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Open pedagogy practices: a case study in undergraduate education

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Abstract

The study reports about an open education practice in undergraduate education, by analysing the openness of a course in which the teacher was not a *self-declared* open educator. It explores data from involved educators, students and entrepreneurs, who participated in a project-based learning pathway carried out online. Data collection included observation of the process by an external researcher, final questionnaires and interviews to participants. Conclusions argue that open education practices (OEPs) can also be found in courses which have not been designed purposely as *open*, and that further work is needed to understand students' perceptions in open practices.

KEYWORDS: Open Teaching; Open Educator; Project-based Learning; Inclusion.

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1. Introduction

One of the most acknowledged definitions of Open Educational Practices (OEPs) derives from the work of the Open Educational Quality Initiative (OPAL) project, as "the range of practices around the creation, use, and management of open educational resources (OERs) with the intent to improve quality and innovate education" (OPAL, 2011). Further, Elhers (2011) considered that the use of OERs does not guarantee itself the openness of the practice: by analysing the use of OERs in context, argued that learning architecture plays a remarkable role in the openness of the practice. The author provided a model in which the degree of openness relates "to openness in resource usage and creation versus openness in pedagogical models" (p. 5), concluding that OERs should "be accompanied by changed learning models to encourage the uptake of open educational practices" (Ehlers, 2011, p. 8). Additional work includes the definition other OEPs-related concepts (Cronin & MacLaren, 2018), such as open scholarship (Burton, 2009; Garnett & Ecclesfield, 2011; McKiernan, 2017), networked participatory scholarship (Veletsianos & Kimmons, 2012), and open pedagogies and open teaching.

Open pedagogies have been often referred to as the use of open educational resources in teaching and learning (Wiley, 2013, 2017). Other authors, however, have shifted toward a more comprehensive concept of open pedagogies and generally openness (Conole, 2013), which can be broadly defined as "the natural progression of integrating socially just principles of human relations and the potential of current technology into the educational system" (Green, 2017). Hegarty, starting from the five principles of openness as defined by Conole (2013), identifies eight attributes to open pedagogies (Hegarty, 2015), namely:

1. Participatory technology;
2. People openness and trust;
3. Innovation and creativity;
4. Sharing ideas and resources;
5. Connected community;
6. Learner generated;
7. Reflective practice;
8. Peer review.

These interlocked attributes are able to generate, according to the author, "a seamless process that occurs throughout life when participants engage in open and

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collaborative networks, communities, and openly shared repositories of information in a structured way to create their own culture of learning" (Hegarty, 2015).

Even if a shared understanding of open pedagogies, which are constantly expanded by technologies (Hilton III et al., 2019), has not been agreed yet, it can be argued that open pedagogies include the adoption of learning designs and approaches to teaching and learning that consider sharing, networking, and co-creation of knowledge at least. With reference to teaching, Nascimbeni and Burgos (2016) proposed four dimensions to analyse the *open educator*, namely:

1. *Open design*, which implies sharing ideas and plan and including insights with colleagues, potential students;
2. *Open content*, by releasing own resources through open licenses and distribute them in OERs repositories, as well as use others' resources;
3. *Open teaching*, by adopting teaching methods promoting co-creation of knowledge;
4. *Open assessment*, by supporting "peer and collaborative evaluation, open badges, and e-portfolios, engaging students as well as external stakeholders in learning assessment" (p. 4).

These dimensions have been applied to explore the degree of openness among teachers of an Italian university, to map the overall OEP capacity of the institution (Nascimbeni et al., 2018). The authors proposed four activity's areas to explore the openness of the educators, each of them having three levels, from low to higher degree, as in Table 1.

Nevertheless, the adoption of open pedagogies by teachers is not enough, since positive outcomes of learning require an aware and active involvement of students. Research on students' perceptions and beliefs about open pedagogy is still underdeveloped. Hilton III et al. (2019) explored the perceptions of 173 students of implementations of approaches to open pedagogy in post-secondary institutions in New Hampshire, by comparing *traditional* and *open* pedagogies. They found that 53% of students value open approaches more than traditional approaches, 31% considered them as equal in terms of educational value, and 16% that open pedagogy approaches had less educational value than traditional approaches. Also, 20% of the overall sample would have preferred traditional methods compared to *open* methods. Scholars seem to agree on the added value of active pedagogies for learning (Hassanien, 2006; Hyun et al., 2017). However, the engagement of students, and their perceptions about this type of teaching, cannot be given for granted: students can be resistant to group work (Allan, 2016; Payne et al., 2006; Piezon & Donald, 2005), flipped teaching (McNally et al., 2017), and generally active pedagogies (Smith & Cardaciotto, 2011).

2. Materials and Methods

This study seeks to analyse the degree of openness of education in the frame of the course "Economics and Marketing of Agri-food" carried out at the University of Macerata during the Academic Year 2019-2020, by using as reference the Open Education Factory (OEF) framework proposed by Nascimbeni et al. (2018).

The course, which is mandatory for the undergraduate program degree "Cultural Heritage and Tourism", is usually delivered face-to-face. It includes a range of teaching methods, including lecturing, participation to seminars and workshops, field visits, and a project-based learning pathway (Blumenfeld et al., 1991; Bell, 2010; Blackwell et al., 2014), which is the core students' activity during the semester. The project-based exercise is designed as a consultancy project of groups of students to entrepreneurs of the agri-food field. Since years, it has included the use of open educational resources as reference readings and open assessment practices by the involved external stakeholders. During the academic year under analysis, due to the COVID-19 pandemic, learning activities have been implemented entirely online.

The course enrolled 58 students, of which 54 participated in the project-based learning (PBL) exercise. One of the participants to PBL was a student with a disability: a personalised learning pathway was designed in this case and did not include teamwork. Involved tutors, post-doc researchers or PhD candidates, were 7; involved companies/associations were 7.

Feedback was collected by a researcher external to the teaching group, appointed as observer/evaluator.

Evaluation data included:

- Observation (and participant observation for open assessment);
- Analysis of online content in the course's virtual learning environment (VLE) space;
- Questionnaire to students;
- Semi-structured interviews with tutors and the teacher;

Design	Content	Teaching	Assessment
A3. Open designer	B3. Expert OER user	C3. Open teacher	D3. Open evaluator
A2. Collaborative designer	B2. Familiar with OER	C2. Engaging teaching	D2. Innovative evaluator
A1. Individual designer	B1. New to OER	C1. Traditional teacher	D1. Traditional evaluator

Table 1 - OEF (Open Education Factory) framework. Source: Nascimbeni et al. (2018, p. 514).

- Feedback collection with entrepreneurs (unstructured interviews).

The dimensions under evaluation are listed for each target group here below.

Students (questionnaire):

- Online course as learning experience (includes technological user acceptance items)
- Quality of the online materials
- Quality of the project-based learning exercise
- Added-value of working a) in a team; b) with entrepreneurs.

Each dimension required rating of items on Likert-scale 5 and compulsory open questions, asking to comment their rating on technology and online educational resources, and a reflection on skills development for learning and employability purposes. Assessment of the project-based process and on the tutors' support was also part of the questionnaire, as items to be rated on Likert-scale 5. The questionnaire was based on the work of Petasakis et al. (2015) and Palmer and Hall (2011) and adapted to the case. It was administered online during the second half of June 2020, after the ending of the classroom and exam activities.

Tutors (semi-structured interviews):

- Perceived quality of online tools and processes
- Strengths/weaknesses of the online working groups
- Awareness about open education

Teacher (semi-structured interview):

- Awareness about open education
- Design process and reasons for the chosen approach and methods
- Reasons for using OERs

Entrepreneurs (unstructured interviews):

- Reasons for undertaking the online learning activity
- Perceived strengths and weaknesses of the process

The interviews were carried out in the second half of June 2020 over Skype and Microsoft Teams.

3. Results

Results, which include data from different sources as above described, are organised according to dimensions/activities of the open educator model. They include analysis of 24 valid questionnaires (students), 5 interviews (1 teacher, 4 tutors), and 4 not structured interviews to collect feedback from stakeholders.

Design

The re-design was carried out before the beginning of the course when the university courses went online following the COVID-19 lockdown. The design was driven by the teacher's pedagogical approach, based on promoting co-creation of knowledge among learners and between learners and the stakeholders in the field. As a researcher, the teacher applies action-based research and participative approaches to local development. For course design purposes, meetings have been organised with tutors and entrepreneurs to define the possible options to implement the project-based learning online, and maintaining the key features in terms of learning outcomes (marketing in agri-food), pedagogical objectives (cooperation and co-creation), and activities (desk and field research). Furthermore, other pedagogical choices were kept, such as the choice of participating the project-based learning pathway or choosing autonomous learning (additional readings were assigned in this case); the self-organisation of students in groups and the appointment of a coordinator within the group; the appointment of a reference tutor for each student groups and the function of the tutors (support to finding information; guidance in using the adopted tool for designing the project, the Business Model Canvas; feedback to project presentation).

Modifications from the original design were: field visits replaced by presentations by companies and associations; interviews with stakeholders carried out online (with different channels, either Skype or WhatsApp); online tutoring.

Importantly, the course has not been designed or planned as based on the *open* concept, as defined in literature: instead, it has been designed on the basis of participative and co-creation approaches, according to the teacher's statements. In fact, also across tutors, "open educational resources" were described as "accessible to all for free" (1), "open source" (2), and "online resources" (1). Likewise, "open education" and "open course" were referred to the concepts of "open source" and online access. One of the tutors noticed that the course could not be defined as *open* as it required enrolment at the university and login to the platform and other tools.

The evaluation of course design, or better its implementation through project-based learning, was in general positive among students, as reported in Table 2.

The most appreciated characteristic of design for stakeholders was the attempt of the university to keep open and active relations with the territory, which was also the main reason for them to be involved in the course. Getting in direct touch with stakeholders (either companies or associations) has also been considered an added value by the all the respondents to the questionnaire, in particular for meaning-making relevance: increased understanding on how the theory works in practice (11), and the added value of sharing and networking for learning purposes (6); increased awareness and of the labour market (4) and acquisition of employability skills (2).

Content

Readings of the course were only open educational resources: the first, the online learning "FARM INC – The farm is my business"; the second, the MOOC "Sustainable food systems: A Mediterranean perspective". Both resources were based on individual learning, with an available online test to self-assess progress, and were subject to formal assessment during the intermediate and final exams.

The FARM-INC course has been produced in the frame of a European-funded project, and at today is hosted by the University of Macerata's server. It is composed of 10 modules, divided into units. Each of the modules provides final tests to self-assess learning progress; some units also provide intermediate tests. The resource is mostly based on text and graphics, with some embedded video from YouTube. Although the teacher stated that this is an open educational resource, there is no indication of the adopted license on the website: however, it is freely accessible from the website and does not require registration. The teacher asked about the licence of the material, answered that:

> *Honestly, when it has been produced, we didn't think about the declaration of the license… we should probably add the license to complete it, as we did for other materials delivered in the frame of other projects afterwards… but I have always conceived this work as shared work. I have promoted its use across colleagues in my subject field. It is also labelled as good practice by the Erasmus national agency of Italy, and also promoted through that channel, so everyone interested can simply use it. [Teacher]*

The MOOC, hosted on the edX platform, was an xMOOC type (Ross et al., 2014). Composed of 10 modules, each of them taught by a different expert, it provides video chapters with transcripts, supplementary learning resources, and a final test. The MOOC is available on the platform for free, upon registration.

According to the teacher, the first was aimed at providing the theoretical ground of the field subject, the second at enlarging horizons, by giving an international perspective about the implications of food production and food chains in global terms.

The results of students' evaluation of the two resources, is reported in Table 3.

Open questions further define pros and cons of the learning materials, particularly in relation with the update or the type of access (videos within the MOOC were considered highly useful for learning from 5 out of 24 respondents); many about the translations (the

Item	Average	St. Dev.
Did you enjoy working in teams?	4,17	0,87
Did you enjoy giving oral presentations?	3,42	1,10
Did you understand what you needed to do for the design project assignment?	4,38	0,71
Were you able to find the information you needed to complete the design project?	4,38	1,01
Did your group work well together on all design project assignment?	4,33	0,92
Was your group presentation successful?	4,63	0,65
Were you satisfied with the design produced by your group?	4,50	0,78
Overall, were the project-based activities an enjoyable learning experience?	4,08	1,14
Did the project-based activities increase your knowledge of the field of economy and marketing of agri-food?	4,29	1,08

Table 2 - Results evaluation from the questionnaire (Likert scale 1-5, where 1 = not at all; 5 = a lot) – project-based learning.

Item	MOOC		FARM INC	
	Average	*St. Dev.*	Average	*St. Dev.*
The online content was sufficient and accurate	3,62	*1,18*	4,08	*0,93*
The online content was clear and understandable	3,54	*1,05*	4,25	*0,94*
Information provided were adequate	3,62	*1,06*	4,17	*0,87*
The online content satisfied me	3,31	*1,28*	3,92	*0,93*
The online content was appropriate to the course	3,73	*1,00*	4,08	*1,02*
The educational content was updated	3,50	*0,93*	3,83	*1,01*
There was enough online content for the specific course	3,69	*0,83*	4,04	*1,04*
The online content offered too many information	2,58	*1,02*	2,88	*1,26*
The link between the learning materials and the course was clear	3,58	*1,08*	4,08	*0,97*
I could identify the link between the content of the learning materials and the local context (of the region where I study/where I live)	3,38	*1,09*	4,04	*0,95*

Table 3 - Results evaluation from the questionnaire (Likert scale 1-5, where 1 = not at all; 5 = a lot) – online content.

MOOC was available in English with Italian translations). Only one respondent stressed (or noticed) the fact that the learning materials were available for free:

> *As online and for free, the learning materials support those students who have a little financial capacity, or difficulties in finding the books [Respondent 14]*

One respondent pointed out the preference for paper-based learning materials.

The Business Model Canvas (BMC) template, produced by Strategyzer and licensed under an open licence (CC-BY-SA 1.0), was used to guide the process toward the production of the project. The students' projects were shared within the group, but neither made public nor published under open licenses.

Teaching

The overall course, except for introductory lectures, which were recorded and made available on the platform, was mostly self-managed by students, with the support of tutors. Students were asked to self-organise groups, identify the company case as the subject of their project, appoint a group leader, and freely organise their work. The only compulsory requirement was the use of the BMC as reference for the project development; however, the final presentation could be produced in any form (video, or presentation file, etc.) as long as it contained all the elements of the BMC. Tutors did not intervene in group management, and a little in groups' self-organisation: they were appointed to support the group according to the need, and in particular to facilitate the links with the stakeholders. The role of the teacher was to facilitate relations during online presentations with entrepreneurs, to provide further insights to interpret data, and to motivate active discussions during lessons about topics related to the task (e.g. case studies on agri-food in tourism with invited experts, tools' analysis, apps, etc.).

Discussion took place mostly through synchronous communication; therefore, data on the online forum are limited. The analysis of posts shows that the self-organisation of students in groups was carried out mainly outside the online platform, and all groups coordinators posted the names of participants by the given deadline. Student teams could choose the subject for their consultancy project according to their interest after the presentation of the stakeholders' cases. Tutors were appointed according to the selected case.

According to tutors, there were no major detected problems in the groups' work and self-organisation during the process, even if some doubts on the task were pointed out at the beginning and teamwork has been challenging for some of them:

> *In both groups that I have supported, I noticed a certain initial "disorientation" in understanding the necessary work, despite the clarification meetings with the teacher and tutor(s). [Tutor 1]*
> *I didn't perceive the willingness of anyone to work individually. Instead, I found little interest in some of them; difficulty in reaching an agreement within a group. [Tutor 3]*
> *I noticed that sometimes they had difficulties in finding an agreement. [Tutor 4]*

Also, the degree of groups motivation and autonomy increased over time:

> *In the beginning, I needed to 'push' more to get their attention and involve them more in the assigned case study […] Later, I noticed an increased engagement and autonomy in discussing the case and proposing meetings where necessary. [Tutor 3]*

Tutors also stress the need to be flexible in this type of design, particularly in terms of time:

> *We also organised meetings in the evening, especially when the entrepreneurs were involved… it is difficult to find the right time to allow everyone to participate [Tutor 3]*
> *In terms of organisation, the most difficult part is probably to organise the meetings between students and entrepreneurs [Tutor 1]*

From their point of view, students reported about a perceived lack of guidance and feeling of disorientation within the project-based learning process. 30% of respondents to the questionnaire (7), stated that they would have needed more examples on how to do and how to proceed, even if the two introductory lessons of the description of process and tools were recorded and available, and the tutors were ready to provide support also to link with entrepreneurs.

The most positive aspect of the process was identified by students as teamwork (37.5%), followed by 'relations with stakeholders' (16.7%). While it should be considered that the sample represents only 45% of participants to the course, it should also be noticed that none pointed out difficulties to work in a group. Only one respondent stressed the group as a subject of evaluation:

> *As a suggestion to improve the process, I would advise reviewing the criterion for assessing individual members of the group.*
> *[Respondent 23]*

Concerning online tools used for the course (OLAT platform and Microsoft teams), tutors, in general, agree that they were adequate, with few remarks:

> *Microsoft Teams was fine. I such an emergency, and the unexpected re-design, the adopted solution was the best possible. Perhaps for the future, the use of more innovative and engaging tools could stimulate better the students [Tutor 3]*
> *The availability of recorded lessons was an added value [Tutor 4]*

Students report an average satisfaction regarding the tools, as shown in Table 4.

Unfortunately, none of the respondents reported, in open questions, about what has worked or not as regards tools, and which features they would have preferred. One respondent commented:

> *The course would have been much better F2F [Respondent 4]*

Assessment

The course planned intermediate and final assessment exercises, as follows:

- Intermediate assessment on modules (MOOC and online course);
- Final assessment of the project produced by the groups (with the participation – and feedback – from stakeholders, and marking from tutors and teachers on the basis of established dimensions);
- Final assessment of the course, including intermediate assessment results and oral exam.

It should be taken into account that within the Italian system, the final exam of the course is carried out by a committee of three members at least, all of them belonging to the university. As a consequence, any form of external assessment, or peer assessment, cannot have formal value as such.

4. Discussion and Conclusions

Open education, open pedagogy and open resources were not at the basis of the design of the course, as a conscious choice of the teacher. However, the analysis of the case highlights a quite good degree of openness in all explored dimensions.

Concerning design, the teacher is a collaborative designer (A2, in Nascimbeni et al., 2018 model), since he designs courses with colleagues and stakeholders, by also sharing decisions about content, teaching methods and roles of involved educational players (tutors, stakeholders, experts at least). In the specific case, the re-design of the course included 100% use of technology and online learning, but also in 'regular' courses, the combination of online and offline work is continuously applied, as well as the use of OERs as readings for the course.

In terms of content, he is familiar with OERs principles: he produces learning materials for the open use of others, he uses OERs provided by others (B2). He cannot be defined as an expert, as the licensing is not always available on all his shared work, and the awareness of the Creative commons licences' use is rather recent.

In terms of teaching, he reaches in some aspects the higher level of openness (C3): the course has been conceived and implemented to promote co-creation between students, researchers (tutors and experts) and stakeholders and promote the use of public resources by students. Yet, while co-creation and sharing of knowledge is encouraged as attitude, the publication of co-produced materials under open licenses has not been pursued so far (C2). However, sharing as such is supported: two groups of students presented and publicly shared their project work, invited by the association of companies involved in the course, during an open event in agri-food.

Finally, he is an innovative evaluator (D2), and he would probably become, at least for some parts of the course, an open evaluator, by including stakeholders assessment, at least for project-based pathways, in a more formal way.

We argue that, regardless of the knowledge about the open education movement, still a remarkable role is played by the pedagogical approach of the teacher in the use of open pedagogies. At least in the studied case, it seems that it was not open education to stimulate the teacher to open pedagogies; on the contrary, the pedagogical approach made the teacher a more open educator.

Item	Average	St. Dev.
The online course was useful	3,50	1,22
The use of the applications OLAT and Teams to attend the online course was easy	3,92	0,93
The discovery of the requested information was easy	4,00	1,02
The online course helped me in understanding better the course domain	3,42	1,14
The online course supported my learning process	3,67	1,09

Table 4 - Results evaluation from the questionnaire (Likert scale 1-5, where 1 = not at all; 5 = a lot) – online course (overall).

The practice, however, is always limited by practical and institutional concerns. As Cronin noted (2017, p.21): "the use of OEP by educators is complex, personal, and contextual; it is also continually negotiated". Likewise, in this case, some limitations and hindering factors, as well as additional issues to open learning design, were observed.

The ICT tools were more or less given. The use of the LMS platform and the synchronous communication tool of the university was a choice of the institution. The option also considers institutional needs of having registered/enrolled students, the need for tracking both activities and testing/assessment. We should recognise that at least in formal education, the choice of technologies is often limited.

Time could be an issue for all involved players. To meet within the group and with entrepreneurs and tutors would require high flexibility in time. On the one hand, it is understandable that entrepreneurs cannot devote much of their working time to meet students; on the other hand, tutors and the teacher need to be available in the evenings. Similarly, students can have problems in finding the right time to work together, or to be available to work with tutors and entrepreneurs in the evenings/unsocial hours.

Finally, data analysis did not provide enough elements on the student perception. More qualitative research is needed to understand the role of the students in open education. The active engagement of students, as well as their autonomy, or the willingness to actively participate, should not be given as assumption. Teachers regularly experience resistance to active pedagogies, particularly to group work, but also open debates, public speaking, peer-assessment or any other method that take out students from their comfort zone. Active learning requires more efforts and time than studying to do the exam. To increase openness in teaching, then, more work is also needed to understand learners better. Concerning that, it is essential to recall that the students' body can be very diverse: it should be therefore considered the responsiveness of OERs and OEPs to different needs.

For this reason, we need to design open educational ecosystems better to support inclusive learning practices (Zhang et al., 2020), so that the right to equitable quality education can be effectively implemented. The characteristics of OERs and OEPs, including the possibility of reusing and remixing, could facilitate the fulfilment of different user needs, through their functioning with the learning context (Giaconi et al., 2020). Therefore, OERs and OEPs could be key resources for the promotion of lifelong learning for all. It is therefore essential to take into account in the design and use of OERs and OEPs' pathways different analysis plans that allow to meeting the needs of students with disability and with Specific Learning Disorders. To this end, the three pedagogical dimensions that can contribute to the implementation of inclusive processes through OERs and OEPs are fundamental, namely accessibility, usability and personalisation.

In any OER/OEP it is thus important to consider the level of accessibility, i.e. "the use of a product, service, framework or resource in an efficient, effective, and satisfying way by people with different abilities" (ISO 9241-171, 2008); of usability, i.e. the "degree in which a product can be used for specific users to achieve specific goals with effectiveness, efficiency and satisfaction in a specific use context" (ISO 9241-11, 1998), and, finally, of customisation, i.e. at what level different paths have been designed and activated according to the cognitive style profile of each user (Giaconi, 2004). To this aim, the model of analysis of OEPs and OERs proposed in Table 5 takes up the conceptual and procedural dimensions typical of the construction of learning courses, by adopting an inclusive perspective (D'Angelo & Del Bianco, 2019; Giaconi et al., 2018, 2020). The categories developed by Nascimbeni et al. (2018) can integrate the principles of accessibility, usability and personalisation in the analysis of OEPs and OERs (Capellini & Giaconi, 2015). The pedagogical dimensions (accessibility,

Design	**Content**	**Teaching**	**Assessment**
Accessibility degree	*Accessibility degree*	*Accessibility degree*	*Accessibility degree*
A3. High A2. Medium A1. Low	B3. High B2. Medium B1. Low	C3. High C2. Medium C1. Low	D3. High D2. Medium D1. Low
Usability degree	*Usability degree*	*Usability degree*	*Usability degree*
A3. High A2. Medium A1. Low	B3. High B2. Medium B1. Low	C3. High C2. Medium C1. Low	D3. High D2. Medium D1. Low
Personalisation degree	*Personalisation degree*	*Personalisation degree*	*Personalisation degree*
A3. High A2. Medium A1. Low	B3. High B2. Medium B1. Low	C3. High C2. Medium C1. Low	D3. High D2. Medium D1. Low

Table 5 - Model for analysis of accessibility, usability and personalisation (Giaconi et al., 2020).

usability and personalisation), concerning the framework developed by Nascimbeni et al. (2018), can be analysed taking into account three levels of compliance, to meet the diversified needs of the users, as follows:

- *High*, when the resource and practice reach the highest level of effectiveness, efficiency and satisfaction for end-users;
- *Medium*, when the resource and practice reach the average level of effectiveness, efficiency and satisfaction for end-users;
- *Low*, when the resource and practice reach a minimum level of effectiveness, efficiency and satisfaction for end-users.

The evaluation of OEPs and OERs in relation to these three dimensions can be carried out either by a staff of experts through the use of specific tools (Alsaeedi, 2020), and/or by involving final users, e.g. people with disabilities and Special Learning Disorders.

Therefore, by taking into account the students' perceptions of open education, it is also essential to include the dimensions of accessibility, usability and personalisation both to OERs and OEPs, to increase the inclusion of all students in the educational contexts (Schiavone, 2017; Zhang et al., 2020).

This study aimed at analysing the degree of openness of an undergraduate course: conclusions highlight that the awareness of teachers about OER/OEPs is not necessarily related to the declared openness of the course, as the course could be open beyond teacher's purposes, and that more research is needed on end-users, therefore students, to increase inclusion and learning effectiveness.

Limitations of the study

The study analyses a case with limited sample of students: it offers insights for further research, but it cannot propose generalised conclusions. The course took place during the lockdown during the 2020's pandemic, thus in an atypical situation and in emergency times, which could have affected students' psychological and emotional reactions.

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