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Visualizing constructive alignment in the process of course design

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Abstract

Course design in higher education is often approached in a very linear and text-based manner. The paper presents a visual tool in the form of a canvas aimed at accompanying teachers in the design of courses. The canvas can be used in an individual or co-teaching setting. It can be applied either during the conception phase of a new course or to revisit and reflect an existing course.

The visual dimension departs from the usual text-based format and ambitions to offer a practical and intuitive approach. It aims at engaging teachers to adopt a prototyping approach in the design of courses. It builds on the various visual modeling tools offered in the fields of business and strategy.

The proposed canvas is part of a broader project accompanying higher education teachers in the clarification of their pedagogical intent, in ensuring constructive alignment and in the adoption of a reflexive posture on their teaching experiences.

Keywords: *visual approach; constructive alignment; course design; modelling*

1. Introduction

Many of the "classic" handbooks addressing teaching in higher education (Davis, 2009; Diamond, 2008; Fry et al., 2015) cover very extensively course design, including intended learning objectives, teaching strategies and assessment strategies. They usually do so in a very linear and text-based manner. Such format can be daunting for seasoned and non-seasoned teachers considering creating a new course or revisiting an existing course.

This paper presents a visual tool to support course design in higher education. It aims to offer a practical approach encouraging teachers to design their courses by mixing both intuition and constructive alignment. As such the proposed approach is both non-normative and non-descriptive.

The paper is structured as follows: after introducing the underlying pedagogical philosophy of the approach it describes the merits of a visual approach; the four blocks of the canvas and the contextual elements are then presented; the "mechanics" of the approach are described as well as a number of a use case scenarios.

2. A student-centered and teacher-focused approach

The underlying pedagogical philosophy of the approach draws from the work on constructive alignment carried out by Biggs (2003) and Biggs and Tang (2011). In the same vein, the course design canvas links learning outcomes, teaching strategies and assessment strategies. It also caters to teachers by integrating the course's actual content and embedding the course in a broader context (Sylvestre & Maitre, 2018). Indeed, a given course always takes place in a particular context. These contextual elements can eventually add constraints to the design of the course. As such it allows the teacher to focus on his/her immediate concern (i.e., designing a course) without disconnecting it from the realities of higher education (e.g., the resources available, the audience, etc.). The originality of this work compared to the usual representations of constructive alignment is that it integrates elements related to the context of teaching and learning.

3. A visual approach

Paraphrasing Larkin and Simon (1987), "diagrams are (sometimes) worth a thousand words". In fact, diagrams, models and other visual representations are often found in the course design literature. They seldom lay at the core of the approach. In addition, visual supports are mostly used to describe/illustrate concepts and constructs. The positive impact of pictures and visual representations on learning has been mentioned for a long time (Nelson et al., 1976) and remains a very interesting for education (Bobert & Tversky, 2016; De Santis et al., 2016).

Visual representations can be used to improve collaboration (Brand, 2017) or communication (Kernbach et al., 2015) to name a few.

Visual approaches to course design in higher education can be found in Bosschaert et al. (2016) or to a lesser extend in the RASE – Resources, Activity, Support and Evaluation) – model (Churchill, 2006; Churchill et al., 2016). Additional examples of curriculum design templates can be found Wiggins and McTighe (2005).

Both canvas and approach presented in this paper draw inspiration from the business model and value proposition canvases proposed by (Alexander Osterwalder et al., 2014; Alexandre Osterwalder & Pigneur, 2009). Such visualization and modeling have been present for some time in the strategic management literature and have increasingly been used in corporate settings (Eppler & Platts, 2009; Platts & Tan, 2004).

4. The 4 blocs of the canvas and the context

The core of the canvas is composed of 4 blocs (see figure 1):

- Learning outcomes – the skills that the student must master at the end of the course, the session or the program
- Content – the material that the teacher aims to transmit
- Learning strategies – the means to teach the learning outcomes; these strategies can be rather student-centered (e.g., reflexive questions) or teacher-centered (e.g., *ex cathedra* lecture)
- Assessment strategies – the means to ensure that the learning outcomes were reached

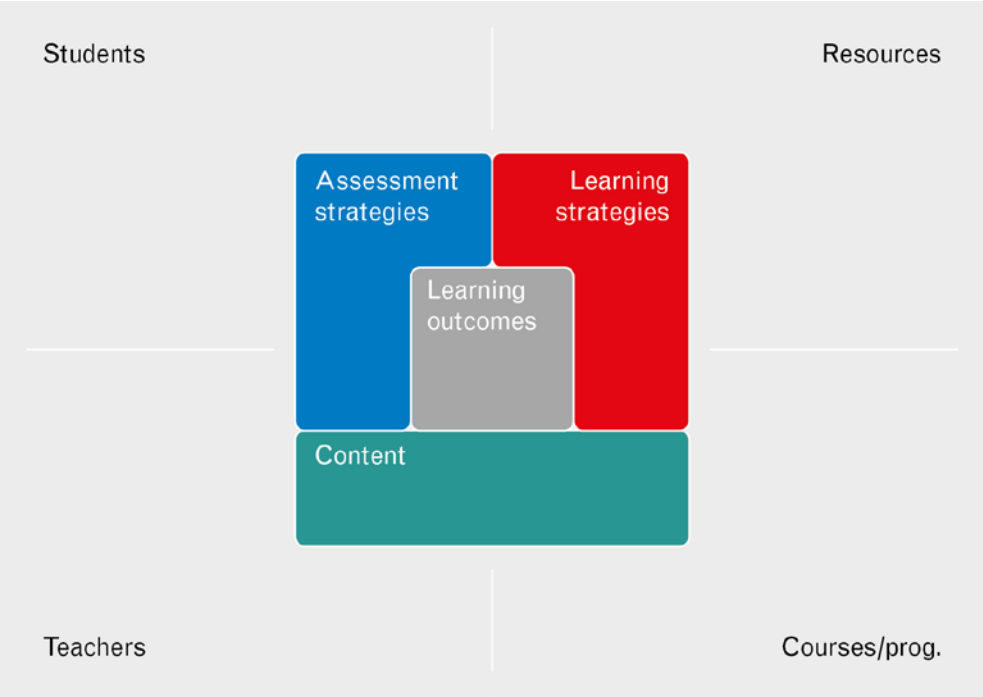

Figure 1. Course design canevas. Source: Lanarès et al. (forthcoming).

A mentioned above, a course always takes place in a particular context. These include:

- Students – homogeneity/heterogeneity, size, level and profile of the audience
- Teachers – expertise regarding the content, teaching expertise, incentives to teach
- Courses – where does the course fit in the overall curriculum, whether the course is elective or mandatory, whether there are credits or not attached to the course
- Resources – financial, logistical (e.g., rooms and material) and human (e.g., availability of teaching assistants)

In addition to those listed above, one can find additional constraints specific to a given course environment such as regulations relative to credits (e.g., ECTS), relative to accreditation (e.g., NQF) or institution-specific regulations. One must also often factor in institutional philosophies (e.g. vision and values), consider whether the course takes place in an institution with more of a theoretical or practical focus. Visually, the course design canvas is therefore embedded in a context. In addition, the 4 blocks are represented in a puzzle-like fashion to emphasize their reciprocal integration.

5. Use scenarios and "mechanics"

The canvas can be used in different cases including individual teaching, co-teaching or as part of a program. One can also imagine using the canvas to communicate with students, providing them with an integrated view and thus allowing them to better understand the links and logic between learning outcomes, content, teaching strategies and assessment strategies.

One starts by setting intended learning outcomes (ILOs) and content. This can be done either by writing a set of ILOs on post-it notes or directly in the canvas. In practice, one often starts by identifying suitable content and working "backwards" to transform content into ILOs.

As discussed above, contextual elements also have the potential to frame content and learning outcomes one. One is therefore encouraged to answer a number of questions in relation to the students, the resources, the course and the teacher. For instance, regarding content, one could ask whether the course is linked to other courses, what students already know (or are supposed to know) on the subject, how the content is related to a teacher's existing research interests. Regarding learning objectives, one could ask whether the course is rather practical or theoretical, how homogeneous the audience is, what time is at disposal.

One shall bear in mind that there is usually a back-and-forth process taking place when committing to ILOs and content. What really matters at this stage is to ensure coherence between content and ILOs.Once content and ILOs are defined, one then fills the teaching strategies block, followed by the assessment strategies. It goes without saying that there are plenty teaching strategies one can envisage; the same applies to assessment strategies and one shall choose those most adapted to the intended learning outcomes and to the content. Completing this allows to check to what extent ILOs and assessment strategies are aligned and eventually revisit the content and teaching strategies envisaged.

6. Conclusion

The paper presents a visual tool aimed at supporting course design in higher education. The canvas is the (first and) central element in a set of tools aiming at accompanying teachers in taking a more intuitive and practical approach to course design while at the same time ensuring constructive aligment. It can be used both when designing a course from scratch or when reflecting on an existing course and is aimed both at new and experienced teachers.

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