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**TESTING GUIDELINES**

*Checklist for testing of the Interoperable Europe Academy eLearning courses*

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1. Introduction

The objective of this document is to describe the different testing stages of the courses and present the course testing checklist, along with test cases, which will be used to ensure high quality and proper functioning of the self-paced courses.

The current document will provide an explanation of each tested aspect, contributing to an overall understanding of how each course should be tested, and which information should be available after each testing phase. This document will form the basis for preparation of the testing report, since it will offer the structure that should be followed when reporting testing results.

Each course developed in the context of the IOPEU Academy should undergo rigorous testing prior to its publishing and promotion across a broad audience. The following section is dedicated to the testing of eLearning courses.

Roles and Responsibilities

Course development, testing and deployment involves several teams and stakeholders and it is important to define their roles and responsibilities in each of the course testing stages. Below are listed the main groups involved in the process and their detailed responsibilities will be explained for each testing stage.[[1]](#footnote-1)

1. **Course owner:** a person or a team (i.e. EC officials, Member State representatives) who is commissioning the course creation and who is accountable for the overall course after approving the final course content which will be published on the platform.
2. **Course content creator:** a person or a team (i.e. contracting company) who are providing the expert knowledge for course creation, for example, creating the content of the storyboard.
3. **Course technical creator:** a person or a team (i.e. contracting company) who is providing technical expertise for course creation, for example, creating animations and afterwards SCORM package.
4. **Interoperable Europe Academy team:** a team that consists of the further parties: a) EC officials in charge of the Interoperable Europe Academy project; and b) contracting company in charge of Interoperable Europe Academy management.
5. **Interoperable Europe Academy stakeholders:** a person or a group which collaborates with the Interoperable Europe Academy team on different levels, for example, they can voluntarily test the course. It is important to note that this step is not necessary for the testing phase of the course, however, it is always recommended since it helps the course owners understand whether their course is clear and/or if there are any last-minute changes or adjustment to be made so that it can reach its optimal form.
6. Testing of Alpha/Beta course

Testing the course is of paramount importance to its success and it is the first stage prior to the deployment testing. By testing it, the course owners make sure that the eLearning courses are well prepared and that they work perfectly on the platform where they are uploaded for publishing. It is important that, before the testing of the course begins, the course owners have not only finalised the course but also, they have finalised and configured the quizzes and certificates as well, as it is an important part of the course. The testing phase consists of four different steps, two of which are mandatory while the other two are just recommended as an added layer of security. The testing process goes as follows (it is also displayed in Figure 1 Testing Phases):

Figure 1 Testing Phases

**a) Testing of alpha/beta course.** During this phase, the course is uploaded on the platform and tested internally by the course owner for final corrections and adjustments {this step is mandatory}.

**b) Testing the final course.** During this phase, the final corrections have been made and the course owners along with the POs check the final version of the course to make sure that it is fully compatible with the platform where it is uploaded {this step is mandatory}.

**c) Testing with a small group of stakeholders.** During this phase, the course owners test the course before it is published with a small group of people that can provide feedback on the course. That can be done in various ways, i.e. organisation of a webinar/workshop, sending the course by email, etc, and it can also be used as a way to inform the stakeholders for other upcoming courses and/or changes as well. {This step is only recommended}

**d) Quality check from the DIGIT Unit.** During this phase, the course is sent to the Unit for a final quality check. Usually, the deadline for any feedback to be given is two weeks, but that would also depend on the course owner’s deadlines that need to be met {This step is only recommended.

The next stage of course development is typically focussed on developing the finalised and functioning course ready for deployment. Depending on the approach used, there may be various development phases (‘sprints’) focussed on non-interactive and interactive versions. This stage is therefore focussed on testing the competed and functioning course to ensure it is ready for deployment. For this stage of testing, the following testing criteria should be followed:

* **User experience:** Do all menus function? Is there sufficient and help and support available? Is navigation logical? Can users control progress (play, pause, go forward, go back)?
* **Quality of content and media:** Is the audio synced to video presentations? Is the narration clear and easy to understand? Is video of good enough quality to be played at higher resolutions? Are multimedia elements consistent in terms of size and quality?
* **Accessibility:** are all audio-visual and interactive elements appropriate and adaptable to users’ needs (sight impairment, hearing impairment, physical impairment?) Is audio clear and of good quality? Is there adequate user control for audio output levels? Do images have appropriate and meaningful alternative text descriptions? Has interactive content been tested for compliance with international accessibility standards (i.e. W3C WCAG)?
* **Technical functionality:** Do quizzes function correctly? Are test outcomes presented to the user? Do transitions function smoothly? Do multimedia elements play smoothly and at the correct resolution? Are course media elements compressed appropriately?

The aim of this testing is to:

* check the overall coherence of the course;
* receive feedback on the learning experience and user journey (i.e. tests, quiz, material);
* check the visual aspect of the course such as user-friendliness, look and feel, pace of narration, voice over quality graphic resources;
* test functional aspects (bugs, speed), and;
* ensure the accessibility of the course.

To support this stage of testing, use the **Error! Reference source not found.** displayed in Section **Error! Reference source not found.**.

Stakeholders involved:

1. **Course owner:** deciding whether the course can be exposed to the broader audience; approving the alpha/beta course.
2. **Course content creator:** providing additional course content in case that parties who are testing a course point that some changes need to be made, i.e. to clarify certain concepts.
3. **Course technical creator:** creating course alpha/beta; implementing technical changes based on testing results[[2]](#footnote-2).
4. **Interoperable Europe Academy team:** deploying the alpha/beta version to the platform; testing the course based on the checklist; organising testing[[3]](#footnote-3) with external stakeholders (i.e. organising a webinar, developing a dedicated testing survey for external stakeholders); summarising all testing results and providing recommendations.
5. **Interoperable Europe Academy stakeholders[[4]](#footnote-4):** testing the course and filling in the testing survey.

Figure 2 - Outcome of the stage 4: Alpha/beta course

1. Testing of Alpha/Beta course

The final stage of course development is focused on ensuring it functions technically, is bug-free and is packaged for deployment to its intended hosting platform. All self-contained IOPEU Academy courses should be packaged as SCORM courses and deployed to the [EU Academy Learning platform](https://academy.europa.eu/). For this stage testing, the following testing criteria should be followed:

* Performance testing: has the course release version (final version) has been successfully run prior to SCORM packaging; the course runs without performance issues; all required output data is generated; the release version has been signed off by the Project Lead.
* Content packaging: the course has been output as a SCORM 1.2 content package (.zip); the content package (.zip) contains a relevant manifest file (imsmanifest.xml); all required metadata has been included in the manifest file.
* Deployment: the SCORM content package has been conformance tested prior to deployment in the live environment (in a testlab or SCORMCloud); the SCORM content package can be uploaded successfully in the live environment; the course can be run successfully in the live environment.

The aim of this testing is to ensure that:

* there are no bugs, and
* the content has been approved by both PMs and experts in the field.

To perform this testing, use the ‘**Error! Reference source not found.** in the Checklist displayed in Section **Error! Reference source not found.**.

**Stakeholders involved:**

1. **Course owner:** approving the final course.
2. Course technical creator: implementing technical changes based on testing results and producing the final course.
3. **Interoperable Europe Academy team:** deploying the course on the platform and testing the course based on the checklist and providing recommendations.



Figure 3 – Outcome of the stage 5: Course release and deployment

1. Checklists and reporting template.

This section describes in detail how reporting will be performed and includes the Checklist for course testing.

1. Checklists

The Checklists section below contains the checklist tables with all criteria that should be addressed at each stage of testing (as described in Testing of Alpha/Beta course). The checklists are presented in the order that the course and all its elements should be tested before publication on the eLearning platform.

Course content Checklist

|  |  |  |  |
| --- | --- | --- | --- |
| **Instructions:** Please fill in the information relevant to the testing performed and include the document in the Test Report. The tables that are not used for specific testing should be deleted prior to reporting. If any of the below elements are not applicable during a specific testing phase, please add ‘N/A’ (not-applicable) and provide comment if needed (i.e. you believe that the element should be present). | | | |
| **No.** | **Questionnaire** | **Yes/No/NA** | **Comment/Recommendation** |
|  | **Please check properties specified below.** |  | **Please specify what should be changed/improved & suggest how** |
|  | **Instructional design** |  |  |
| **7.1** | Does the course contain clearly defined learning activities/table of content? |  |  |
| **7.2** | Do these activities correspond to accepted learning design principles? |  |  |
| **7.3** | Are concepts clearly explained? |  |  |
| **7.5** | Are the outcomes clearly communicated to the learner? |  |  |
|  | **Pedagogic value (learning quality)** |  |  |
| **7.6** | Are the learning objectives clearly described for each activity? |  |  |
| **7.7** | Are the learning prerequisites clearly described? |  |  |
|  | **Curriculum relevance** |  |  |
| **7.8** | Do the learning objectives relate to a relevant curriculum / competency framework? |  |  |
| **7.9** | Is learning mapped clearly to certain skills and competencies? |  |  |
|  | **Language, context and tone** |  |  |
| **7.10** | Is the language used clear and understandable? |  |  |
| **7.11** | Does the tone of voice reflect the context of learning (formal/informal)? |  |  |
|  | **User experience and course design** |  |  |
| **7.12** | Is the correct course title used? |  |  |
| **7.13** | Are the visuals and logos of Course owner/leader/Organisation properly placed? |  |  |
| **7.14** | Can users control progress (play, pause, go forward, go back)? |  |  |
|  | **Quality of content and media** |  |  |
| **7.15** | Is video of good enough quality to be played at higher resolutions? |  |  |
| **7.16** | Are multimedia elements consistent in terms of size and quality? |  |  |
| **7.17** | Is all formatting aligned? Does anything look out of place? |  |  |
|  | **Accessibility** |  |  |
| **7.18** | Are all audio-visual and interactive elements appropriate and adaptable to user’s needs (sight impairment, hearing impairment, physical impairment?) |  |  |
| **7.19** | Is the audio clear and of good quality? |  |  |
| **7.20** | Is there adequate user control for audio output levels? |  |  |
| **7.21** | Do images have appropriate and meaningful alternative text descriptions? |  |  |
|  | **Summary conclusions** |  | |
| **7.25** | What is your general impression? |  | |

Alpha/Beta Course Testing Checklist

|  |  |  |  |
| --- | --- | --- | --- |
| **Instructions:** Please fill in the information relevant to the testing performed and include the document in the Test Report. The tables that are not used for specific testing should be deleted prior to reporting. If any of the below elements are not applicable during a specific testing phase, please add ‘N/A’ (not-applicable) and provide comment if needed (i.e. you believe that the element should be present). | | | |
| **No.** | **Questionnaire** | **Yes/No/NA** | **Comment/Recommendation** |
|  | **Please check properties specified below.** |  | **Please specify what should be changed/improved & suggest how** |
|  | **User Experience** |  |  |
| **4.2** | Do all menus function? |  |  |
| **4.3** | Is there sufficient help and support available? |  |  |
| **4.4** | Is the navigation logical? |  |  |
| **4.5** | Can users control progress (play, pause, go forward, go back)? |  |  |
| **4.6** | Is there any missing content from the transcript? |  |  |
|  | **Quality of content and media** |  |  |
| **4.7** | Is the audio synced to video presentations? |  |  |
| **4.8** | Is the narration clear and easy to understand? |  |  |
| **4.9** | Is video of good enough quality to be played at higher resolutions? |  |  |
| **4.10** | Are multimedia elements consistent in terms of size and quality? |  |  |
| **4.11** | Is all formatting aligned? Does anything look out of place? |  |  |
| **4.12** | Is the menu designed to specs (check scene names, slide names, numbering, and navigation specs)? |  |  |
|  | **Accessibility** |  |  |
| **4.13** | Are all audio-visual and interactive elements appropriate and adaptable to user’s needs (sight impairment, hearing impairment, physical impairment?) |  |  |
| **4.14** | Is the audio clear and of good quality? |  |  |
| **4.15** | Is there adequate user control for audio output levels? |  |  |
| **4.16** | Do all images have appropriate and meaningful alternative text descriptions? |  |  |
| **4.17** | Has the interactive content been tested for compliance with international accessibility standards (i.e. W3C WCAG)? |  |  |
|  | **Technical fuctionalities** |  |  |
| **4.18** | Do the quizzes function correctly? |  |  |
| **4.19** | Are the test outcomes presented to the user? |  |  |
| **4.20** | Do transitions function smoothly? |  |  |
| **4.21** | Do multimedia elements play smoothly and at the correct resolution? |  |  |
| **4.22** | Are course media elements compressed appropriately? |  |  |
| **3.23** | Does the course work in multiple browsers? (IE/Chrome/Firefox, etc.) |  |  |
| **3.24** | Do all PDFs and external links work? |  |  |
|  | **Summary conclusions** |  | |
| **3.25** | What is your general impression of the course alpha/beta? |  | |

SCORM Release and Deployment Checklist

|  |  |  |  |
| --- | --- | --- | --- |
| **Instructions:** Please fill in the information relevant to the testing performed and include the document in the Test Report. The tables that are not used for specific testing should be deleted prior to reporting. If any of the below elements are not applicable during a specific testing phase, please add ‘N/A’ (not-applicable) and provide comment if needed (i.e. you believe that the element should be present). | | | |
| **No.** | **Questionnaire** | **Yes/No/NA** | **Comment/Recommendation** |
|  | **Please check properties specified below.** |  | **Please specify what should be changed/improved & suggest how** |
|  | **Performance testing** |  |  |
| **5.2** | Has the course release version (final version) been successfully run prior to SCORM packaging? |  |  |
| **5.3** | Does the course run without performance issues? |  |  |
| **5.4** | Does the course generate all required output data? |  |  |
| **5.5** | Has the release version has been signed off by the Project Lead? |  |  |
|  | **Content packaging** |  |  |
| **5.6** | Has the course been output as a Scorm content package (.zip). |  |  |
| **5.7** | Does the content package (.zip) contain a relevant manifest file (imsmanifest.xml)? |  |  |
| **5.8** | Are all required metadata included in the manifest file? |  |  |
|  | **Deployment** |  |  |
| **5.9** | Has the SCORM content package been conformance tested prior to deployment in the live environment (in a testlab or ScormCloud). |  |  |
| **5.10** | Can the SCORM content package be uploaded successfully in the live environment? |  |  |
| **5.11** | Can the course run successfully in the live environment? |  |  |

SCORM Visual Elements

|  |  |  |
| --- | --- | --- |
| **Considering that testing usually requires taking screenshots of identified issues, in addition to the above checklist, it is recommended that the following record is used for visual aspects which need to be reported.** | | |
| **No.** | **Screenshot** |  |
|  | <insert picture> | Issue  <describe an issue>  Proposed solution  <describe an issue> |

Course Quizzes & Additional Elements

|  |  |  |  |
| --- | --- | --- | --- |
| **Instructions:** Please fill in the information relevant to the testing performed and include the document in the Test Report. The tables that are not used for specific testing should be deleted prior to reporting. If any of the below elements are not applicable during a specific testing phase, please add ‘N/A’ (not-applicable) and provide comment if needed (i.e. you believe that the element should be present). | | | |
| **No.** | **Questionnaire** | **Yes/No/NA** | **Comment/Recommendation** |
|  | **Please check properties specified below.** |  | **Please specify what should be changed/improved & suggest how** |
|  | **Quizzes** |  |  |
| **8.1** | Do tests and quizzes function correctly? |  |  |
| **8.2** | Is the test set to passing score of 60%? |  |  |
| **8.3** | Are test outcomes presented to the user? |  |  |
|  | **Additional elements** |  |  |
| **8.4** | Are there any additional elements included to the course? |  |  |

ii. Reporting

Test results should be shared with POs after each of the four stages described in **Error! Reference source not found.** and presented in the Test Report, which will include the following information:

1. Name of the course tested
2. Information about testing stage
3. Time and date of testing
4. Parties involved in testing
5. Checklist filled in
6. Recommendations
7. Conclusion

Important notes:

* Test reports will be produced in MS Word and should be as concise as possible, including only the points mentioned above.
* The Test Report should be reviewed by POs and shared with other parties involved in course creation, if needed.

1. Responsibilities which these groups have outside the course testing are out of scope of this deliverable. For instance, it is out of scope of this deliverable to explain the process of storyboard creation and approval, a process in which the Course owner and Course content creator are involved. This deliverable describes how the final storyboard is tested and based on which criteria. [↑](#footnote-ref-1)
2. At this stage, if the course is tested also by external stakeholders, IOPEU Academy team will summarise all testing results. [↑](#footnote-ref-2)
3. Prior to this testing stage, a detailed follow-up questionnaire should be prepared and shared with the external stakeholders in order to collect feedback. This is important in order to evaluate the course under pre-defined criteria set by the team which would provide consistency. It is good practice to provide an email address that interested stakeholders could send more detailed feedback. [↑](#footnote-ref-3)
4. Having tested the course internally, now it is the time to involve external stakeholders such as students, employees of Public Administrations and any other relevant body. External stakeholders would be expected to comment extensively on the content, flow and look and feel of the course but also validate which UX proposal they prefer. To maximise stakeholders’ engagement and to raise their interest, it is good practice to organise a mini-webinar session in order to present a teaser of the course. If a dedicated session is arranged, all materials should be sent in advance in order to allow time for experimentation and testing. To incentivise external stakeholders to test the course, action owners could provide a certificate of completion. [↑](#footnote-ref-4)