Living Lab as an educational tool

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Abstract

In order to adapt to the increasing in complexity of the challenges facing our society, the higher education institutions have started to explore new methods of knowledge production as well as shifting their attitudes towards the other societal sector (government, private sector, NGOs, citizens) from their "ivory tower" approach to a more collaborative one.

As conventional educational methods struggle with preparing students for facing complex sustainability problems, by acquiring practical skills and competence. To address this problem the universities have attempted to enrich the sustainability of education through multi-stakeholder partnerships as well as experiential learning.

This change in paradigm is not only an extension to the previous mode of operation, but rather tests with other ways in which universities may attempt to fulfill their three missions, that of education, research and community engagement. The results of these tests are increasing our knowledge of the impact of partnerships as well as the advantages and limitations of different models that facilitate students to acquire practical expertise and enable research as well as serve as agents of change.

On this challenging road the Faculty of Political, Administrative and Communication Sciences (FSPAC) of the University of Babes-Bolyai has taken the first steps towards embracing this new paradigm through the Living Lab project, engaging in ideation, co-creation, experimentation and transdisciplinary models.

Keywords: co-creation; living lab; university; collaboration; knowledge co-production; societal transformation

Introduction

We find ourselves in an environment that has been characterized more by change rather than stability. We live at times where technology, demographic trends, climate change and even political trends have been putting constant pressure on the capacity of higher education institutions to adopt incremental changes to their processes however the foundations of have remained knowledge production at a means it itself (Ford, 2002).

This view has started to shift under the pressure of our current challenges towards the function of universities as facilitator of sustainability co-creation (Van Veen, 2013; Trencher, 2014) that collaborates with a multitude of social actors towards achieving societal transformation. (Trencher, 2014) Moving away from the conception of university as an ivory tower ue to the pressure put on the institutions to address problems of the community that they are part of by mobilizing the resources and expertise an iterated by (Wals, 2014) , although he also argues that despite the numerous examples in literature this has yet to penetrate mainstream approaches to ESD**.**

There is a large body of literature underlining the value that universities may bring to the community through mechanisms of co-creation, the potential that I wish to analyze in this paper is the educational potential of such practices. As the FSPAC Living Lab project was destined to aid the students in their educational process by offering a space for experimentation, co-design, co-creation and open innovation that addresses the problems and challenges of public institutions, companies or other entities that have an ecosystem approach and that have a strategy based on collaboration with the relevant stakeholders in the ecosystem.

The role of this pilot was to create at the faculty level the coordination structure of the FSPAC Living Lab and to carry out the first experimental project together with important partners from the socio-economic environment. Based on the lessons learned from this trail the FSPAC team plans on improving and extending on the projects as a constant element in the educational strategies for the future. This paper aims at contributing to that effort by analyzing by comparing the model of participation and learning used with those in the literature, identifying its merits, limitations and gaps that may need addressing.

Literary review

The notion of a university making use of its resources to address the needs of the community and solving real-world problems has a long and well established history in America as well as in Europe (Alperovitz et al., 2008). There are plenty of discussions and arguments to be made in regards with the economical impact this practices bring, however there are also points of view that use the perspective of co-creation to illustrate criticisms directed at 'structural' characteristics of the modern university, with an increased shift in perspective proposing a new prototype of academic approach.

Traits criticized more often include the university's commitment to separate academic disciplines while at the same time emphasizing specialized, fragmented knowledge (Ford, 2002; Taylor, 2009), the tendency to focus on studying problems of society instead of attempting to generate concrete solutions (Clark and Holiday, 2006) and its disregard for place-based, real-world problem solving and engaged research (Ford, 2002; Taylor, 2009).

These criticisms paint the image of an academic filled separated from the real and complicated problem of the world and of the community in their "ivory tower" (Mowery, 2004), underlining the need for the higher education to move beyond the established scientific norms and educational norms and take appropriate steps towards generating concrete solutions to complex sustainability challenges. (Komiyama and Takeuchi, 2006).
This shift in focus knowledge production as an end in itself to knowledge as a means to trigger societal transformation, (Van ven et al 2013) as well as better familiarize the community with the advantages the university can bring to the development process. This has led to the increasing importance as well as popularity of the place-based, action-orientated research and transdisciplinary collaborations with external actors from government, industry and the community (Bardaglio and Putman, 2009; Clark and Holiday, 2006; Klein et al., 2001; Whitmer et al., 2010).

The literature shows that the co-creation collaborations between universities and societal partners fall somewhere along a continuum between the two acutely distinct objectives of knowledge production at one end, through the concepts of co-design of and co-production applied towards acquiring first-hand knowledge as well as increase the societal relevance in

towards this knowledge , and knowledge implementation at the other, manifesting the ambitions to implement knowledge create tools and transform society. (Trencher, 2017)
We ought to take this continuum into consideration when looking at how the roles of universities may change in the future.

The role of modern university has been normally associated with the first mission of teaching and preparing students and the second mission of conducting basic research in the framework of knowledge production. To these two in accordance with the shift in paradigm a third mission has been emerging, that of community engagement. This 'alternative' mission does not imply the rejection of the previous ones, but instead accept the ever-evolving character of universities. It represents a shift from contributing to economic and societal development through technology transfer to actually transforming and co-creating society in the pursuit of sustainable development via a much broader range of channels, approaches and actors. "The process of co-creation for sustainability and the transformative institutions that we have described involves a merging and synergising of diverse research and social engagement paradigms such as urban reform, transdisciplinarity, regional development and living laboratories, in addition to the integration of conventional technology transfer and commercialisation activities into a wider development and research agenda." (Trencher, 2013)

Living Labs are one of the tools used in this new direction taken by universities, having gained popularity as eco-systems for innovation where users and experts go through co-creation processes in an transdisciplinary approach. Its main functions are products and services generation as well as elaboration of policy tools for facilitating open innovation in communities, cities and regions across the world (Almirall et al., 2012; Nesti, 2017).

Due to this popularity as a tool for practical innovation, LLs have received growing attention from researchers, policy-makers and practitioners. More and more journals and scholars have published articles on LLs, especially since 2015. (Hossain et al., 2019)

Following our aim to identify methods through which the new directions for higher education can take form in the present educational system, I looked into different models through which the students may contribute to the co-creation process while also learning and producing knowledge. For this purpose I used the framework of Daneri et. al.(2015), in which he

highlights three categories as particularly important: first, project-based learning, trans academic research and , intern-ships.

Project-based learning focuses on experiential learning, 'learning by doing,' and the planning or implementation of real- world community projects, creating a two-way learning process between students and external partners. Transacademic research could be characterized as transdisciplinary, participatory and community-based It involves non-academic stakeholders in all stages of knowledge production and strives to balance both scientific robustness and social impact. Internships enable students to collaborate with interested partner organizations such as local government offices, businesses, NGOs and civic groups, offering them access to first hand knowledge while building professional competencies.

Project-based learning focuses hands-on knowledge production and the creation of design, implementation and team working skills that allow students to link theoretical knowledge to its applied uses in the real world. Transacademic research is more concerned with formal knowledge production to inform stakeholder projects than on actual project implementation. Internships also serve these ends, as they focus more on the acquisition of skills for individual professional development and, in some cases, research.

Models	Project-based learning	Transacademic research	Internships
Description	Student teams collaborate with faculty and external partners in formal courses to design, propose (and often implement) sustainability projects and experiments	Individual students conduct research (for formal courses or graduation requirements) targeted at the local community. Results are shared with partners and stakeholders	Individual students are placed in formal work experience programmes (paid or unpaid) in local municipality, government agencies or project headquarters to assist in project design and implementation and research
Emphasis	Hands-on knowledge production Project conception and implementation Team working skills	Research and codified knowledge production	Hands-on knowledge production Project conception and implementation Professional skills building

(Daneri et. al., 2015)

Another important aspect to take into consideration is the national context, how the universities are participating in the social development of the communities. From this point of view we know that the one of the components of the third mission of universities is underutilized by most universities, a study shows that out of the one of the least involved stakeholders in the strategic planning processes of the public institution in Romania are universities, with only 20% of authorities reporting they involved these stakeholders in a way or another in the process. (Hintea, 2017)

However one of the expectations to this rule is the collaboration between the city of Cluj-Napoca and the Faculty of Political, Administrative and Communication Sciences (FSPAC) of the Babeș Bolyai University, case presented in the paper *Strategic Planning in Local Public Administration: The Case of Romania*, written by Călin Emilian Hințea, Marius Constantin Profiroiu and Tudor Cristian Țiclău, 2019.

The city has six state universities and a student population nearing 100,000. In 2007, FSPAC, Babeș-Bolyai University, and the City Hall initiated a collaboration aimed to develop the local development strategic plan for the 2007–2013 and renewed for a new strategy for the 2014–2020 period as part of the initiative of the FSPAC/Babeș-Bolyai University to have an active role in the community and was preceded by several other smaller projects between local authorities and the University. This shows the ways in which universities could implement their third mission and contribute further to the community by using their knowledge and methods to solve problems and create strategies.

Methodology

•Research objective:

To identify potential ways in which living lab practices tested in FSPAC LIVING LAB may be used in universities for educational purposes.

•Research questions:

Q1. Did FSPAC Living Lab meet its initial expectations?
Q2. Which student participation and learning models were used?
Q3. Were transdisciplinary collaborations used?
Q4. Which Living Lab practices could be integrated as learning tools and how?

In order to address these questions i used qualitative research methods such as interviews with the organizers as well as participants of the project, document analysis on the outputs of the projects as well as on the internal feedback and proposal notes for the future iterations and finally observation, as one of the participants and members of the fifth team working with the Cluj-Napoca City Hall. This allowed me to get first-hand information about the ups and downs of the project as well as the general impressions of the teachers as well as those of the students. This process will also include a case study on the Living Lab developed by FSPAC.

I opted for the qualitative route due to the fact that this is just an exploratory piece of the initial progress made by the first iteration of the project and accordingly is meant to serve as a building block for future research that would emphasize a broader perspective.

Results

CASE STUDY - FSPAC LIVING LAB

As a concept FSPAC Living Lab was thought of as a space for experimentation, co-design, co-creation and open innovation that addresses the problems and challenges of public institutions, companies or other entities that have an ecosystem approach and that have a strategy based on collaboration with stakeholders relevant from the ecosystem. FSPAC Living Lab is supposed to annually go through the co-design process together with the socio-economic partners from which the challenges addressed to students are to be defined.

Participating companies and institutions would be constantly invited to validation sessions of the solutions proposed by the teams made up of students, researchers and teaching staff. One of the goals of the FSPAC Living Lab is to contribute to the experimental learning process through which students have the chance to capitalize on their collaborative potential in a team with other colleagues and professors addressing real problems in society, public institutions or companies.

The areas of specialization of the FSPAC Living Lab are the following:

- communication and marketing
- urban and community innovation
- digitization and digital transformation
- green transition
- organizational innovation
- intrapreneurship in public institutions
- entrepreneurship and social economy
- market fit for the young audience

At the initiative of the Faculty of Political, Administrative and Communication Sciences (FSPAC), the project FSPAC Living Lab carried out the first pilot project between April 2023 and March 2024 together with business partners.The first stage completed was that of "problem framing",' at this stage the companies went through a guided process of identifying problems and outlining real and attractive challenges in a format addressed to the teams form of teachers and students. In the second stage, mixed teams made up of students, teaching staff, PhD students and researchers from all FSPAC departments were put together. Considering that the role of a Living Lab is to ensure interdisciplinarity in order to analyze the challenges received from as many perspectives as possible and to provide innovative solutions. A mixed team was assigned to each challenge, and specific design thinking, co-design and innovation steps were taken over a period of six months. The activity carried out by the students involved applied research of the phenomena associated with the received challenge, the use of statistical data, conducting interviews and focus groups, generating innovative solutions, making reports and presentations for partner organizations. During the final event, which took place in March 2024, the final solutions were presented to the six partners from the business environment together with the scenarios for implementing the developed solutions in the real environment.
The challenges of the first experimental iteration were:

•Romanian Commercial Bank: Improving the George BCR platform to be more attractive to young people.

•Cluj Cultural Center: Out of the shadows: How do we show concepts, skills and jobs that are not visible?

•NTT Data Romania: We want to become more attractive to future colleagues aged 18-22 through the way we communicate on social networks.

•Iulius Mall: Iulius Mall is the place to be, now let's make it the place to work.

•Cluj - Napoca City Hall: ReStart Participation.

•EMERSON: Realization of a concept and an action plan to increase the visibility of the company in the rural environment of Cluj county and neighboring counties and at the same time, increase the number of employees.

Q1. Did FSPAC Living Lab meet its initial expectations?

As a pilot project, the first iteration of FSPAC Living Lab has served its purpose of testing the interest of the students, teachers and partners as well as indicated strong and weak points that may be addressed in the next iteration, at the same time it increased the interest in the area co-creation and design-thinking as well as opened the possibility of using more practical methods as a teaching tool for the higher education institutions. The project was successful enough to gather consensus for its continuation and improvement in the form of a second iteration.

Q2. Which student participation and learning models were used?

As for the first iteration the only student participation model used was Project-based learning. The project functions on the basis of a mixed team between students and teachers, matching the team-based pattern as well as being designed as a combination between the research and ideation process with the experimental aspect, unfortunately the experimental side was only planned and not implemented in this iteration. The activity of the teams offered hands-on knowledge as well as team working skills. The organizers however mentioned plans for the

future iterations to be compatible with internship requirements as well as be eligible as research subjects for bachelor papers or dissertations.

Q3. Were transdisciplinary collaborations used?

Taking into considerations that the teams were mixed not only from the perspective of students/teachers, but from the point of view of departments as well we could say that the design thinking process was based around interdisciplinary collaborations, however due to limited communication and place-based collaborations, making a transdisciplinary approach not manifesting itself at this moment in time.

Q4. Which Living Lab practices could be integrated as learning tools and how?

•Project based activities - on the lines of the first iteration we have the proof that project-based tools can be applied within the existing framework of the university, however this seems to be only in its early stages and should be analyzed further in the context of future iterations.

•Course-based tools - FSPAC has at this moment in time a number of courses at the Masters focused on the subject of Living Labs and using their methods, these are still focusing on the first two missions of the universities with the possibility of them being used for practical problems when partnerships with socio-economic actors. These methods can be introduced outside of dedicated courses as well, for example within the framework of seminars that are meant to be more practical in nature.

•Internships - The UBB already has a framework for mandatory internships, however the degree to which these contribute to the training and formation of the students for the workforces is up for debate. An effective option would be for the existing internship framework to be used in the context of sustainable and co-creation based partnerships with social-economical actors.

•Research for publications, bachelor thesis and dissertations- similar with the point of internships the already existing framework could be made more practical and relevant though integrating it with key partnerships, in this case projects and collaborations may open the way for access to less accessible information as well as give a use for the bachelor and master papers and research.

Discussion

There were a number of lessons learned from this pilot project, most of them were related to what problems the next iteration would have to address as well as what is the interest within the faculty for such an approach.

On the subject of needed improvement we have the need to further Assist the partners in the process of problem framing and elaboration of the challenges, assistance focused on the teachers as well, on the logic of training the trainers, and prepare teachers responsible at the department level for supervision of teams. Progress ought to be made when it comes to the framework as well, in need of consistency and easy introduction to new participants and collaborators.

It was a good sign to find notable support and interest for the project from both students and teachers however a considerable number has mentioned that offering incentives for both teachers and students would make the program more approachable, this has been done to a certain degree for the students and their activity in the project could be admitted as their mandatory internship class.

Another fortunate news was that the interest of the social-economica partners was increasing during the project as well as new companies were asking to be included in the next iteration of the program as ”challenge-owners”.

For the future further research should be made on the next iterations and the development of the FSPAC Living Lab.

Another point requiring further research is if the methods can be applied at scale through the other two student participation models and if yes, how would they be placed on the continuum between knowledge creation and knowledge implementation.

Conclusions

In the end we can say that the FSPAC living lab is a step in the right direction in the path of university to better adapt to the requirements and needs of the 21st century, however it is only the first step on a long way. We can characterize FSPAC as an exception to the way in which most of the universities in Romania underperform their community engagement mission, proving that it can actively serve this purpose, as well as being innovative for the desire to start this pilot and put resources into testing new approaches to education. The results show promising interest from students, teachers and social-economical actors, however this is more

of a sign of potential than a guarantee for success. Problems still need to be addressed and the project improved as well as have the right incentives put in place, not to mention potentially integrating it with other educational processes within the faculty. If these concerns are adequately addressed then it would make it more than fascinating enough to motivate continuing the research on the subject.

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