

Institutional mapping of open educational practices beyond use of Open Educational Resources

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# **Mapping openness capacities within universities beyond OER: a case study**

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## **Mapping openness capacities within universities beyond OER: a case study**

Many efforts exist to increase the use of open practices within Higher Education, but just a few of them start from the actual *openness capacities* of universities, mainly because mapping openness is a rather difficult exercise. This paper addresses this challenge from an original viewpoint, claiming that capacity building on openness within a university - as well as within any educational institution - should be done by building on the existing skills and on the *local champions* that are already fluent in open approaches. The paper builds on the *Open Educators Factory* methodology to map openness capacity of universities across all dimensions of open education: open design, open content, open teaching and open assessment, and presents the results of its application to a pilot case study within an Italian university. As shown by the pilot results, by using this approach it has been possible to map the existing level of openness capacity within a university and to connect it with the fluency of local educators, offering university leaders the possibility of building on the best performers to raise the overall openness capacity of their teaching staff.

Keywords: open education, higher education, open educational resources, teachers' training

### **The problem of mapping openness capacity within universities**

Open practices in education are generally recognised as potential enablers of quality, access and effectiveness within universities (Weller 2014). Governments are stressing the importance of openness within education worldwide, as demonstrated by the organisation of a series of congresses on the topic along 2017: II UNESCO International Forum on ICT and Education 2030 in China in July, II UNESCO OER World Congress in September in Slovenia, the UNESCO-COL International Day to Universal Access to Information in Mauritius also in September, or the XXVII ICDE World Congress in Toronto in October. And, at the same time, an increasing number of universities are

striving to mainstream the adoption of open approaches across their educational programmes. Still, those universities that are investing time and resources in open education activities, are typically supporting the creation of Open Educational Resources (OER) or to the development of Massive Open Online Courses (MOOCs) (Grodecka & Śliwowski 2014, Agbu et al. 2016), while cases of institutional openness, normally demonstrated by the launch of open education policies, are very limited. In parallel, few higher education institutions are focussing on one of the main enablers for mainstream adoption of open practices, that is the development of educators' awareness, motivation and capacity to work in the open (Nascimbeni 2015). The spread of ICT and the consequent increase of innovative experimentations within education are challenging the traditional role of educators, and in particular the idea that teachers are the only ones entitled to produce and transmit knowledge (McLoughling & Lee 2008, Anderson & Dron 2011, Rivoltella & Rossi 2012, Bates 2015).

Some national initiatives exist that aim to build open capacities among university teachers, such as the OEPS Programme in Scotland or the OER Info initiative in Germany, which normally focus on awareness raising and practical training (Inamorato dos Santos et al. 2017, Mulder 2013). While these top-down programmes are surely useful, we believe that they should be complemented by bottom-up capacity building initiatives, planned and designed within universities that are motivated to transform their teaching staff into open educators (Nascimbeni & Burgos 2016). In order to do so, university leaders first need an understanding of the actual capacity of their educators in terms of open approaches across all the components of their teaching (learning design, teaching resources, teaching methods, assessment practices), and second, they would need to identify the best open practitioners within the institution and use their experience to build generalised capacity across the university. In other words,

only by having a picture of the open capacity of staff across the whole university - or part of it - can academic leaders understand who is in need of more training and in which field, and how to provide this capacity within the institution.

The problem is that the open capacity of the teaching population of a university - or even of a part of it - is difficult to quantify, mainly because openness is a social construct which evolves over time (Veletsianos 2015) and because it is connected with individual cultural behaviours of educators (Cronin 2017), resulting in a situation where almost everyone – policymakers, researchers, academic leaders, educators – seems to agree on the potential benefits of opening up education but nobody has an understanding of the open practices actually performed by individual educators (Veletsianos 2015).

The scientific literature on open education is abundant in conceptualisations, definitions and frameworks, especially as far as OER is concerned (Nascimbeni & Burgos 2016, Paskevicius 2017), and a lot has been said about the potential benefits of open practices and on the barriers to adopting open approaches. Still, only a few studies have managed to provide empirical data to demonstrate what proportion of teaching staff of a given university are able to work in the open (Veletsianos 2015). Among the few existing attempts to map openness within universities, Jhangiani et al. (2016) describe the patterns emerging from a survey of all British Columbia universities on the use of open content, noting that faculty with more open personality tend to be more likely to use OER. Pete et al. (2017) shed some light on the perceived value of OER from students and faculties in four Kenyan universities, concluding that despite the low awareness of OER and open licensing, some sort of preparedness for openness exist in the studies universities. Hilton III et al. (2017) analyse the impact of OER on students' performance in a US university, concluding that the use of OER has a positive impact

on students performance both in face-to-face and online settings. Cox and Trotter (2017) analyse lecturers adoption in three South African universities, connecting this to institutions' capacity for openness and stressing the importance of institutional culture as a leverage for OER adoption. All these studies provide important insights on how to increase the adoption of OER within universities, but they are limited by the fact that they do not go beyond open content. On the other hand, it has been observed that research on open education should shift its focus from open content towards a more holistic understanding of openness which can demonstrate the impact of open practices in supporting innovative education (Ferguson et al. 2017, OPAL 2011, Kimmons 2016, Weller, de los Arcos, Farrow, Pitt & McAndrew 2015).

Through our literature review, we have found just two studies that aim to map capacity for openness, within a specific university, beyond OER adoption. Veletsianos, by analysing the adoption of open practices at Tall Mountain University, found that open practices are not mainstreamed within the institution, and discusses this finding in relation to enabling factors, collaboration practices and technological issues (Veletsianos 2015). Cronin, by analysing the situation at National University of Ireland, Galway, concludes that “a complex picture emerges of a broad range of educators: some open (in one or more ways), some not; some moving towards openness (in one or more ways), some not; but all thinking deeply about their digital and pedagogical decisions” (2017: 7). These two papers shed in-depth light on the way educators work in the open within these universities and take into account a holistic vision of open practices. However, they are qualitative case studies that do not go down to the level of the actual capacities of individual teachers, and therefore they are not directly applicable to other universities.

This paper aims to contribute to filling the gap in the current literature, by providing a case study of a mapping exercise to identify the open capacity of a university, which takes into account open practices beyond open content and which builds on the individual open practices of a relevant number of educators of the institution, thus providing university leaders with the ability to build on the expertise of leading open practitioners to raise the overall capacity of their teaching staff.

### **The OEF framework: mapping openness capacity beyond OER**

The data obtained through the pilot case study have been analysed through the Open Educators Factory (OEF) framework, presented in the table below, which gathers four areas of a teacher's work that are influenced by open approaches – the four columns: design, content, pedagogy and assessment - and grades the ability of educators to work with open approaches within these areas. The framework is based on an original definition of Open Educator that is presented in detail elsewhere (Nascimbeni & Burgos 2016) and was built as a result of an extensive literature review where the authors have identified definitions, conceptual frameworks and guidelines targeting university teachers and aiming to improve their open fluency, and on subsequent discussions with a number of experts in the domain of open education (Nascimbeni & Burgos 2016).

<b>Design</b>	<b>Content</b>	<b>Teaching</b>	<b>Assessment</b>
<b>Open designer</b>	Expert OER user	Open teacher	Open evaluator
<b>Collaborative designer</b>	Familiar with OER	Engaging teacher	Innovative evaluator
<b>Individual designer</b>	New to OER	Traditional teacher	Traditional evaluator

Table 1: The Open Educators Factory framework

Starting at the bottom of the table, the three typologies of educators identified with respect to the design area are the Individual designer, who designs their courses individually, based on previous knowledge and experience, the Collaborative designer, who co-designs their courses with close colleagues, either from the same university or from international subject-related teams, and the Open designer, who shares their course design ideas and curriculum openly through the open web, for colleagues and students to engage with and enrich the course design.

In terms of resources, the framework typifies the “New to OER” educator, who might use digital resources found on the web to enhance teaching and learning – normally without considering whether they are openly-licensed, and who does not use open licenses for the content they produce. Then we have the Familiar with OER user, who re-shares resources they have reused among close colleagues, produces and shares his/her own resources under open licences and reuses resources recommended by trusted colleagues, and finally the OER expert user, who re-shares resources they have reused openly through social media and OER repositories, uses resources created by others, searches for OER through social media and repositories and shares links and resources beyond the classroom, through an open online identity.

As far as teaching is concerned, the Traditional teacher adopts traditional lecture-based pedagogy, the Engaging teacher, who adopts seminars-like strategies, either offline or through restricted online spaces and uses innovative teaching methods such as the flipped-classroom approach, and finally the Open teacher, who implements methods that foster students’ co-creation of knowledge, nurtures students to contribute to public knowledge resources, encourages learners to access freely available online content and shares examples of teaching practice in open subject-related communities. Importantly, this classification has nothing to do with the use that an educator makes of



ICT for teaching: for example, traditional educators may use ICT extensively, such as using the university LMS to share resources. However, if these resources are shared only with the students of their courses, they are implementing open practices only to a limited extent, despite their intensive use of technology.

In terms of assessment, we have the traditional evaluator, who assesses students through classic methods such as tests or classwork, the Innovative evaluator, who experiments with peer-based assessments methods adding some elements of collaboration among students and experts, and finally the Open evaluator, who uses open assessment practices such as open peer assessment or open e-portfolios and engages communities of practices to assess students' work.

The framework is based on all areas of teaching activity that an educator can undertake in an open way, gives a clear message to both teachers and educational leaders, that openness is not binary where you are either an open educator or not, because working in the open can mean different things to different educators. As we will see later in the data analysis, teachers are normally more open in some aspects of their work than in others, depending both on their attitude towards sharing – and in particular on the individual balance between privacy and sharing (Cronin 2017) and on contextual elements such as national copyright legislation or institutions receptiveness to open approaches.

### **Context: Polytechnic University of Turin**

Within this study, we have run the case study analysis at the Polytechnic University of Turin (Politecnico di Torino, or POLITO, from now on), a public technical university based in Turin, Italy. POLITO is Italy's oldest technical university and offers several courses in the fields of Engineering, Architecture and Industrial Design. It enrolls 35.000 students (A.Y. 2016/2017) with an academic catalogue of 22 Bachelor programs, 29

Master of Science programs and 16 Ph.D. programs. Considering the QS graduate employability ranking by graduate employment rate, POLITO stands at the top of the world ranking (QS 2018). As of today, POLITO has 890 teaching faculty with 307 researchers, 371 associate professors, and 212 full professors.

This institution was chosen for this case study because, in common with a large number of other educational institutions, it does not have an internal policy mandating or encouraging openness, but it does have a number of open-education related activities, including a high number of freely available online resources. POLITO has engaged with openness and education technology since the late 1990s, when it began recording lessons and disseminating them using different platforms. It also provides teachers and students with a teaching web portal with personal pages where students can upload homework and find lesson materials, information and self-certification documents. This university is, therefore, a typical example of an institution where, despite the absence of an official policy on OER and open education, educators are free to adopt open practices and to produce openly-licensed resources.

## **Methodology**

The goal of this research is threefold. First, to meaningfully map capacity for openness within a university by taking into account the level of open practices adopted by individual educators within the institution, through a holistic approach that goes beyond the use of OER. Second, to demonstrate that this mapping can provide university leaders and managers with important information that they can use to increase the adoption of open practices across the institution. Third, to validate the OEF framework, approach and inquiry tools in a real-life case study.

In order to reach these goals, we started investigating the level of open literacy of as many teachers as possible within the institution: teachers were asked to fill in a short online questionnaire, which had previously been validated and improved in collaboration with university management, focusing on their teaching practices and tackling the four dimensions of the framework presented above; course design, teaching resources, teaching and assessment practices. We deliberately did not focus on open research since this falls outside the scope of the study, even if such a dimension could be easily added to future rounds of research without having to change the overall methodology. Two things must be said about the data collection phase. First, the online questionnaire never mentioned concepts such as OER or Open Education, in order to avoid being perceived as an exercise for specialists in e-learning or open licenses. Second, once having completed the questionnaire, teachers were provided with real-time feedback, illustrated in the figure below, showing their position in every column of the framework, in addition to a set of targeted guidelines depending on the capacity of the respondent, in the form of links, suggested readings, courses or learning materials.

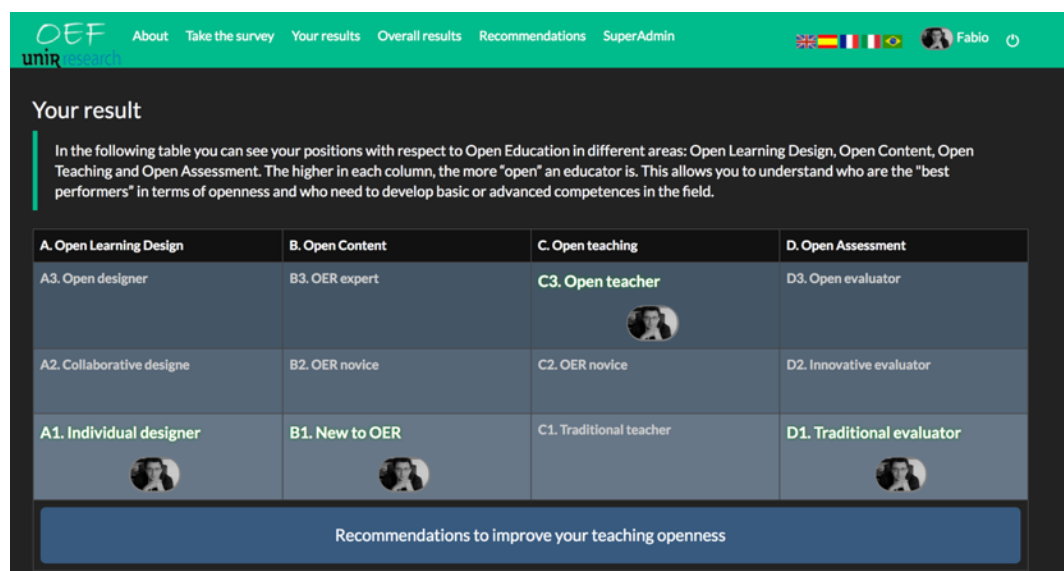


Figure 1: Example of the feedback received by teachers once they filled the online questionnaire

181 teachers from POLITO have completed the online questionnaire: 19% of respondents were full professors, 49% associate professors, and 31% researchers with some time dedicated to teaching. In terms of academic discipline, 63% were from engineering, 19% from physics, sciences and mathematics, 10% from architecture, 8% from other fields, including economics and business, social sciences and education. In terms of age, the majority (60%) were between 35 and 50 years old, 6% were between 25 and 35, while the remaining 34% was over 50. 32% of respondents were female and 68% male. This sample of respondents can be considered representative, as it appears to be well proportioned to the teaching staff population.

Data were analyzed by cross-referencing the main results with the characteristics of the respondents, and by comparing the main emerging findings with the similar studies presented earlier in the paper.

Two limitations of this study must be highlighted. Firstly, the results are based on the responses of 181 out of the 890 teaching staff at POLITO, and even if the respondents' population sufficiently corresponds with the general characteristics of the overall teaching population, it must be remembered that the data represents only a proportion of the teaching staff. Second, it must be noted that, since replying to the survey was a voluntary activity, teachers with more familiarity with the use of ICT were more likely to respond (this is despite the relatively low percentage of respondents stating that they use social media).

### **Appreciating the overall picture of openness within the university**

The online questionnaire has generated abundant data: in this paper, we present a

fraction of the outcomes, focussing mainly on the overall level of openness within the university, discussing aspects of particular interest, and looking for emerging patterns between the level of openness of educators and their characteristics.

First of all, the collected data has allowed us to reach a comprehensive understanding of the capacity for openness and of the knowledge gaps within the institution, as illustrated below.

<b>Design</b>	<b>Content</b>	<b>Teaching</b>	<b>Assessment</b>
Open designer <b>7 (4%)</b>	Expert OER user <b>23 (13%)</b>	Open teacher <b>9 (5%)</b>	Open evaluator <b>13 (7%)</b>
Collaborative designer <b>118 (65%)</b>	Familiar with OER <b>98 (54%)</b>	Engaging teacher <b>81 (45%)</b>	Innovative evaluator <b>9 (5%)</b>
Individual designer <b>56 (31%)</b>	New to OER <b>60 (33%)</b>	Traditional teacher <b>91 (50%)</b>	Traditional evaluator <b>159 (88%)</b>

Table 2: Overall positioning of POLITO staff with respect to Open Practices

If we look at the overall results, we notice that a certain degree of capacity for openness is present across all the four areas, and that in all areas but Assessment a relevant percentage of educators falls into the middle layer, meaning that collaboration and experimentation are strongly embedded in the university educational practices.

Expectedly, Content is the area where open practices are more spread among educators at POLITO, with more than 65% of respondents being wither familiar of proficient with the use of Open Educational Resources, while Assessment is the area where traditional methods are still the norm for the great majority of respondents.

In the next sections, we will explore in detail how, following the research results, the teaching population of POLITO is performing with respect to openness in the four areas identified by the framework. By cross-referencing the survey results with

the profiles of the respondents, we will try to connect the use of open approaches with the characteristics of teachers, to provide some grounded indications to the university management on how to improve the level of openness of the institution's teaching staff.

### ***Open learning design***

In terms of course and resources design, most respondents (65%) design their courses in collaboration with colleagues and peers, either from the same university or from other institutions. 31% of respondents stated that they plan and design their courses on their own, based on their own knowledge and experience. The most interesting data is that 7 teachers (corresponding to 4% of the total) stated that they design their teaching activities in an open and collaborative way, by sharing ideas and curriculum openly through social media with colleagues and students, before their courses start in order to get ideas, feedback, and criticism. Opening the way an educator thinks about and designs their courses, is not only “a creative way to breathe new life and fresh ideas into course design” (Cochrane & Antonczak, 2015, p. 3), it is also a fundamental component of the open education culture and practice, as it reveals the existence of an open attitude from the very beginning of the teaching cycle. Knowing the identity these 7 open designers could be beneficial to university management as they could represent an inspiration and an example for colleagues; however, it will be important to consider issues related to their privacy and identity before starting any capacity building activities that might engage them.

By cross-referencing these results with the characteristics of the respondents, we could not find any correlation between the propensity to develop open courses and resources with age, gender or academic discipline. On the other hand, it seems that individuals' role within the institution does influence the use of open design practices: full professors, and to a limited extent associated professors, are relatively more active

in opening up their design processes in comparison to researchers. An explanation for this might be that using open practices takes time and experience, and researchers – especially in their early careers – are not in the position to have time to experiment with these innovations.

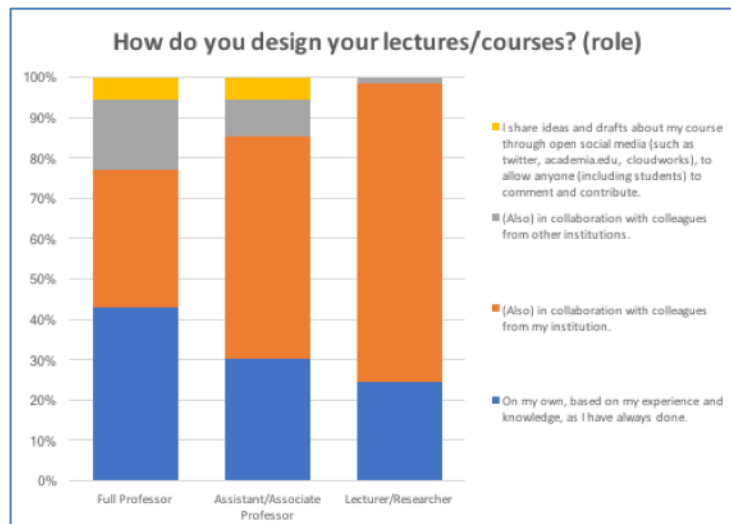


Figure 2: Relation between open design and use of social media for teaching

### ***Open content***

When it comes to the use of open teaching resources, the general approach of the institution is rather positive: although a number of participants (33%) stated that they are not aware of the benefits or methods of using openly licensed materials, the majority of respondents (54%) knew about and already used Open Educational Resources, applied open licenses to their materials, used resources recommended by colleagues, and/or shared resources they use among colleagues. Note that we say and/or since in order to be identified as Familiar with OER respondents had to respond positively to at least one question regarding the use of open content. This distinction is important because, in contrast to the area of learning design, where a single question was put to educators regarding the design of their courses, in the case of open content a number of questions were posed. Consequently, the position of each educator depends on more

than a variable. This means for example that a teacher that critically uses material provided by others but does not apply open licenses to his/her resources will fall in this category, as well as a teacher that uses open licenses but does not reuse material produced by others. Interestingly, if we move to the level of the Expert OER users, we find 23 respondents (13%) who are confident and familiar with these kind of teaching resources, meaning that they search for, adapt, use and re-share resources not only in collaboration with colleagues they know but openly through OER repositories and or social media. Also, in this case, knowing that such a pool of OER experts exists within the university can represent an important starting point to further spread the openness virus (Weller 2014) across the institution and to start a process of institutional implementation of OER production and use.

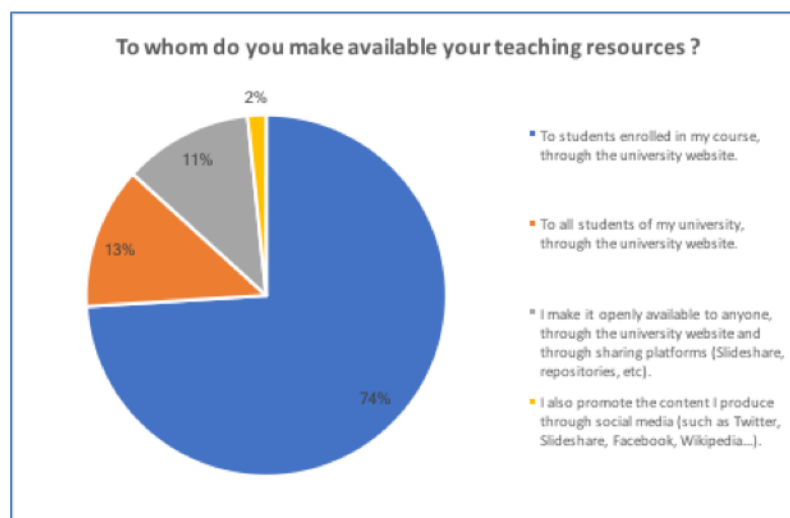


Figure 3: Level of openness in resources dissemination

An interesting indicator of the level of open practice is the degree of openness that teachers decide to apply to their own teaching resources. As we can see from the figure above, 74% of the respondents only make their content available to students enrolled in their courses, and 13% make those available to all students enrolled in the university.



However, 13% of respondents make their materials openly available to anyone, and of these, 2% disseminate their resources through social media.

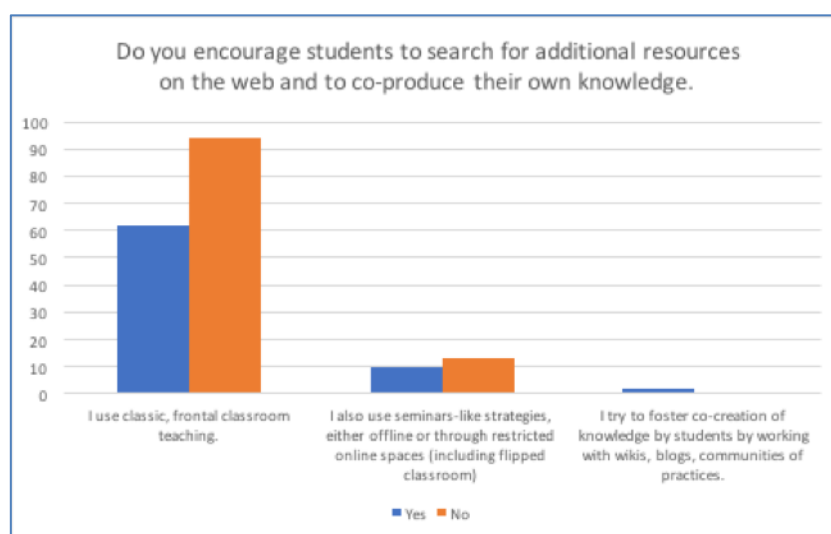


Figure 4: Level of reuse of resources

Another indication of open practices is the degree to which educators use (whether adapting them or not) resources produced by others for their teaching. In this respect, the situation is composite: 43% of respondents do not use resources produced by others, while 57% do so. 16% of respondents commented that they only use openly licensed resources, demonstrating both awareness of licensing issues and the capacity to understand and use resources with different open licenses.

### ***Open teaching***

When investigating open teaching practices, we started by asking respondents what the most common modality of teaching is: 86% are using traditional teaching methods, 13% engage students through offline and online collaborative methods, including flipped-classroom approaches, while only the 1% of respondents tried to foster co-creation of knowledge by students, through working with wikis, blogs, and communities of

practice.

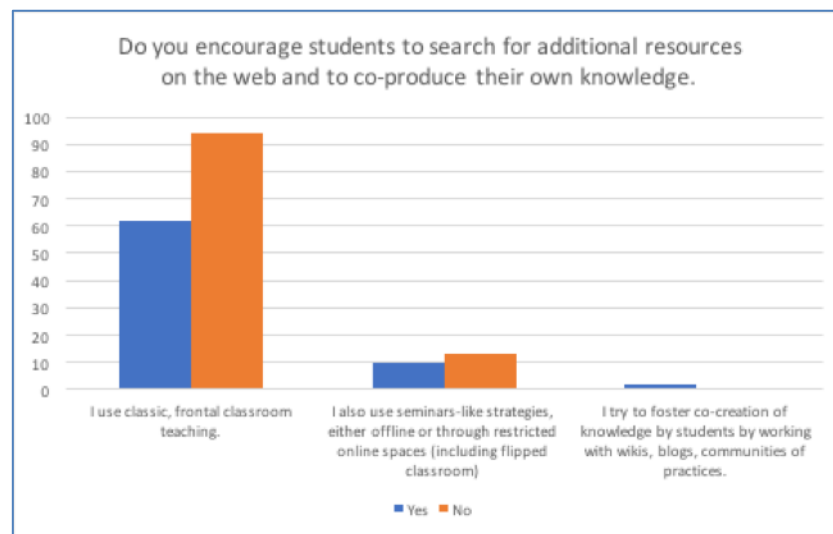


Figure 5: Open practices and teaching styles

This classification is important to understand how open practices can exist across different teaching styles. In fact, when asked whether they encourage students to search for resources on the web and to co-produce their own knowledge, a number of respondents from all teaching styles replied positively. Because of this, the percentage of Open Teachers within the university is higher than the ones who declared that they use innovative teaching methods. If we look back at Table 2, we can see that 50% of respondents are mapped as traditional teachers, 45% as engaging teachers, and 5% as open teachers. If we look in detail at the responses of this last group, we notice that apart from encouraging students to co-create content and to access freely available online content, this group (composed by 9 teachers) is doing something more: they are sharing their teaching practice in open communities. These 9 educators can potentially act as mentors to both engaging and traditional teachers, as they are used to openly sharing their teaching strategies and methodologies. Furthermore, being open practitioners, they should in principle be willing to openly share their approaches with their colleagues.

## ***Open Assessment***

As might be expected, assessment is the area where more work needs to be done in terms of building capacity for openness, as demonstrated by the fact that the great majority of respondents (88%) use traditional assessment methods. Very interestingly, Open Evaluators (7%) are slightly more numerous than Innovative Evaluators (5%), and this result brings us to two considerations. First, in the field of assessment, probably because it is rather a strictly controlled field within universities, innovation seems to be fully a matter of individual initiative, where practices such as engaging communities of practice to assess students, open blogging or cross-commenting among learners are more common than more institutionalised practices such as eportfolios. Second, open assessment seems strongly connected with open teaching practices, as it appears if we compare the answers of open evaluators and the ones of open teachers of our sample. This confirms the fact that Open Assessment can have an impact on the overall teaching practice of an educator, as noted by Paskevicius: “when designing assessment and evaluation activities, faculty may enact OEP by exploring ways in which they can engage students as producers of content, find ways to integrate peer-review and assessment, promote student collaboration, and develop digital literacies” (2017: 9).

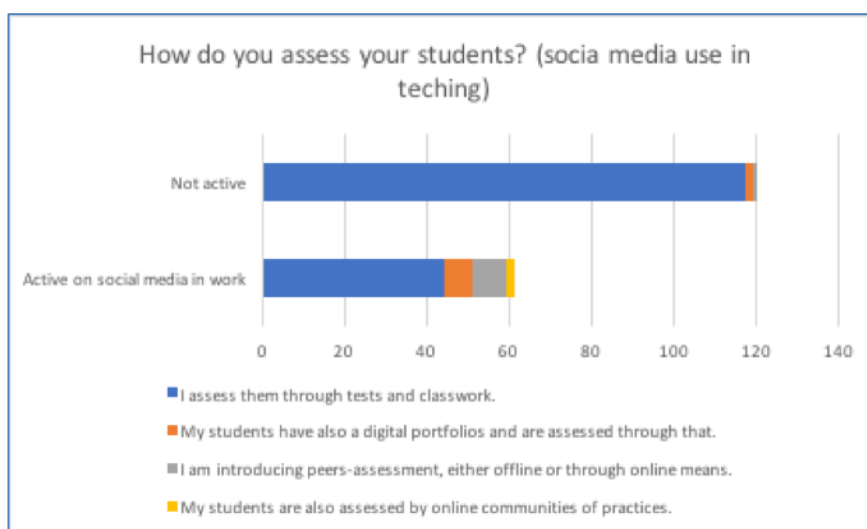


Figure 6: Open assessment and social media use

As might be expected, Figure 6 shows that a direct relationship exists between the use of open assessment methods and using social media for professional use. Most of the innovative approaches to assessment, whether eportfolios, peer assessment or community-based assessment, are undertaken by teachers who use social media in their professional practice.

## Discussion

As appears in the Figure below, in every one of the four areas, a cohort of educators fluent with open practices exists, that could be motivated to inspire and build capacity among colleagues.

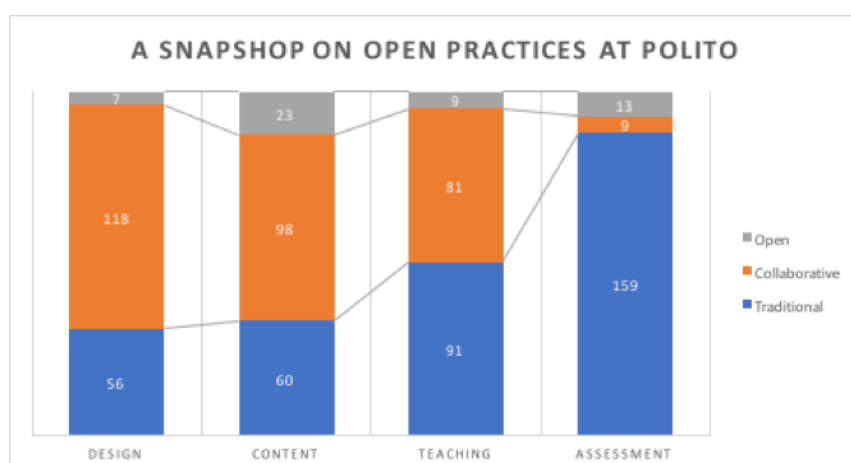


Figure 7: Overall openness level of POLITO staff

Nonetheless, our research also demonstrates that in very few cases the same educator is fluent in all areas, corroborating the idea that, when distinguishing between non-open and open educators, each teacher is different and will typically be more open in some areas of work than in others. For example, some lecturers who are releasing their content through open licenses and are fostering collaboration among students through flipped-classroom methods, have never experimented with open design or open

assessment. Alternatively, some teachers are adopting peer-based assessment practices but, for whatever reason, are not releasing their content as OER. This is why, in order to plan capacity building interventions in such a multifaceted area as open practices, it is important to consider educators individually, whether we want to identify them as champions or if we want to increase their capacity in a certain field. The strength of the proposed methodology is that it can highlight any advancement towards openness for individual educators in any area of activity, and can, therefore, motivate educators to explore other areas of work where open approaches can be adopted.

Another important consideration has to do with the relation between the level of openness of educators and their characteristics. What we have seen across all the areas of analysis is that openness is not a matter of age: when the level of OER awareness is examined by age group, it is the oldest faculty (aged 55+) that have the greatest degree of awareness, while the youngest age group (under 35) trail behind. The youngest faculty do show the greatest proportion claiming to be very aware, but have lower proportions reporting that they are aware or somewhat aware. Similarly, openness is not a matter of discipline: even if respondents from some disciplines seem to be more open to sharing, as it is the case for scientific areas such as physics in which there is strong agreement about research priorities and reuse of outputs is more common than social sciences for example, we can conclude that to identify bounded academic fields with specific cultural features would be an oversimplification, due to increasing specialization and interdisciplinarity of teaching and research (Becher & Trowler 2001).

On the other hand, the research shows some correlation between certain characteristics of respondents and their tendency to adopt open practices. First, openness stems from small groups collaboration, in the sense that open approaches often seem to stem from the sharing culture that normally exists among close

colleagues, especially as far as using resources produced by others. This consideration is in line with the findings of Lopukhova & Makeeva (2017) and of Veletsianos (2015) who claim that both individual and systemic barriers exist to the adoption of open approaches and that close collaboration can strongly influence individual agency in the practice of openness. Adding to this, we can claim that the findings of Jhangiani et al. (2016), that faculty who score higher in terms of openness personality are more likely to both create and reuse OER, can be extended to open teaching. Second, openness is connected to collaboration: across all the four areas of analysis – with a more limited extent when it comes to assessment practices – data seems to confirm that a strong relationship exists between the use of open approaches and collaborative attitudes among university teachers, where open online identities and networks seem to be a key to develop open teaching strategies (Nascimbeni & Burgos 2016). As noted by Weller (2012) and Cronin (2017), a relation exists between educators' positive attitude towards openness and their collaboration practice, confirming that the use of OER and open pedagogical approaches can have an impact on the personal networks of educators, and vice-versa. It is interesting to compare these findings with what Cronin concludes in her recent article reporting on a study run within an Irish university: "Overall, for the participants in this study, using OEP (Open Educational Practices) was primarily characterized by: having a well-developed open digital identity; using social media for personal and professional use, including teaching; using both a VLE and open tools; using and reusing OER; valuing both privacy and openness; and accepting some porosity across personal-professional and staff-student boundaries" (Cronin 2017: 7).

## **Conclusions**

In line with the goals of this research, we can draw conclusions at three levels.

First, the research demonstrates that it is possible to meaningfully map the capacity for openness of a university by taking into account the level of open practices implemented by individual educators within the institution, through an approach that goes beyond the use of open content. As stated before, to our knowledge no previous research has been able to provide such a holistic picture of the capacity for openness of teaching staff across a university, by touching upon the four dimensions of learning design, content, teaching, and assessment. With respect to similar attempts to categorise universities regarding openness (Cox & Trotter 2017, Janssen, Schuwer & Mulder 2012) the present research is based on empirical data provided by the teachers rather than on qualitative analysis run in cooperation with the university leadership.

Second, such a mapping can provide university leaders and managers with important information that they can use to increase the adoption of open practices across the institution. In addition to representing a self-assessment and self-development tool for individual teachers, the study has provided departmental leaders with a tool for undertaking group assessment. Provided that a number of educators at any university have positioned themselves in the framework, as it was the case for the Polytechnic University of Turin, university leaders can gain with a rather complete understanding both of the areas where more capacity building is needed and of the teachers who can support others in building such capacity. This becomes a powerful tool for skills-assessment, with the final goal to encourage and support teachers with little or no experience of OER or other open educational practices to learn from their peers and colleagues within the same institution.

Third, the research has contributed to validating the OEF framework, approach and inquiry tools through a real-life case study, confirming that approaching the issue of openness competence building through multiple and complementary routes (learning

design, resources, pedagogy, evaluation) can be a successful strategy that allows educators to validate what they can already do and to improve their skills in other areas. Furthermore, the pilot confirms the preliminary results of the study (Nascimbeni & Burgos 2016) that the attitude towards openness is stemming from small-groups dynamics and is strongly related to general collaboration capacities, adding that the way towards openness by default seems to be rather independent of the teachers' characteristics in terms of age and discipline.

The next steps of the research will deal with an in-depth qualitative analysis of the best-performing teachers with respect to open practices, selected from the respondents' cohort, searching for common patterns in terms of areas of openness of teachers' work, that will allow understanding how faculty can be motivated to explore areas where they are not openness fluent, starting from the ones where they are already proficient. Also, qualitative research will help understanding the relevance of contextual elements such as national copyright legislation or institutions readiness to open approaches, digging into possible enablers for openness capacity building across universities.



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