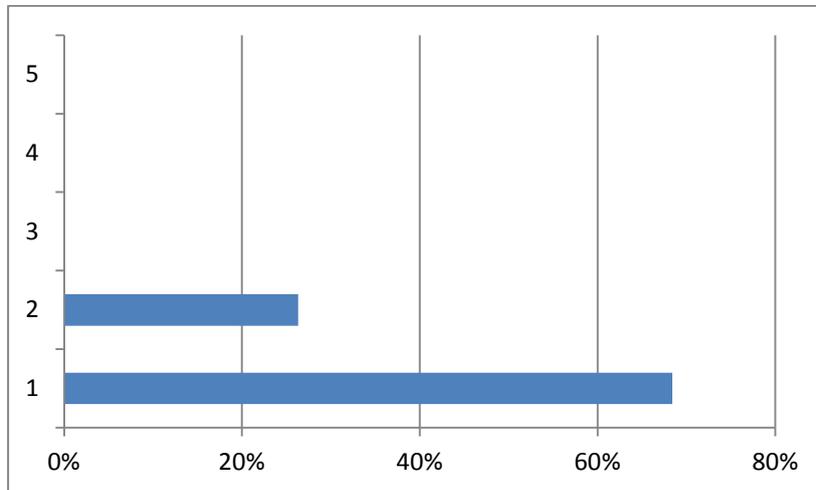


Figure 6: Subjective rating of comprehensibility of contents for module 1

4.1.4 Applicability (M1)

Figure 7 is giving an overview on the applicability of the collected contents.

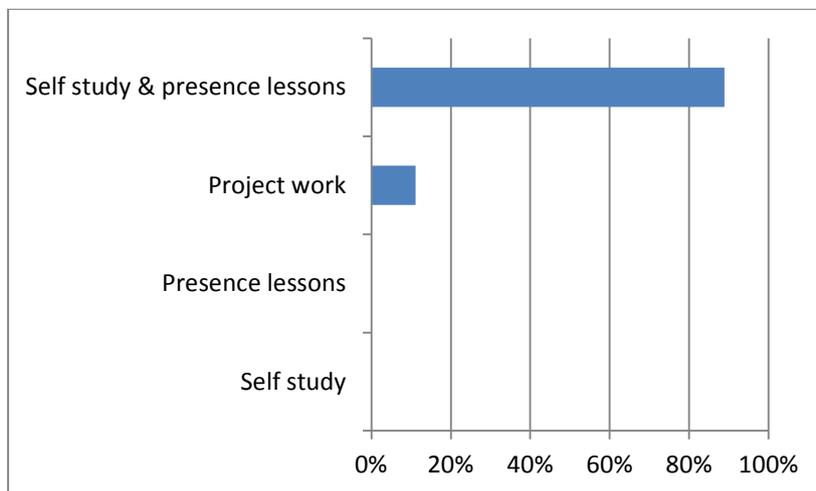


Figure 7: Applicability of contents for module 1 in the course of the training

4.1.5 IPR issues (M1)

Figure 8 is giving an overview on the IPR issues of the collected contents.

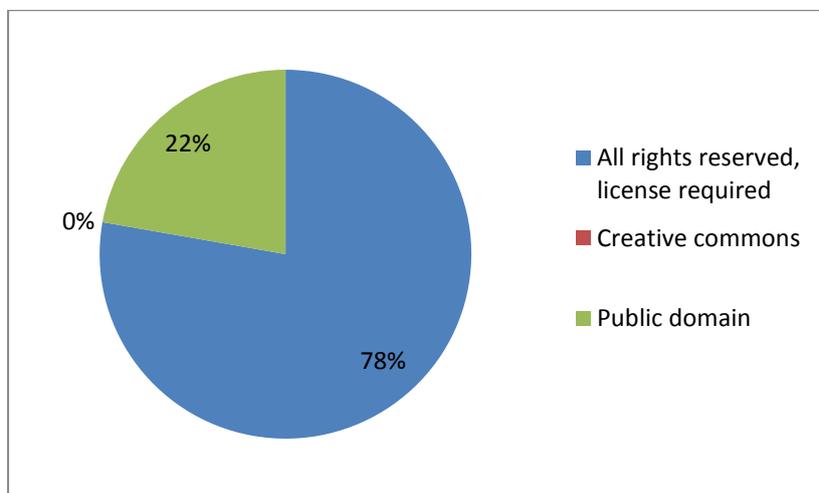


Figure 8: IPR issues regarding contents for module 1

Figure 9 is giving an overview on the holders of the IPR of the collected contents.

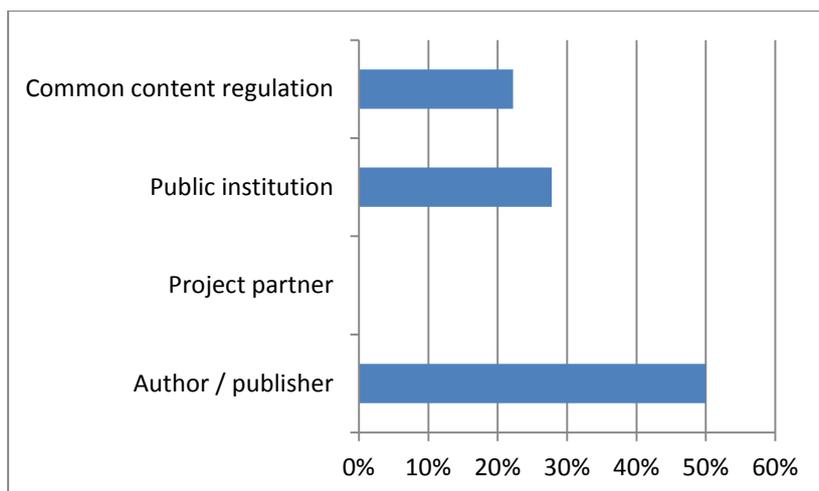


Figure 9: IPR-holders of contents for module 1

4.1.6 Usability of contents (M1)

Figure 10 is giving an overview on the usability of the collected contents.

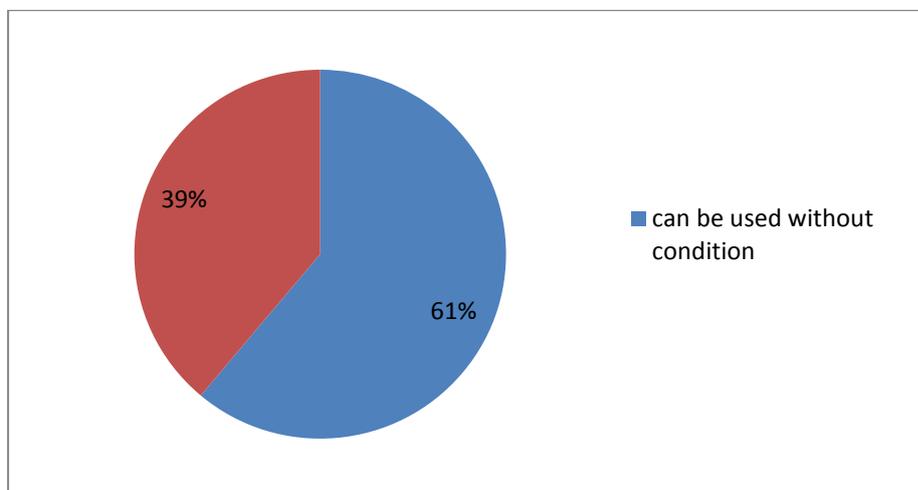


Figure 10: Usability of contents in module 1

Figure 11 is giving an overview on the conditions for using the collected contents.

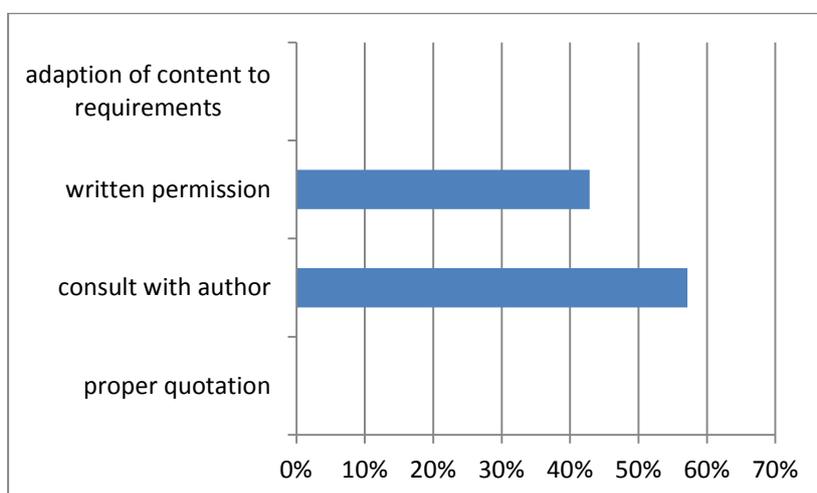


Figure 11: Conditions for content use in module 1

4.2.1 Types of contents and sources for module 2 (M2)

4.2.1.1 Contents (M2)

Table 6 is showing the types of collected contents for module 2 by number and share. Figure 12 is a graphical visualization of the table's content.

Type	Number	Share
Text/Tables	8	23%
Text/Images/Tables	13	37%
Text/Images	11	31%
Text	2	6%
Table	1	3%
Other	-	0%
Item	-	0%
Image	-	0%
Film	-	0%
Chart	-	0%
Audio	-	0%

Table 6: Types of contents for module 2

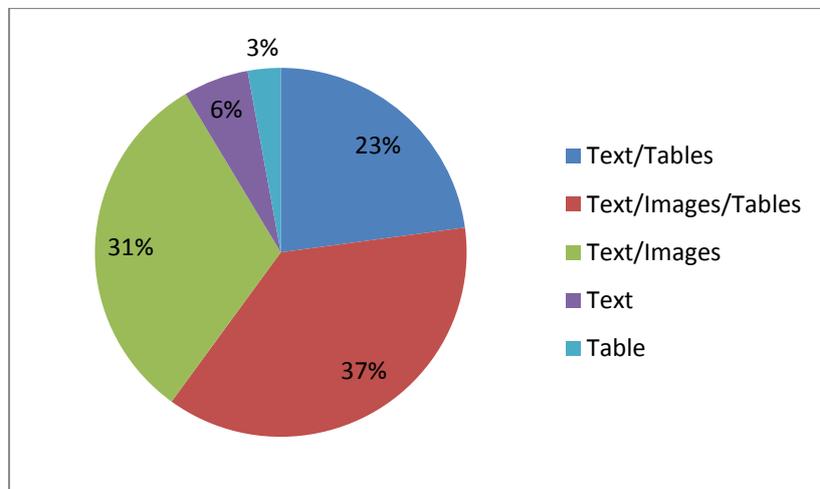


Figure 12: Types of contents for module 2

4.2.1.2 Sources (M2)

Table 7 is showing the types of sources for the collected contents for module 2 by number and share. Figure 13 is a graphical visualization of the tables content.

Type of source	Number	Share
Article in learned/professional journal	0	0%
Audiovisual	0	0%
Data file	24	69%
E-book	9	26%
Item	0	0%
Personal experience report	0	0%
printed publication	2	6%
Slide presentation	0	0%
Web based tool	0	0%

Table 7: Types of sources for module 2

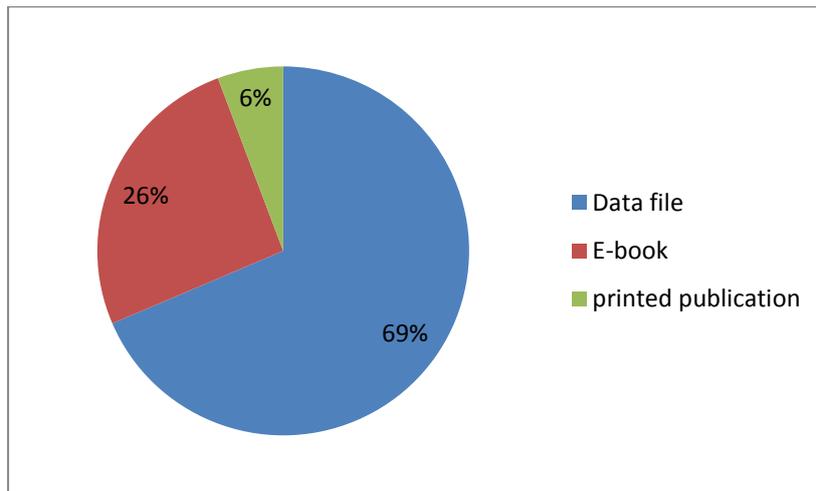


Figure 13: Types of sources for module 2

4.2.2 Up-to-dateness (M2)

60% of the contents are carrying a release date younger than 5 years before the collection. 40% are older, in 3 cases the date of release is unknown. Figure 14 is giving an overview on the frequency of release dates.

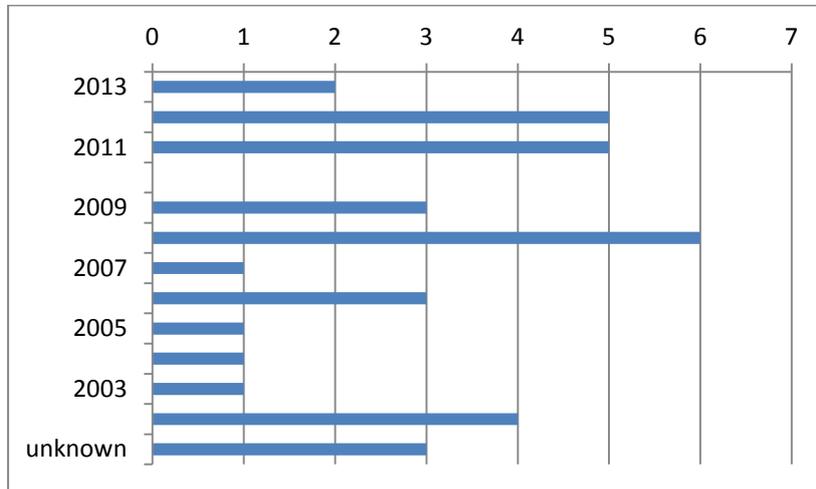


Figure 14: Up-to-dateness of contents for module 2

4.2.3 Quality issues (M2)

Figure 15 is giving an overview on the educational level of contents and the reliability check.

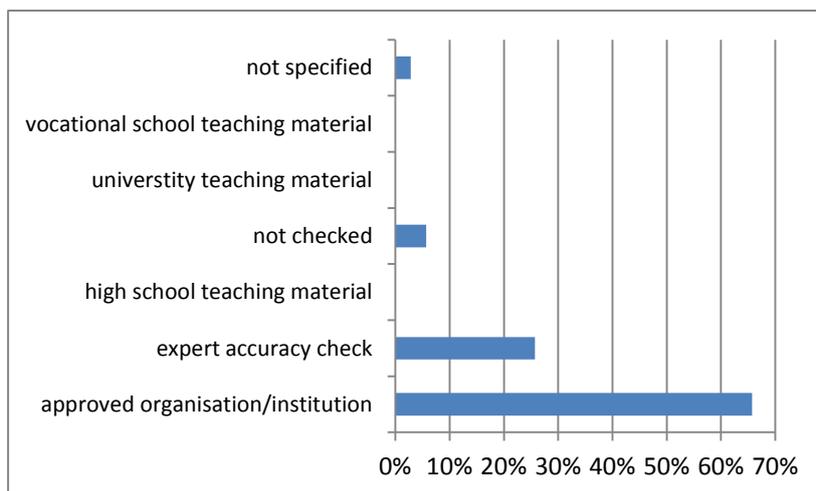


Figure 15: Educational level of contents and reliability check for module 2

Figure 16 is giving an overview on the position of the collected contents on a (subjective) comprehensibility scale from 1 (easy to understand) to 5 (hardly to understand).

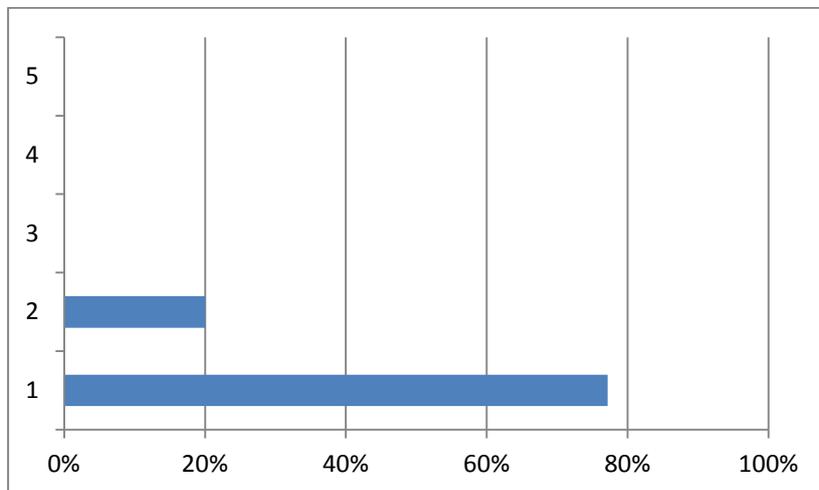


Figure 16: Subjective rating of comprehensibility of contents for module 2

4.2.4 Applicability (M2)

Figure 17 is giving an overview on the applicability of the collected contents.

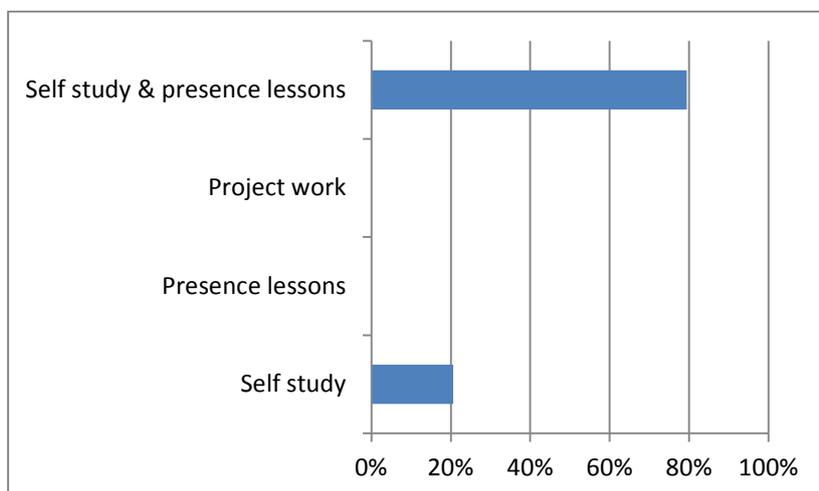


Figure 17: Applicability of contents for module 2

4.2.5 IPR issues (M2)

Figure 18 is giving an overview on the IPR issues of the collected contents.

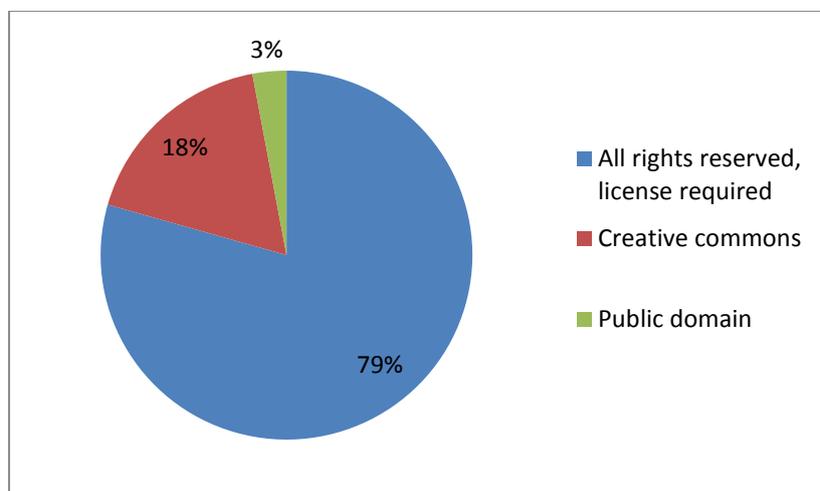


Figure 18: IPR issues regarding contents for module 2

Figure 19 is giving an overview on the IPR holders of the collected contents.

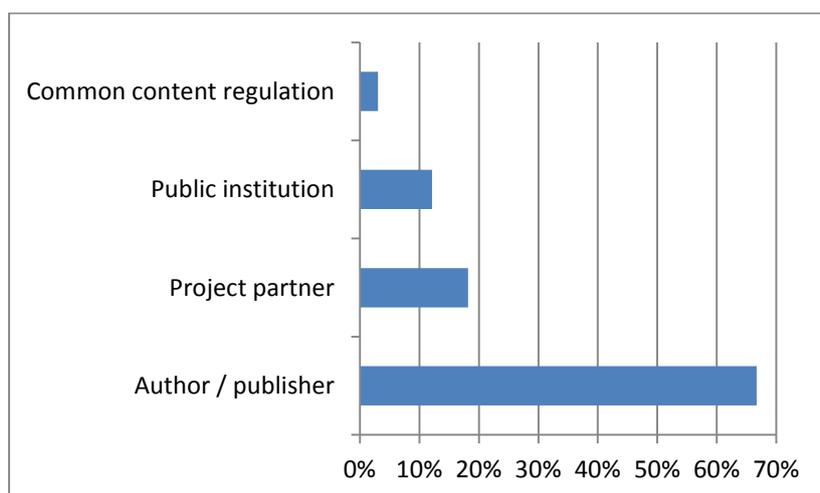


Figure 19: IPR holders of contents in module 2

4.2.6 Usability of contents (M2)

Figure 20 is giving an overview on the usability of the collected contents.

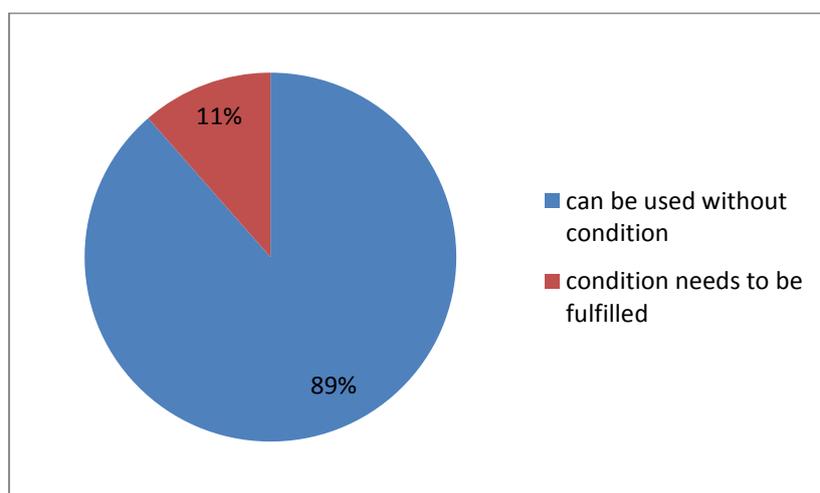


Figure 20: Usability of contents in module 2

Figure 21 is giving an overview on the conditions of use for the collected contents.

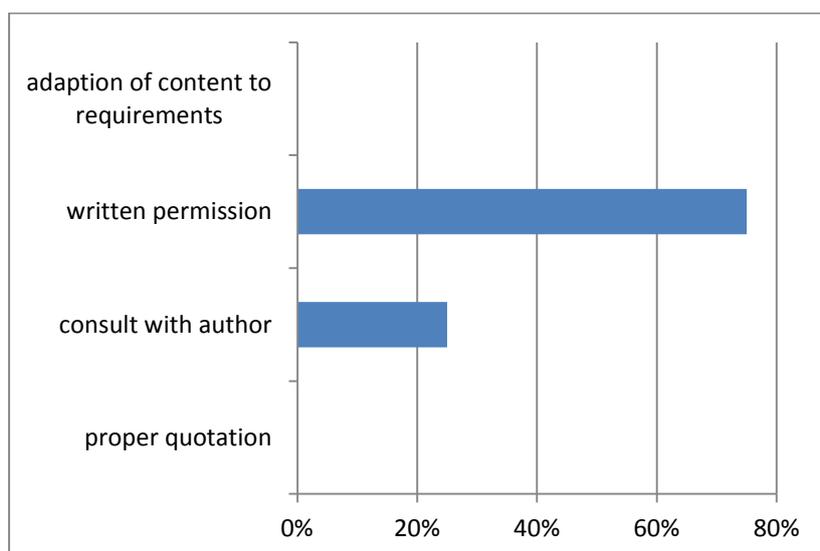


Figure 21: Conditions for the use of contents in module 2

4.2.7 Types of contents and sources for M3

4.2.7.1 Contents (M3)

Table 9 is showing the types of collected contents for module 3 by number and share. Figure 22 is a graphical visualization of the table's content.

Type of content	Number	Share
Text/Tables	9	43%
Text/Images/Tables	2	10%
Text/Images	3	14%
Text	7	33%
Table	-	0%
Other	-	0%
Item	-	0%
Image	-	0%
Film	-	0%
Chart	-	0%
Audio	-	0%
	21	100%

Table 9: Types of contents for module 3

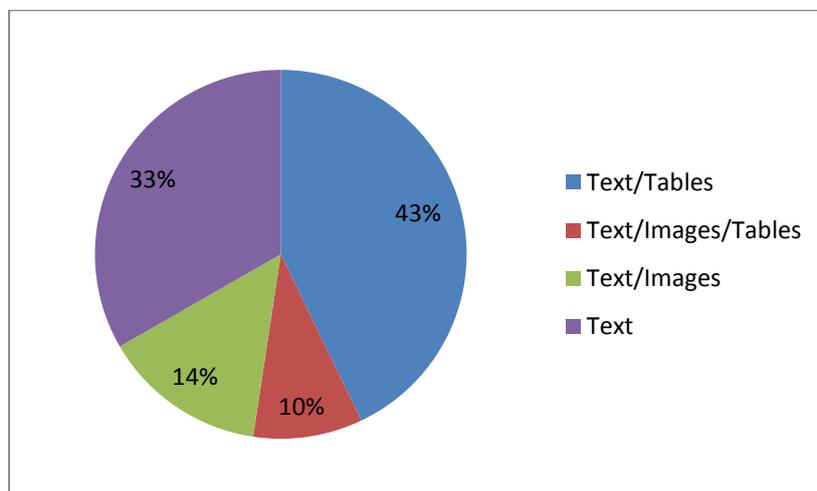


Figure 22: Types of contents for module 3

4.2.7.2 Sources (M3)

Table 10 is showing the types of content sources for module 3 by number and share. Figure 23 is a graphical visualization of the table's content.

Type of source	Number	Share
Article in learned/professional journal	2	10%
Audiovisual	1	5%
Data file	3	14%
E-book	12	57%
Item		0%
Personal experience report	0	0%
printed publication	2	10%
Slide presentation	1	5%
Web based tool	0	0%

Table 10: Types of sources for module 3

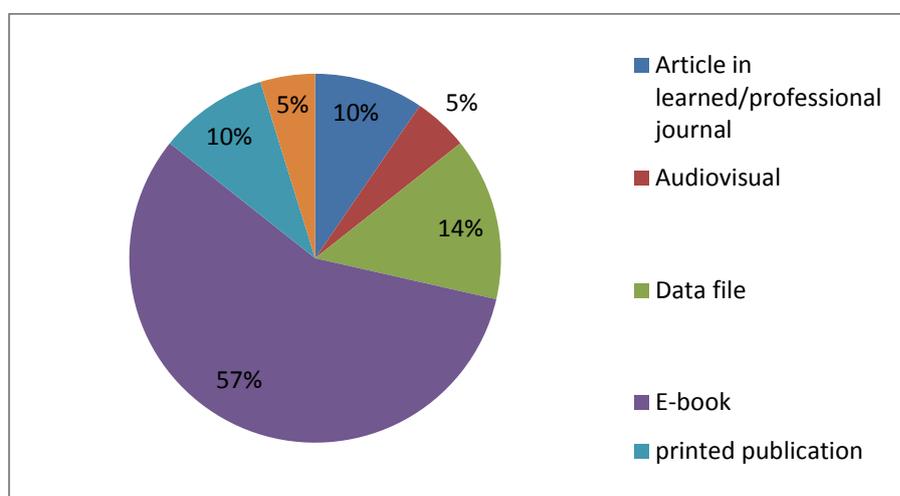


Figure 23: Types of sources for module 3

4.2.8 Up-to-dateness of contents (M3)

85% of the contents are carrying a release date younger than 5 years before the collection, 15% are older, in one case the release date is unknown. Figure 24 is giving an overview on the frequency of the release dates.

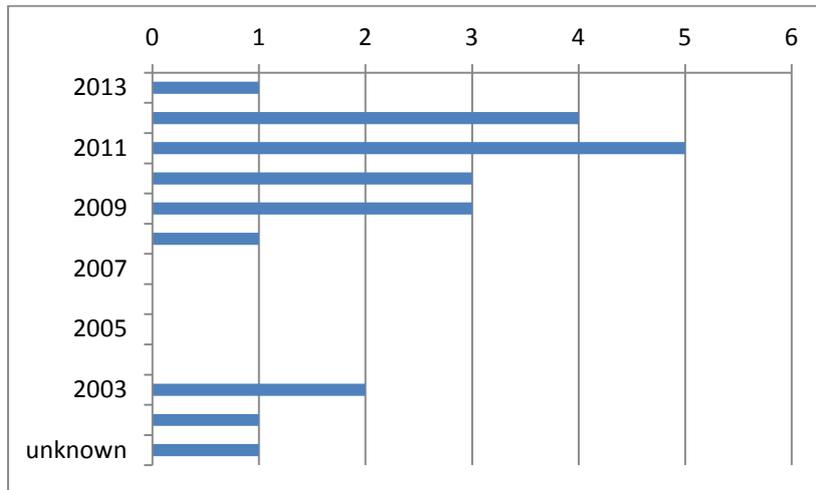


Figure 24: Up-to-dateness of contents for module 3

4.2.9 Quality issues (M3)

Figure 25 is giving an overview on the educational level of contents and the reliability check.

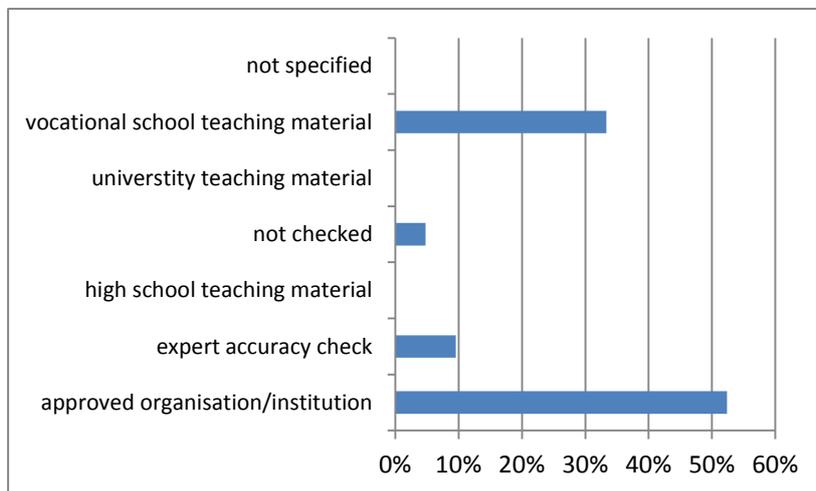


Figure 24: Quality issues regarding contents for module 3

Figure 26 is giving an overview on the position of collected contents on a (subjective) comprehensibility scale from 1 (easy to understand) to 5 (hardly to understand).

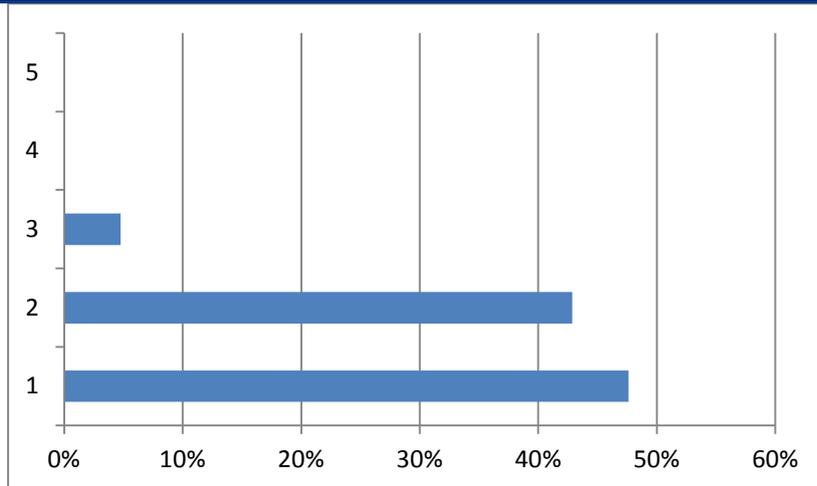


Figure 25: Subjective rating of comprehensibility of contents for module 3

4.2.10 Applicability (M3)

Figure 27 is giving an overview on the applicability of the collected contents.

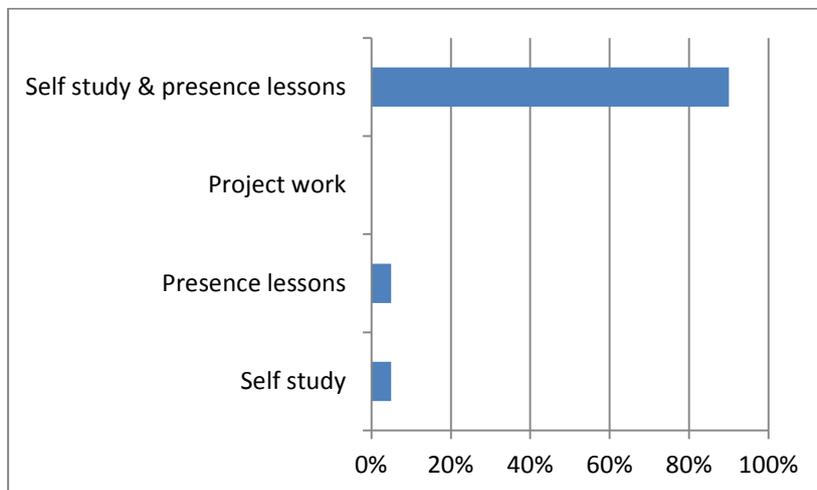


Figure 26: Applicability of contents for module 3

4.2.11 IPR issues (M3)

Figure 27 is giving an overview on the IPR issues of the collected contents.

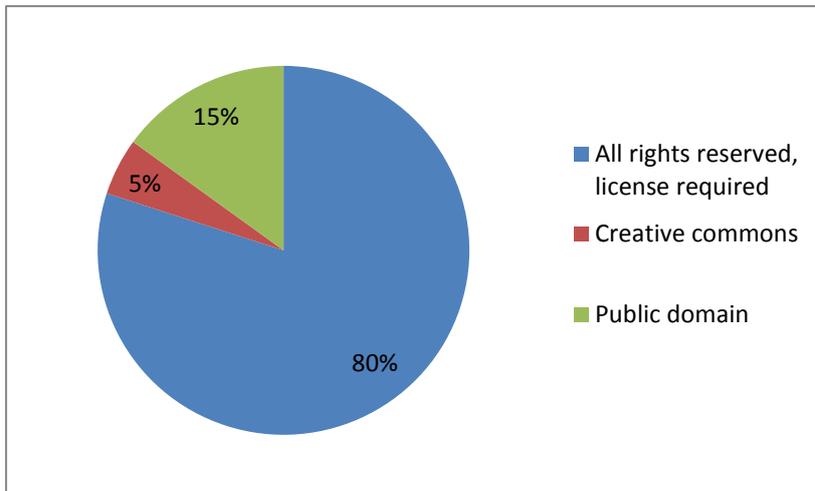


Figure 27: IPR issues regarding contents for module 3

Figure 28 is giving an overview on the IPR holders of the collected contents.

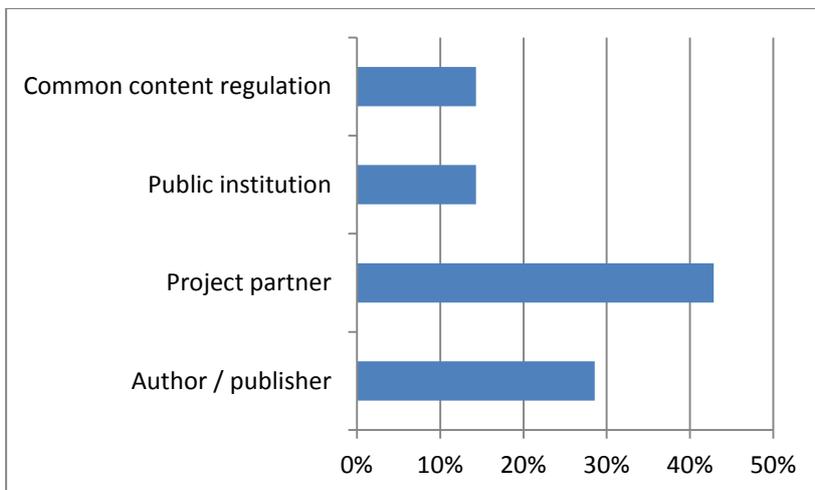


Figure 28: IPR holders of contents for module 3

4.2.12 Usability of contents (M3)

Figure 29 is giving an overview on the usability of the collected contents.

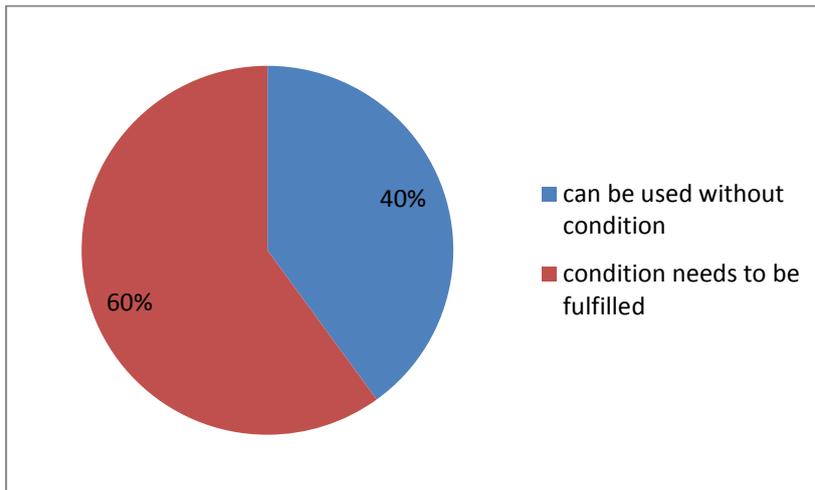


Figure 29: Usability of contents for module 3

Figure 30 is giving an overview on the conditions of use for the collected contents.

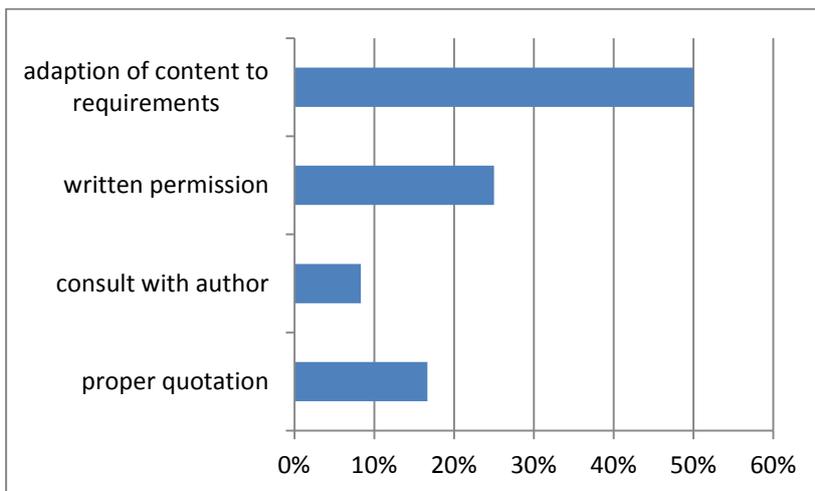


Figure 30: Conditions for the use of contents in module 3

4.2.13 Types of contents and sources for M4

4.2.13.1 Contents (M4)

Table 12 is showing the types of collected contents for module 4 by number and share. Figure 31 is a graphical visualization of the table's content.

Type of content	Number	Share
Text/Tables	1	14%
Text/Images/Tables	1	14%
Text/Images	4	57%
Text	1	14%
Table	-	0%
Other	-	0%
Item	-	0%
Image	-	0%
Film	-	0%
Chart	-	0%
Audio	-	0%

Table 12: Types of contents for module 4

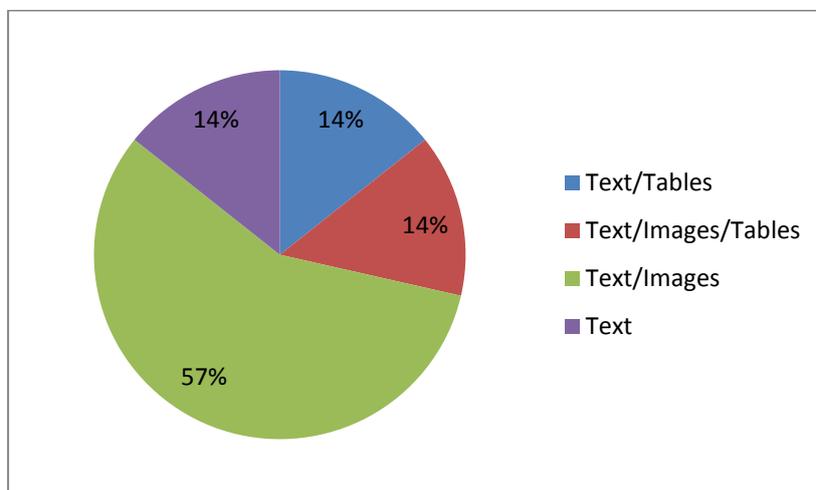


Figure 31: Types of contents for module 4

4.2.13.2 Sources (M4)

Type of source	Number	Share
Article in learned/professional journal	-	0%
Audiovisual	-	0%
Data file	2	29%
E-book	5	71%
Item	-	0%
Personal experience report	-	0%
printed publication	-	0%
Slide presentation	-	0%
Web based tool	-	0%

Table 13: Types of sources of contents for module 4

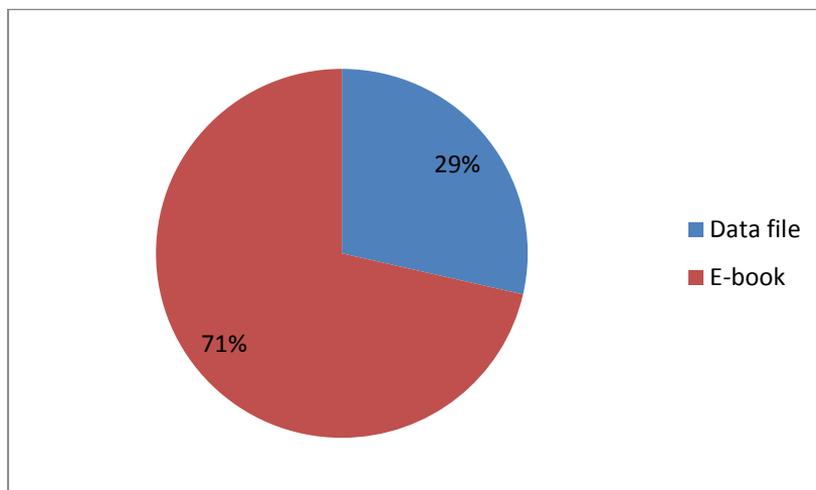


Figure 32: Types of sources for module 4

4.2.14 Up-to-dateness of contents (M4)

All of the contents, except one, are carrying a release date younger than 5 years before the collection, in one case the release date is unknown. Figure 33 is giving an overview on the frequency of release dates.

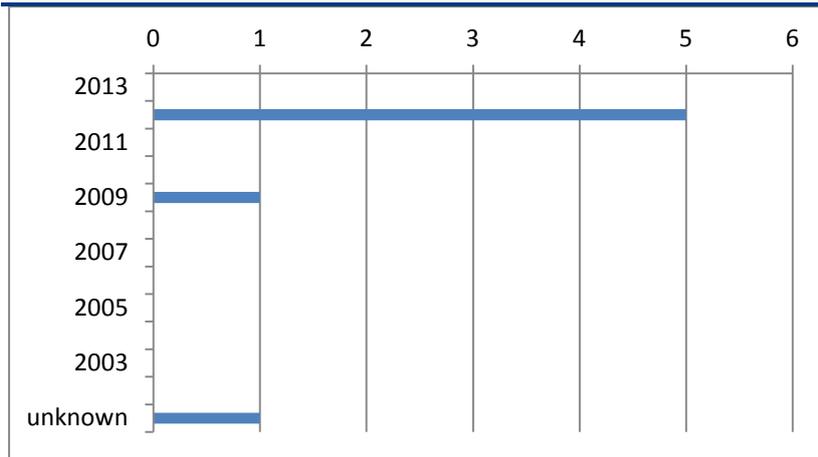


Figure 33: Up-to-dateness of contents for module 4

4.2.15 Quality issues (M4)

Figure 34 is giving an overview on the educational level of contents and the reliability check.

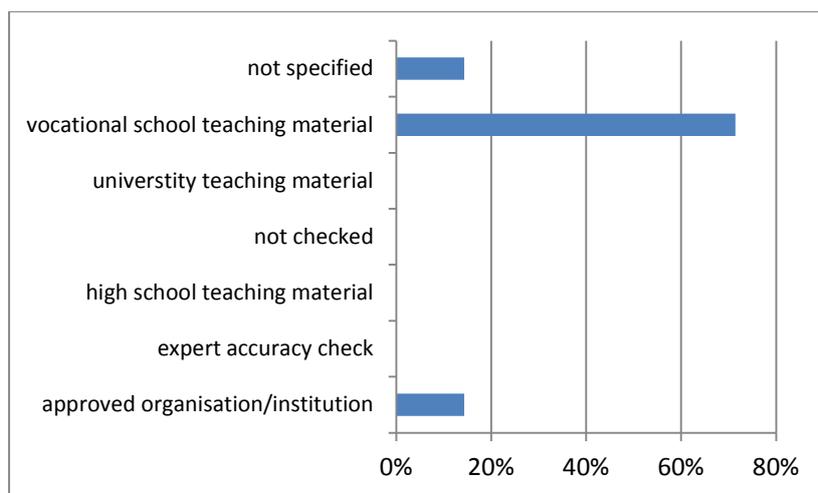


Figure 34: Quality issues regarding contents for module 4

Figure 35 is giving an overview on the position of collected contents on a (subjective) comprehensibility scale from 1 (easy to understand) to 5 (hardly to understand).

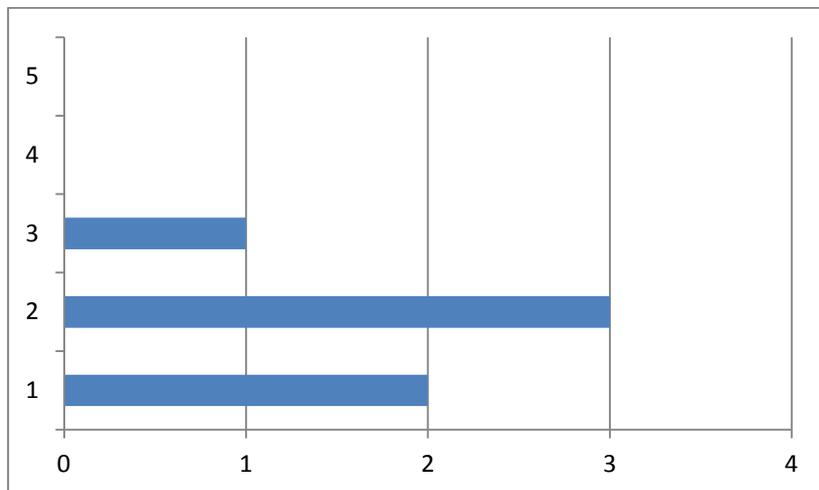


Figure 35: Subjective rating of comprehensibility of contents for module 4

4.2.16 Applicability (M4)

Figure 36 is giving an overview on the applicability of the collected contents

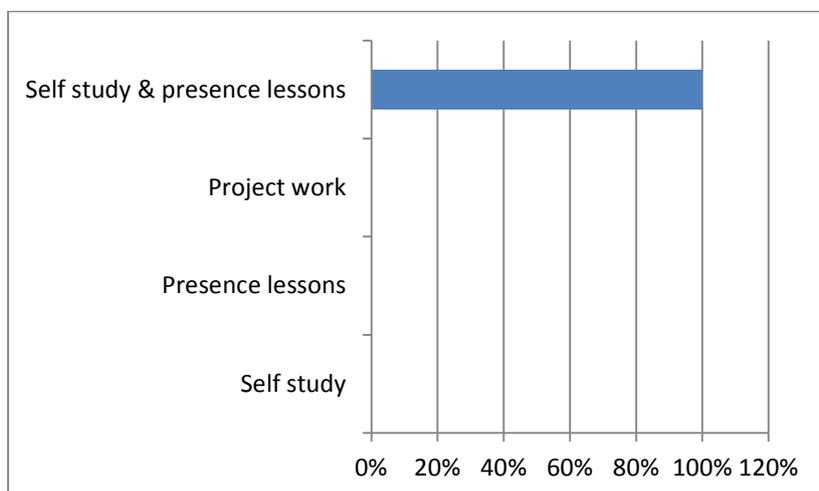


Figure 36: Applicability of contents for module 4

4.2.17 IPR issues (M4)

Figure 37 is giving an overview on the IPR issues of the collected contents.

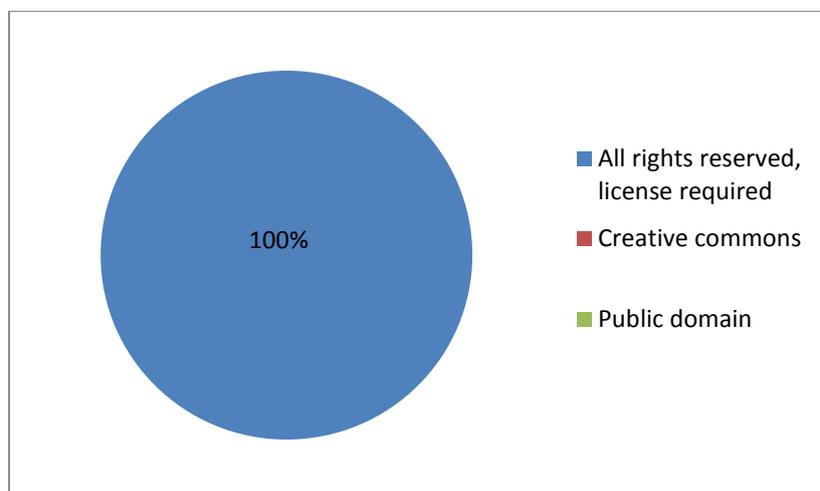


Figure 37: IPR issues regarding contents for module 4

Figure 38 is giving an overview on the IPR holders of the collected contents.

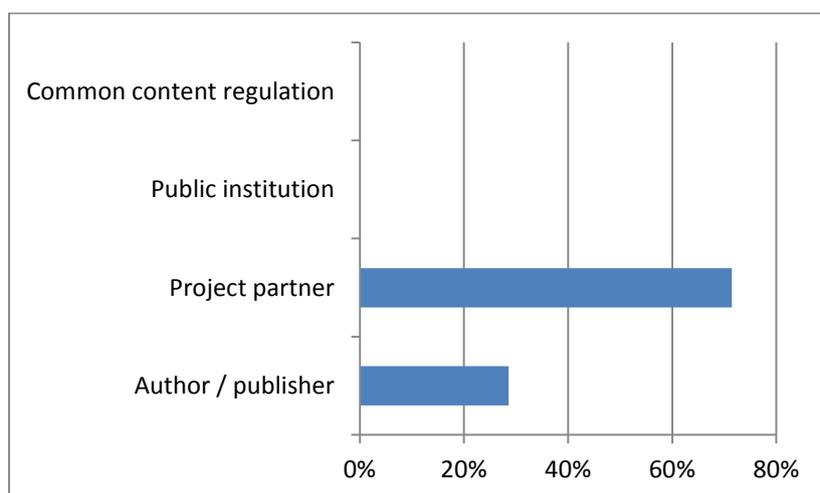


Figure 38: IPR holders of contents for module 4

4.2.18 Usability of contents (M4)

Figure 39 is giving an overview on the usability of the collected contents.

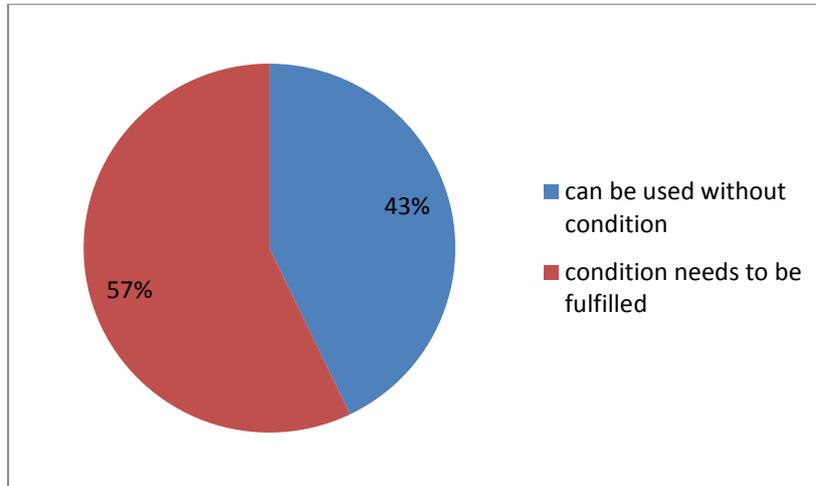


Figure 39: Usability of contents for module 4

Figure 40 is giving an overview on conditions of use for the collected contents.

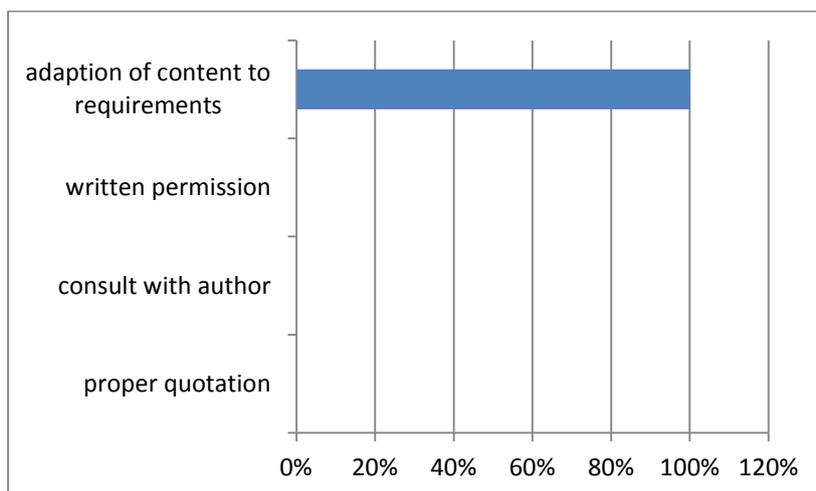


Figure 40: Conditions for the use of contents in module 4

4.3 Overview on the main aspects of entirety of collected contents

The overview on the entirety of the collected contents and sources is following the same structure as the evaluation of contents for the respective modules.

4.3.1 Entirety: types of collected contents

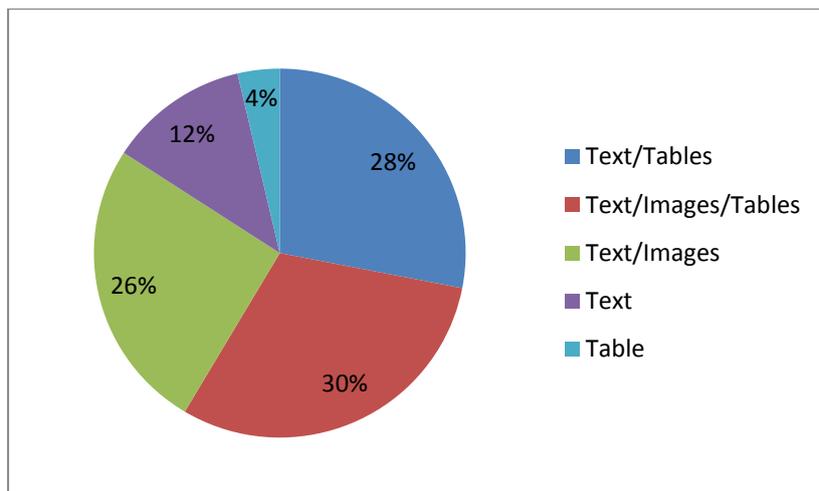


Figure 41: Entirety of collected data - types of collected contents

4.3.2 Entirety: Types of sources of contents

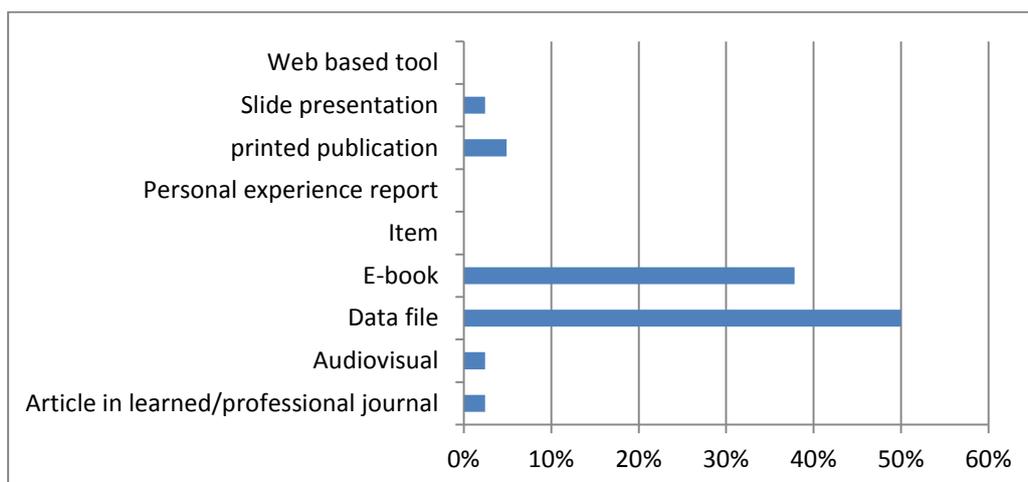


Figure 42: Entirety of collected data – types of sources for contents

4.3.3 Entirety: Up-to-dateness of contents

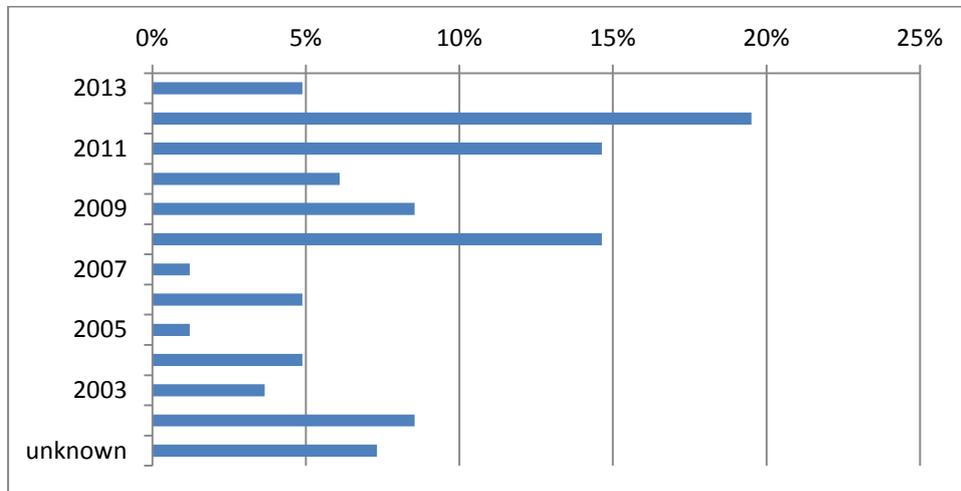


Figure 43: Entirety of collected data – up-to-dateness of contents

4.3.4 Entirety: Quality issues – educational level, reliability and comprehensibility

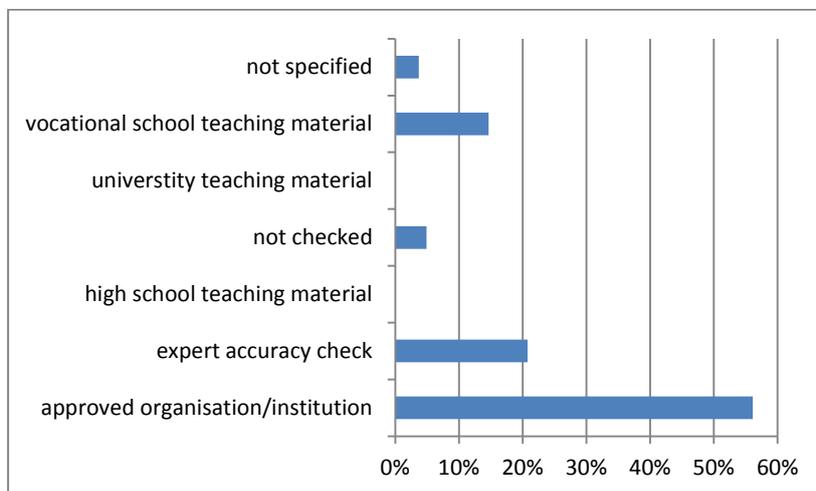


Figure 44: Entirety of collected data – Quality issues regarding contents

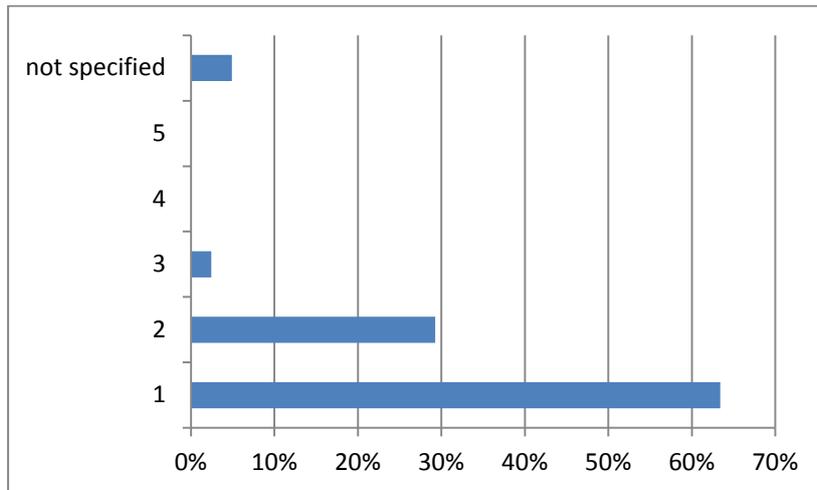


Figure 45: Entirety of collected data – Subjective rating of comprehensibility of contents

4.3.5 Entirety: Applicability

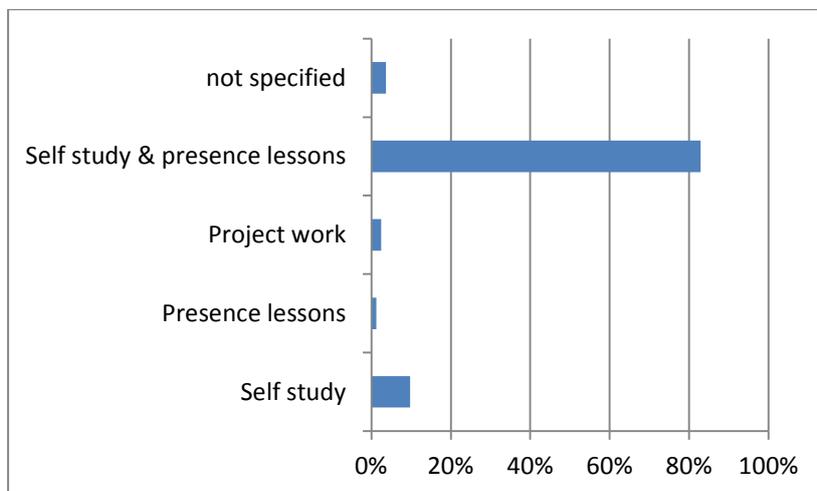


Figure 46: Entirety of collected data – Applicability of collected contents

4.3.6 Entirety: IPR issues

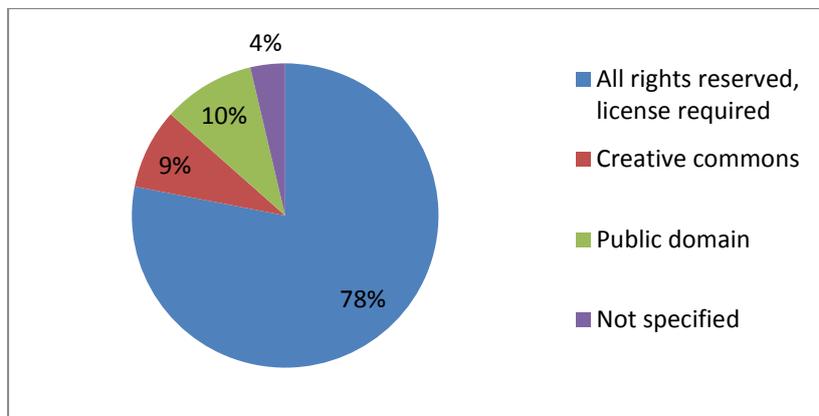


Figure 47: Entirety of collected data – IPR issues regarding contents

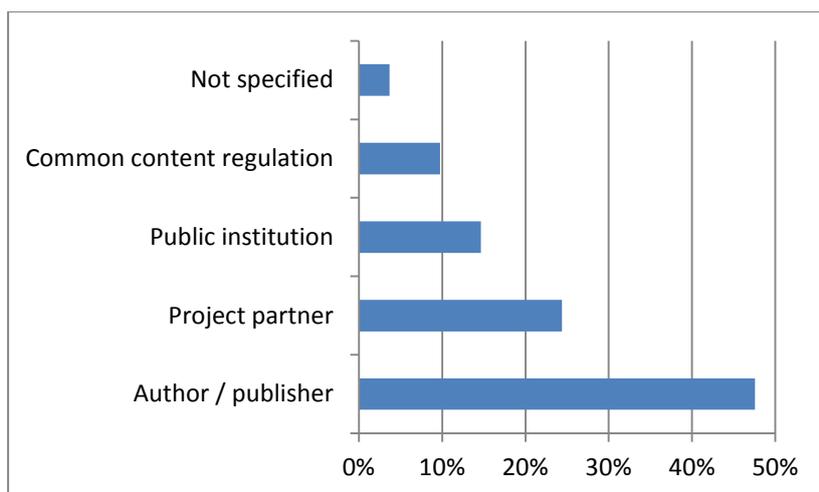


Figure 48: Entirety of collected data – IPR holders of contents

4.3.7 Entirety: Usability of contents

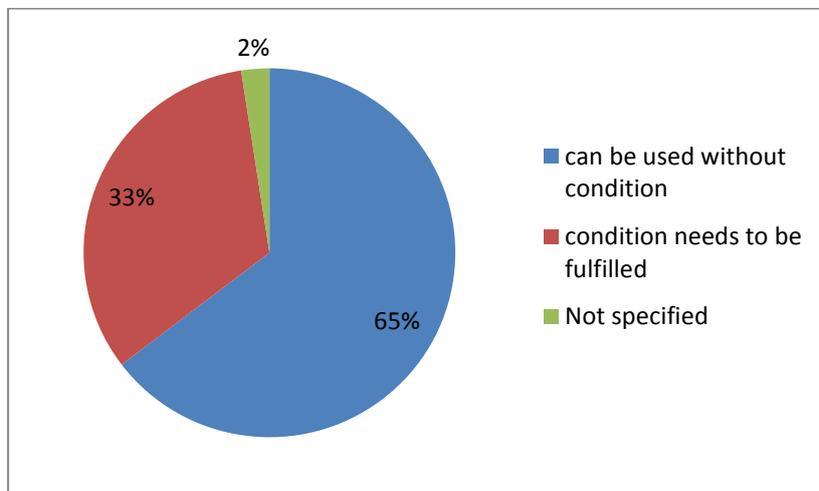


Figure 49: Entirety of collected data – usability of contents

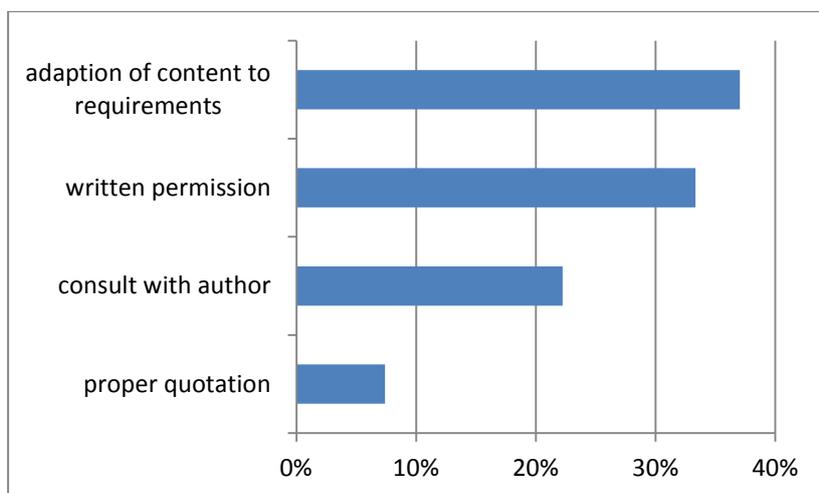


Figure 50: Entirety of collected data – conditions for the use of the contents



4.3.8 Entirety: Description of contents

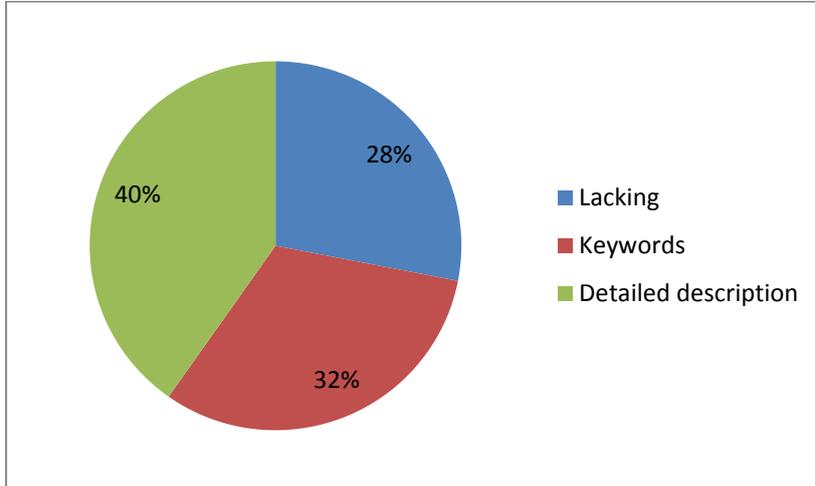


Figure 51: Entirety of collected data – state of content descriptions

5. Discussion and evaluation of the quantitative results

The current report about the availability of contents for the pilot training course is showing the possibilities and limitations of existing literature and other teaching materials regarding the requirements related to the curriculum .

The findings, regarding general availability, shall be discussed on the level of modules. All other issues are then then discussed on the level of the entirety of the collected data.

5.1 General availability or lack of content

- *Module 1:*

Regarding the technical basics in chapter 1 and 2, all contents can be provided by the Austrian PPs.

In chapter 3, all PPs are obligated to provide data on national level in the fields of the national situation of energy provision. Sources and contents providing these data are named by the Austrian, the Hungarian and the Polish PPs. The relevant contents for Germany are missing and need to be gathered by the German PP in order to meet the requirements of the curriculum. As soon as the needed data are collected also in Germany, all contents for module 1 can be produced.

Generally, except the missing inputs on German national level, there is no special need of further inputs and the contents can be produced by EEE. For the implementation of contents on national level, EEE can provide a structural framework.

- *Module 2:*

All contents of the module can be provided by the Austrian PPs. For the first two chapters as well as chapter 6 there are also contents by the Hungarian and Polish PPs. The Hungarian PP can also provide contents for chapter 3 and 4. There are no inputs by the German PP.

Generally, the contents for the whole module can be produced by EEE without the need of further input by the other PPs

- *Module 3:*

There are only few contents or sources available for chapter 1 and these contents are mainly regarding the basics of project management and less the particular requirements needed for managing biomass related projects. The specification of contents will be a task in content production. Inputs for chapter 1 did come from the Austrian, the German and the Polish PPs.

The chapters 2 and 3 are strongly bound and tributary to content inputs on national level. For the requirements of the Austrian pilot training course, there are all needed contents available. It is not clearly visible, if all these needed national level contents are also available for the other PPs. Especially on the part of the German and partly on the part of the Polish PPs there seem to be still needs for investigation.



Generally, module 3 is a very heterogeneous one, because the curriculum requires particular inputs which can be produced only by the individual PPs regarding their national situation. EEE can produce the contents for chapter 1. The contents for chapter 2 and 3, except contents regarding legal framework on European level, have to be produced by each PP on their own, EEE can provide the structure for arranging the contents within the teaching units.

- *Module 4:*

Contents and sources can be provided mainly by the German PP and for some packages also by the Austrian and the Hungarian PPs. The Polish PP could not provide any content.

Generally, in order to produce the contents for module 4, EEE has to rely on the inputs from the German PP and needs to investigate more in the fields of communication and participation.

5.2 Properties of collected contents

- *IPR issues and usability of collected contents:*

Although the vast majority of the knowledge which has to be conveyed in the course of the training is public domain, 78% of the collected contents and sources are matter to copyright and only 10% are declared public domain.

In 65% of the cases also the copyrighted contents can be used, because the copyrights are held by PPs or the question of copyrights is already cleared with the owner of rights, who have already given their permission for use. Nevertheless the share of copyrighted contents is unnecessarily high, regarding the amount of common knowledge as referred to the curriculum.

Up to now there has not been made much effort to investigate contents which can be used under the creative commons license. Within the collected contents only a share of 9% are matter to this license. The creative commons license normally also allows the use and alteration or adaption of, for example graphics and images, for other purposes, if they are then shared under the same license. The use of contents under creative commons license could reduce the need for copyright licenses considerably. This would mean to intensify investigations, if copyrighted contents, in the same quality, can also be found under a creative commons license. The further investigation is a task of content production and will mainly be done by EEE, except for contents on the respective national levels.

- *Quality aspects of collected contents:*

The quality of contents can be defined by comprehensibility, reliability and up-to-dateness. In lack of parameters to measure comprehensibility, the individual and subjective impression of the comprehensibility of a content or source of the content collectors was sampled on a rating scale from 1 to 5.

In the current case, 63% of the collected contents have been rated to be very good to understand, 29% of the contents rated to be good to understand and 2% to be quite



understandable, but it has always to be kept in mind, that the rating is always dependent on the educational level and the professional experience of the person making the rating.

The check of the educational level of the content can also provide information on the comprehensibility as well as on the reliability of content. The collected contents do not contain university or high school teaching material. More than the half of contents are released by approved organisations, like national offices, governmental departments, educational institutes, agricultural chambers or NGOs. About 20% have passed an expert accuracy check to be reliable and about 15% are vocational school teaching materials. Only 10% have not been checked or there is no specification regarding reliability or educational level.

The evaluation is showing that the majority of contents can be found in and extracted from reliable sources. The comprehensibility rating does not meet scientific criteria, but gives a hint, that most contents and sources are clear-structured and well formulated and thus can be used for the preparation of teaching material.

Up-to-dateness is essential for contents which are related to statistics, legal and funding issues. These contents need to be always up to date. The sources collected for contents in the relevant chapters of module 1 and 3 are meeting these conditions.

Basic knowledge can be provided from older sources. The average release date for the entirety of contents and sources is 2010. 85% of all contents and sources have been released later than 2003, so the contents can be regarded as up to date, as older contents are mainly regarding technical standard aspects.

- *Types and kinds of contents, applicability*

Almost 90% of the contents and sources are provided as data files or e-books and only 5% in the (classical) form of a printed publication. Other formats as audiovisual sources or articles in professional journals are making up the remaining 5%. This means that contents and sources are easy to exchange in the course of content production and, if applicable, can be easily provided directly as additional or self study material.

Various combinations of texts, images and tables are making up 96% of the collected contents. This means, that also the learning and teaching materials which have to be produced for the pilot training will be based on the form of written publications.

The majority (83%) of the collected contents and sources has been rated to be usable for presence lesson as well as for self study. An inspection of the collected contents from Austria, which have a share of 54%, did show that these contents, rated as usable for presence lesson and self study, are well usable for self study, but the contents for presence lessons need to be extracted from this material. Thus, in the context of presence teaching, they can only be regarded as sources.



6. Recapitulation and conclusions on content availability

In total, 78% of the required contents can be covered with already available contents or by extracting contents from available and appropriate sources .

In many cases, the collected contents can be found in compendiums on the energetic use of biomass and need to be extracted from these sources. In few cases the material is designed as a script and can be used as such. The share of contents which can be used for presence teaching is also very low. From this point of view, the “content collection” can be rather seen as “source collection”

Mainly in the modules 1 and 3 there is the necessity for further investigation of sources and contents. The German, Hungarian and Polish project partners need to do further investigations on national energy statistics, legal framework and funding. In detail, these contents belong to the following learning packages:

- National biomass statistics
- National energy statistics
- National environmental law: immission acts - air, water and soil
- National energy law
- National legislative basis for facility sites and energy plant operation fundings
- National legislative basis and legal framework for fundings and subsidies

All these packages have to be reworked thoroughly.

Regarding the integration of contents on national level in the course of content production there has to be created a standardised formal structure for these contents by EEE, which will allow to integrate national contents for each PP in the same form and manner, although these contents may have individual particularities. A list of the particularly needed data will be sent out to the PPs after the refinement of the curriculum (as discussed below in 7.2).

In module 4 there has still some research for contents to be done. This may be caused by the very rough and poorly detailed structure of the curriculum, but C&Q as well as BFI who are professional educational institutions could be helpful in clarifying structures and providing the needed contents. Maybe also EPC could provide some material.

Regarding IPR issues, existing contents should be explored for versions under a creative commons license, especially in the course of content production.

Generally, there could be collected enough material to create and provide contents for the biggest part of the pilot training course. Exceptions are some contents on national level and module 4, which do need again some attention in order to be completed.

7. Common content guideline

7.1 Criteria for contents

The basic structure for content provision is the curriculum, which defines the kind of information that has to be conveyed by the educational material. According to the curriculum's requirements, all necessary elements have to be gathered and arranged in a way, that ensures that the specific information on a topic is transferred in a clear and understandable way from the educational institution and its training personnel to the students. The information has to be based on reliable sources and shall enable the student to use and reproduce the content in a practical and self-reliant way.

7.2 Structure and types of contents

In the same way as the curriculum defines the kind of information, content provision has to provide the information itself and to define a way, how this information can be displayed and conveyed in an effective and exhaustive, but nevertheless compact manner.

Figure 52 is giving an overview on the principle and the process of content provision.

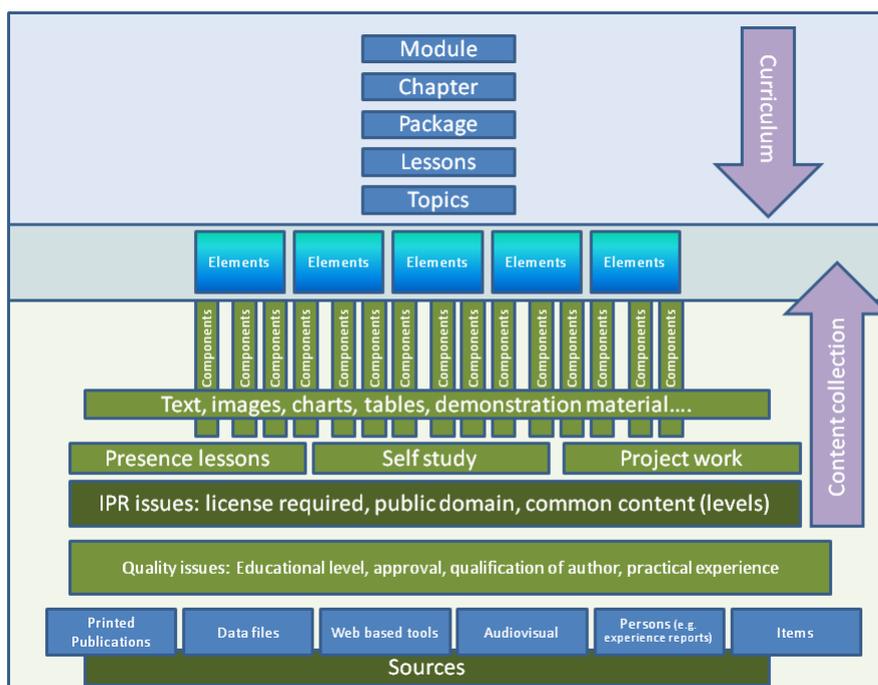


Figure 52: Overview on principles and the process of content provision

- *Elements*

The first step of content provision is a refinement of the curriculum. When the curriculum for example requires information on stalk type biomass as a topic, content provision has to complete this requirement in a more detailed way, by filling the topic with all relevant elements, as for example: grain straw, maize straw, miscanthus etc. The element can therefore be regarded as the intersection point of curriculum and content provision.



- *Components*

Components are containing more detailed information on the elements, as for example production areas, annual yields, information on the plants appearance, characteristics in production and harvest etc. The components can be provided in the form of texts, images, charts, tables etc.

The components have to be chosen also in observance of the didactical context, this means, that the content has to be arranged either for presence teaching or self study or project work.

- *Sources*

Components are always drawn from sources. Most component sources and thus also the components themselves, are subject to intellectual property rights and cannot be used without the permission of the owner. The development of creative commons licenses have eased the use of such material and for the purposes of Q-BICON, preferably creative commons shall be used in the components gathering and content production process. In this context, copyrighted works can be used as a benchmark for reliability of the needed information and the component, if in accordance with the reliability benchmark, shall be drawn from a medium or platform which is running under creative common license.

7.3 Content preparation

As mentioned before, contents shall preferably be prepared by using reliable sources as a benchmark for the contents, which then shall be created or prepared from sources which are provided under a creative commons license. Copyrighted material shall be reduced to the minimum and be used only in cases, when creative commons are not available at all, or the available creative commons cannot meet the quality requirements of the benchmark.

Mainly texts, but also images and tables for the modules 1 and 2 as well as partly for module 3 can be provided by EEE. Since EEE is also the holder of the copyright of the material, the use of it, in case of the Q-BICON pilot training course, is free and will remain free for the involved project partners for the purposes of the developed Q-BICON training.

Relevant images, graphics, charts and tables, which cannot be provided by EEE shall be investigated on and retrived from the following creative commons platforms, which are constantly mentored and reviewed by an academic community:

en.openei.org : "Open energy information" is a platform providing information on energy and renewable energy sources

www.oercommons.org: "Open education ressources" is providing, amongst others, information on natural science, as well as applied science and technology

cnx.org: "Connexions" a platform to view and share educational material made of modules that can be organized as courses, books, reports, etc. Cnx is providing a lot of information material on university level.



www.wikipedia.org: "Wikipedia" is the most popular and best known information source based on creative common license and contains a vast database of materials. Information on natural science or technical contents are, from experience, reliable, but an expert check is advised.

Statistical data shall be preferably retrieved from the respective national statistical offices, the respective state departments (agriculture, economy etc), relevant chambers and from the statistical office of the European Union (Eurostat).

Contents regarding national legal framework and funding shall be retrieved from the respective state departments or state offices and the relevant administrative authorities.

7.3.1 Contents for presence lessons

- *Contents to be prepared*

Contents for presence lessons have preferably to be prepared in the form of slide presentations. If necessary, also handouts can be prepared, but this should be the exceptional case.

The structure of the presentations has strictly to follow the structure of the curriculum

Elements and components have to be arranged in a way, that the presentations are containing the core information which is needed to be understood in the learning packages, in order to reach a positive certificate at the end of the course.

- *Contents to be documented and to be made accessible after a presence lesson*

Presence lessons may spontaneously lead to discussions regarding certain aspects of the contents or to excurses by the trainer for deeper explanation. Key aspects of discussions or explanatory excurses have to be documented on a flip chart. The emerging schemes and annotations shall be photographed after the presence unit and be provided as online content within one week.

7.3.2 Contents for self study

Material for self study has to be provided in the form of scripts, preferably one script per module.

The structure of the scripts has strictly to follow the structure of the curriculum.

The scripts have to be worked out on a more detailed level than the presentations for the presence lessons.



They have to provide the essential knowledge on all topics as defined in the curriculum which is needed to reach a positive certificate at the end of the course. Furthermore they shall be organized in a manner, that they can be used as a reference work for self reliant working by the alumni of the training. This affects particularly calculation processes, but also sources with intermittent changing information as regards legal framework or funding.

The contents, elements and components have to be arranged in a coherent and logical way, quotes and component sources have to be marked clearly. The extent of the contents has to be chosen in a way, that they can be acquired within the time frame set by the curriculum.

Contents on national level have to be provided by the respective project partners, the scripts have to provide a standardized structure for these contents which is equal for every project partner's country. The contents on national level have to be inserted into the provided structure.

For additional and more detailed information the scripts shall also contain titles, short descriptions and supply sources of the main compendiums and handbooks regarding the main topics of the training course, in order to ease the composition of the individual project works of the participants. These additional information sources are not matter to the final exam.

7.4 Manner of provision

All contents, be it for presence teaching or self study, have to be provided on the online learning platform.

Contents for self study shall be provided before the start of the respective module, contents for presence teaching shall be provided at the latest one week after the performance of the teaching unit.