



ENCODE

BRIDGING THE <GAP> IN ANCIENT WRITING CULTURES
ENHANCE COMPETENCES IN THE DIGITAL ERA

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Hands-on Workshops

ENCODE report on digital competences,
learning outcomes and best practices in
teaching and learning



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1. Objectives of the report

The report is based on a comparison among feedback and competence questionnaires produced within workshops and training events organised by the ENCODE Project or in collaboration with it. The ENCODE Project promotes collaborative, participatory and intercultural digital approaches to the study of Ancient Written Cultures, developing innovative teaching modules and implementing them in the existing curricula. Besides this, the project supports an intense activity of dissemination, involving international graduate students and researchers in workshops and training activities aimed at testing training design, collecting feedback and promoting discussion and networking opportunities within a community of practice¹. These training activities are part of Multiplier Events, which involve partners, experts and interested parties, and are usually preceded by Project Conferences or organised back-to-back with planned partners meetings.

The purpose of this report is to cross-reference data collected in three training activities directly organised by ENCODE:

- the “ENCODE Greek and Latin Epigraphy Workshop”, part of the first Multiplier Event held in Bologna (January, 26th-29th, 2021)
- the “Training Workshop Multilingual and Multicultural Digital Infrastructures for Ancient Written Artefacts”, part of the third Multiplier Event held in Leuven (November, 3rd-5th, 2021)
- the ENCODE Winter School “Papyrology for non-specialists”, part of the fourth Multiplier Event held in Würzburg (February, 14th-17th, 2022)²

This analysis will also consider other experiences organised in collaboration with partners or associated partners of the project, such as the “Epigrafia digitale e EpiDoc” Workshop, organised by A. Bencivenni and I. Vagionakis (October, 12th-14th, 2020), the “EpiDoc Workshop London/Bologna”, organised by G. Bodard and I. Vagionakis (April, 12th-16th,

¹ <https://site.unibo.it/encode/en> (and Project Summary Erasmus+: <https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/2020-1-IT02-KA203-079585>).

² A fourth event, the “Advanced Training Linked Open Data for Written Artefacts” was organised by the University of Hamburg within the ENCODE Project as part of the second Multiplier Event (May, 26th-28th, 2021). On this occasion, written feedback through Google Form has not been realised, but trainees orally shared their feedback and some of them also accepted to re-assess their progress in dialogue with trainers. For a report on this event, see Liuzzo / Elagina *forthcoming*.

2021) and the “Edizioni digitali di testi sanscriti: introduzione a XML e TEI” Workshop, organised by G. Buriola, M. Franceschini, I. Vagionakis (April, 26th-29th, 2021).

Since these feedback- and competence questionnaires have been filled out only by trainees, this report can be considered a valuable tool for comparison with the “Report on digital competences, learning outcomes and best practices in teaching and learning”. This report has been designed for the Intellectual Output 1 of the ENCODE Project by the University of Würzburg and analyses the results of an international online survey filled out almost exclusively by teachers (92% of the respondents are teachers)³. The ENCODE Survey registers results of feedback from different transnational training experiences, offering a valuable insight into the learning and training practices in the field of digital tools applied to the study of Ancient Written Cultures. Moreover, it is helpful for suggesting new ways of improving formats and methods and for identifying further teaching and learning needs. However, it offers a partial view since it is mostly filled out by teachers. A comparison with trainees’ feedback can therefore shed light on aspects and methods that have been particularly appreciated or need to be improved from their point of view. Furthermore, it is useful to understand competences and skills acquired during training events and further digital needs of participants, eventually confirming the results of the international survey.

2. Questionnaires’ design

The questionnaires were conducted via Google forms. The difficulty in comparing the data of the questionnaires is linked to their different nature: questions do not recur identical, as these questionnaires have been produced over a rather long period (from October 2020 to February 2022) and sometimes even for different kinds of events and by different organisers or institutions. Since they have been developed to replace the usual practice of feedback sessions, which have been an important component of digital workshops so far, many questions were left open-ended. For this reason, a subjective component in the data analysis cannot be excluded. Precisely in order to meet these two requirements, consistency in questions and quantifiability of results, project partners designed the ENCODE Survey, which will be used for all future events organised by ENCODE.

As mentioned before, the questions differ in each feedback questionnaire, even if recurring topics can be detected, such as motivation in taking the course, expectations, positive and

³ Breuer 2021. Henceforth, ENCODE Survey.

negative aspects, satisfaction, possible recommendation to peers, impact of the acquired competences in the field of Ancient Written Cultures, eventual suggestions to improve the workshop, further needs and expendability of acquired competences in the job market.

An important difference with the ENCODE Survey is that respondents of these questionnaires have not been required to provide any information about the course itself (duration, course format, academic areas) since each questionnaire was specific for the event for which it has been designed. An exception is the feedback questionnaire of the *EpiDoc Workshop London/Bologna*, which is almost exclusively devoted to evaluating the tools used during the workshop, thus shedding light on the methods employed. This focus on methods can be explained by the fact that this workshop experimented with new and different instruments in order to solve problems of the online format adopted during the pandemic. Furthermore, in all questionnaires there is no specific question about the respondents (country, affiliation, scientific field): in certain events dedicated to specific topics, participants came from related scientific fields and had similar academic status, in others (especially in the international ENCODE Workshops) trainees had very different levels of prior knowledge. For this reason, such information will not be mentioned in the questionnaire analysis but summed up in a specific paragraph dedicated to the description of the events.

For four of the training activities, trainers realised a competence questionnaire besides the feedback questionnaire, in order to measure the initial and final level of humanistic and digital competences of course participants. Unlike the feedback questionnaires, the competence questionnaires are structured in a similar way and, for this reason, are more easily comparable. This is due to the fact that they are aligned with two international frameworks: the CALOHEE Framework for Humanistic Competences and the DigComp 2.1 Framework for Digital Competences. Both frameworks have been adapted to the specific field of Ancient Written Cultures. The alignment with these frameworks was necessary to enable the realisation of open badges, which certify the acquisition of competences in a way comparable to European levels, and to develop new training modules for implementing academic curricula. Among the competence dimensions of the CALOHEE Framework in the area of History⁴, the following have been taken into consideration for the ENCODE Project:

⁴ Wagenaar et alii 2018: 60-79.

(CALOHEE) 2. Text and Context:

(CALOHEE) Subset 1. Source Identification = (ENCODE) Source Identification: Identify Relevant Historical Data / Problems, People, Places

(CALOHEE) Subset 2. Source Retrieval = (ENCODE) Source Retrieval – Metadata Cataloguing Practices

(CALOHEE) Subset 3. Source Analysis = (ENCODE) Source Analysis – Transcription, Critical Edition, and Interpretation

(CALOHEE) Subset 4. Contextualization of Source Production and Transmission = (ENCODE) Contextualization of Source Production and Transmission – Preservation History / Historical Context)

(CALOHEE, ENCODE) 4. Interdisciplinarity

(CALOHEE) 5. Communication, 6. Initiative and Creativity = (ENCODE) Initiative and Creativity

In the competence questionnaire produced for the ENCODE Workshop Leuven and the ENCODE Winter School Würzburg, the dimension “Initiative and Creativity” has been split into two dimensions following the CALOHEE Framework, “Communication” and “Initiative and Creativity”. Among the competence areas and sub-areas of the DigComp 2.1 Framework⁵, the following have been taken into account for the ENCODE Project:

(DigComp 2.1, ENCODE) 1. Information and Data Literacy: 1.1 Browsing, Searching and Filtering. 1.2 Evaluating Data and Information. 1.3 Managing Data, Information and Digital Content

(DigComp 2.1, ENCODE) 2. Communication and Collaboration: 2.1 Interacting through Digital Technologies. 2.2 Sharing through Digital Technologies. 2.3 Collaborating through Digital Technologies. 2.4 Netiquette

(DigComp 2.1, ENCODE) 3. Digital Content Creation: 3.1 Developing Digital Content. 3.2 Integrating and Re-elaborating Digital Content. 3.3 Copyright and Licences. 3.4 Programming

(DigComp 2.1, ENCODE) 4. Safety

⁵ Carretero / Vuorikari / Punie 2017.

(DigComp 2.1, ENCODE) 5. Problem Solving: 5.1 Solving Technical Problems. 5.2 Identifying Needs and Technological Responses. 5.3 Creatively Using Digital Technologies. 5.4 Identifying Digital Competence Gaps

The competence questionnaire produced for the ENCODE Workshop Leuven does not present the following areas and sub-areas: 4. Safety, 5.3. Creatively Using Digital Technologies. In the ENCODE Winter School Würzburg are absent the following areas and subareas: 1.1. Browsing, Searching and Filtering, 2.1. Interacting through Digital Technologies, 2.2. Sharing through Digital Technology, 2.4. Netiquette, 3.3. Copyright and Licences, 4. Safety, 5.1. Solving Technical Problems, 5.2. Identifying Needs and Technological Responses. 5.3. Creatively Using Digital Technologies. 5.4. Identifying Digital Competence Gaps. Added or removed dimensions/areas are motivated by the specific themes addressed in the training activity: for example, the sixth dimension of the Humanistic Framework CALOHEE (Communication) has been added in the competence questionnaire of Leuven because of the multicultural and multilingual perspective of this training event. Trainers decided to divide the humanistic and digital content of the competence questionnaires into four proficiency levels: Basic, Focused, Advanced, Expert⁶. Respondents should indicate which level they possessed before the workshop and which level they achieved after it, in order to check the progress in the acquisition of competences.

3. Events and respondents

The events, whose feedback and competence questionnaires are analysed here, were of different kinds and involved different audiences of participants. However, a common ground can be found in the fact that they were held online due to the pandemic, except for the “Epigrafia digitale e EpiDoc” Workshop, held both in presence and online. The following subparagraphs contain a brief description of the events with important information, such as the number of participants, the nature of the training programme, the scientific areas involved, the duration, the format, methods and materials employed.

⁶ The proficiency levels of the ENCODE Survey are Basic, Intermediate Advances, Specialist. They follow more closely the eight proficiency levels of DigComp 2.1 (Foundation 1, Foundation 2, Intermediate 1, Intermediate 2, Advanced 1, Advanced 2, Highly specialized 1, Highly specialized 2).

3.1 Encode Greek and Latin Epigraphy Workshop

The *Encode Greek and Latin Epigraphy Workshop* was an international workshop organized by the University of Bologna as part of the first Multiplier Event of the ENCODE Project (January, 26th-29th, 2021)⁷. The workshop was conducted synchronously via the Zoom platform and involved a limited number of participants (25) from nine different countries and three continents. Participants were mostly postdoctoral researchers, PhD students or graduate students working on Greek/Latin epigraphy and papyrology: 24 out of 25 filled out the feedback questionnaire, 23 out of 25 the competence questionnaire. The course length was of four days: on the first day, participants were trained in the use of EDR (Epigraphic Database Roma), on the second and third days they were introduced to the XML-TEI encoding and the EpiDoc Guidelines for digital encoding of ancient documents. A fourth day was dedicated to Papyri.info and Leiden + for the encoding of ancient papyri and to the online XML publishing tool, EFES. The Workshop was conducted by four/five trainers and it alternated explanations of tools, training, sessions and open conferences (on the third and fourth day). The workshop aimed at reproducing as closely as possible an in-person workshop: for this reason, also the training sessions were conducted online by splitting participants into small groups through the Zoom breakout rooms. The materials used by trainers were mainly the EpiDoc Guidelines and slides provided by the EpiDoc Community; texts of inscriptions and papyri had already been made available by trainers before the beginning of the workshop. Furthermore, participants could actively contribute to digital projects (EDR, Papyri.info).

3.2 Training Workshop Multilingual and Multicultural Digital Infrastructures for Ancient Written Artefacts

The *Training Workshop Multilingual and Multicultural Digital Infrastructures for Ancient Written Artefacts*, was an international workshop organised by the Katholieke Universiteit Leuven as part of the third Multiplier Event of the ENCODE Project (November, 3rd-5th, 2021)⁸. It was conducted via Microsoft Teams and involved 31 participants from thirteen different countries and four continents, researchers, PhD and graduate students working on different fields of the ancient written heritage, from Greek and Latin to Chinese and Ethiopian, almost all with previous experience in digital infrastructures and actively working on digital projects: 22 out of 31 filled out the feedback questionnaire, 23 out of 31 the

⁷ <https://site.unibo.it/encode/en/agenda/epidoc-workshop>

⁸ <https://site.unibo.it/encode/en/agenda/leuven-workshop>

competence questionnaire. The workshop was structured in five half days and presented various topics, with a special focus on multilingualism and multiculturalism. Each half-day had a specific topic, with teaching and training sessions conducted by eight trainers: the first session was dedicated to the Trismegistos Database, the second to Papyri.info and Leiden+, the third and the fourth to an introduction to digital editions of multilingual sources in TEI (with concrete examples from the Beta maṣāḥeḥft Project and of Greek and Latin inscription encoded in EpiDoc), the fifth explored some Databases for learning Greek and Italic languages (Pedalion and CEIPoM). The material used in the workshop was generally previously supplied and, in the case of the second session about Papyri.info, participants could contribute directly to the Database.

3.3. Winter School “Papyrology for non-specialists”

The *ENCODE Winter School “Papyrology for non-specialists”* was an international winter school organised by the Julius-Maximilians-Universität of Würzburg as part of the fourth Multiplier Event of the ENCODE Project (February, 14th-17th, 2022)⁹. It was conducted via Zoom and involved 19 participants from eleven different countries and four continents, researchers, PhD and graduate students both non-specialists seeking a first introduction into papyrology and specialists teaching papyrology to students of other subjects: 11 out of 19 filled out the feedback questionnaire, 11 out of 19 the competence questionnaire. The workshop was structured in four days and divided into twelve lectures and training sessions held by nine trainers, with a special focus on instruments of digital papyrology (Papyri.info and other Databases of digital papyrological editions), on the presentation of teaching tools and publication tools for digital papyrological editions and on project design, with some lectures specifically dedicated to traditional papyrology (e.g. Herculaneum papyri). Participants could actively contribute to international projects, editing some papyri in the Papyri.info Database with the help of the Leiden+ Documentation and the support of trainers.

3.4 Workshop Epigrafia digitale e EpiDoc

The *Epigrafia digitale e EpiDoc* Workshop was held by A. Bencivenni and I. Vagionakis within a module of Greek Epigraphy for MA in Classics, Ancient History and Archaeology of the University of Bologna¹⁰. It covered a slot of six hours (three lessons of two hours each)

⁹ <https://site.unibo.it/encode/en/agenda/papyrology-for-non-specialists-encode-winter-school-wurzburg-14-17-february-2022>

¹⁰ <https://www.unibo.it/en/teaching/course-unit-catalogue/course-unit/2020/392537>

in October 2020. The participants were 18 (10 out of 18 filled out the feedback questionnaire), all master students with no previous knowledge of digital encoding: due to pandemic restrictions, half of them were in class, half online (Microsoft Team Platform). The training focused mainly on EpiDoc, with a general introduction to the XML-TEI encoding. There are two significant innovations that distinguish this workshop from the others here taken into account: this training was part of a traditional course in Greek Epigraphy, in which digital epigraphy has been integrated with the traditional epigraphic teaching from a very early stage. Another important aspect is that participants did not freely choose to take part in the workshop, since it was held during class hours. Trainers used mainly EpiDoc Guidelines and slides provided by the EpiDoc Community and provided exercises focused on Greek inscriptions, in accordance with the learning outcomes of the course that hosted the workshop.

3.5 EpiDoc Workshop London/Bologna

The *EpiDoc Workshop London/Bologna* was organised by G. Bodard (Institute of Classical Studies, University of London) and I. Vagionakis (Department of History and Cultures, University of Bologna) and took place online (Zoom Platform) on April, 12th-16th, 2021¹¹. The aim of the workshop was to offer training in EpiDoc and in the XML Publisher EFES. The idea behind the workshop was to reject no application, so the participants were 52 (27 out of 52 filled out the feedback questionnaire) from twelve countries and two continents and from different fields of research and previous levels of digital knowledge. This large participation has been made possible by the experimental structure, suggested by the need to solve a problem consistently highlighted by feedback from previous online workshops, that is the great amount of consecutive screen hours. For this reason, the workshop was run both synchronously and asynchronously: live sessions of one hour and Q&A sessions with participants divided into small groups (and supervised by the two organisers with the help of other three trainers) through the Zoom Breakout Rooms were held on Monday, Wednesday and Friday. Video tutorials have been registered and made available weeks before the start of the workshop, in order to convey content and allow participants to watch them at any time and do exercises autonomously. Moreover, special feedback sessions were held on Wednesday and Friday, whose results can integrate those coming from the questionnaire. Trainees were also invited to use a GitHub Forum to get answers to their

¹¹ <https://ics.sas.ac.uk/events/event/23877>

questions from trainers and to use the Markup List for more advanced questions. Materials, such as video tutorials, exercises and a syllabus for guiding trainees in learning, have been made available on a GitHub page dedicated to the workshop¹².

3.6 Workshop Edizioni digitali di testi sanscriti: introduzione a XML e TEI

The *Edizioni digitali di testi sanscriti: introduzione a XML e TEI* Workshop was organised by G. Buriola, M. Franceschini, I. Vagionakis at the University of Bologna (Department of History and Cultures) on April, 26th-29th, 2021 (three hours per day)¹³. It focuses especially on XML-TEI language for encoding Sanskrit texts and it was run entirely online (Microsoft Teams Platform). Participants were 10, all master students in Oriental Studies with no previous experience in digital encoding. 8 out of 10 filled out the feedback questionnaire, 6 out of 10 the competence questionnaire. The first day was dedicated to a general introduction to XML-TEI encoding and to the use of the XML Editor Oxygen, the second day to the explanation of the TEI and DHARMA Guidelines and Template for the digital editions of Sanskrit texts, the third to instruments for the visualization and publication of the editions. The second and third days were followed by a two-hour training session each, whereas the fourth day was entirely dedicated to training, with participants supervised by two trainers. Materials (Guidelines, Template and exercises on literary texts) were distributed during the workshop.

4. Analysis of questionnaires¹⁴

4.1 Feedback questionnaires

4.1.1 Previous digital knowledge and motivation in taking the course

As shown by the previous paragraph, these events are very different, as well as the participants' prior digital knowledge. This may depend on the format of the events. No

¹² <https://github.com/EpiDoc/Tutorials/wiki/London-Bologna-April-2021>

¹³ <https://corsi.unibo.it/magistrale/ScienzeStoricheOrientalistiche/bacheca/workshop-edizioni-digitali-di-testi-sanscriti-introduzione-a-xml-e-tei>

¹⁴ From now on, for practical reason, the following abbreviation in referring to the events will be used: *ENCODE Workshop Bologna* (= "ENCODE Greek and Latin Epigraphy Workshop"), *ENCODE Workshop Leuven* (= "Training Workshop Multilingual and Multicultural Digital Infrastructures for Ancient Written Artefacts"), *ENCODE Winter School Würzburg* (= "ENCODE Winter School, Papyrology for non-specialists"), *Epigrafia digitale Workshop* (= "Epigrafia digitale e EpiDoc Workshop"), *EpiDoc Workshop London/Bologna* (= "EpiDoc Workshop London/Bologna"), *Edizioni digitali di testi sanscriti Workshop* (= "Edizioni digitali di testi sanscriti: introduzione a XML e TEI").

workshop or training activity usually requires previous digital knowledge¹⁵: for this reason, especially in courses associated with a degree programme, such as the *Epigrafia digitale Workshop*, 100% of participants stated that they did not have previous knowledge of Markup Languages or of EpiDoc. On the contrary, it is more frequent that in international workshops with free participation after selection participants already have knowledge of the discipline: more than a half of participants to the *ENCODE Workshop Leuven* (57%) explicitly declared to be acquainted with XML Markup, EpiDoc or Leiden+ for having attended training activities in the past or for working on digital projects.

There are many motivations in attending the course, where they were required to be specified. However, once again differences can be identified depending on the training activity¹⁶: if in the *Edizioni digitali di testi sanscriti Workshop* and in the *ENCODE Winter School Würzburg*, trainees declared that they chose to take the course for research purposes (38% and 36% respectively) or because they were interested in the subject (25% and 27% respectively) or searching for new perspectives (12% and 18% respectively) (**Figures 1, 2**), in the *ENCODE Workshop Bologna* there was a clearer interest by participants in job prospects inside or outside the academia (job requirements: 42%, research: 54%), perhaps because respondents were at a more advanced stage of their education (**Figure 3**). These data match with those inferred by the ENCODE Survey and precisely by the answers offered by teachers about the main motivations in offering the courses, mainly the desire to offer opportunities for future study/work (78%) and to train the required people (53%)¹⁷. Surprisingly, the data of the *ENCODE Leuven Workshop* show higher percentages for reasons such as search for inspiration (27%), pure interest (27%) and search for new perspectives (23%). This is perhaps due to the fact that most participants declared to be working in digital projects and instead of being interested in acquiring basic skills, they aimed at expanding their knowledge (**Figure 4**).

4.1.2 Methods, positive and negative aspects

As mentioned before, the only questionnaire that asks for an evaluation of materials is the one of the *EpiDoc Workshop London/Bologna*. 100% of participants found video tutorials

¹⁵ The only previous knowledge required is usually familiarity with transcription conventions for inscriptions and papyri and either Greek, Latin or other ancient languages. Only the call for participation of the ENCODE Workshop Leuven specified that previous digital skills can be an added value in the process of selection of the participants.

¹⁶ Participants could give more than one answer (in a discursive form).

¹⁷ ENCODE Survey 3.1 and Figure 9 (= Breuer 2021: 9).

useful, judging positively the length and the depth of the explanations. Also the Q&A sessions were very much appreciated (85%), whereas the instrument considered less useful was the Markup List (33%): these percentages demonstrate the success of the experimental formula of this workshop, which alternated teaching moments conducted asynchronously and synchronous sessions with trainers for the solution of exercises and the discussion of problems. Many participants admit that they did not use the Markup List (hence the low percentage of appreciation) because many problems had already been solved through the dialogue with trainers.

The other questionnaires ask in general which aspects of the workshop were at most or at least appreciated. Among the positive aspects are precisely the supervised training (33% of participants of the *ENCODE Workshop Bologna*), the explanation of trainers (62% of participants of the *Edizioni digitali di testi sanscriti Workshop*, 29% of participants of the *ENCODE Workshop Bologna*, 27% of participants of the *ENCODE Workshop Leuven*, 9% of participants of the *ENCODE Winter School Würzburg*) and the practical exercises, occasionally with the possibility to contribute to real on-going projects (45% of participants of the *ENCODE Winter School Würzburg*, 32% of participants of the *ENCODE Workshop Leuven*, 25% of participants of the *Edizioni digitali di testi sanscriti Workshop*, 17% of participants of the *ENCODE Workshop Bologna*) (**Figures 5, 6, 7, 8**). The duration was the least appreciated aspect: 33% of participants of the *ENCODE Workshop Bologna*, 30% of participants of the *Epigrafia digitale Workshop*, 18% of participants of the *ENCODE Workshop Leuven* considered the workshop too short with the disadvantage that some topics were not covered or were covered too quickly. These data are consistent with those of the ENCODE Survey, according to which 31% of teachers think that the course was too short¹⁸. Perhaps this is due to the nature of the courses themselves, non-regular and limited to a few days (from the three days of the *Epigrafia digitale Workshop* and the *ENCODE Workshop Leuven* to the five days of the *EpiDoc Workshop London/Bologna*). One of the negative aspects related to the duration and highlighted especially during the *ENCODE Workshop Bologna* was the large amount of consecutive screen hours with too short breaks. The experimental formula of the *EpiDoc Workshop London/Bologna* has been carried out precisely to solve this problem since it was conducted mostly asynchronously with few live

¹⁸ ENCODE Survey 3.2.2 and Figure 34 (= Breuer 2021: 11-12).

sessions dedicated to questions and feedback¹⁹. Another negative aspect highlighted by 36% of participants of the *ENCODE Winter School Würzburg* and 23% of participants of the *ENCODE Workshop Leuven* was the complexity of topics treated during the workshop, in the first case due to the highly technical competences required for certain topics, in the second case due to the the multiplicity of ancient languages required in a workshop focused on the concept of multilingualism.

4.1.3 Satisfaction and recommendation

In general, such training activities were widely welcomed by participants, who declared that the workshops met their expectations and that they were highly satisfied (100% of participants of the *Edizioni digitali di testi sanscriti Workshop*, 92% of participants of the *ENCODE Workshop Bologna*, 91% of participants of the *ENCODE Workshop Leuven*, 85% of the *EpiDoc Workshop London/Bologna*, 80% of participants of the *Epigrafia digitale Workshop*, 64% of the *ENCODE Winter School Würzburg*) (**Figures 9, 10, 11, 12, 13, 14**). The importance of digital tools in the study of the ancient written heritage is confirmed by participants: 90% and 80% of participants of the *Epigrafia digitale Workshop* believe respectively that digital skills are important for historical, archaeological and philological education and that encoding is essential for the study of Ancient Written Cultures, 95% of participants of the *ENCODE Workshop Leuven* recognize that the digital approach is important for improving the understanding and working with multicultural and multilingual digital infrastructures. In one case, the *Epigrafia digitale Workshop*, the participants have been asked to evaluate which aspects of digital epigraphy they considered the most important. The results are particularly interesting because trainees did not freely choose to take part in the workshop but attended it as part of the module of Greek Epigraphy in their MA class: for this reason, they could not have had the opportunity to reflect earlier on the usefulness of digital epigraphy. The workshop was thus an important opportunity to get them thinking about the practical implications of digital tools for the discipline. 90% of them considered important aspects the transformation of traditional corpora into digital publications and the creation of digital publications more accessible to a wide audience, whereas the second most important aspect for them is the availability of the results of epigraphic research to the scientific community (80%) (**Figure 15**).

¹⁹ Despite this, 11% of participants expressed the need for more opportunities of live interaction (especially more Q&A live sessions).

Consequently, participants would definitely recommend similar intensive training to peers: 100% of participants of the *ENCODE Workshop Bologna*, of the *Edizioni digitali di testi sanscriti Workshop* and of the *ENCODE Winter School Würzburg*, 95% of participants of the *ENCODE Workshop Leuven*. These data are consistent with those of the ENCODE Survey relating to the recommendation of course participants (100% of participants would recommend the courses)²⁰ (**Figures 16, 17, 18, 19**).

4.1.4 Suggestions, further needs and future acquisition of digital competences

Despite the overall satisfaction, participants expressed some suggestions for future improvement. Respondents showed the need for more training sessions with structured exercises (58% of participants of the *ENCODE Workshop Bologna*, 27% of participants to the *ENCODE Winter School Würzburg*, 25% of participants to the *Edizioni digitali di testi sanscriti Workshop*, 15% of participants to the *EpiDoc Workshop London/Bologna*). Other suggestions regarding the format were more work in groups (*Edizioni digitali di testi sanscriti Workshop*), distribution of material in advance (*ENCODE Workshop Bologna*) and more live sessions (*EpiDoc Workshop London/Bologna*). If there had been more time, participants would have liked to study deeper the XML Markup Language and its subset EpiDoc (36% of participants of the *ENCODE Workshop Leuven*, 29% of participants of the *ENCODE Workshop Bologna*, 26% of participants of the *EpiDoc Workshop London/Bologna*) and Publication Tools, especially EFES, to which specific sessions have been devoted in the *EpiDoc Workshop London/Bologna* and in the *ENCODE Workshop Bologna* (33% of participants of the *EpiDoc Workshop London/Bologna*, 23% of participants of the *ENCODE Workshop Leuven*, 21% of participants of the *ENCODE Workshop Bologna*). To a lesser extent, participants demonstrated interest also in learning Programming Languages, such as XSLT and Python (12% of participants of the *ENCODE Workshop Bologna*, 11% of participants of the *EpiDoc Workshop London/Bologna*, 9% of participants of the *ENCODE Workshop Leuven*)²¹ (**Figures 20, 21, 22**). These results partially agree with those of the ENCODE Survey: whereas participants show equal interest in all digital contents, trainers are more interested in learning Programming Languages (70%) than in learning Markup Languages (56%) and how to publish using tools on the web (30%). This evaluation of

²⁰ ENCODE Survey 3.2.5 and Figure 144 (= Breuer 2021: 24).

²¹ Further need of acquiring competences in the field of digital papyrology (Leiden+) and content creating in existing databases (Trismegistos) have been expressed by 17% and 23% of participants of the *ENCODE Workshop Bologna* and the *ENCODE Workshop Leuven* respectively, since these topics have been covered in the two workshops.

personal further needs corresponds to the identification of a particular need for teaching Programming Languages (75%), but a significant urgency in teaching publication tools has also been observed (72%)²².

In general, a high percentage of course participants is interested in attending other similar initiatives and continuing acquiring digital competences (100% of participants to the *ENCODE Workshop Bologna* and of the *Edizioni digitali di testi sanscriti Workshop*, 91% of participants to the *ENCODE Winter School Würzburg*, 73% of participants to the *ENCODE Workshop Leuven*) (**Figures 23, 24, 25, 26**). Significantly, despite the enthusiasm demonstrated for digital Epigraphy (see 4.1.3), only 60% of participants of the *Epigrafia digitale Workshop* is interested in participating in an EpiDoc Workshop: this can be explained considering that trainees did not choose freely to take part in the training activity, as it was integrated into the MA module of Greek Epigraphy (**Figure 27**). From feedback questionnaires can also be observed that course participants seem to be aware of the fact that the acquired competences are useful from a future career or job perspective: surprisingly, all participants (100%) of the *Epigrafia digitale Workshop* think that digital epigraphy makes a difference in the job market, even if they do not seem to be willing to attend a dedicated workshop (**Figure 28**). Finally, the expendability of digital competences in the job market was recognised by 92% of participants of the *ENCODE Workshop Bologna*, by 82% of participants of the *ENCODE Workshop Leuven*, by 75% of participants of the *Edizioni digitali di testi sanscriti Workshop*, by 55% of participants of the *ENCODE Winter School Würzburg* (**Figures 29, 30, 31, 32**).

4.2 Competence questionnaires

As mentioned above, competence questionnaires are based on the international Frameworks CALOHEE for humanistic competences and DigComp 2.1 for digital competences. In these questionnaires, respondents had to indicate initial and final level of humanistic and digital competences among four different proficiency levels: Basic, Focussed, Advanced, Expert. The following paragraphs analyse the data from the self-assessment of course participants: not for each training activity a competence questionnaire has been produced, but only for the *ENCODE Workshops Bologna*, *ENCODE Workshop Leuven*, the *ENCODE Winter School Würzburg* and for the *Edizioni digitali di testi sanscriti*

²² ENCODE Survey 3.2.4.2 and Figures 123, 131 (= Breuer 2021: 22-23).

Workshop. Since these are self-assessment, the questionnaires allowed trainees to reflect on their progress and systematise knowledge thanks to an accurate exemplification of the competences described in the questionnaires²³.

4.2.1 Humanistic competences

Participants need to possess non-digital competences to attend all these digital courses: in the case of the two *ENCODE Workshops* and in the *ENCODE Winter School*, prerequisites were the knowledge of Greek and/or Latin (or other ancient languages) and of the main principles and conventions of the epigraphic and papyrological critical editions. The *Edizioni digitali di testi sanscriti Workshop* was mainly reserved for graduate students of the course in Oriental Studies, who already had experience in traditional editions of Sanskrit texts. Despite the fact that participants already possessed humanistic competences and that the courses focused mainly on digital tools applied to the study of Ancient Written Cultures, a significant increase in the level of humanistic competences was observed in the self-assessments. From the competence questionnaire of the *ENCODE Workshop Bologna* an increase in the dimensions “Interdisciplinarity” and “Initiative and Creativity” can be noticed: before the workshop, 52% of participants were at an advanced or expert level, after the workshop 69% and 74% reached these levels in the two dimensions respectively (**Figures 33, 34**). Regarding the *Edizioni digitali di testi sanscriti Workshop*, the most significant increase in terms of proficiency level occurred in the dimensions “Source Retrieval” and “Source Analysis”, since the course led to an advanced and expert level 67% of participants (from a starting value of 17%) (**Figures 35, 36**). With regard to the *ENCODE Winter School Würzburg*, trainees noticed a considerable increase in the dimensions “Source Identification” and “Source Retrieval”: before the workshop, 27% of participants claimed to be at an advanced or expert level, after the workshop 82% reached these levels in the two dimensions (**Figures 37, 38**).

It is not possible to identify a clear trend from these data, perhaps because of the diverse nature of the events. However, the data from the *ENCODE Workshop Leuven* are significant, since there is a percentage variation between an initial (advanced/expert) and a final (advanced/expert) level of more than 25% in each dimension of the Humanistic Framework²⁴.

²³ For the importance of self-assessment, see Li / Grion 2019.

²⁴ 2.1 Source Identification: 56% of participants had an advanced or expert level before the workshop, 78% after the workshop; 2.2 Source Retrieval: 39% of participants had an advanced or expert level before the workshop, 78% after the workshop; 2.3 Source Analysis: 39% of participants had an advanced or expert level

4.2.2 Digital competences

Within the *ENCODE Bologna Workshop*, a significant increase in proficiency level has been noticed in the first area “Information and Data Literacy”: 78% of respondents reached an advanced or even expert level in the sub-area 1.1 “Browsing, Searching and Filtering” (from 48% before the workshop), 74% in 1.2 “Evaluating Data and Information” (from 39% before the workshop) and 52% in 1.3 “Managing Data, Information and Digital Content” (from 4% before the workshop) (**Figures 39, 40, 41**). Especially interesting are the data related to the sub-area 1.3, which corresponds in the ENCODE Survey to the content “Tools for publication on the web (EFES, Recogito, TEI publisher...)”, where it has been registered that participants with basic knowledge at the beginning, often gained intermediate knowledge after the workshop (50%)²⁵. Tools for publication on the web were indeed one of the topics treated in this workshop, even if additional training has been required for this content by many participants²⁶. Another sub-area, in which a great increase of proficiency level has been registered is 3.2 “Integrating and Re-elaboration Digital Content”, where 47% of respondents achieved an advanced or expert level (from 9% before the workshop) (**Figure 42**).

Also in the *ENCODE Workshop Leuven* an important increase in the first area “Information and Data Literacy” has been observed: 74% of participants achieved an advanced or even an expert level in the sub-area 1.1 “Browsing, Searching and Filtering” (from 17% before the workshop) and 52% in 1.2 “Evaluating Data and Information” (from 22% before the workshop) (**Figures 43, 44**); significant results can be registered also in the sub-area 1.3 “Managing Data, Information and Digital Content” (26% of participants declared to have reached an advanced level from a basic or intermediate level before the workshop), in 2.1 “Interacting through Digital Technologies” and in 3.2 “Integrating and Re-elaborating Digital Content” (30% of participants reached an advanced or expert level after the workshop from 4% before the workshop) (**Figures 45, 46, 47**). Slightly different data have been extrapolated

before the workshop, 61% after the workshop; 1.1 Contextualization of Source Production and Transmission: 35% of participants had an advanced or expert level before the workshop, 56% after the workshop; 4. Interdisciplinarity: 52% of participants had an advanced or expert level before the workshop, 70% after the workshop; 5. Initiative and Creativity: 43% of participants had an advanced or expert level before the workshop, 74% after the workshop; 6. Communication: 52% of participants had an advanced or expert level before the workshop, 65% after the workshop.

²⁵ ENCODE Survey 3.2.4.1 and Figure 108 (= Breuer 2021: 20).

²⁶ 21% of participants expressed this need, see 4.1.4.

by the self-assessment from the *Edizioni digitali di testi sanscriti Workshop*, where the most significant improvement has been registered in the second area “Communication and Collaboration” and in the fifth area “Problem Solving”: the workshop led 83% of participants to an advanced or expert level in the sub-areas 2.2 “Sharing through Digital Technologies” and 2.3 “Collaborating through Digital Technologies” (from 33% before the workshop), whereas 66% of participants reached an advanced or expert level in 5.3 “Creatively using Digital Technologies” (from 17% before the workshop) (**Figures 48, 49, 50**). Furthermore, the result of the sub-area 5.4 related to the identification of digital competence gaps and opportunities for self-development is significant, considering the fact that most participants expected from the workshop a basic introduction to XML encoding, as they had no previous experience. Hence, acquiring digital skills from a basic level also leads to a reflection on gaps to be filled and new skills to be acquired: accordingly, 100% of participants of this workshop are willing to take part in other similar workshops to expand their digital skills (see 4.1.4). Lastly, within the *ENCODE Winter School Würzburg* significant improvements have been observed especially in the 1.3 “Managing Data, Information and Digital Content” and 3.1 “Developing Digital Content” subareas: 45% of participants reached an advanced or expert level (when before the workshop no one claimed to be at these levels). The most significant increase, however, can be seen in the subarea 2.3 “Collaborating through Digital Technologies”: 55% of participants reached an advanced or expert level from basic and focussed levels. As a matter of fact, the collaborative dimension is the basis of Papyri.info, one of the central topics of the workshop: participants had also the opportunity to actively contribute to the insertion of papyrological editions in the database (**Figures 51, 52, 53**).

There was no significant increase in proficiency level in the sub-area 3.4 “Programming”, in the *ENCODE Workshop Bologna*, in the *ENCODE Workshop Leuven* and in the *ENCODE Winter School Würzburg* and in sub-area 4.1 “Safety” in the *Edizioni digitali di testi sanscriti Workshop*. The first data can be compared with those of the ENCODE Survey, where a large number of participants of different training activities had no previous knowledge of Programming Languages (89%)²⁷ so that the improvement perceived after the workshop rarely reached an advanced level. Curiously enough, the need to learn more about Programming Languages is felt by respondents of the present analysis to a much lesser extent than the need to learn more about other topics (Markup Languages, Publication

²⁷ ENCODE Survey 3.2.4.1 and Figures 92, 98 (= Breuer 2021: 20).

Tools, see 4.1.4). On the contrary, as the ENCODE Survey reveals, teachers feel a particular need for teaching and train experts in Programming Languages (75%)²⁸.

5. Conclusions

The analysis of results of the feedback- and competence questionnaires filled out by participants of events organised by or in collaboration with ENCODE shows some interesting recurring phenomena, which match with those registered in the ENCODE Survey. Digital courses in the field of Ancient Written Cultures usually meet the expectation of participants, who would definitely recommend the courses to peers and who recognize the importance of digital tools in the study of Epigraphy, Papyrology, Ancient History, Philology, Cultural Heritage and Archaeology. Moreover, they seem to be fully aware of the expendability of these competences in the job market. Therefore, they usually want to acquire further competences and attend other future workshops in order to achieve them. What they find particularly useful in these events is the close link between theory and practice, seen as a positive and characteristic aspect of these events and at the same time as an aspect to be improved in the future, since the training part is always the most demanded. Another appreciated aspect is the interaction between trainers and trainees, which, however, was made difficult by the very conditions under which these events took place, as can be seen from the feedback questionnaires themselves.

The effects of the pandemic in recent years have not prevented the organisation and running of workshops and other training activities, even if they have radically changed their nature. The online format implicates positive aspects, such as wider international participation and simplification of bureaucracy. However, these aspects seem to have been observed almost exclusively by trainers, whereas trainees usually highlight negative aspects of the online format, such as the reduction of social and convivial moments characteristic of face-to-face events or the great amount of consecutive screen hours. A possible solution to these problems was experimented by the *EpiDoc Workshop London/Bologna*, in which asynchronous individual work was alternated with synchronous live moments, specifically dedicated to questions and solutions of problems. Trainers of this workshop noticed that among the advantages of moments of individual practice were a considerable increase of self-reliance by participants and the possibility for all participants to follow their own personal

²⁸ ENCODE Survey 3.2.4.2 and Figure 131 (= Breuer 2021: 23).

pace of learning, thus allowing participation of trainees with different levels of digital knowledge. The positive feedback testifies that this experimental formula is a good teaching and learning practice to be followed and improved in future events.

Competence questionnaires reveal another interesting aspect. In general, after the workshops, a noticeable increase not only in digital but also in humanistic competences was observed, even if these events have been specifically designed for fostering digital skills in the study of Ancient Written Cultures. The teaching of Digital Epigraphy/Papyrology/Palaeography and other disciplines of the ancient written heritage has always been deferred to a later stage since humanistic competences are usually considered as a prerequisite. On the other hand, these results have shown how digital teaching has also produced a reflection by trainees on the disciplines themselves, leading to a considerable increase in humanistic competences. Therefore, these results prompted teachers to start designing courses aimed at integrating traditional teaching with a digital approach to these disciplines. This teaching practice is still experimental, but an interesting example can be seen in the *Epigrafia digitale e EpiDoc Workshop*, held within a MA Module of Greek Epigraphy at the University of Bologna, an experience that received enthusiastic feedback from participants²⁹.

²⁹ Unfortunately, for this workshop a competence questionnaire has not been designed. For other similar experiences see Bodard / Stoyanova 2016.

6. Table of figures

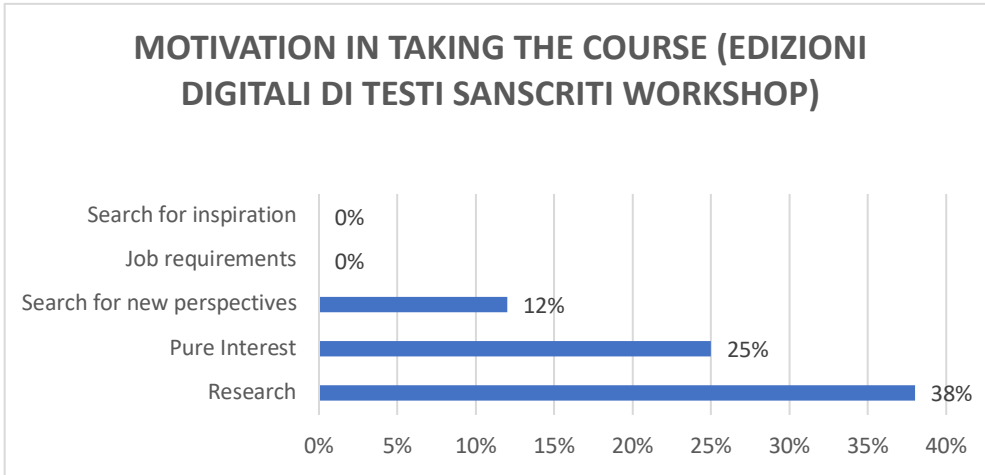


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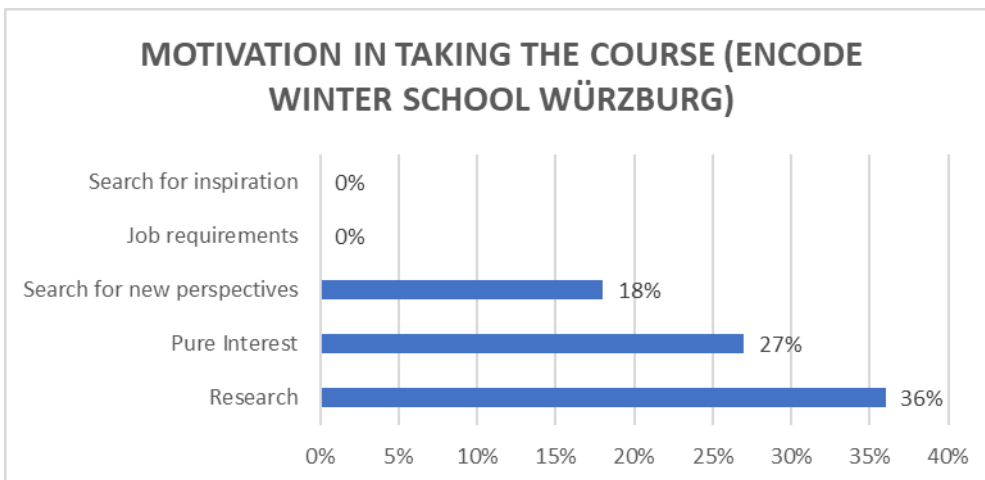


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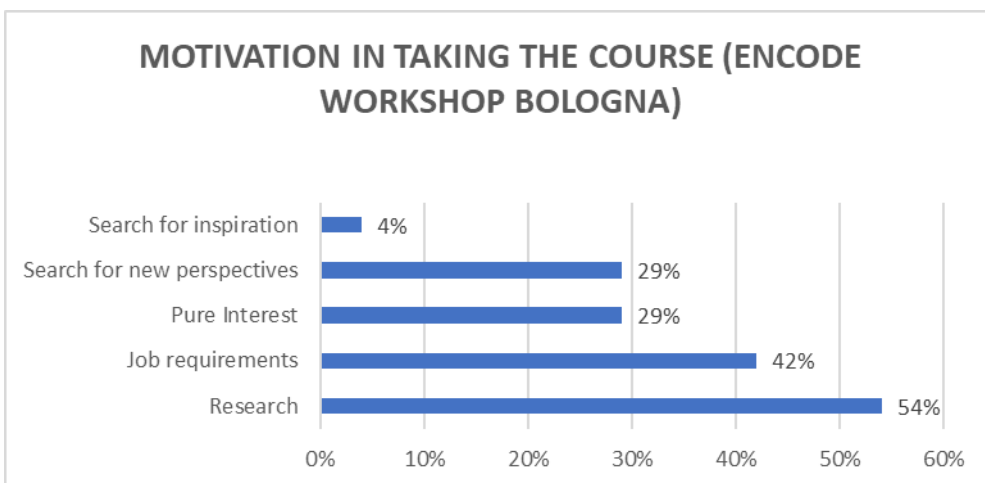


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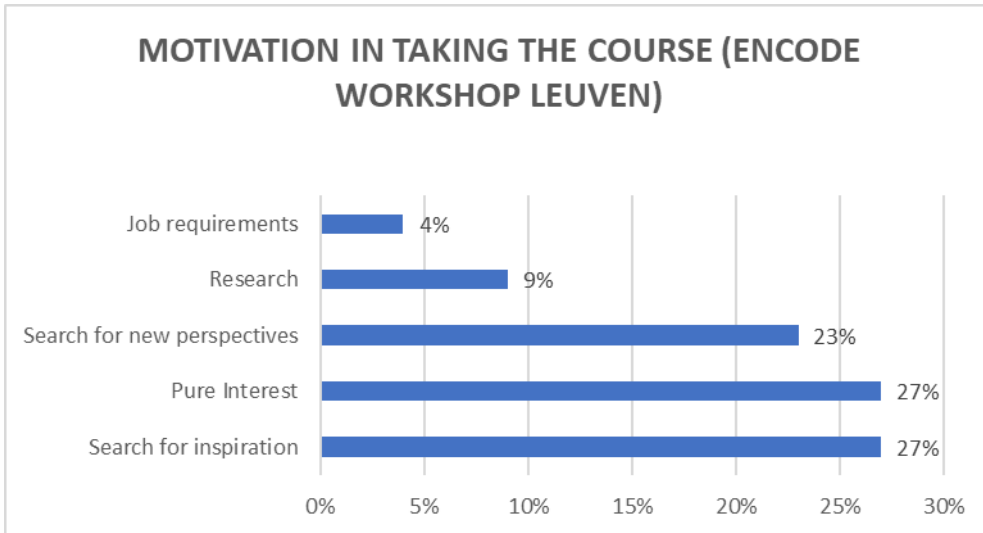


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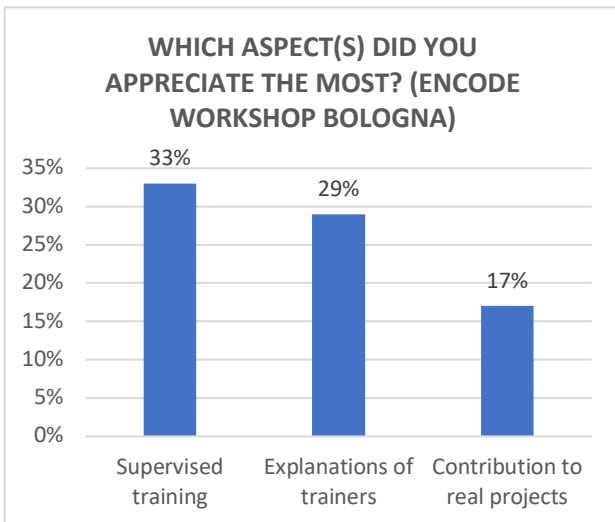


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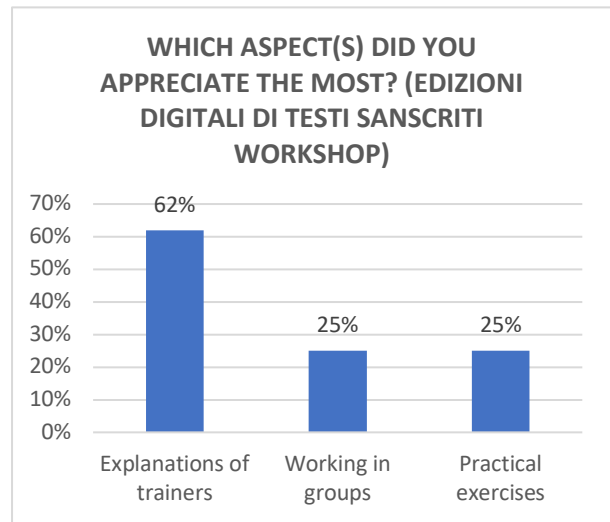


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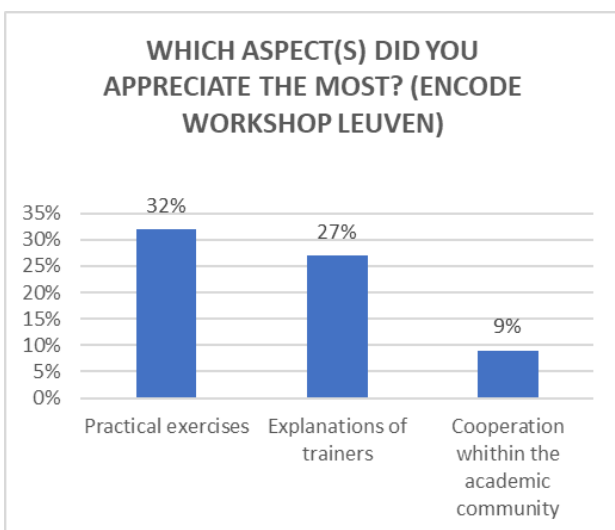


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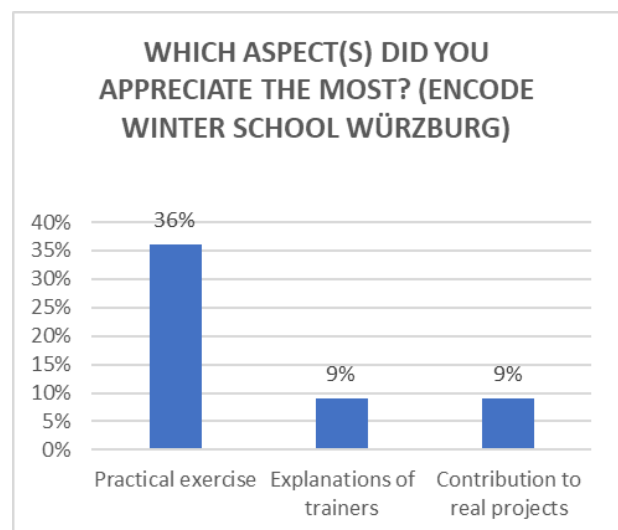


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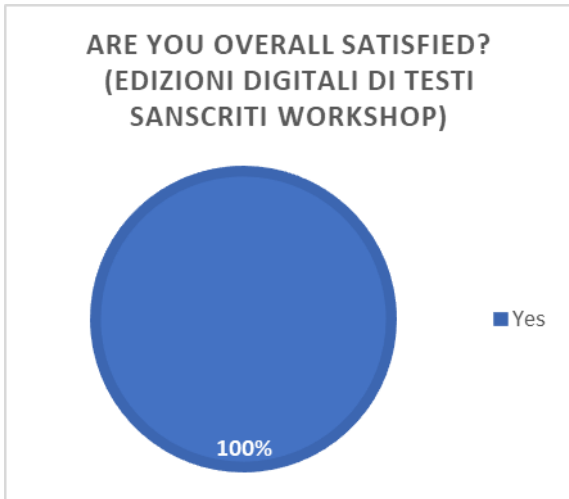


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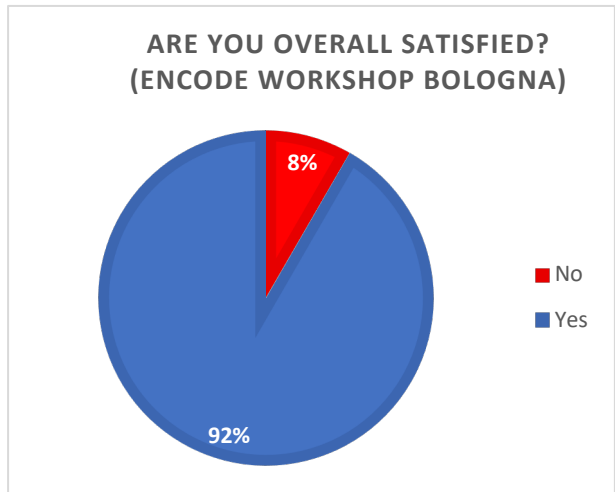


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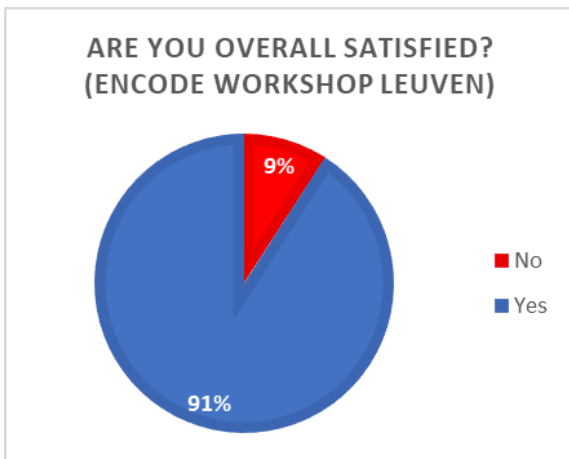


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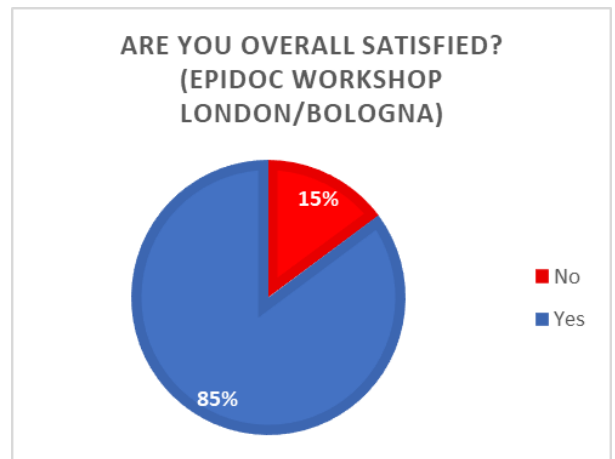


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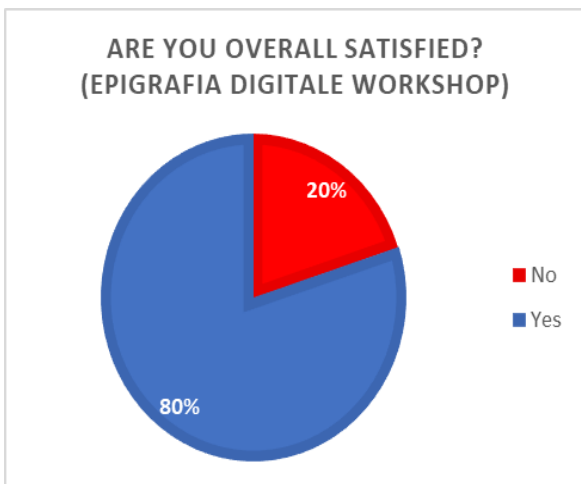


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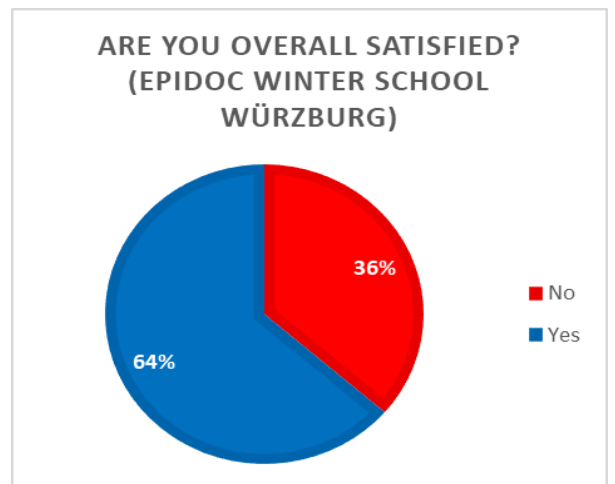


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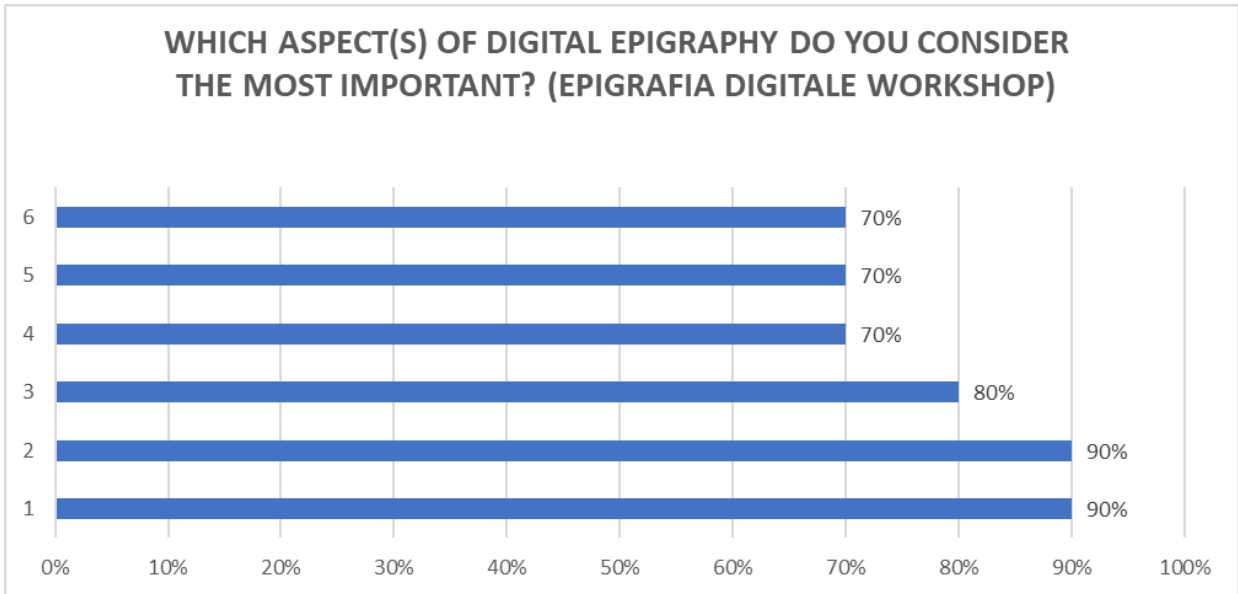


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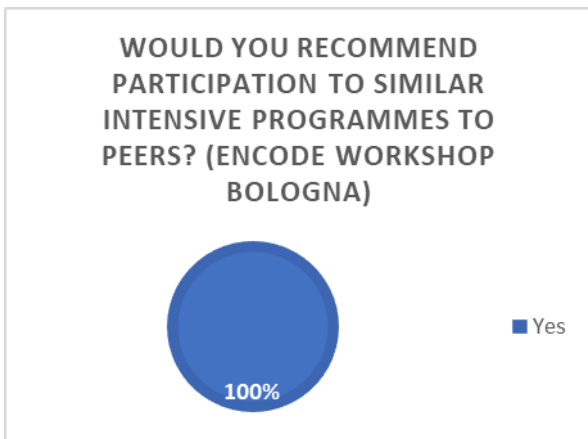


Figure 16



Figure 17

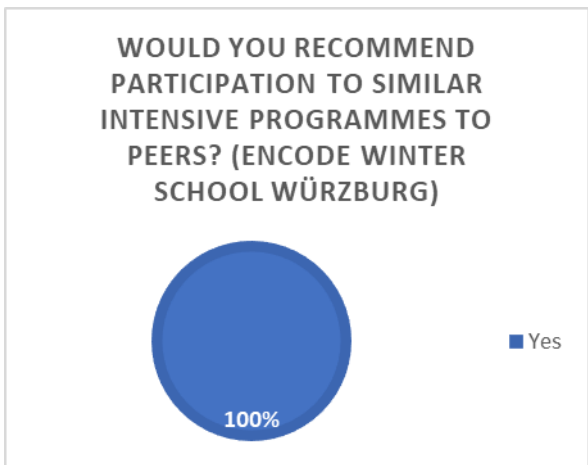


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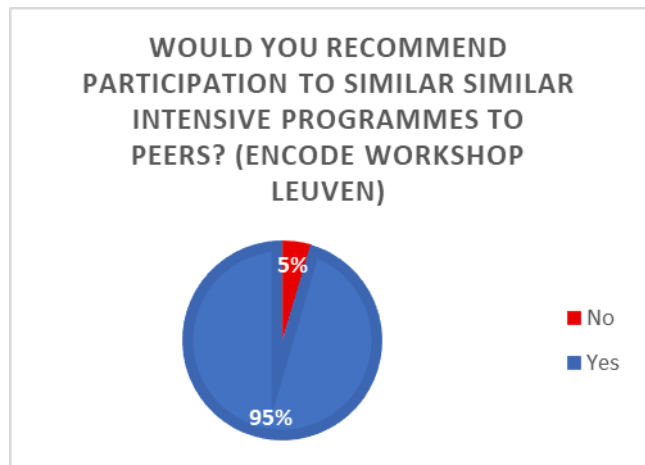


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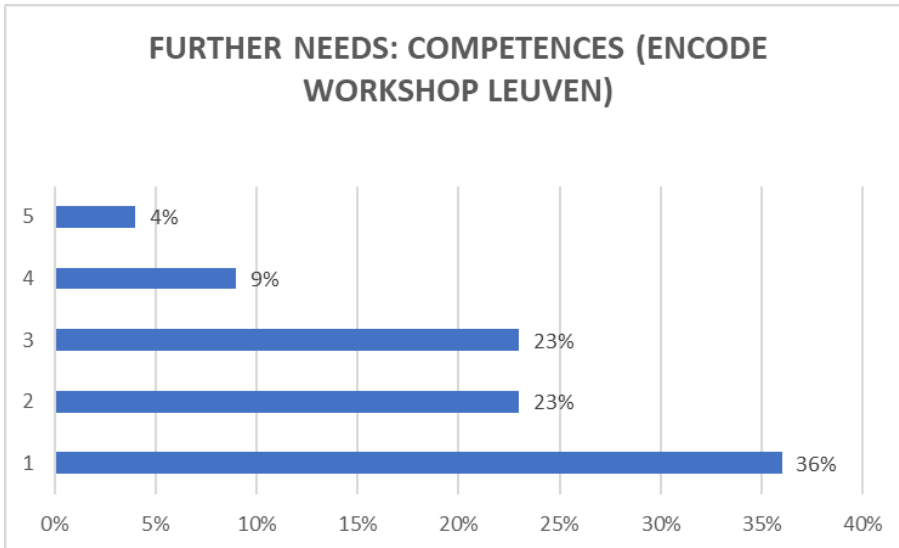


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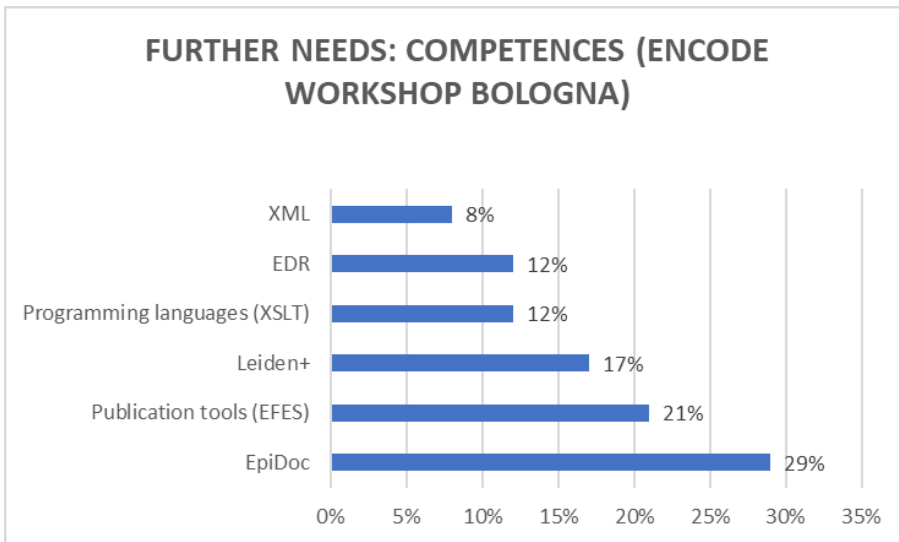


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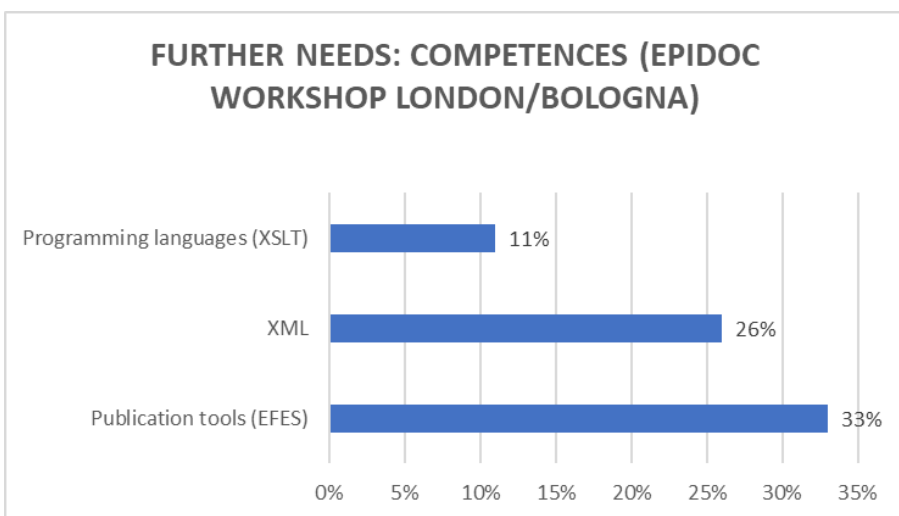


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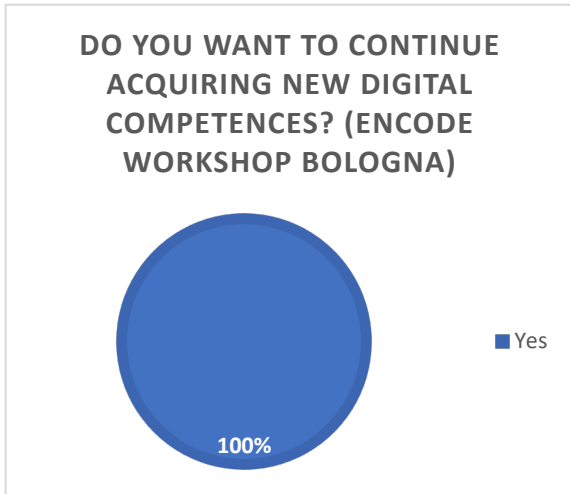


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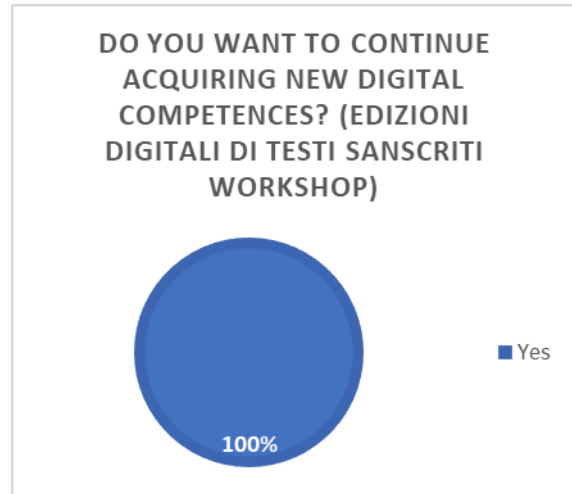


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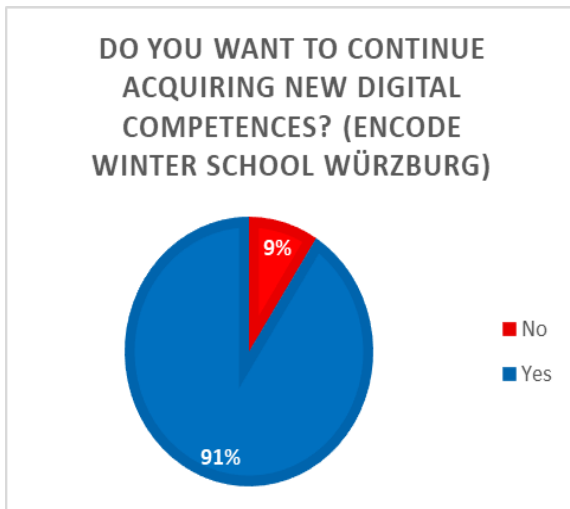


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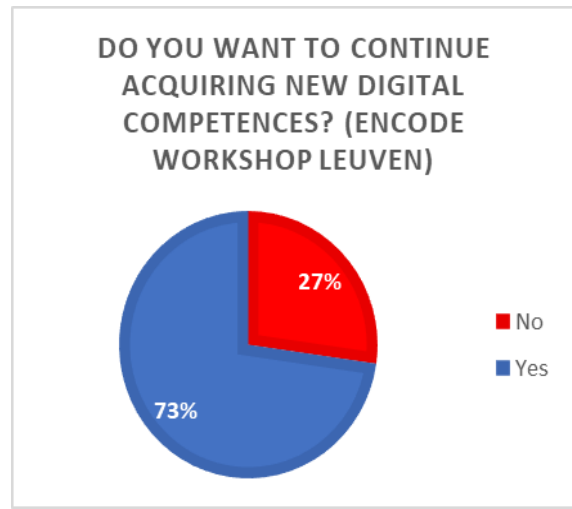


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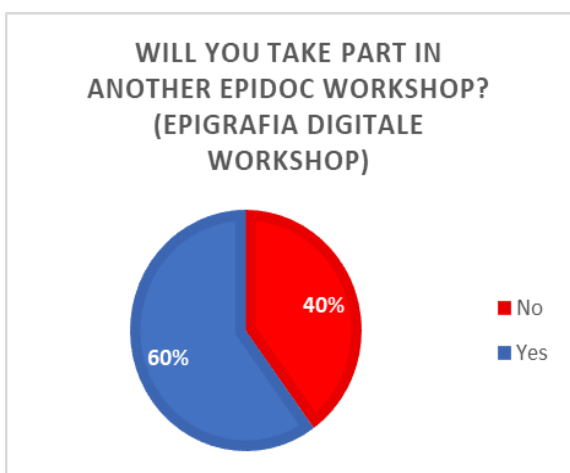


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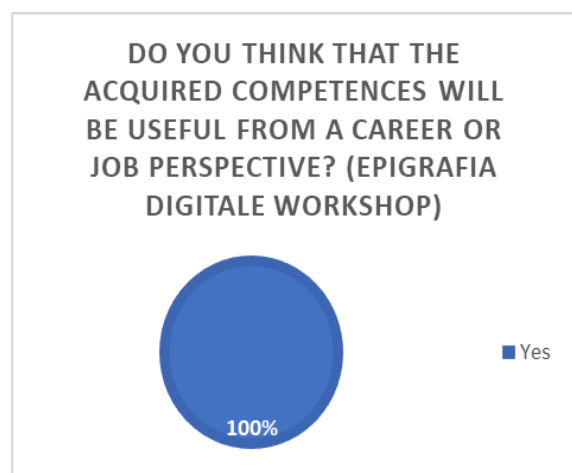


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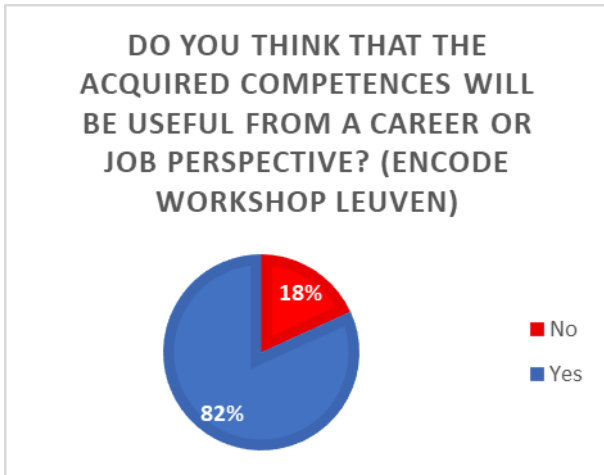


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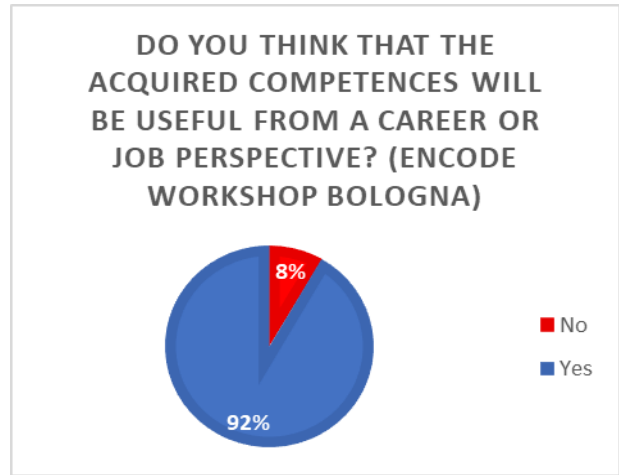


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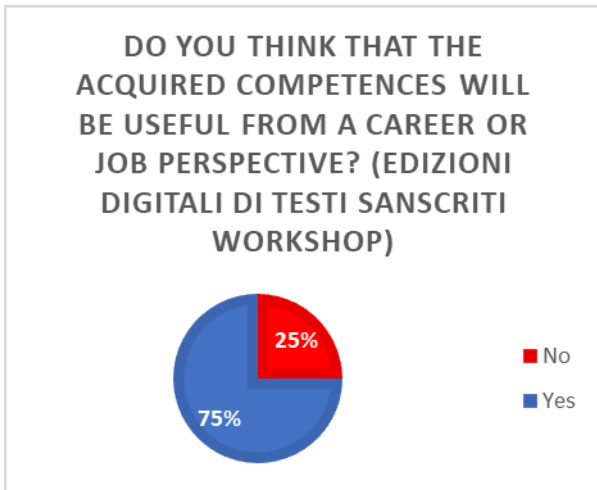


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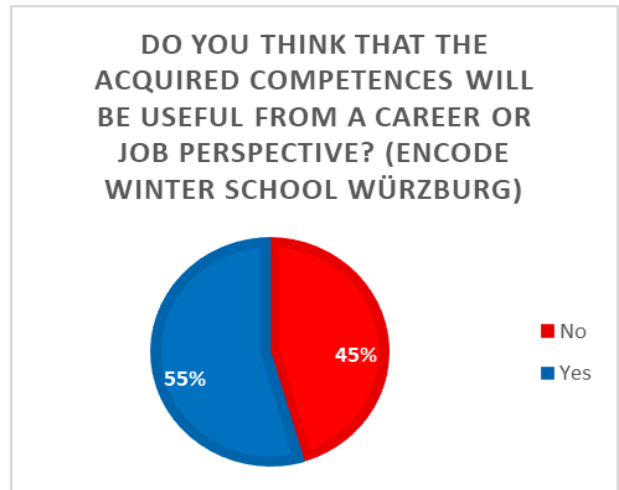


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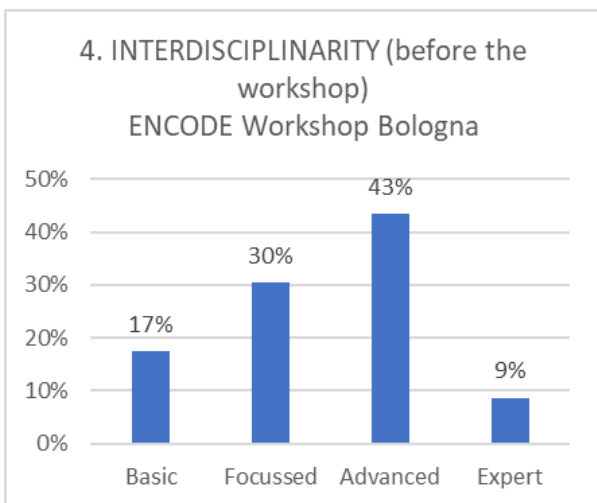


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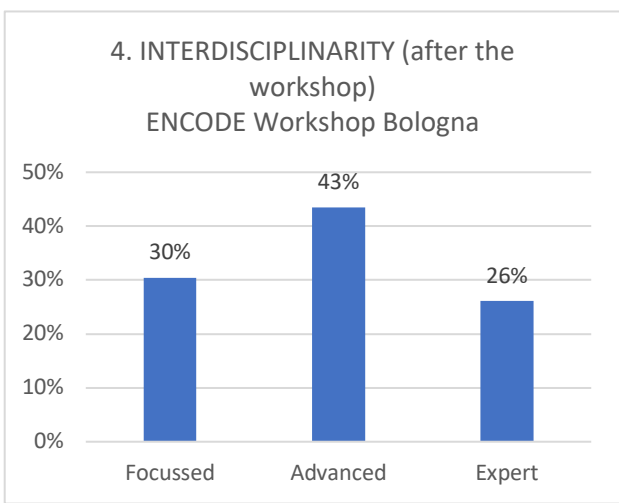


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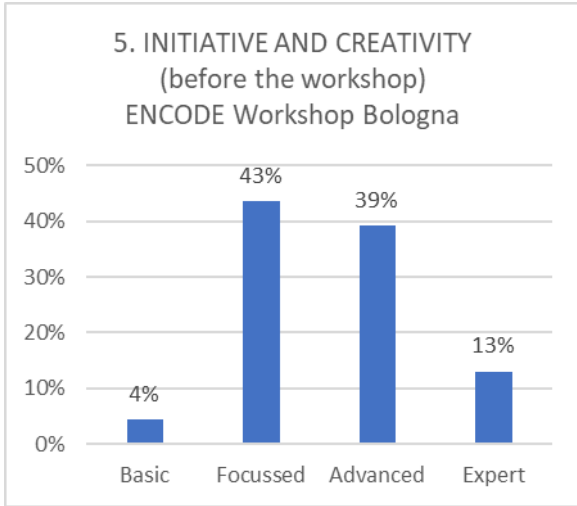


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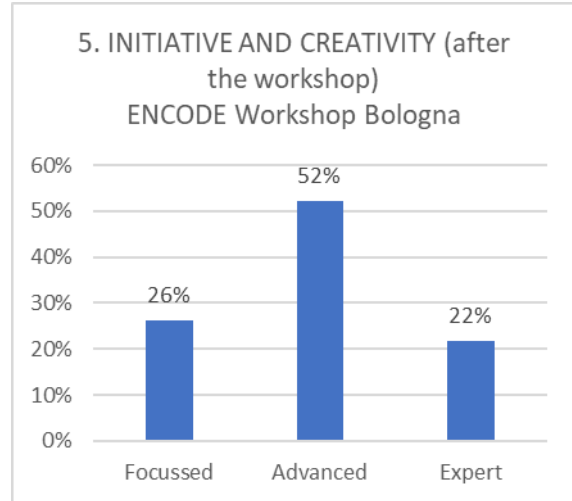


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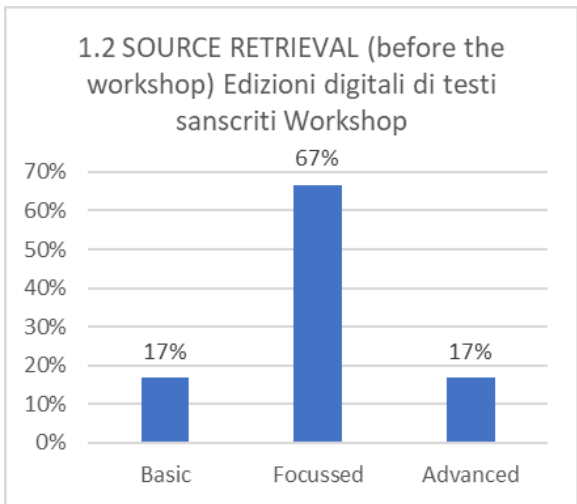


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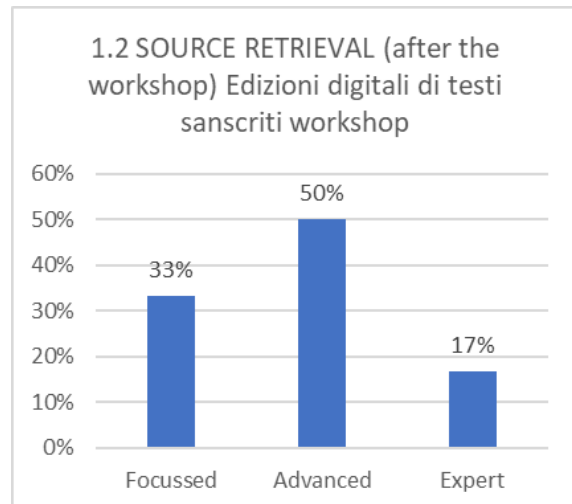


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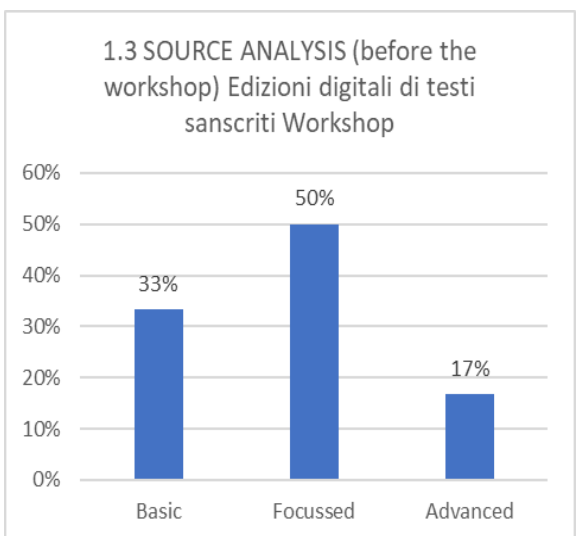


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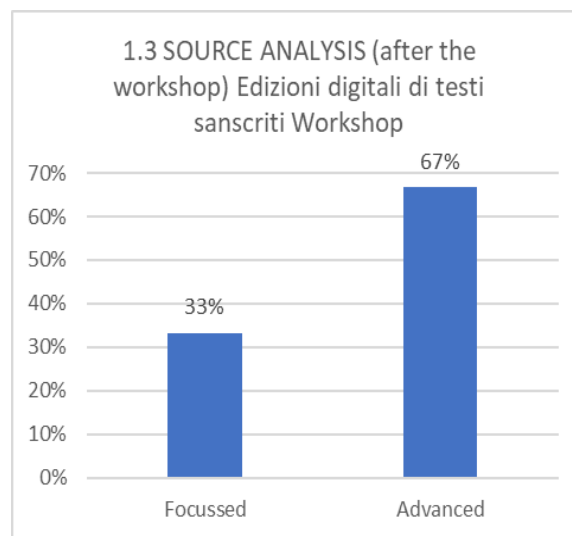


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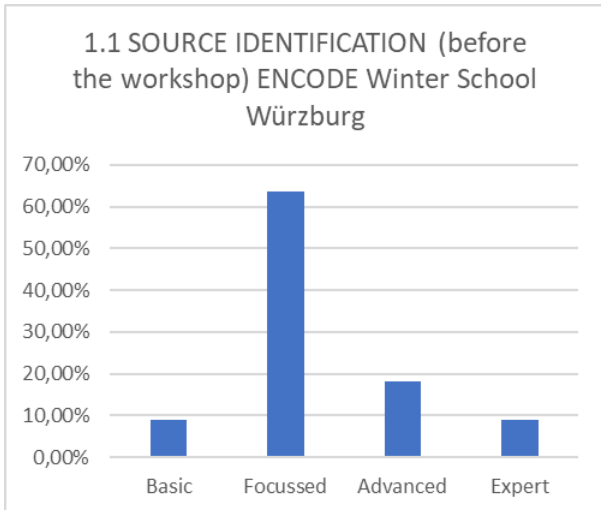


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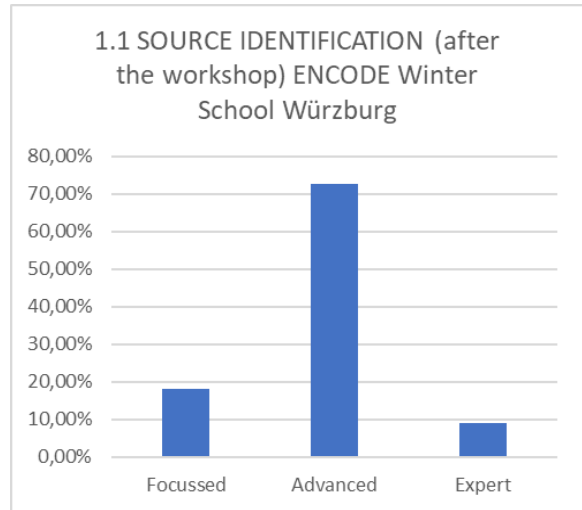


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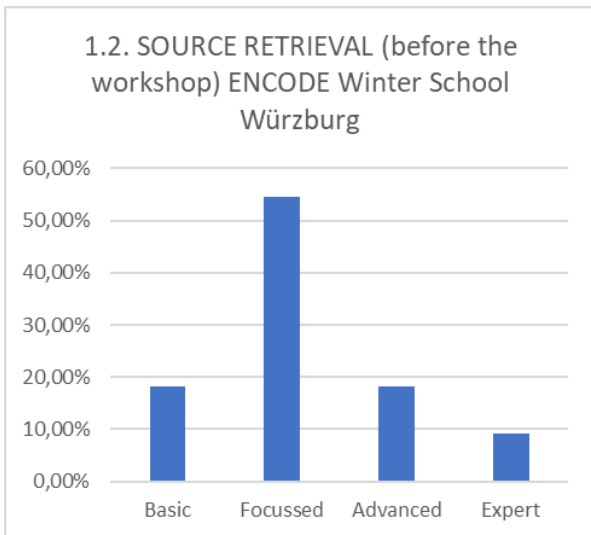


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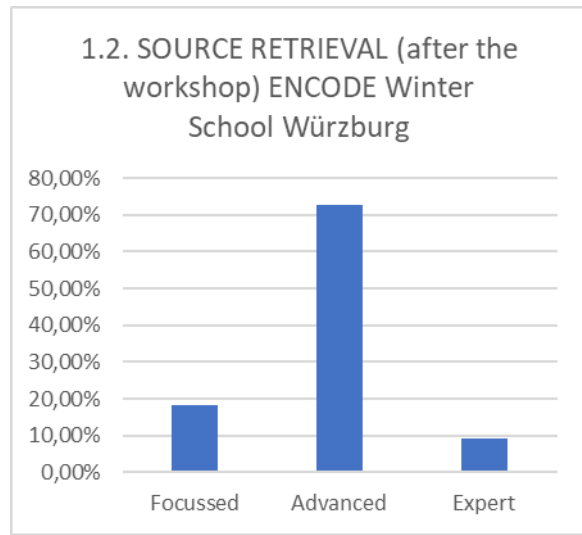


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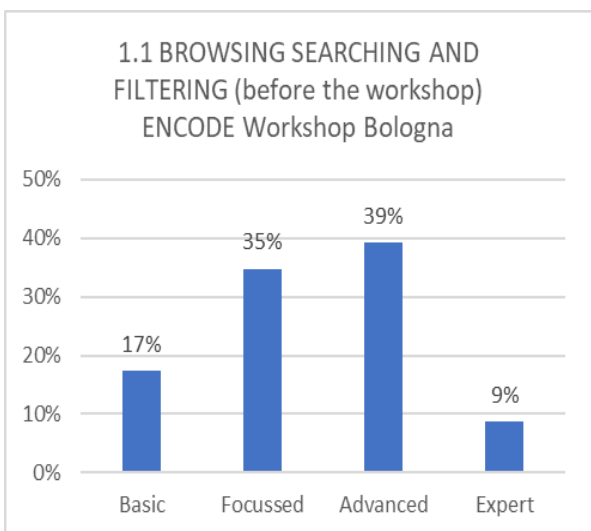


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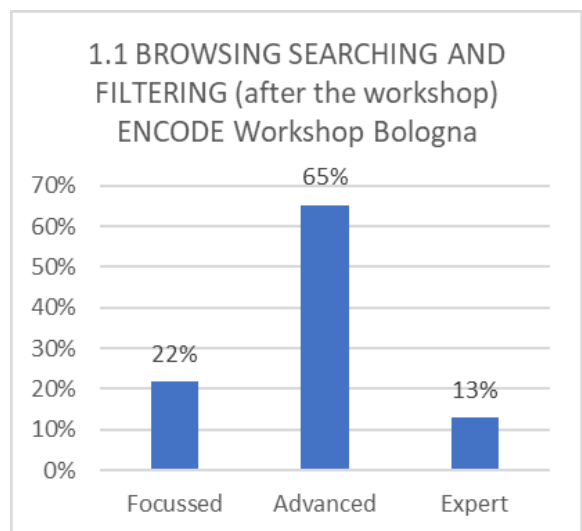


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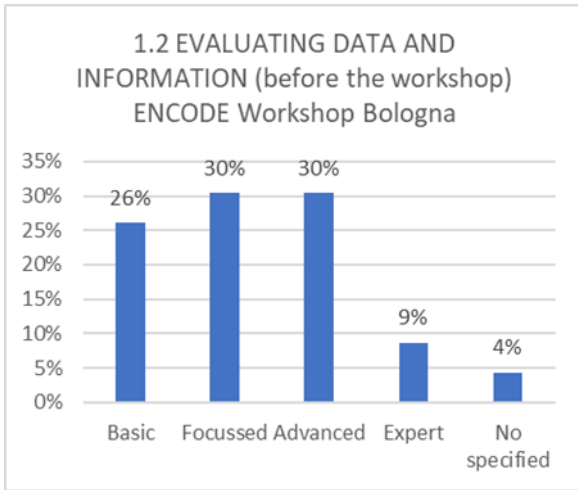


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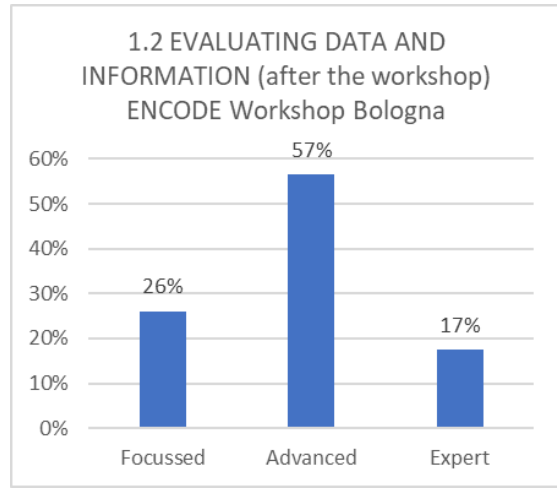


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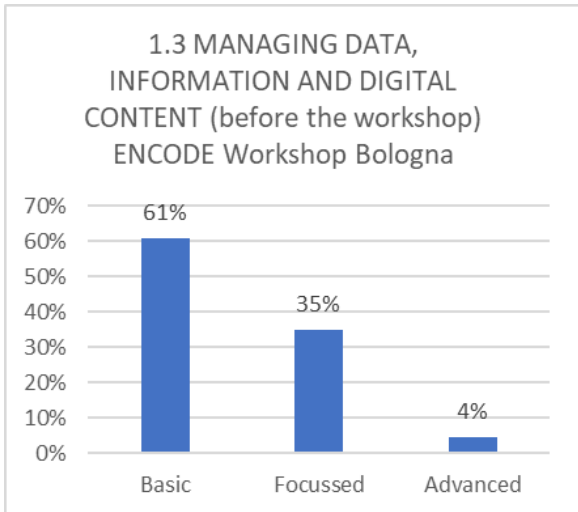


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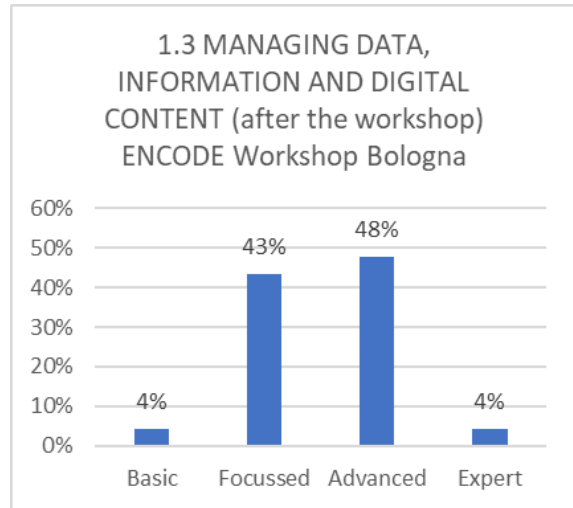


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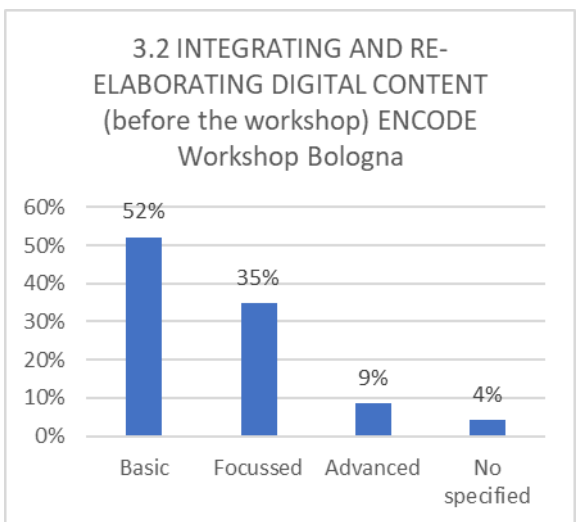


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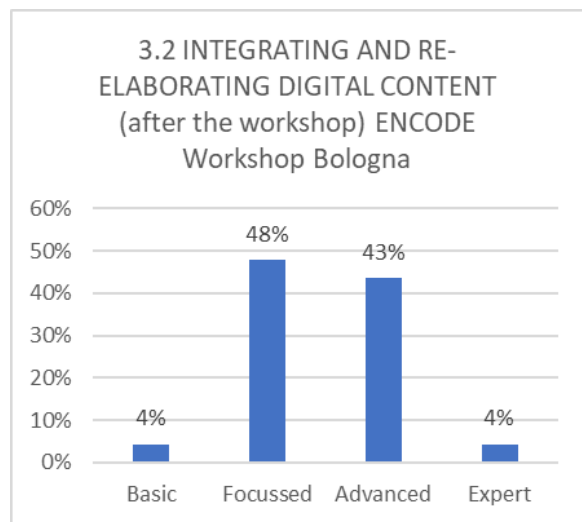


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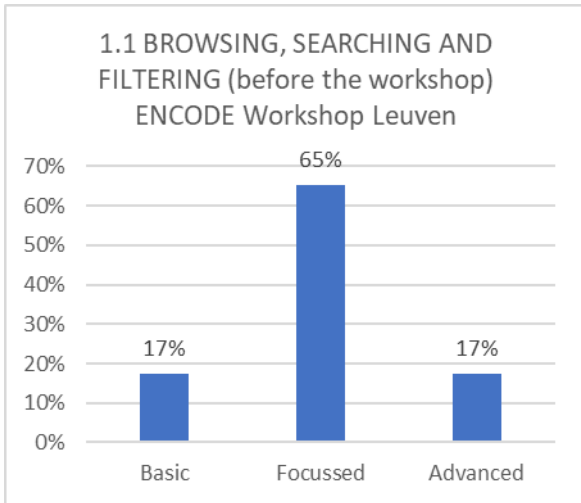


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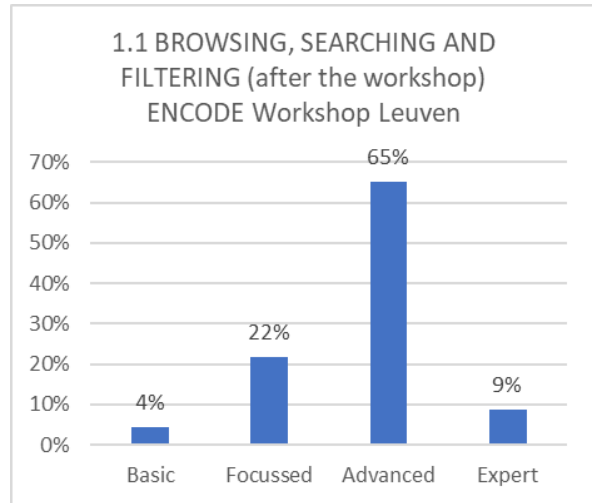


Figure 43b

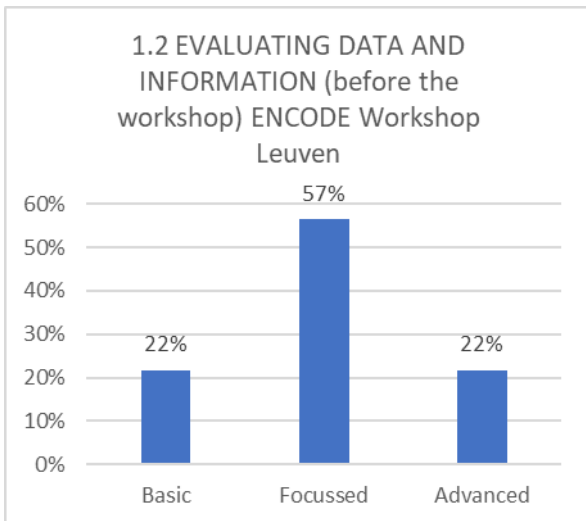


Figure 44a

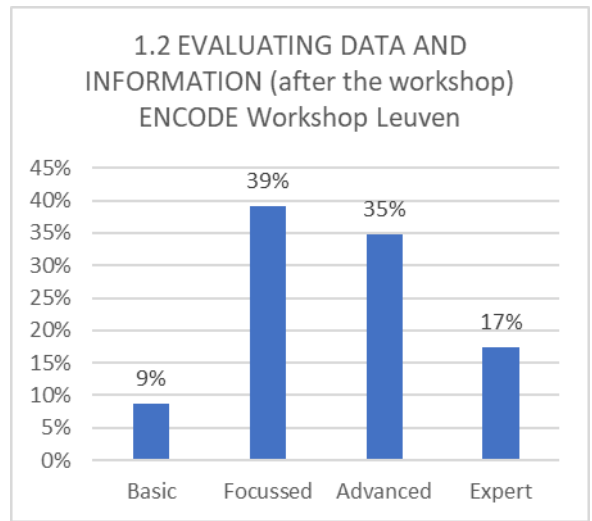


Figure 44b

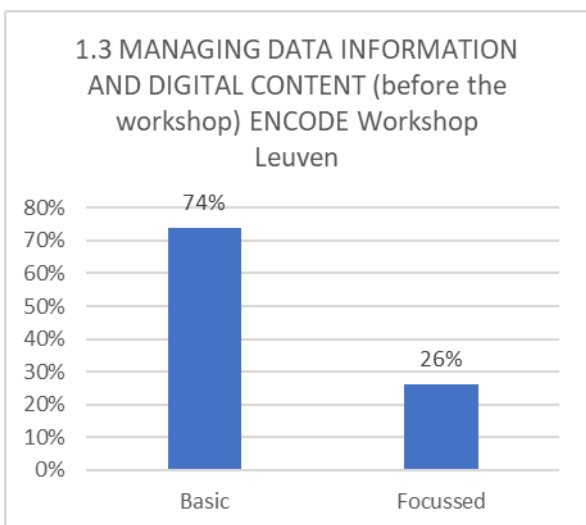


Figure 45a

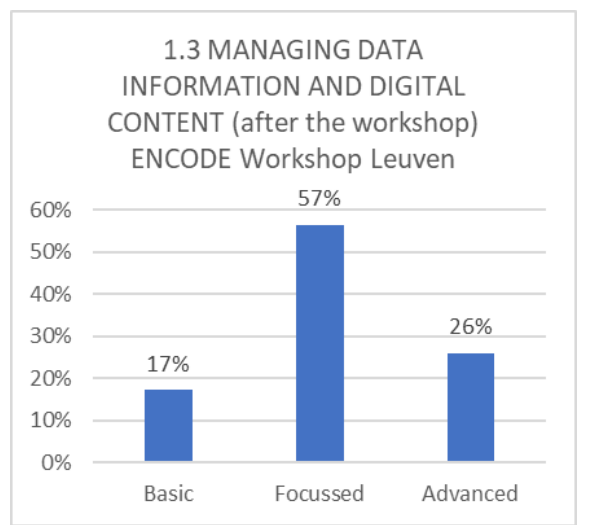


Figure 45b

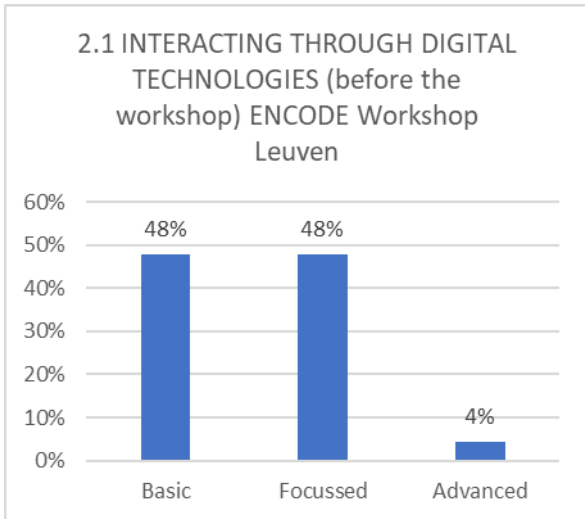


Figure 46a

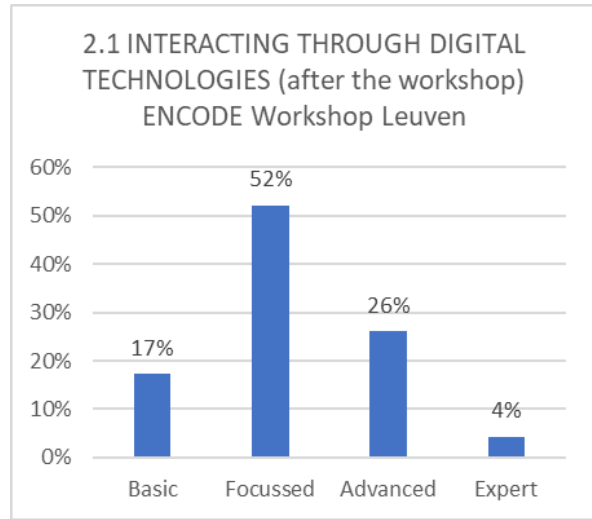


Figure 46b

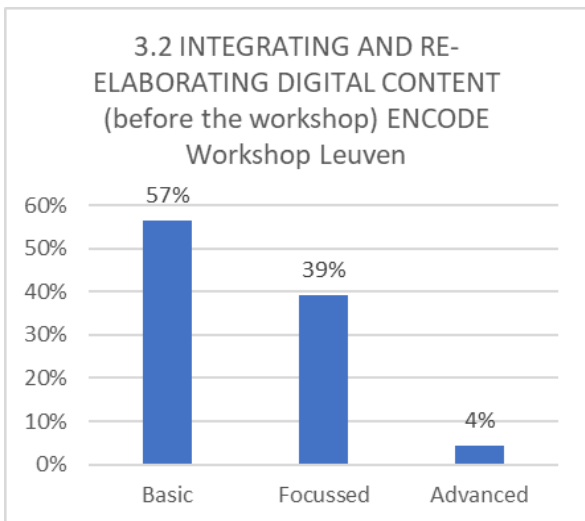


Figure 47a

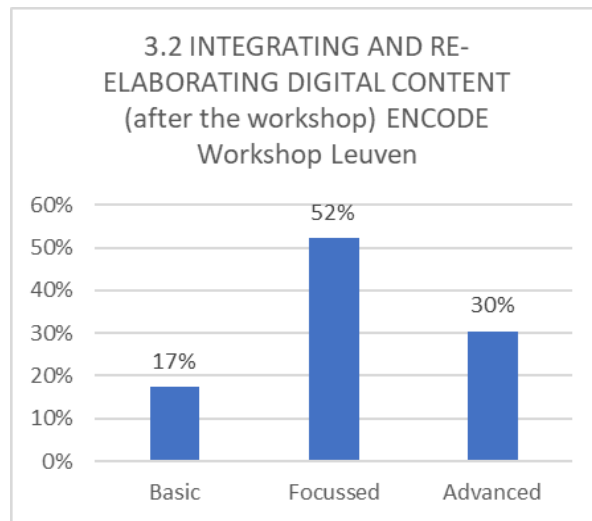


Figure 47b

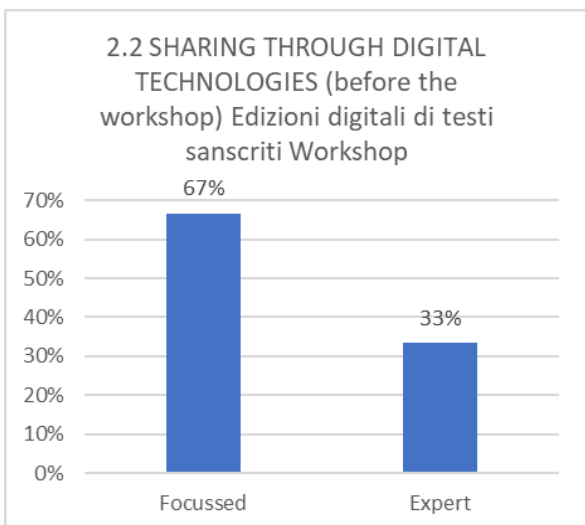


Figure 48a

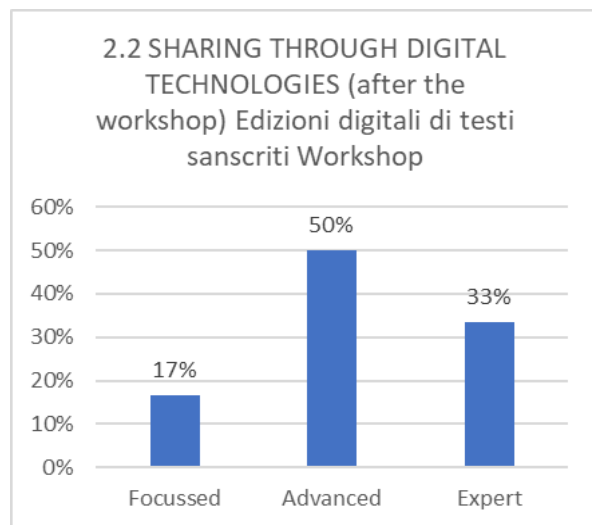


Figure 48b

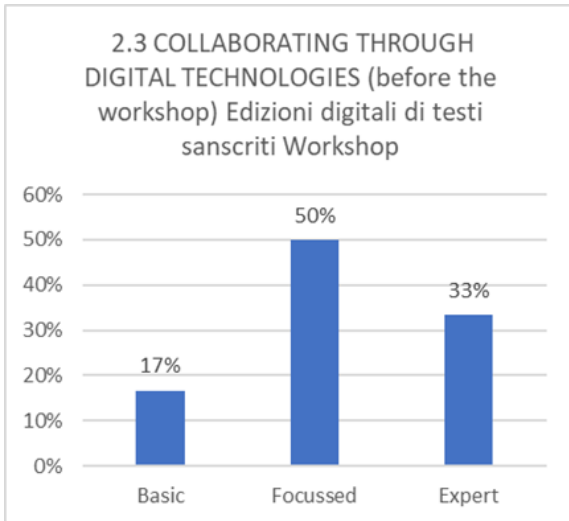


Figure 49a

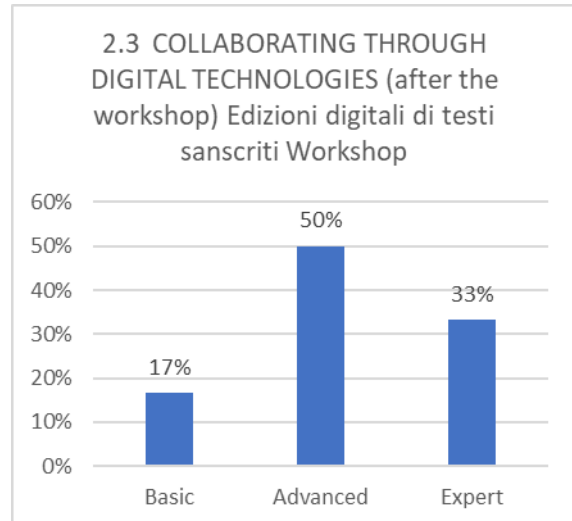


Figure 49b

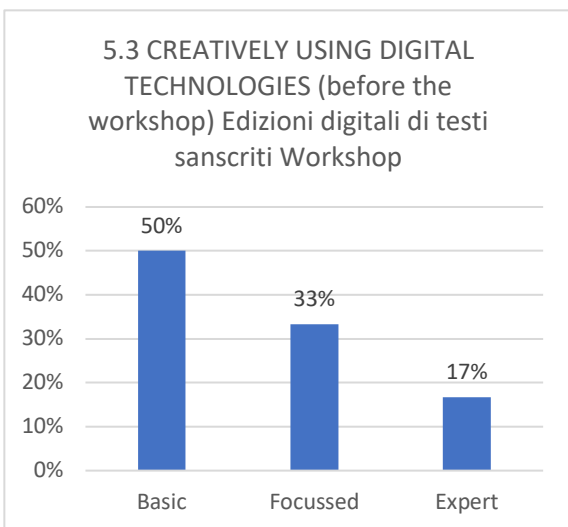


Figure 50a

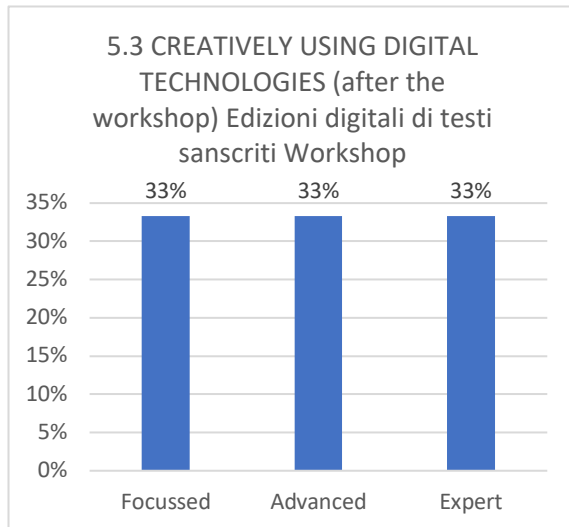


Figure 50b

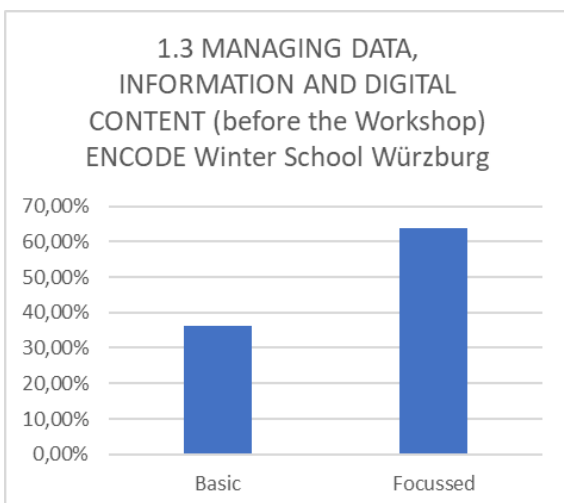


Figure 51a

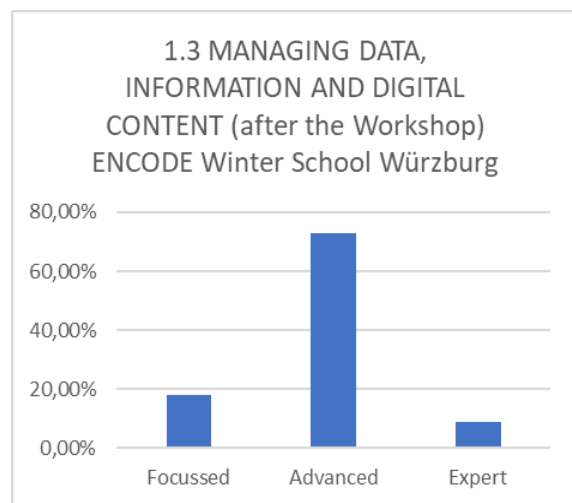


Figure 51b

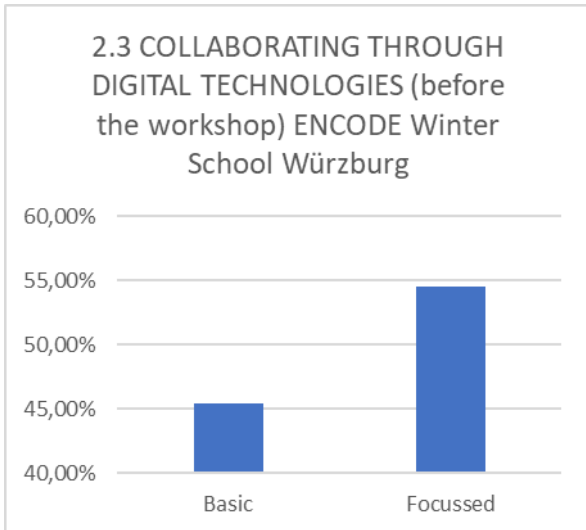


Figure 52a

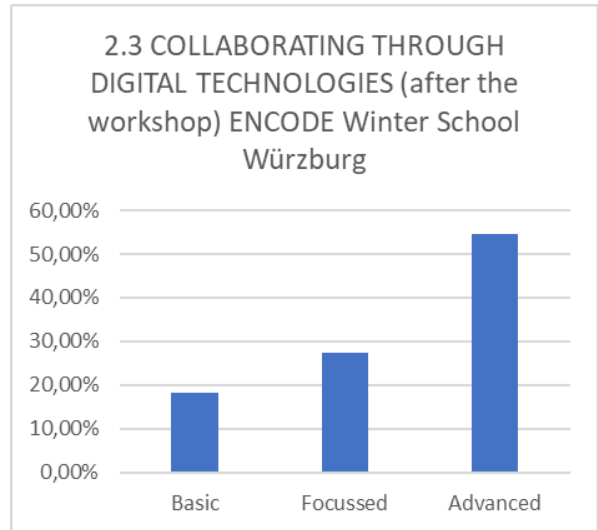


Figure 52b

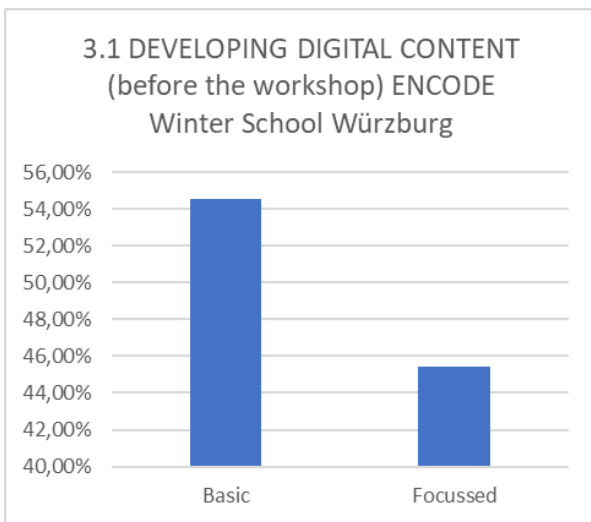


Figure 53a

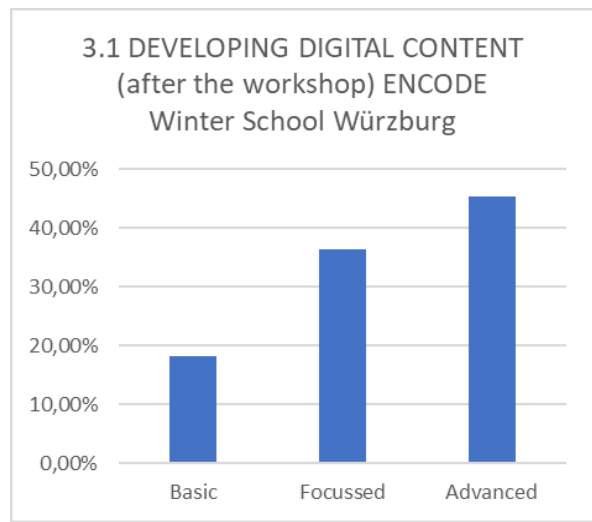


Figure 53b

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