# Analyzing University Students' Participation in the Co-Design of Learning Scenarios

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**Abstract:** In this paper we report an ongoing research project that aims to develop, apply, assess and accurately document a method for co-designing learning scenarios in higher education with the participation of teachers and students. The theoretical and empirical background is described and a model for the study and analysis of students' participation in co-design processes is proposed. Finally, the main implications, challenges and potential contributions of the application of this model are discussed.

## Introduction

The study of student participation and consideration of their perspective in planning and curriculum design has been approached from different perspectives. There is, first, a line of work on "student engagement", dedicated to the analysis of proposals based on encouraging active involvement and commitment on the part of students. It is assumed that offering opportunities for students to take control of their learning activities, reflect and become aware of what they do to learn, may favor the adoption of deeper learning approaches (Bain & Zimmerman, 2009). Another line of work focuses on the study of "student voice". This is both a theoretical approach and a set of practices that place students as active agents in the analysis and review of teaching and learning proposals. From this perspective, students' perception and experience about their learning is recognized as unique and essential to the improvement of education (Bovill, Cook-Sather & Felten, 2011). A third line of study, more recent and more focused on the field of higher education, is framed under the expression "students as producers" also referred to as "students as researchers". Neary (2012) refers to this approach as way of turning students into key agents of a radical transformation of higher education institutions. Although the approach may have different concretions, one of those most widely taken is the use of academic research as a core undergraduate curriculum, involving teachers and students as partners in academia's function of knowledge production.

The literature developed in the last decades around the issue shows that, although there is a clear stream of research that supports the need to address learning in universities from the shared responsibility of teachers and students, examples of transformation of concrete contexts of practice are almost anecdotal and confined to specific projects. Although the literature puts forward a number of reasons for student involvement in curriculum design, there is still little systematic evaluation of their real impact and specific dynamics (Bovill, Cook-Sather & Felten, 2011).

Moreover, several authors highlight the risks of participatory approaches, and even maintain a critical stance regarding the way "student voice" has been interpreted and represented, particularly in the field of higher education. According to Seale (2010), in the discourse of these approaches there is the implicit assumption that the students' feedback will have a transformative impact on teaching practices and curriculum development. However, these expectations of transformation are not articulated or explicit, nor do they sufficiently describe how this type of participation can be realized to achieve the mentioned purposes. Finally, the same author asserts that the lack of clarity about the real commitment towards students' participation and empowerment is reflected in the way "student voice" is defined and the roles assigned to students in some projects. Based on her review, Seale (2010) argues for the need to create a framework to connect theory and practice from which to articulate the implementation of concrete actions so that the "student voice" can really have an impact on universities. According to this author, participatory research methods have this potential.

In this paper we report an ongoing research project that aims to develop, apply, assess and accurately document a method for co-designing learning scenarios with the participation of teachers and students, including its articulation, roles, components, phases, conflicts and turning points. In the following pages the theoretical and empirical background is described and a model for the analysis of co-design processes is proposed. Finally, the main implications, challenges and potential contributions of the application of this model are discussed, as well as its relevance within the framework of the 2014 ICSL Conference.

## Contextualization and Rationale of the Project

Although the idea of student participation in curriculum design is not new and has been developed mainly in primary and secondary education especially in the USA, it continues to have a very modest and partial scope in the field of higher education. Existing literature is limited and tends to focus on the description of varied experiences rather than on the abstraction and evaluation of specific methodological parameters, so that progress in knowledge on the subject is still not evident (Bovill, Morss & Bulley, 2008; Seale, 2009). However, all the latest pedagogical literature provides arguments in favor of the idea of actively involving students in curriculum

design, either from the perspective of enhancing the development of their critical judgment, increasing their commitment and responsibility for their own learning, enabling more authentic and meaningful learning experiences, improving the options to personalize learning, or understanding the very idea of curriculum as a co-creation task between teachers and students (Bovill, Morss & Bulley, 2009). Below we provide a summary of some of the most relevant results from the study of university students' participation in curriculum design.

## Evidence on Students' Participation in Curriculum Design

Seale (2009) carries out a comprehensive review and accounts for the heterogeneous ways of approaching and materializing the study of "student voice" in higher education. According to this author, there are two purposes that are mainly linked to the student voice projects in higher education: quality enhancement and assurance and staff or professional development, which, in turn tend to be aligned respectively with higher education policies on assessment (evaluation and feedback) and teachers' reflective practice.

The most widespread form of university students' participation is through giving feedback on courses through means such as staff-student liaison committees, questionnaires and surveys, focus groups and electronic voting systems (Bovill, Morss & Bulley, 2009), although the real impact of this kind of procedures on the design of courses is not clear. Some authors have proposed methodologies in which students and teachers participate in "co-generative" discussions, aimed at sharing their views and reflecting together on how to improve the practice of teaching and learning (Roth, Lawless & Tobin, 2000). There is less evidence of the procedures used in the exploration of the direct involvement of students as "co-designers" in the field of higher education. Cameron and Tanti (2011) report the methods utilized in a project where students were asked to take an active role in planning and creating their own learning tasks through a problem-based learning approach supported by social media tools. Bovill, Cook-Sather and Felten (2011) describe a multiple case study of students' participation in course re-design conducted in different universities in the USA and UK. Those experiences involved different strategies such as the creation of small "course design teams" (CDT) formed of teachers and students that co-create or re-create a course syllabus; the commissioning of a small group of students to design a new virtual learning environment based on case studies, also including the production of written, audio and video resources; and engaging a whole group of students in decision making over the actual content of the course according to what they considered they needed to learn. Finally, Bovill, Morss and Bulley (2009) propose as an alternative way of participation, enabling students to participate in the design process at a later stage in order to capitalize on their experience of a course.

Regarding the conditions and factors that may determine or affect a co-design process, it seems clear that time is a key factor. A sustained dialogue over time is required to generate the context of trust needed to deconstruct mutual prejudices between students and teachers and allow them to express their ideas clearly. It also takes time and external facilitation for students to come to understand and use certain pedagogical concepts. There seems to be a turning point from which the co-design process becomes more fluid and rich, when students understand that their views will be taken into serious consideration (Bovill, Morss & Bulley, 2009).

Cameron and Tanti (2011) highlight the role that technology and specifically social media can play in facilitating these processes, to enable students to create, discuss and publish new knowledge objects easily and quickly (Chang, Kennedy & Petrovic, 2008). In this sense, the OER movement offers plenty of opportunities to put into practice the concept of "students as producers" by involving them in activities to inform and enhance learning designs and to produce and improve learning materials (Greaves, 2012).

But the reviewed studies also found points of tension that may hinder the co-design process. According to Cameron and Tanti (2011), for students to assume the role of co-designers, teachers must relinquish some control. They need to be more self-aware, flexible and knowledgeable to respond to student learning needs and to accept their opinions and demands. There are also institutional factors that can constrain student participation, such as professional requirements or regulatory frameworks (Bovill, Morss & Bulley, 2009).

Moreover, participatory approaches have a number of drawbacks if they are not genuine or not proposed in an appropriate manner. Sometimes student participation is treated as an aesthetic and superficial issue, limited to spaces too specific and timely to have a real impact on the learning design process. There is a risk of falling into the objectification and generalization of the perspective of students, ignoring their diversity of profiles and underlying motivations. Students used to maintaining a relationship under the authority of teachers may show resistance, fears and even feel manipulated when facing such proposals (Bovill, Cook-Sather & Felten, 2011). According to Seale (2011), some student voice projects are teacher-centric, in the sense that they put students in the role of teacher, rather than empower them from their position and enable equal and constructive dialogue.

## Theoretical and Methodological Approach

The project discussed here, based on the use of co-design methods, takes as a reference the revised work on "student voice", "student engagement" and "students as producers", to propose the direct and active participation of students in the process of co-designing learning scenarios they will take part in. In addition, it combines the

methodologies and tools of the domain of learning design with those of the participatory design field. Roschelle, Penuel & Shechman (2006:606) describe co-design as "*a highly-facilitated, team-based process in which teachers, researchers and developers work together in defined roles to design an educational innovation, realize the design in one or more prototypes, and evaluate each prototype's significance for addressing a concrete educational need*". According to these authors, the co-design process is not completely democratic –as it is in participatory design– because researchers often hold the ultimate responsibility for the quality decision-making. Many of the co-design practices in education are associated with the design and implementation of technological tools to support learning processes (Mor & Winters, 2006; Penuel, Roschelle & Schechtman, 2007). In general, it is about funneling educational innovations that currently involve the use of technological resources in the school context. These experiences have typically involved teachers, researchers and often software developers, as partners in the process of co-designing educational innovation. This procedure ensures the connection and the orchestration of the theory, practice models, tools and participants' insights.

The project aims to study the development of learning scenarios that are more authentic, contextualized and focused on learners, through a co-design process involving students and teachers in the negotiation of the design principles of such scenarios to assess the potential of this approach as a catalyst for change and innovation in higher education. The study applies the methodology of design-based research. The design of the investigation is iterative, situated and intervention-led but underpinned by theory. The object of study is therefore the very process of co-designing, taking as key agents both the teachers and the students to whom those practices are addressed. A mixed approach (quantitative and qualitative) is used for data collection, analysis and interpretation. The research design involves several cycles of iterations with the aim of refining the process of co-design. The research questions that address the issue of students' participation are as follows:

a. How are participants' roles and levels of intervention negotiated, assigned and managed?
b. What are the stages and critical issues to consider in the process of co-design?
c. What are the effects of the co-design process on teachers and students' perception of learning, teaching and learning design?
d. How does context (university model, area of knowledge, profiles) influence the co-design process?

The participants are a group of teachers and students from two universities with different models, one of them blended (University of Barcelona) and the other virtual (Open University of Catalonia). Of the four mentioned contexts reported in this study, two are from the blended university and two are from the virtual one. The four design contexts correspond to different disciplinary areas, such as medical informatics, economics, tourism and communication. The co-design of a learning scenario for each context of practice aims to ensure that results are accessible, acceptable and useful to all participants, and can be effectively used to evaluate, report and improve practice in these and other contexts (Anderson & Shattuck, 2012).

The co-design process takes place cyclically, through the following four main stages: exploration, envisionment, operationalization and assessment and reflection. The first phase of the co-design process consists of a series of participatory workshops with six teachers from the four selected practice settings, along with members of the research team. These sessions have the function of introducing participants to the dynamics of co-design and gaining a deeper understanding of the contexts of practice. They are also oriented to designing learning scenarios based on inquiry-based learning and technology-enhanced learning principles, involving the prototyping of the designed learning scenarios. In the second phase of the co-design process, two students selected from each context join the design work groups (a total of eight students) with the aim of critiquing the prototypes of the learning scenarios designed by teachers, bringing their own ideas and perspectives and thus validating the final designs. This is done through the same dynamic of participatory workshops used in the first phase but adding the implementation of the learning scenarios in the corresponding real contexts of practice. In this way the prototypes of the learning scenarios are tested and feedback is collected from the entire student group. Implementation occurs in iterative cycles that enable the designed scenarios to be refined based on collected feedback, reflection and discussion by the design teams. Thus, it addresses two levels of student participation: a) students who are part of the co-design team of each context, b) students who make up each of the four student groups where learning scenarios are implemented.

Throughout this entire process exhaustive data collection is performed using several research instruments: initial interviews with teachers and students, participant observation and audio recordings of joint work sessions, short questionnaires addressed to both teachers and students after each work session, classroom observation and field notes, a questionnaire to the whole student group, final interviews with teachers and discussion groups with students. The purpose is to thoroughly keep track of the co-design process, enabling the research questions that were posed to be answered. To do this, an analytical model has been developed that integrates all the meaningful dimensions for studying the co-design according to the literature review and research questions. Specifically, the relevant dimensions for the analysis of students' participation reported in this paper are: *methodological aspects of co-design, roles, dialogue and negotiation, phases, conflicts and key issues, student and teacher profiles, students and teachers' change, institutional and curricular factors.*

These dimensions are discussed from four perspectives or different viewpoints that reinforce each other, as shown in Figure 1: joint work sessions, classroom implementation, perceptions and design product. It is a holistic model of analysis of the co-design process, which in turn allows the triangulation of data and methods, in order to preserve the research trustworthiness. For the analysis of qualitative data (interviews, observations, field notes and post-session questionnaire) the constant comparative method and grounded theory (Glasser & Strauss, 1967) is used, while for the quantifiable data collected with the post-session questionnaire and the general questionnaire applied to the whole students group, a descriptive statistical analysis is performed.
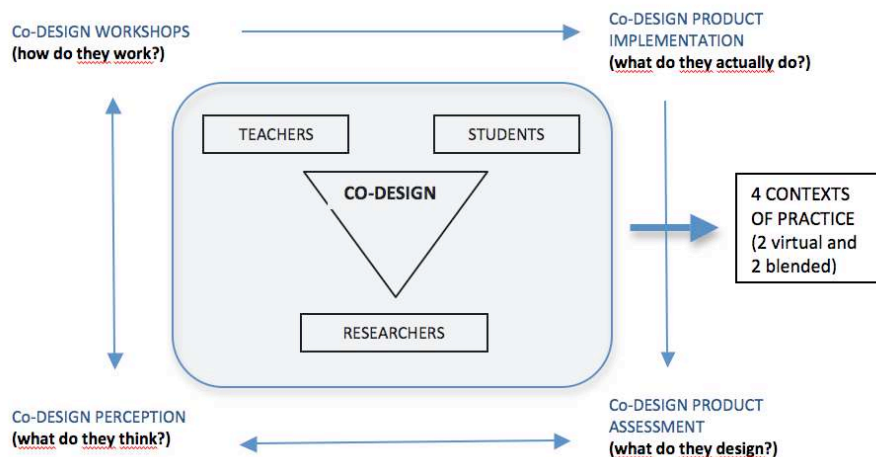


Figure 1: Co-design process analysis framework

Design-based research is coupled with the use of participatory design methods. The principle of performing various iterations allows students to participate in all stages of the process even though they are incorporated into a second phase. Teachers and students work in close contact and are placed at the same level through the entire process of co-design, although the former will have the ultimate responsibility for the scenarios designed. Similarly, teachers and students assume the role of co-researchers to engage in the production and analysis of collective research knowledge and enhancement of the group to solve the problems identified (Fielding, 2004). However, the research team is ultimately responsible for the co-design process.

## Discussion on Opportunities for Productive and Innovative Inquiry

The research presented is intended to advance the study of participatory and collaborative learning design methods that involve teachers and students in the field of higher education. With this goal, inquiry-based and technology-enhanced learning scenarios will be co-designed. It is considered that the design of learning scenarios –including the sociocultural context in which they are framed, the chosen pedagogical approach and the objects that make up the learning situation– in which learning activities are inserted, can elicit the processes intended to be facilitated and promoted among students. Moreover, the co-design process itself is proposed as a learning experience. In the case of teachers it is viewed as an opportunity for professional development and in the case of students it is expected to cause a change in their conceptions, understanding and attitude towards learning from the perspective of learning design. Therefore, this research is based the following assumptions:

a) students' participation in the co-design process can integrate their perspective, interests and needs more effectively into the designed learning scenarios, ultimately promoting deeper learning by different student profiles and in different learning contexts;

b) participation in the co-design process can make students more aware of the processes involved in learning and learning design, and become more autonomous in the direction of their learning activities;

c) co-design processes involving students and teachers in collaborative negotiation of the design principles applied to learning scenarios can facilitate the adoption of an inquiry-based learning model mediated by a more mature and autonomous use of technology by students;

d) students' participation in the co-design process is expected to encourage teachers to reflect on their practice. Similarly it is expected that the supporting co-design methods and instruments will help participant teachers to develop awareness and skills as learning designers.

## Conclusions and Relevance of the Topic

Involving students in learning design processes is a complex task because it implies profound changes in how to approach teaching and learning in higher education. However we consider it indispensable to walk this path in order to offer learning scenarios that are more authentic, contextualized and meaningful to current students.

We have shown the positive implications of the adoption of this approach, both in terms of improving the quality of learning, changing roles and relationships between teachers and students, and as a catalyst for teachers' professional development processes. The absence of clear and detailed references on the implementation of such participatory processes hinders its application and its generalization. For this reason, we believe that the adoption of a design-based research approach could be useful to faithfully capture the co-design experience in a real context and simultaneously feed the knowledge in this field.

If the goal of universities is to train autonomous, critical, creative students who are able to develop themselves throughout their lifes they must begin to adopt the vision of students as producers. To do this, it seems essential to empower students and to provide them with the agency to truly influence and bring about change in the university. Models of inquiry-based learning combined with the use of social media offer many opportunities in this regard, which we intend to explore in this research. In turn, teachers have a crucial role to play in facilitating this process, as well as in the transformation of learning design proposals in higher education.

From our point of view the subject of the reported research is closely related to the theme chosen for the 2014 ICLS Conference and would be an appropriate and relevant contribution to it. The focus of the inquiry is in fact the learning experience of teachers and students based on the co-design process. We believe that co-design processes are of special richness because they are located at the intersection between different types of practices: sociocultural practices of collaboration between participants and the actual practices of teaching and learning in institutional and epistemic contexts.

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