Chapter 3

DEVELOPING SUPPORTIVE POLICIES AND STRATEGIES FOR THEIR IMPLEMENTATION: STUDENT EXPERIENCE WITH REAL-WORLD CASES

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Abstract:
    One of the principal recommendations of the UNESCO OER Recommendation (2019) is the development of supportive policies, including regulatory frameworks and strategies. In this chapter, we describe a novel approach to the development of

such policies and strategies for their implementation. The process involves using two resources: the UNESCO Guidelines for OER Policy as a framework and the Open Education Policy Game as a method for eliciting gaps and defining priorities in open policy and strategy design. Both instruments have shown to be a powerful mechanism to analyse and create a road map for OER and open education policy for organisations and groups. We will describe this methodology, developed and implemented as part of the Leadership in Open Education Master's course entitled Open Education Strategies. We begin with an overall perspective on the importance of developing leadership in open education by describing the Master's programme, its conception and its objectives. We highlight the importance of policy to promote the adoption of Open Educational Resources (OER) and Open Education (OE) more broadly. We then present the course rationale, followed by a description of the open practices and tools used to support a group of 10 students as they engaged in real-world open policy design.

Key words Open Policy, Open Strategies, Leadership, Professional Development, Open Educational Resources

1.   INTRODUCTION

The Open Education (OE) movement has seen renewed interest and substantial activity globally for at least two decades. A central component and a catalyst of OE has been the push for Open Educational Resources (OER):

> *Open Educational Resources (OER) are learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others.* (UNESCO, 2019).

The provision and use of OER have been directly connected to developing the Sustainable Development Goals (SDG), particularly Goal 4 (Quality Education). As such, a reoccurring question is how to ensure that the potential approaches involving OER for improving learning opportunities for all are fully explored. There is a strong argument that two key measures can play a significant role here – ensuring that organisational leadership fully supports OER and that appropriate policies and strategies are developed to provide supportive frameworks for conducive practices. This is because fully benefiting from the potential of OER requires significant change, and change occurs when routine processes are adapted and when the mindset, expectations and behaviours of actors are reorientated to new methods of achieving their objectives (Inbar, 1996).

A key change, for instance, in the case of OER, is the context of reusing and processes that allow for the improvement of educational materials. While educational materials are designed and implemented through curation of existing knowledge and arguments from other authors (scientists, engineers, business and political leaders), they are seldom designed in such a way that the next person (e.g. teacher) using them can also adapt and improve them (Amiel, Squires, Orey, 2009; Amiel, Orey, West, 2011). The principle of continuous improvement (remix, reuse, adaptation) is a central tenet of OER, but often "open" resources are confused with those that are simply offered for "free" online. Of course, this is not the case for the OER evangelists and important pockets of innovation (e.g. through projects).

One critical voice from education asked in 2018:

> *"So will we ever get to a Wikipedia-type model of teaching resources, with teachers freely giving and taking textbooks, lesson plans, and tests, refining and improving them, and sharing their improvements? There's no clear path right now to achieving that model —you can't will the proper ecosystem into existence, and overburdened teachers haven't built it up from the grassroots. Should we even want them to?"* (Berger, 2018).

For reasons related to priorities, resource scarcities and frameworks defining expected behaviours, only leadership, organisational policies, and strategies can help mainstream such change (Atenas et al., 2019). The prize of increasing mainstreaming of OER is making a significant contribution to SDG4, i.e. improving the quality of education for all. Perhaps, for this reason, the UNESCO OER Recommendation (2019) singles out supportive policies as one of its key objectives. Governments should "develop or update legal or policy frameworks to stimulate the creation, access, re-use, repurpose, adaptation and redistribution of quality OER by educators and learners". Furthermore, they should encourage "… mechanisms to create communities of practice, promote teacher professional development using OER, create networks of experts of OER and properly recognise OER creation as a professional or academic merit." (p. 5).

The Master Programme on Leadership in Open Education, hosted by the University of Nova Gorica, Slovenia, has taken up the gauntlet of training a new generation of open education leaders who can fulfil these expectations. As part of this programme, two courses: Open Education Strategies (OES) and Open Education Policies (OEP), are of specific interest. Students are introduced to key concepts and case studies on policy and strategy for openness in education. In the sense of scaffolding and professional cognitive apprenticeship, students are provided with the tools and the opportunity to develop and critique their own strategies through frameworks, mentoring and exchange with external experts from the field. They are reminded of the UNESCO Guidelines for OER in that a specific OER policy may not be the best or only solution to ensure mainstream OER practice and, ultimately, the achievement of better quality learning opportunities for all. At times an OER policy should be (and is) integrated into other educational or digital policies to ensure that it makes a key contribution and does not remain a proverbial solution seeking a problem.

In this article, we will provide an overview of the Master's programme and a review of its development so far, in its second year. It will specifically highlight the methods used to support students on their journey towards becoming the next generation of open education leaders in the hope that this work can be expanded to cover more students and perhaps replicated and adapted in other settings worldwide. The chapter aims to present the (open) tools and strategies used in a specific course as a way to highlight the overall goals of the Master's programme. As such, it is aimed at university staff and educators who hope to incorporate principles of openness into programmes and teaching.

2.   LEADERSHIP IN OPEN EDUCATION

The Leadership in Open Education (LOE) study programme has been developed by the University of Nova Gorica in cooperation with the UNESCO Chair on Open Technologies for Open Education Resources and Open Learning at the Jožef Stefan Institute and an international team of experts, with all authors of this chapter being involved. The main motivation was to support the implementation of the UNESCO OER Recommendation by building the capacities needed to meet its goals.

The programme development is rooted in experience with the Open Education for a Better World (OE4BW[1]) global online mentoring programme (Urbančič et al., 2019)[2]. The OE4BW programme connects developers of OER with OE experts volunteering as mentors, guiding developers from their idea to the implementation of OER. The response to the calls for developers and mentors to be included in the programme was global and exceeded all expectations, from 14 projects being developed in the first year, 35 in the second, 80 in the third and 104 in the fourth year, with more than 200 mentors actively involved. The programme's growth clearly proved the need for capacity building for OER development.

[1]   See: https://oe4bw.org

[2]   The programme was launched and coordinated by two of the authors, Tanja Urbančič and Mitja Jermol, in 2017.

As required by the OE4BW calls, the contents of all projects are bound to topics supporting at least one of the 17 SDGs. Besides helping developers to achieve their projects (many of them talked about how their dream project became a reality), the programme is raising awareness and knowledge about numerous aspects of sustainable development, as thousands of users were exposed to the resulting Massive Open Online Courses (MOOCs), Open Textbooks and other materials covering specific themes related to peace and justice, quality education for all, public health issues, clean and affordable energy, and more.

Last but not least, an important result of the OE4BW programme is also a growing network of OE experts and developers, fostered by coordinators, hub-coordinators and mentors, with developers taking increasingly responsible roles as they gain new skills, experience and professional connections through the programme and numerous collaborations that came out of it.

The approach in the OE4BW programme is pragmatic and has successfully achieved concrete results, namely, leading developers from their ideas to concrete OER. This is very important for spreading the use of OER and for moving away from the "starting from scratch" approach. Beginners often design resources without verifying the potential of reusing, combining or improving existing materials to contribute to needed adaptations, advancements and sustainability rather than multiplications of similar resources.

Despite the results of the OE4BW, the programme has some limitations regarding capacity building for OE. Namely, it has been designed to support developers wanting to learn and improve practical skills needed to implement OER. Although it is important, it is not sufficient to enhance the development of open education more systematically and on a larger scale. To this end, much more in-depth, interdisciplinary and holistic knowledge is needed, and this is what we offer with the new Master's programme, Leadership in Open Education.

The Leadership in Open Education programme aims to prepare its graduates for the role of leaders that will shape the future open education ecosystem. In their professional work, they must consider strategic, pedagogical, technological, social and managerial aspects. Moreover, they will have to understand how these aspects are interconnected. Only in this way will they acquire the competencies needed for a future managerial role in open education at the level of projects, institutions or communities. They will be prepared to work in formal or non-formal education at the national or international level – in all contexts where ecosystems of open education are to be developed, including strategies and policies for establishing or improving open education solutions. The graduates of this programme will also have the interdisciplinary knowledge needed for implementing these strategies, contributing to the progress of an inclusive knowledge society as mindful and skilled leaders

The main three characteristics of the Leadership in Open Education programme are as follows:

(1) *Global*. It is truly an international programme with a team of professors and mentors from different backgrounds and parts of the world. The same holds for students as well. This provides a perfect setting for experiencing and practising learning and working with care and attention to different contexts, different viewpoints and needs in an inclusive and supportive way.

(2) *Holistic*. It does not favour technical, pedagogical, economical, or any other specific strand but rather combines them into a meaningful whole. It does not matter if graduates focus on management, teaching or production of OER. They will have a holistic perspective in line with the role and the needs of other co-workers and stakeholders

(3) *Leadership*. The programme's success will be measured by the success of its graduates in terms of their impact and contribution to positive developments through open education, especially to the achievement of SDGs.

In (1), the LOE programme very naturally connects with the OE4BW programme as both communities have some intersections and coexist with excellent opportunities to meet. However, the LOE goes far

beyond the OE4BW scope in (2) and (3) and substantially contributes to the capacity building for open education.

Much emphasis is placed on critical understanding and development of the ability to select appropriate methods and technologies that are to be meaningfully used to solve current professional and practical as well as research issues in the field of open education. The aim of wider interdisciplinary integration is achieved mainly through teamwork and individual project work of students. Teaching is highly interactive, and discussions about current problems and trends are a vital part of it. Individuals and companies from a wider participating network are regularly invited to participate in the process and share their expertise with the students, providing them with additional information to help them build their competencies and future professional network.

The programme started in the academic year 2020/21, and the second cohort of students was enrolled in the academic year 2021/22. As it is a two-year programme, the programme still does not have graduates. As part of this programme, a specific course, Open Education Strategies, brings students a novel approach to thinking early on about policy-making and strategy-building for openness, which will be presented below.

3.   OPEN EDUCATION STRATEGIES COURSE

Following Mintzberg et al. (2009), strategy concerns itself with bridging the gap between goals for the future and the current situation. Common to all definitions and interpretations of the concept is that strategy (p. 16–18):

- sets direction
- focuses efforts
- defines the organisation
- provides consistency

Strategy is, in other words, the general framework that expresses a commitment by a government or an institution to change and sets the direction for actions to be taken. It consists of a means-ends rationale, which considers the past and present situation, assesses the important forces affecting the situation and lays down success factors for achieving future changes through specific interventions. The framework provides consistency of purpose whilst defining the scope and scale of the collective activities and the expected changes. In the LOE programme, we utilise three main resources to help our students to develop and evaluate open education strategies.

Firstly, the UNESCO Guidelines on the Development of Open Educational Resources (OER) Policies (Miao et al., 2019) provide a blueprint which can be used to develop such strategies for open education[3]. It is set up to provide a toolkit approach to take the reader through steps and specific questions that will eventually lead to the drafting of a full strategy for open education. One of the key resources used in the LOE programme, it provides the students with a way of thinking about open educational initiatives in a structured and strategic way.

Still, strategic developments do not happen in a vacuum. Here, Minzberg (2009) talks about "crafting" a strategy, as it must both link to the current situation and current practices and provide a vision for the future while offering stepping stones (measures, training, support, incentives) to help those involved in the space which should be changing to enact such change. This is very important, as people's daily lives

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[3]   One of the authors of this paper, Dominic Orr, was a lead author of this work.

are often characterised by a kind of balancing act between coping with current challenges and trying to keep an eye on how to reach future goals.

Secondly, we utilise the Open Policy Game in our learning programme, developed by the Brazilian Iniciativa Educação Aberta[4] (Open Education Initiative[5]), to help members of educational institutions and their leadership diagnose the current status of their practices using an open education framework. Key stakeholders can play this game in the strategy process to help them better assess the current situation and identify collective priorities. This can be used particularly well in the strategy design *gap analysis* phase *and* helps identify the key measures that become part of the strategic master plan.

As part of our course, we ask students to decide on a concrete open education policy they would like to evaluate and/or develop. Students usually select scenarios important to them: proposing a new policy for an institution, improving existing policy on a project they coordinate, and the like. After making some first decisions on the scope and scale of their strategy, they use the policy game to work with stakeholders on assessing the gaps and identifying priority areas for action.

Thirdly, we have a further key resource, which is necessary to help us conceptualise, evaluate and design open education strategies. These are our students. The Master's programme specifically recruits internationally and encourages students who already have some expertise in elements associated with open education to apply. While some have specific knowledge and work in the field, others have connections to themes like distance education, free and open-source software, and the like).

Since the purpose of the Master's programme is to nurture a new generation of open education leaders, our strategy programme also focuses on encouraging our students to fully utilise their own experiences and their own networks while building new ones from peer exchange both in the course and with experts from the field. We utilise a micro-blogging tool, which is an open-source platform in the Fediverse[6] environment, to achieve this goal. We want to encourage our students to exchange *publicly* on what resources and discussions they find in their networks while using a tool that follows free and open-source software principles.

3.1 Open Education Policy Game

The Open Education Policy game is designed as a board game to elicit discussion among invested stakeholders to identify gaps and priorities in their path to a viable open education strategy or policy. The game is available in three languages (Portuguese, English and Spanish) and has been used in diverse scenarios: from working and activist groups to state and federal governments[7]. The game is played with a small group of participants and a facilitator.

The game includes two types of cards: diagnostic and challenge cards. Diagnostic cards are used to elicit discussion on three important pillars of a viable open education strategy/policy: *legal, technical,* and *pedagogical*. Each card exhibits a statement, questioning if a particularly important aspect of open education policy is in place (Figure 1). One example of a legal theme would be: "tenders and contracts always include provisions for open licensing for various educational materials, including publications". On the technical front, an example would be: "we have a privacy policy page on our digital platforms". Finally, in terms of pedagogical concerns, a discussion should surface around: "our educational policies are designed with the participation of the community".

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[4] See: https://aberta.org.br

[5] Co-lead by one of authors of this paper, Tel Amiel. The game can be found at: https://aberta.org.br/oe-game

[6] See: https://fediverse.party

[7]   As an example, the Game was used as part of the process which led to the implementation of the State Secretariat of Education OER policy for the State of São Paulo, in Brazil, one of the largest school systems in the world. See: http://www.educacao.sp.gov.br/lise/sislegis/detresol.asp?strAto=202107220063

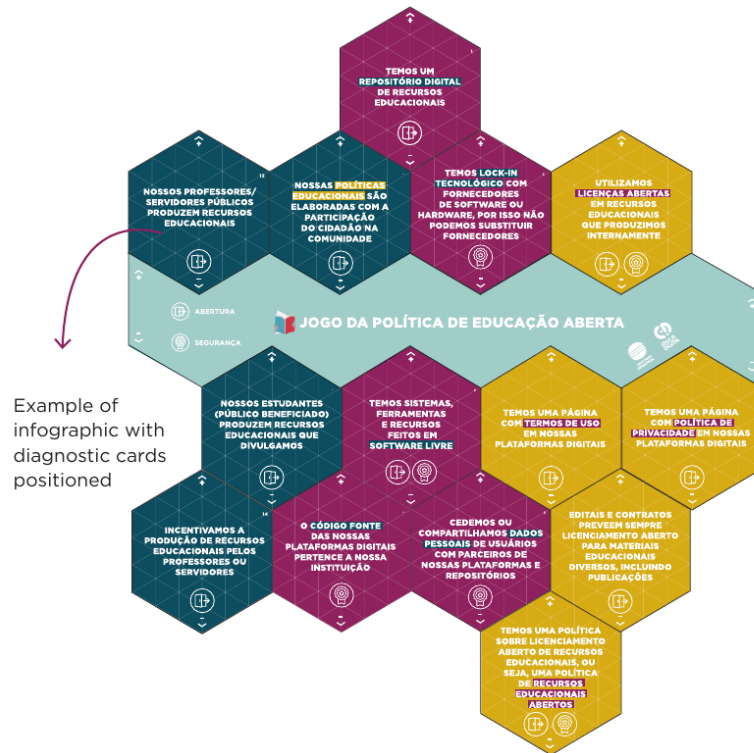**Figure 1**
Diagnostic card

Figure 2
Challenge card

Since the terminology in these cards can sometimes be complex for novice participants, a set of three challenge cards are included for each diagnostic card (Figure 2). So, in the example above, "privacy policy" would be highlighted to signal a glossary card with three possible answers. Participants must first correctly guess and understand this term to answer the question ("do we have a privacy policy?"). For each diagnostic card, the group of participants has to vote (a simple yes/no), but if no consensus is reached, a discussion should ensue in order to understand the nuances and pertinence of the arguments. As consensus is built around these topics, the cards are positioned on a board (Figure 3): if the card is on top, it signals a "yes" (this exists or is well implemented already); if it is at the bottom, it signals a "no" (needs to be addressed). The game then offers mechanisms to prioritise the challenges and help the group move forward in designing their policy.

Figure 3
Open Education Policy Game Board

Example of infographic with diagnostic cards positioned

Students were introduced to the game in an online session, where the teacher acted as a facilitator. Each card is shown on the screen in a presentation format, and the facilitator is responsible for tallying up votes and facilitating the conversation. A specific scenario that is common to all students is selected for join analysis. In this case, they analysed their own Master's programme.

After this trial run, students are then asked to conduct the game with their specific audiences as part of the gap analysis phase in policy design. These results are then brought back for discussion with the whole group[8]. Having to conduct the game presents a series of challenges for students. First, as they are learning and grappling with the concepts, it provides them with a hands-on opportunity to challenge their knowledge of these issues. Second, conducting the game online demands that students plan and organise a session in a format that is conducive to conversation and exchange.

The pandemic made organising the game with representative participants a bigger challenge for students. Some invited a large number of participants, which made conversation and exchange more difficult. Others were only able to engage a certain subsection of parties (e.g. mostly administrative staff but no technical staff). Still, this 'trial run' provides students with insights on how policy design can (and should) be conducted in a participatory fashion, improving the facilitator's understanding of the context while also bringing in potential future collaborators to policy design.

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[8] Examples of this process can be seen in reports published in our community. An example from a previous year can be seen in: https://zenodo.org/record/4728828

3.2   Public exchanges through Mastodon

During this course, 10 students interacted on a social network called Mastodon[9], a microblogging platform. The selection of social media for this course was based on specific principles and provided challenges to students which were aligned with the competencies of the course and ethics of the programme. First, our goal was for students to professionally interact in an open and public space to publish reflections and thoughts on open education. This was meant to encourage students to identify how to engage publicly (as opposed to the existing safer space of the course chat system) but also develop a public figure within the field. Contrary to closed platforms such as Twitter, Mastodon can be seen as a more 'safe' space to interact, as it has a substantially reduced base of users and provides less exposure to confrontation and conflict. Second, as part of open practice (Bali et al., 2020), the network provided channels for student-student interaction and ways for students to engage in specific-topic debates and bring on other readings and references, including news. Third, it is based on free and open-source software (Free Software Foundation, n.d.), which is an important aspect of open education and education in general. If we aim to educate students about the importance of free and open-source software as part of the design of their policy, we must also engage them in the challenge of experiencing new platforms and services and help reduce any stigma associated with free software. Students can then understand its robustness and possibilities by using a free, open communications platform. Finally, Mastodon allows for data extraction[10], which allowed us to run simple but useful analytics on student posting and interaction.

For this purpose, one of the teachers in the course developed a free and open-source Python-based script[11] to extract, analyse and periodically present data on student posting and interaction. The script extracts all posts based on a single hashtag used by the students for every post (#oesloe).

The results were published over intervals online. They were available publicly with an open license. As explained to the students, the analytics were not primarily meant to provide an individual evaluation of engagement but to help understand how interactions were happening and track overall student engagement over time – opening up avenues for dialogue between students and teachers. Individual data on posting and replies are useful to identify if students are disproportionately unengaged in the course (e.g. if students post far less than others), which could signal a problem (difficulty or resistance in using the platform, lack of connections, hesitancy to exposure) and can lead to a personal contact by the teachers and student support. Once framed as such from the initial stages, analytics can become an interesting tool for finding novel forms of engagement and dialogue.

We were able to track the number of postings and replies by each student over time, as well as their interactions[12]. The data presented below is publicly available on the Mastodon instance and available for extraction by the public.

Figure 4
Original posts after one week

Figure 5
Replies to *posts after one week*

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9   See: https://mastodon.online
10   Through an API, see: https://docs.joinmastodon.org/client/intro/
11   See: https://gitlab.com/tamiel/mastodon-counter/
12   This instance of the course developed over a 13-week period.
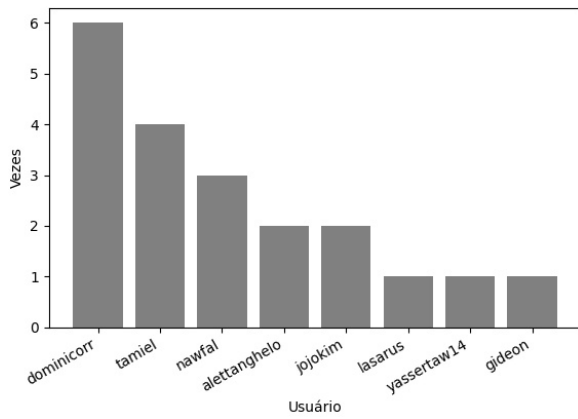
Figure 6
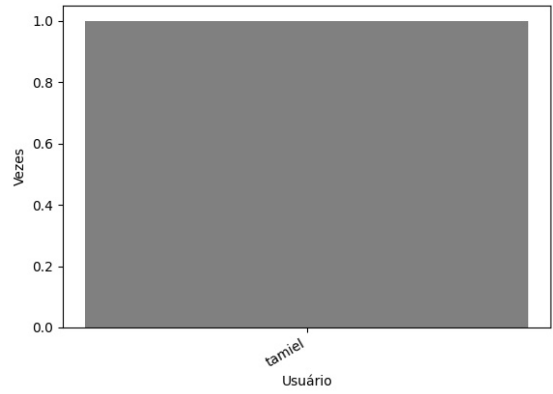*Original posts after four weeks*
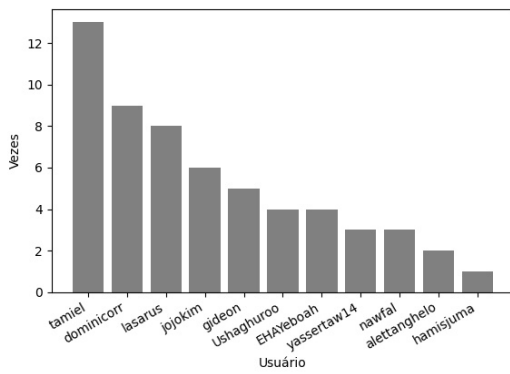
Figure 7
Replies to *posts after four weeks*

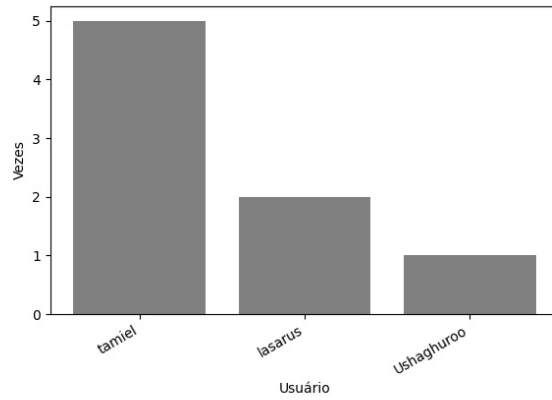**Figure 8**
Original posts after eight weeks

Figure 9
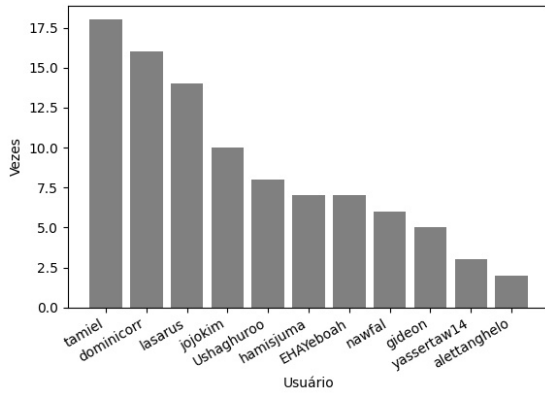*Replies* to *posts after eight weeks*

Figure 10
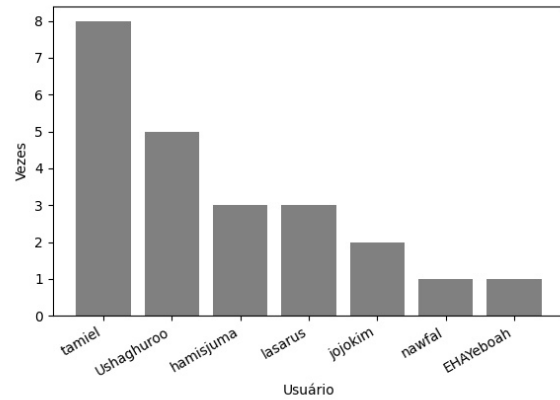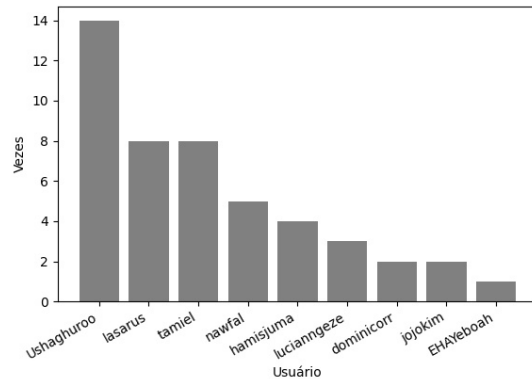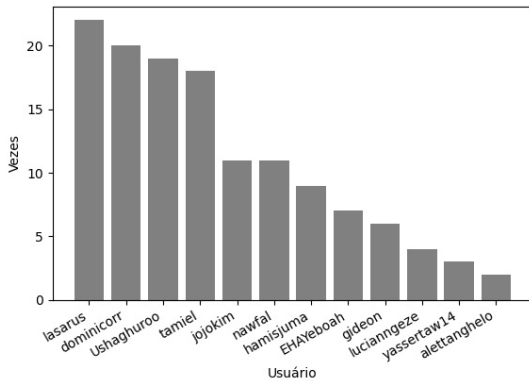*Original posts after eleven weeks*

Figure 11
Replies to *posts after eleven weeks*

Tables 4-11 show the number of original posts (a post using the #oesloe tag, indicating who submitted it); it also indicates, as a subset of these messages, who *replied* to others the most, indicating some form of engagement or conversation. First and foremost, there is an increasing number of posts and replies overall. There is also a larger number of original posts than replies, though the difference between them is not substantial as we reach the final stages of the course. When analysing original posts, both teachers (tamiel/dominicorr) are more engaged overall, but students greatly increase the number of posts over time. For example, once we began showing and discussing engagement graphs with students, which demonstrated that teachers posted the most, we encouraged students to spend more time engaging with each other and providing feedback on their comments and their work. In regards to replies, where student participation grows more slowly, there is a positive reversal - more students than professors engage.

Though students are generally familiar with common features of social networking (hashtags, mentions), we find that there is still a need to provide guidance on the profitable use of these platforms. This includes the targeted use of mentions (@) when necessary, and using the hashtag in every post so that the script can perform and everyone can zoom in on the conversation through a search or a bookmark.
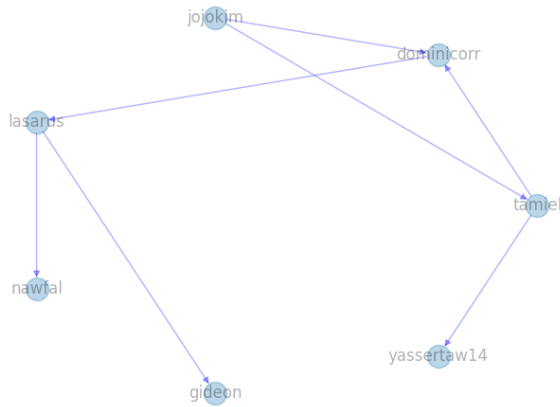
Figure 12
Interaction graphs after one week

Figure 13
Interaction graphs after four weeks

Figure 14
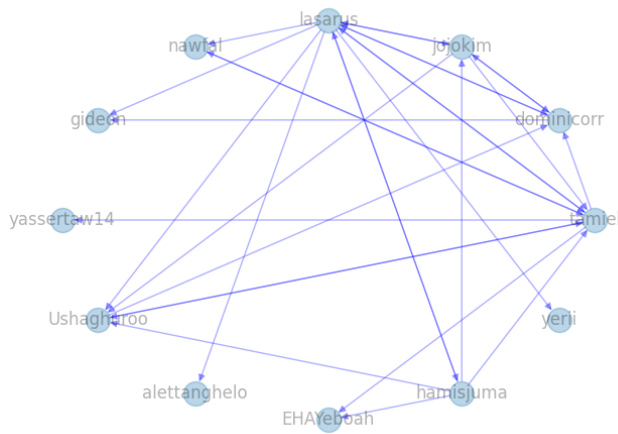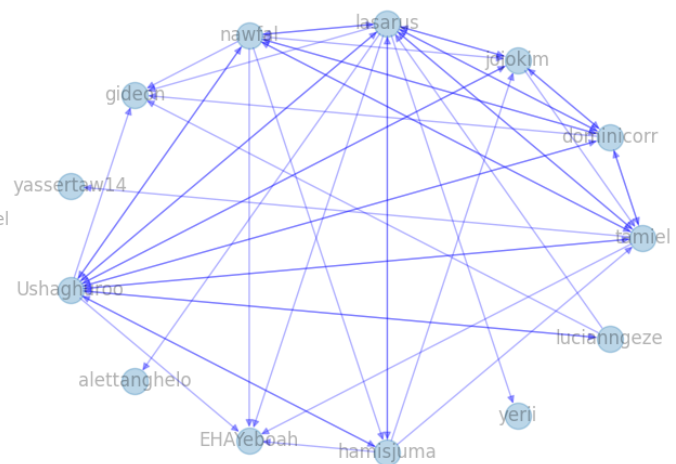*Interaction graphs after eight weeks*

Figure 15
Interaction graphs after eleven weeks

The analysis of network interactions (Figures 12-15) counts mentions (through @*username*) in each post, showing that a user mentioned/connected to another. The lines indicate a connection; arrows indicate the origin and destination, and stronger lines indicate a larger number of messages. The graphs above indicate substantial growth in interactions between students over time. It shows how interactions

are also less centred on mentions directed solely at teachers and shows a growth in mentions between students.

Some evidence of this can be seen in many posts towards the end of the course, where students began mentioning *all* participants in their messages. While this is unnecessary, given the use of the #oesloe tag to aggregate all user posts, it is a formal 'direct' way to elicit a response. After eleven weeks of the course, the final graph (Figure 15) indicates where these interactions were more fruitful. This happens between a few students where lines are stronger and bi-directional, showing some form of sustained dialogue. In other words, though some students posted messages mentioning (*@username*), the graphic help us see where conversations seem to be most sustained.

The graphs provide a limited but easy form to gather information regarding course postings and replies. When used as a regularly updated, open dataset, it can provide a quick and interesting snapshot into conversations and help provide insights into course dynamics.

4.   DISCUSSION AND CONCLUSION

Social network analysis is a rich field of inquiry, and the goal of this paper was not to specifically address the content and quality of the interactions. Analysis of the conversation can be achieved through automatic means to indicate, for example, if students are asking questions (Neto et al., 2020). The script used for the quantitative analysis also extracts the full content of the posts, and this data provides valuable content for future research.

The LOE programme is a pioneering example of professional development focused on addressing the need for leadership in the open education space. It is a strong international programme with a holistic approach to open education. At the same time, it is an evolving laboratory for open practices. Here, we presented an attempt to make use of open practices through the implementation of the Open Policy Game and the use of free and open-source systems, including simple analytics, in a course dedicated to the design of an open policy document. The reports produced by the students also demand that they make their work publicly available with an open license in an open repository[13].

Regarding the Game, work is underway to use dedicated online systems for gameplay[14], particularly as the COVID-19 pandemic demands more hybrid forms of engagement. Regarding the script, future work can be done to automate data collection, provide a timeline to see changes in engagement and improve and provide further analytics. Also, a best practices tutorial or simple guide on making productive use of the Mastodon for educational purposes seems to be warranted to improve student engagement (which could be done by the students themselves).

The programme is still in its initial stages and there is much more to be learned (and modified) as new cohorts join and new iterations of courses occur. This is especially relevant given the novelty of formal graduate level programmes in the field of open education. As the programme and courses evolve, the community of teachers and students continuously reflect on this experience in an attempt to conduct small-scale investigations for improvement, as is the case here (Adams, 2007). We hope that with this, the LOE programme can continue to sustainably implement open practices as it also helps contribute to their meaning and significance in higher education.

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[13]   See: https://zenodo.org/communities/loe

[14]   See a draft implementation in: https://tabletopia.com/playground/openeducation-uurt7v/play-now

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