IO4 report – A case study on how the critical success factors work in practice

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Erasmus+ Project Digital Education for Crisis Situations:
Times when there is no alternative (DECrIS)

https://decris.ffos.hr/

Intended Intellectual Outputs during the project duration 2021 – 2023:

- Survey of the state-of-the-play on the use and policy making documents on OERs at European HEIs during the COVID-19 crisis
  - Responses by 56 heads of departments in library- and information science from 23 countries

- Apprenticeship Framework for crisis situations

- Optimisation of OERs

- Case study on how the critical success factors work in practice

- Digital Education appraisal and quality perception by students, teachers and trainers at the partner HEIs during the COVID-19 crisis
  - Interviews with 39 lecturers and 10 focus group discussions with students at project partner institutions

- A list of critical success factors and their typological classification for the evaluation of the OER's
Result: Evaluation Framework

4Ds for 5Rs of OERs
DECrIS Methodological Framework for evaluation of OERs

| OER's Title: |  |
| Address/ URL: |  |
| Domain: |  |
| Author: |  |
| Organisation: |  |
| Type: Describe (presentation, video, text, quiz, assessment ...) |  |
| General score: |  |
| General description: |  |
| Content | Activity |

Points from 1 to 5 (highest) where 3 is good

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Aim of this study

• Case study on how the critical success factors work in practice
• Mapping the success factors to the practices at partners’ HEIs
• Obtain a better understanding of the relation between the success factors and the implementation and use of digital learning resources, OERs in particular, in separate settings
• Understanding of critical success factors for digital learning and use of OERs in time of COVID-19 crisis
Mapping the success factors to the practices at partners’ HEIs (IO4)

IO 3: OER Framework
- Student Survey
- Document Analysis
- Delphi study
- List of critical success factors

IO 5: Optimization of OER

Work in progress
Student Survey on Success Factors
Student survey

• 7 groups of questions on experience with OERs in digital learning
  1. Innovation of OER
  2. Reasons to use OER
  3. Challenges and Potential of OER

• Analysis of Potential success factors
  4. Learning Content and Learning Experience Design
  5. Learning Management System
  7. Value-added services

• 40 questions in total

• Online Survey in September/October 2022
Demographic data

• 42 students from Croatia, Bulgaria, Germany and Spain participated
• 70% female, 30% male
• 62% are between 18-25 years old, 38% over 26 years
• Field of study:
  • 50% Library and Information Science
  • 20% Information Technology
  • 15% Sociology and languages
  • 15% other subjects
Students experience with OER
Did you ever use existing OER during your studies?

- 80.95% Yes
- 2.38% No
- 16.67% I am not sure

From where have you used OER?

- 54.76% I used it from a repository.
- 80.95% I used Google.
- 54.76% My professor provided OERs.
- 11.90% Other
What kind of OER were you using?

- Print media (e.g. books, written materials): 61.90%
- Visual media (e.g. online videos, screencasts): 66.67%
- Audio media (e.g. podcasts, ...): 26.19%
- Presentation slides: 66.67%
- Interactive OER (e.g. courses, quizzes): 45.24%
- Other: 7.14%

How were OERs implemented in teaching?

- OERs were integrated into class: 21.43%
- Professors provided OERs, which I could use to learn at my own pace (outside of the class): 45.24%
- I used OERs as additional learning material (not provided by my instructor): 23.81%
- Other: 7.14%
- No answer: 2.38%
In your opinion should OERs be user-centered focusing on...

- Personalization: 54.76%
- Implementation of gamification: 21.43%
- Storytelling: 83.33%
- Being challenge-based: 33.33%
- Intention to support design thinking: 40.48%

In your opinion should OERs consider a student’s learning style (choose what you think is relevant)?

- Activists: learning by doing: 76.19%
- Reflectors: learn by observing and thinking: 42.86%
- Pragmatists: keen on trying things out: 33.33%
- Theorists: like to understand the theory behind the actions: 47.62%
Conclusion

• Students have experience with OER
• Different usage scenarios: OER used in classes (provided by teachers) but also individual search and usage of OER (as additional learning material)
• OER should provide user-centered elements for students
  • Supporting creativity and innovation
  • Personalization
Reasons to use OER (ranked categories, n=42)

1. Open Access
   The ones I used were of good quality, easily accessible and free.

2. Additional learning materials
   To do research beyond of what I got in class.

3. Quality of content
   [...] I also use OERs for term papers or projects.

4. Interactivity
   I use it as another source for learning and finding more information that’s presented in a different way; more creative, interactive, easier and faster access in some cases.
Barriers to use OER (ranked categories, n=29)

1. Missing platform/repository
   Time consuming and every profession uses a different platform. If it could be convenient enough to use one platform [...]

2. Availability and Finding OER
   Access is not always free or Sites requiring registration or payment.

3. No barriers towards OER use
   There aren't any. It is a great tool to use.

4. Ease of use
   [...] Not being compatible with operating systems or programmes and having to download something to use it.

5. Outdated materials
   When there are no more current learning materials.
Guidance to faculty and staff (ranked categories, n=25)

1. Facilitate and promote OER among classes

There should be more OER included, since my generation [...] appreciate different access and tools for learning, especially in the online world. The option to make it more interesting and the need to personalize so one could study and learn regarding ones personal needs [...] They should educare students or at least give a Information that OER exists

2. Provide accessibility and a good UX

make it available for all devices or an intuitive repository with a good UX, so that students can use it

3. Teachers should publish more OER

Teachers should not be embarrassed to publish and share their material [...]

DECrIS
Future of OER for teaching and learning (ranked, n=28)

1. Improvement of technology and teaching
   
   [...] the research is helping to develop and spread information of OER, which will make them richer and more participative, both from professionals, students, researchers and teachers

2. OER will promote networking and knowledge sharing
   
   I see in the future a network in which everyone can help each other and the knowledge of the users is promoted.

3. OER is not suitable for all use cases
   
   [...] unfortunately, until they get recognized as a valuable learning, teaching and research resource, their future is questionable

4. OER can prevent inequalities
   
   [...] It will add more points of view, more opinions, more cultures and more knowledge, and it will help to give access to the people who cannot allow to pay the fees to use regular ER
Ranking of success factors

Main categories
1. Learning content (e.g. accuracy, content quality, content structure) and Learning Experience Design (e.g. accessibility, ease of use, pleasurable, interactive, useful).

2. Learning process (e.g. cultural relevance and sensitivity, updates, assessment methods/self-assessment).

3. Learning Management System and technological tools (e.g. adaptability, flexibility aspects (place/time), collaborating with other students, self-organized learning environment).

4. Value-added services (multilingual support, understandability (OER in natural language), comprehensive description, standardized metadata).

Ranking of four main success factors

1 - very important - 5 - not important

Mean scores: 1.6, 1.8, 1.9, 2.2
Ranking of sub factors per success factor
Learning Content and Learning Experience Design

- Authority: 2.3
- Interactivity: 2.1
- Breadth of perspectives: 1.8
- Accuracy: 1.8
- Alignment: 1.6
- Convenient: 1.5
- Availability: 1.3
- Content quality: 1.2

Mean scores range from 1 (very important) to 5 (not important).
Learning Management System (LMS) and Technological Tools

Quality of the final product/service (e.g. OER is clear and understandable)
Learning Process and Pedagogy

- Pedagogical Goals and Pedagogical Approaches
- Student engagement, assessment methods and self-assessment
- Accessibility
- Open Licensing

Sub-factors

- Mean ratings: 1 = very important, 5 = not important
Value-added services

- National and International Collaboration
  Mean: 2
- Multilingual accessibility and support, understandability in natural language
  Mean: 1.9
- Peer-Review process
  Mean: 1.8
- Monitoring and evaluation (user evaluation tools, feedback systems)
  Mean: 1.8
Conclusion

• Results indicate student’s motivation on using OER
• Open Access, trustful (quality) content, availability

• Ranking results are not very clear
• Students favor more usage of OER in teaching
Document Analysis
Aims and Methodology

• Collect case studies on how the success factors work in practice
• Adopted version of DECriS Methodological Framework for evaluation of OERs
• First draft provided to all partners for commenting, after agreeing on final version start of data collection
• Data collection of examples at all project partner institutions in September and October 2022
• 14 completed forms returned
• Qualitative and quantitative analysis of the documents
Overview of reported OER

- **Is this OER used as part of a course at your institution?**
  - Yes: 12/14 → ~ 86%
  - n/a: 2/14

- **Teacher involvement:**
  - Yes: 9/14 → ~ 64%
  - n/a: 5/14 → ~ 36% (self-paced online-course)

- **Language:**
  - Monolingual: 7/14 → 50%
  - Multilingual: 7/14 → 50%

- **Level:**
  - BA: 7/14 → 50%
  - MA: 2/14 → ~ 14%
  - n/a (EINFOSE/DECris Summer Schools): 5/14 → ~ 36%
Overview of reported OER – Content and Interactivity

• **Content:**
  - Videos: 8/14 → ~57%
  - Book: 2/14 → ~14%
  - Mix of several content types: 7/14 → 50%

• **Activity:**
  - OER includes interactive elements: 11/14 → ~79%
  - Gamification: 7/14 → 50%
Rating results: Learning content and learning experience design (means)

(Scheme: 1=lowest, 5=highest, >= 3 is good)

- **Accuracy and Comprehensive OER Description with Standardized Metadata: 3,5 → lowest**
  - Alignment: 4,8
  - Authority: 4,1
  - Availability: 4,7
  - Breadth of perspectives: 4,8
  - Content quality: 4,8
  - Convenient, easy for use and cost saving: 4,7
  - Interactivity: 3,6
Rating results: Learning content and learning experience design

- Lowest given score:

- Accuracy and Comprehensive OER Description with Standardized Metadata: 1 point

  “Unsatisfactory document metadata description. Data: Authors, Title, created at: 07.02.2022”

  „For the reasons already mentioned, although the content of the video is explained at the beginning, no metadata is used to describe it as OER. In the properties of the file, as well as in the video, a title and the name of the author do not even appear.”
Rating results: Learning content and learning experience design (Arithmetic means)

- **Lowest given score:**

- **Interactivity:** 1 point

  "It's not interactive and the objectives don't ask for it. The resource does not provide opportunities for students to test their knowledge of the material, the use of the content is subsequently shown in the resulting work that the student will do."
Rating results: Learning content and learning experience design

• Example for full score:

• Breath of perspectives: 5 points

“This course reflects multiple perspectives and points of view on course topics as it is created by five authors who has different expertise within the field of research methodology in information science.”
Rating Results: Learning Management System (LMS) and Technological Tools

- LMS and Technological Issues: 4,6
- Quality of the Final Product/Service: 4,6
Rating Results: Learning Management System (LMS) and Technological Tools

- **Lowest given score:**
- LMS and Technological Issues: 2 points

„The Audio-PPTs are available in Microsoft Powerpoint, Microsoft Powerpoint XML and pdf formats and they can be used in different devices. However, they have been created with a proprietary software and not open source, so users need to have the proper software to access to the material. As for the LMS, materials are available in the UB LMS Platform (Moodle) and the institutional repository but both digital platforms are not directly connected.”
Rating Results: Learning Management System (LMS) and Technological Tools

• Example for full score:

• LMS and Technological issues: 5 points

   „The course is available within the LMS (Moodle), learning content works within the existing system. It can be accessed anywhere, anytime, using popular devices that participants can use (tested on laptop and mobile), only requiring a reliable internet connection.”
Rating results: Learning Process and Pedagogy

(Arithmetic means)

- **Accessibility. Inclusiveness and Equality. Cultural relevance.: 3,9**
  → lowest mean rating

- Open Licensing: 4,8

- Pedagogical Goals and Pedagogical Approaches: 5,0

- Student engagement, assessment methods and self-assessment: 4,0
Rating results: Learning Process and Pedagogy

- **Lowest given score:**

- Student engagement, assessment methods and self-assessment: 2 points

  "As we have previously commented, the Audio-PPTs don’t include self-assessment (and this is some improvement that can be added). However, since materials complement the learning process in a face-to-face classroom, activities are performed directly in the classroom, in form of practical exercises. There are some self-assessment online questionaries also available in the virtual classroom, but they are not part of the Audio-PPTs."
Rating results: Learning Process and Pedagogy

• **Example for full score:**

• Open licensing: 5 points

  “The course is available under open license with clearly defined terms of use: Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0).”
Rating results: Value-added services

- Linguistic accessibility. Understandability.: 4,4
- **Monitoring and evaluation (tools/mechanisms):** 4,1 → lowest mean rating
- National and International Collaboration: 4,9
- Peer-review process: 4,8
Rating results: Value-added services

• Lowest given Score:

• Linguistic accessibility. Understandability: 2 points
  „The video lecture is intended for Bulgarian students.”
  „The student book is intended for Bulgarian students.”

• Monitoring and evaluation (tools/mechanisms): 2 points
  “although there was a good experience of the use of the Audio-
PPTs during the pandemic lockdown, they have not been updated since then. It is possible that they would need to be tested and improved in the next years of teaching.”
Rating results: Value-added services

• Example for full score:

• Linguistic accessibility. Understandability: 5 points

“The course is available in English, Spanish, Catalan and Swedish. The language of the content is direct, clear and reduced of linguistic complexity. Key terms are consistent within the course content.”
Conclusions

• Reported examples show broad range of OER use at DECrIS partner institutions – both integrated in courses as well as self-paced course offers.

• What stands out is the high share of multilingual OER (50%).

• In general, the reported OER received a high rating on the evaluation scheme.

• Collected data shows that the developed DECrIS Methodological Framework for evaluation of OERs works for its intended purpose to evaluate OER.

• The individual results demonstrate case studies on how the success factors work in practice.
Delphi Study – The experts’ perspective
Delphi Study

• Goals:
  • Evaluation of OER Framework
  • Identification of unclear and missing factors
  • Comparison of students’ and experts’ ranking results
  • Identification of best practices and use cases: usage/implementation/consideration of success factors at their HEI

• Three phases (involving four international experts in creating OER):
  1. Online survey on success factors
  2. Online discussion on success factors and their use in practice
  3. Online survey on revised version of success factors
Main findings from the Delphi Study (1/2)

• In general very positive feedback – Experts found evaluation framework to be very comprehensive, even opening some new perspectives for them

• Even among exerts disagreement what is OER -> OER definition needed at the beginning of the evaluation form

• Short explanations for each factor would be beneficial to make the evaluation framework better understandable

• Disagreement if there should be a rating of the factors or a weighting of their importance
Main findings from the Delphi Study (2/2)

• Probably different versions of evaluation forms needed?
  • Different OER typologies
    • Example: a well-designed infographic intended to be printed out might be also a very good OER for its intended purpose, but does not fulfil several criteria like interactivity
  • Content creators and users
    • Not all success factors are relevant for students – it might make sense to provide a separate evaluation form to cover the student perspective
  • OER providers/repositories
    • Some factors rate criteria that are not always the content creator’s choice but also influenced by the repository the OER is published (e.g. metadata, license)
Thank you for your attendance!

Questions and Discussion

Further information about DECrIS project:

https://decris.ffos.hr/
Learning Content

1. Accuracy and comprehensive OER description with standardized metadata
2. Alignment
3. Authority
4. Availability
5. Breadth of Perspectives
6. Content quality
7. Convenient, ease of use and cost-saving
8. Interactivity
Learning Content

• **Accuracy and comprehensive OER description with standardized metadata**
  • the information in the OER is accurate; appropriate coverage of material in a clear, logical manner; reflects accurate and recent information in terms of the subject matter

• **Alignment**
  • OER aligns to the catalog’s course description and student learning outcomes
  • similar terms include *appropriateness, educational value, learning effectiveness*

• **Authority**
  • Data about the author, content, and organization should be included
Learning Content

• **Availability**
  • includes concepts such as *transparency* and *ease-of-access*
  • Users should find OER for their needs without a search.
  • Platforms and curation can play a major role

• **Breadth of Perspectives**
  • OER reflects multiple perspectives and points of view on course topics
  • OER includes multiple modalities (e.g. graphics, tables, and information other than text) to support student learning
• Content quality
  • Teachers need some assurance about the perceived quality of a resource in order to help them select the best content possible for their teaching

• Convenient, ease to use and cost-saving
  • effective repositories will make the process of searching, (re-)using, or adapting OER as simple and convenient as possible
  • providing effective learning experiences with lower costs

• Interactivity
  • allows an interaction, as a dialogue, between the device and the user
Learning Management System (LMS) and Technological Tools

1. LMS and Technological issues
2. Quality of the Final product/Service
Learning Management System (LMS) and Technological Tools

• **LMS and Technological issues**
  - technical factors might affect the openness of OER
  - ensure that the learning content will work within the existing system

• **Quality of the Final product/Service**
  - The content in the OER is clear and understandable
  - The interface and design are easy to navigate
  - The sound quality is high for audio resources
  - The video and audio (if included) quality are high
  - The OER contains no spelling errors or typos
Learning Process and Pedagogy

1. Accessibility, inclusiveness and equality, cultural relevance
2. Open Licensing
3. Pedagogical goals and pedagogical approaches
4. Student engagement, assessment methods and self-assessment
Learning Process and Pedagogy

• **Accessibility, inclusiveness and equality, cultural relevance**
  - (OERs) should be truly open to all, they must be accessible to learners with disabilities
  - OER must be designed from an open and inclusive perspective
  - E.g. authors should clarify if they followed any usability guidelines to create the resources

• **Open Licensing**
  - principle of openness and accessibility of education, availability of an open license for the use of educational content
Learning Process and Pedagogy

• **Pedagogical goals and pedagogical approaches**
  • OER promote active learning, class participation, and/or collaboration and to includes a mix of instructional approaches
  • By finding, adapting and remixing OER, educators can create materials that are personalized to their students’ learning needs
  • foster greater equity for accessing content for those with limited background knowledge

• **Student engagement, assessment methods and self-assessment**
  • OER includes effective and engaging student assessments of the course learning outcomes and objectives
  • provide opportunities for students to test their learning; self-reflection and self-assessment
Value-added Services

1. Linguistic accessibility, understandability
2. Monitoring and evaluation (tools/mechanisms)
3. National and International Collaboration
4. Peer-review process
Value-Added Services

• **Linguistic accessibility, understandability**
  • design the interface of the repository in a multilingual way to widen the scope of users by allowing them to perform a search of content in different languages

• **Monitoring and evaluation (tools/mechanisms)**
  • user evaluation tools for the resources to be evaluated by users aiming to rate a resource
  • provide feedback on the value and usefulness of the resources
Value-Added Services

- **National and International Collaboration**
  - Permission of OER to be collaboratively adapted and re-mixed by a global community, resulting in new OER that are more culturally relevant and inclusive for different communities of learners

- **Peer-review process**
  - there is a lack of possibilities to get OER reviewed
  - Peer review as a policy to revise and analyze OER to ensure their quality might be a solution
Learning Content and Learning Experience Design

1. Accuracy and comprehensive OER description with standardized metadata
2. Alignment
3. Authority
4. Availability
5. Breadth of Perspectives
6. Content quality
7. Convenient, ease of use and cost-saving
8. Interactivity

1. Standardized metadata
2. Alignment
3. Authority
4. Breadth of perspectives
5. Accuracy and content presentation
6. Convenient, easy for use
7. Interactivity (optional)
Learning Management System (LMS) and Technological Tools

1. **LMS and Technological issues**
2. **Quality of the Final product/Service**

- **Change category name:** Technological Issues

1. Format of the OER
2. Quality of the final product
   - The content in the OER is clear and understandable
   - The interface and design are easy to navigate
   - The sound quality is high for audio resources
   - The video and audio (if included) quality are high
   - The OER contains no spelling errors or typos

3. Production value
Learning Process and Pedagogy

1. Accessibility, inclusiveness, equality, cultural relevance
2. Open Licensing
3. Pedagogical goals and pedagogical approaches
4. Student engagement, assessment methods and self-assessment

1. Accessibility, inclusiveness, equality, cultural relevance
2. Level of Open License
3. Pedagogical goals and pedagogical approaches
4. Information on how to cite the OER
5. Student engagement, assessment methods and self-assessment (optional)
Value-added Services

1. Linguistic accessibility, understandability
2. Monitoring and evaluation (tools/mechanisms)
3. National and International Collaboration
4. Peer-review process