Messy design

Organic planning for blended learning

Andrea Rankin
Flinders University
andrea.rankin@flinders.edu.au

Ann Luzeckyj
Flinders University
ann.luzeckyj@flinders.edu.au

Jane Haggis
Flinders University
jane.haggis@flinders.edu.au

Callum Gare
Flinders University
callum.gare@flinders.edu.au

Abstract

In this paper we argue that a messy design process does not mitigate against sharing and transfer of artefacts across educational domains. In fact, such a process can aid in developing a model for learning and teaching that is reusable and authentic. We describe the planning and design of an integrated and interactive blended learning environment for students while demonstrating that messiness does not necessarily preclude modelling. Drawing on the educational design literature, our aim in the project discussed in this paper was to develop sustainable designs as a key feature and to facilitate applicability across disciplines. We are proposing a planning and design process framework for blended learning that may be shareable, reusable and flexible while being neither ill-structured nor ill-defined.

Keywords

educational design; blended learning; planning and design processes

Introduction

The literature on educational planning and design processes has often assumed a linear/phased progression that suggests easy transfer across educational contexts (Burrell, Cavanagh, Young, & Carter, 2015; Lee, Steketee, Rogers, & Moran, 2013). In many areas of the arts and humanities, the prevailing cultures of practice focus on the disciplinary expertise of the individual educator in developing content-rich courses. The recent trend towards eLearning, flipped classes and blended learning environments thus involves a major upheaval in academic cultures of practice – from subject specialists working largely in isolation to collaborative relationships between academics, higher education specialists, design and IT professionals (Burrell et al., 2015).

The question arises of how do existing models of educational planning and design support and reflect the kinds of experiential journeys emerging in the arts and humanities around the design of elearning. This paper documents one such journey, arguing that rather than a tidy process, our experience was messy, often non-linear, and marked with breakthrough moments of "serendipity" (Radio National, 2016). However, we argue that such messy processes do not prevent shareability or modelling. Drawing on Goodyear's (2005) pattern approach and the visual artefacts produced during our design collaboration, we demonstrate how a messy design process produced a

framework that captures the authenticity of such a process more accurately than tidy design models, in a form that can be shared across educational contexts.

Framing our approach within the literature

Educational (instructional) design models that attempt to establish a process for planning and developing learning spaces include the ADDIE and Systems Approach models, originally developed in the 1970s and modified, as required, over time. The ADDIE Model is linear in that it defines five design phases (Analyse, Design, Develop, Implement and Evaluate). Whilst it is intended that each step leads to the next, ADDIE recognises that these phases are interrelated. Thus the model has some flexibility and the ability to connect loose ends. ADDIE has undergone contextual adaptations to make it "fit for purpose". The Systems Approach Model (Dick & Carey, 2004) takes a more iterative approach to instructional design although, like ADDIE, it recognises the interrelationship between components such as the instructor, learners, materials, and delivery system.

More recently, however, such models have attracted questions about whether they are sufficiently flexible for the demands of educational design and planning in the digital age (Adamson, 2012; Bates, 2014). Adamson (2012) observed that "the linear process of cause and effect becomes increasingly irrelevant, and it is necessary for knowledge workers to begin thinking in new ways and exploring new solutions" (para. 3). In place of such models, an emergent practitioner conversation, often articulated through the blogosphere rather than in scholarly literature (for example, Dave's Educational Blog (Dave Cormier, n.d) and Hybrid Pedagogy (Digital Pedagogy Lab, n.d), uses vocabularies of design. These vocabularies are closer to Jonassen's (2008) observation that design is diagrammatically better expressed as a spiral of iterative decision-making processes. Models suggesting an iterative process generally acknowledge the need for analysis, evaluation and modification (Instructional Design Central, n.d.). The diagrams associated with these models show looping back and forward mechanisms.

Conole and Wills (2013) identified "a tension between design representations that are rigorous, precise and perhaps machine-runnable and those that are more creative, 'fluffy' and nearer to real practice" (p. 4). They also identified a range of frameworks used by educators to plan and document teaching, noting the importance of visualisation as an aid for thinking beyond content to the learning activities they wish to create. The project team's experience of working together confirms the value of planning, documenting and visualising. The discussion of our visual artefacts (below) demonstrates that more linear approaches to design such as the ADDIE and Systems Approach models do not reflect actual practice very well. In Conole's (2013) words: "design is a messy, creative, interactive practice grounded in real-life contexts" (p. 96). Her view of design is echoed in recent educational research literature that views design as "an 'ill-defined' (also 'ill-structured' or 'wicked') domain" (Masterman, Walker, & Bower, 2013, p. 14). These views acknowledge the creative essence of educational design, where educators may begin with a similar approach (for example, a pedagogic or epistemological viewpoint) but arrive at different outcomes (for example, a variety of learning activities) that nonetheless enable students to engage and succeed.

One of the objectives of learning design is to make the design process itself "more explicit and shareable" (Conole & Wills, 2013, p. 1). Goodyear (2005), drawing on Alexander, Ishikawa, and Silverstein (1977), proposed a pattern-based approach to educational design that offers a way to capture and share "messy" iterative design processes. Such an approach might still include a set of design ideas that are structured, with a clear design problem and solution, but "encod[e] this knowledge in such a way that it supports an iterative, fluid, process of design" (Goodyear, 2005, p. 92).

Agostinho, Bennett, Lockyer, Jones, and Harper's (2013) study of university teachers and learning design practice suggests the pattern approach as described by Goodyear (2005) might better support academic educators in the learning design process. Agostinho et al. (2013) found that participants were averse to using "prescribed design template[s]", preferring instead to select and

adapt learning designs" (p. 122). They used these designs for ideas and benchmarking rather than replicating existing practice. The study concluded that there was a "lack of practical, relevant and flexible supports and tools to help university teachers as they design" (p. 125).

This discussion of recent contributions to the educational design literature highlights why Goodyear's (2005) concept of pedagogical patterns in educational design was embraced by members of the project team, and specifically promoted by the university's central learning and teaching unit. The institutional context of educational design that shapes the project and design pathway discussed in this paper builds on the unit's aim to develop a repository of sustainable design patterns for academic and professional staff across the university, through an open-access resource (the eLearning Gateway) embedded in the university's learning management system.

The project team and approach

The project initially focused on a third-year topic[1] and was then revisited in a first-year International Studies topic in the Faculty of Social and Behavioural Sciences at Flinders University (Australia). A strong thread in the design of this topic was narrative – a concept supported by universal design principles (National Center on Universal Design for Learning, n.d.). The topic coordinator, as the project initiator, led this approach with strong support from the educational designer who acknowledged Universal Design as a desirable (instructional) design feature. As a consequence, the team's approach to working together strongly featured narrative in meetings and other communications. This dialogic way of working meant that face-to-face meetings took the form of negotiated conversations and diagrammatic representation of those conversations. Some planning tools developed in the university's central learning and teaching unit were used to scaffold this experience and guide processes, but more as a loose "agenda" than as meeting artefacts. As iterations of the topics developed and were experienced by students, their feedback was regularly sought. Feedback mechanisms were both formal (an in-house "Touchpoint" survey during the topic and Student Evaluation of Teaching survey at the end of the topic) and informal (solicited and unsolicited comments in emails and class discussions). This feedback also shaped the team's design discussions and understandings. Good practice in educational design through discourse probably best describes the team's approach and goal.

Despite the diversity of their institutional roles, project team members were all *designers* in the project space. All team members used reflective practice to experience "the process by which designers learn from iterations of moves which lead them to re-appreciate, reinvent, and redraw" (Schön, 1983, p. 104). Team members were on a learning journey that is reflected in this paper through presentation and discussion of key artefacts and learning space design outcomes. Reflecting on group interactions in and out of meetings led to shared understandings and products. This reflective process is what Schön (1983) terms "reflection in action" (during) and "reflection on action" (after). Individual and team interactions consisted of "continual interweaving of thinking and doing" (p. 280). Team member "reflections operate[d] *within* their systems of understanding" (p. 282). But as a team, we also needed to work towards shared understandings, described by Schön (1983) as "constancy of appreciative system" (p. 272). Our experience of working together as a project team could be summarised by Schön (1991) when he stated that "designing is primarily social. …The agents of design are individuals who occupy institutional roles, in interaction with one another" (p. 5).

A particular feature of our messy planning and design process was the organic way in which it unfolded as a non-linear "mashing" together of expertise, perspectives and personalities. Team members had to find commonalities of perspective as well as ways to work together. Becoming familiar with new terminology was a shared experience as part of this process – specialised disciplinary knowledge (concepts and skills), pedagogical understandings (inquiry-based learning, transition pedagogy), design principles (universal design, blended learning), and technology

[1] We use "topic" here rather than "subject" as this is the terminology adopted by Flinders University, the site where the study was based. Both topic and subject refer to a specific semester length course of teaching that nests within a larger specialised program of study such as a "major" or specialised degree – in this case, a Bachelor of International Studies.

capabilities (learning management system, external tools). Team members had varying degrees of comfort in these areas so translation across and between these distinctive vocabularies was often required.

Team members brought a particular perspective and skill set to the project. The topic coordinator wanted to implement a hybrid pedagogy grounded in inquiry-based learning and Universal Design in a blended mode of delivery. Her aim was to address the complex diversity of the student cohort. The educational designer's brief was to support this strategic initiative and bring design skills (including the use of educational technology) to the project's presence in the eLearning environment. The project officer was an information technology student. As well as his "student head," his ability to understand and work with systems and educational technology tools (including those external to the University's learning management system) was a key contribution. When the topic was revised for the first-year cohort, the academic whose institution-wide role involves supporting staff who teach first-year students was invited to participate in the team. Her role was to oversee the incorporation of transition pedagogy principles (Kift, 2009) and other modifications that aided students new to learning at university.

Our approach used a process consisting of meetings (conversation and narrative), documentation (such as: topic details, study plans, flow charts), and online/electronic tools (such as: mapping tools, presentation tools). The project team was in search of non-linear (fluid), "joined up" and narrative elements embedded in the topic space. Given these aims, project team meetings were most often structured around dialogue. The meetings were also shaped by understandings about inquiry-based learning and were, in a sense, an inquiry-based journey in itself. At times, our conversations and narratives were directed by the "top down" concerns of institutional educational and technological priorities and, at other times, by the "bottom up" influence of student experiences. Student feedback (formal and informal) contributed to the feedback loop approach the team adopted.

To easily revisit and capture documentation and ideas, a project wiki was created in a shared Flinders Learning Online (FLO)[2] site. This site became the central location for storing the team's documentation and thinking notes but most recently has also become a place to link to other storage spaces, such as *Google Docs*, where materials are shared and worked on collaboratively. This move to online collaborative tools mined the creative possibilities of these tools for developing ideas and design components synchronously and asynchronously, optimising team members' individual time, space and energy inputs. The project wiki remains important for more formal records and tracking the evolution of the design although it is expected that Google Drive may supplant the wiki's use over time. These tools and processes of record keeping coincide with design team examples given by Cober, Tan, Slotta, So, and Könings (2015).

The project's educational goals

The project started in 2012 through a university teaching innovation award in the School of History and International Relations at Flinders University: *Flipping from teaching to learning to anticipate student diversity as the norm: a pilot of a Blended Learning and Universal Design [BLUD] curriculum.* The project experimented with the design of a personalised learning environment based on universal design principles (National Center on Universal Design for Learning, n.d.). A capstone (third-year) topic for a major within the Bachelor of International Studies (BIS), delivered for the first time in 2013 in a blended learning context, was the project's focus. In 2014–15, a new first-year topic in the BIS became the focus. Moving the pedagogy from a capstone topic to a first-year topic necessitated some remodelling. The initial design was intentionally extended to embrace inquiry-based learning and elements of first-year transition pedagogy.

[2] At Flinders University, the web-based learning platform (Moodle), termed *Flinders Learning Online* or *FLO*, is used for the online presence (instance) of all topics.

The project's intended outcomes included developing a *pattern model* and *pattern shell* for the eLearning Gateway.

- The *model* will be the latest iteration of the topic, demonstrating features and tools/activities, with potential modifications of the 2015 version based on student feedback and team reflections. This model will sit in the eLearning Gateway as a "real" topic (student data will be stripped out).
- The *shell* will be a copy of the real topic scaled back so that the key features of the design are shown in a generic format (that is, without disciplinary material). Alternatively, or as well, this shell may be a series of "micro patterns" (activities and resources bundled together meaningfully).

These post-project artefacts are intended to be useful to educators particularly "for cherry-picking inspiring design ideas for adaptation to their own subject teaching or for easy, off-the-shelf adoption of full sequences for teaching in" (Levy, Aiyegbayo, & Little, 2009, p. 245). The *pattern shell* aims to make decisions and design processes more efficient (and sustainable) for educators and educational design staff interested in the design principles (or aspects of them) that underpin the student experience. Educators will be able to request an import of the shell into their topic/s for further development and contextualisation. These project goals mean that educators will have "the means to share their learning designs with other teachers and, conversely, to gain access to others' designs for inspiration or adoption" (Masterman et al., 2013, p. 13). Thus a model/shell approach will meet the needs of a range of users, providing both peer modelling and sharing functions. However, it is the process of achieving these outcomes (solutions or patterns) that has become particularly interesting to the project team.

Our design journey

During the project's lifespan (2013–2015), the design approaches of the team evolved in response to member dynamics and variations in the delivery and cohort of the topic. The feedback acquired from students during and after the second iteration (first-year topic) was also an important influence as it meant the team could redesign the Flinders Learning Online (FLO) topic site in response to a range of learner experiences.

Figures 1–4 show design iterations over the period 2013–15. An important element of the iterative designs is the topic coordinator's ability to "metaphor-ise" the curriculum, in an attempt to personalise the learning experience for students and make it "real world". As well as taking narrative forms, the metaphors used visuals (for example, icons) to aid learning and navigation, and are particularly noticeable in the first-year topic.

First iteration (2013): Capstone (third-year) topic

In 2013, the focus of planning for the online topic design was based on the design principles of blended learning, universal design and inquiry-based learning. The project team at this stage consisted of the topic coordinator, educational designer and project officer with initial input from the faculty eLearning support team.

The first step in the design process was to map the student's journey in, and experience of, the topic. The topic coordinator and educational designer concurrently developed their own diagrams of how this might look based on early conversations between team members. Both diagrams attempted to convey an understanding of how personalised learning pathways and inquiry-based learning might occur in the topic. Figure 1 represents the topic coordinator's version. The path depicted in this "pull diagram" aimed to show the potentially organic nature of the student's journey, which clearly is not meant to be linear, as well as the "back and forth-ness" of the web interface and online behaviours of the student (in both learning and information-seeking contexts). The idea of "pull" is that students take (pull) what they need rather than being given (pushed) what the educator thinks they need. The "territory" (scope) of the topic is bounded by support and

resources, with the learner in the middle. There is scope to go beyond the boundaries of the topic should the learner choose.

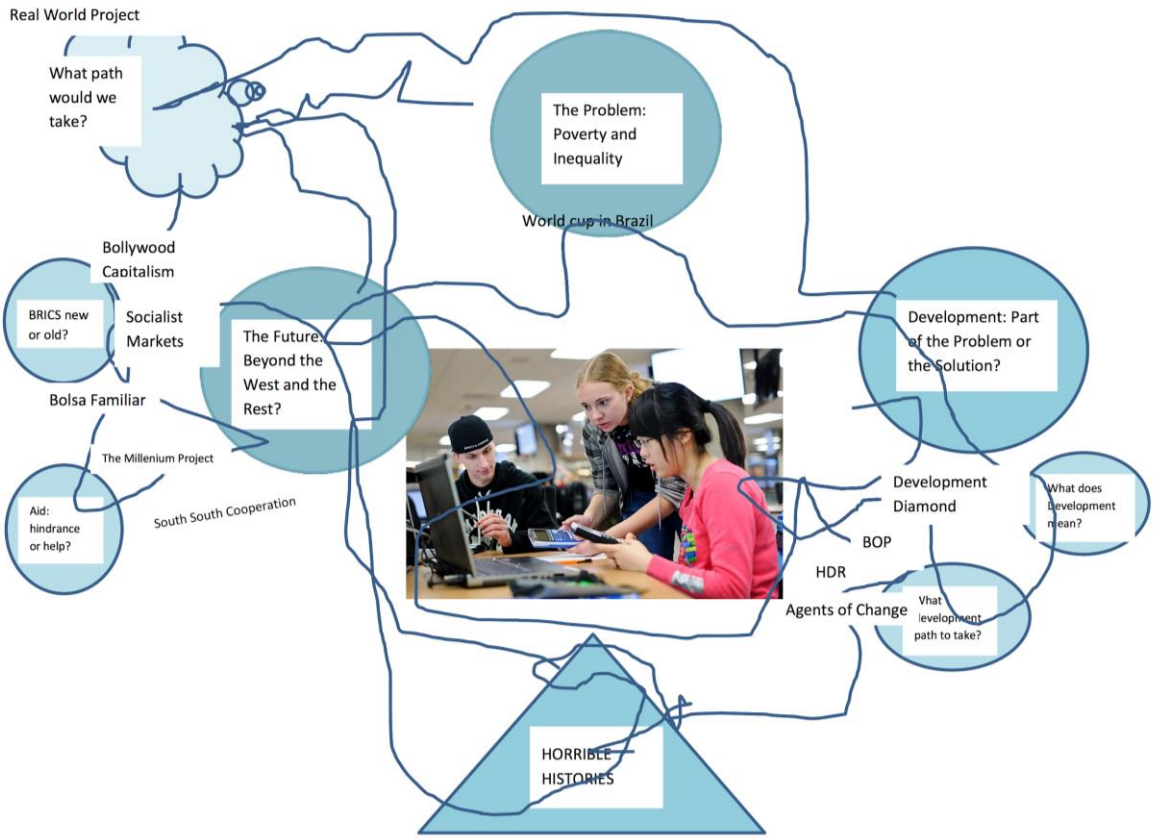

Figure 1. Pull diagram (topic coordinator) [3]

The design principles and planning meetings formed the basis for a complete redesign of the FLO topic site that moved away from the school's standard template to include:

- a colour-coded modular structure
- icons in each module that metaphorically represented signposts (information, key concepts) and levels of engagement (inform, think, challenge)
- a Prezi that situated the site's content (topic inquiry map)
- learning pathways (Moodle's lesson activity) with different colours representing students' inquiry choices.

The key rationale for the site's redesign was to improve its sense making and usability. The lesson activity was used to map learning pathways that students could select to create an individual inquiry-based learning journey through the topic. Despite design limitations of the lesson activity which impacted on students' abilities to navigate through the materials, they persevered and reported that they found the content engaging. The lesson housed a range of formats and sources that met universal design guidelines. These are: Principle 1- Provide multiple means of representation; and Principle 3 - Provide multiple means of engagement) (National Center on Universal Design for Learning, n.d.).

[3] Central image attribution: college.library (WisCEL Centers) 2 October 2013, *Flickr*, https://www.flickr.com/photos/collegelibrary/8621541931

Second iteration (2014): First-year topic

In 2014, BLUD (Blended Learning and Universal Design) was developed with a first-year cohort, incorporating a fourth set of principles relating to transition to university (Kift, 2009). At this stage, the project team expanded to four members and included an academic with responsibility for supporting staff who work with first-year students. The wiki was used less by the team when communicating outside of meetings (although it was still used to document some aspects of the group's interactions). Google Drive became the preferred tool of use. This development occurred organically as the team began to work together more synchronously.

In response to the first-year context, where "for a significant proportion of students (approximately 30%) getting motivated to study is difficult and coping with university study remains challenging" (Baik, Naylor, & Arkoudis, 2015, p. 2), a self-efficacy element was built into the pedagogical approach. This element intended to introduce students to a model that included reflective practice and self-awareness as well as supporting their development as independent and self-directed learners (Lizzio & Wilson, 2004). Given the topic had previously been purposefully designed to support students' diverse backgrounds and academic skill sets, the transition pedagogy principles were easily embedded with minor modifications to assessments and additional signposting (design) elements (Kift, 2009).

Both the third-year and first-year FLO topic sites underwent a transformation from the standard school template to one that was modular rather than weekly in structure. In keeping with transition pedagogy principles, the changes to the first-year topic site were deliberately less radical to ensure students new to university study did not feel lost or confused by the differences they encountered in the topic design. Design elements of this four-module structure (modified from the first iteration) included:

- quick-link buttons in the first section (Module 0) to key locations in the site
- icons in each module as signposts to activities (out-of-class, in-class, lecture)
- tabbing within modules to reduce scrolling.

Third iteration (2015): First-year topic

In 2015, the topic coordinator and educational designer used a university first-year curriculum grant to more explicitly hone in on the transition, design and engagement principles within the topic. The same first-year topic was redeveloped for Semester 2 2015 based on feedback from the 2014 cohort and new Moodle/external tool developments. The makeup of the project team remained consistent for this iteration, although the team member with expertise in first year took on a more advisory role.

At this stage, team members were accustomed to working with each other and some key shared understandings were bedded down. These were: face-to-face/online interconnection and universal design (the BLUD component); inquiry-based approach (topic coordinator's pedagogy); sustainable design (educational designer's strategic principle); transition pedagogy (first-year curriculum specialist's input); and student-centered learning (overarching principle, with the project officer/student providing a real-world perspective).

The planning pace intensified for this iteration, and team members often produced artefacts simultaneously. This process/product approach was useful for comparing different team viewpoints, and facilitated the development of a more inclusive and authentic model. Figures 2, 3 and 4 demonstrate the intensity of working relationships and outputs, as well as the bigger picture view the team was beginning to achieve. The timeline in which these planning diagrams were produced is about nine months (end of Semester 2 2014 until beginning of Semester 2 2015). Feedback loops were working effectively between team members, and outside of meetings consisted of emails, phone conversations and shared files. The FLO topic site was also a collaborative space between the topic coordinator, project officer and educational designer.

Figure 2 is the key patterning diagram that emerged from two lengthy sessions between the topic coordinator and project officer. The sessions were intense, as these team members found it difficult initially to pull away from the detail of the specific topics. The topic coordinator was also challenged to translate the educational designer's use of patterning into her own intuitive understanding of the design process. The project officer's IT background was crucial here. By drawing on his knowledge of object-oriented programming and the concept of object instances, the topic coordinator arrived at a richer understanding of the language of patterns used by the educational designer (Snyder, 1986). This convergence of understandings was captured iteratively in a series of whiteboard maps co-produced with the project officer. What started as a very "messy" map of loose ideas, statements and connections transformed, over the course of these sessions, into a tool that linked the generic features (distinctive elements) with the specific instances used in the topic[4].

[4] The final whiteboard map was photographed and transformed into Figure 2 using Scapple, a free form text editor for Mac OSX and Windows.

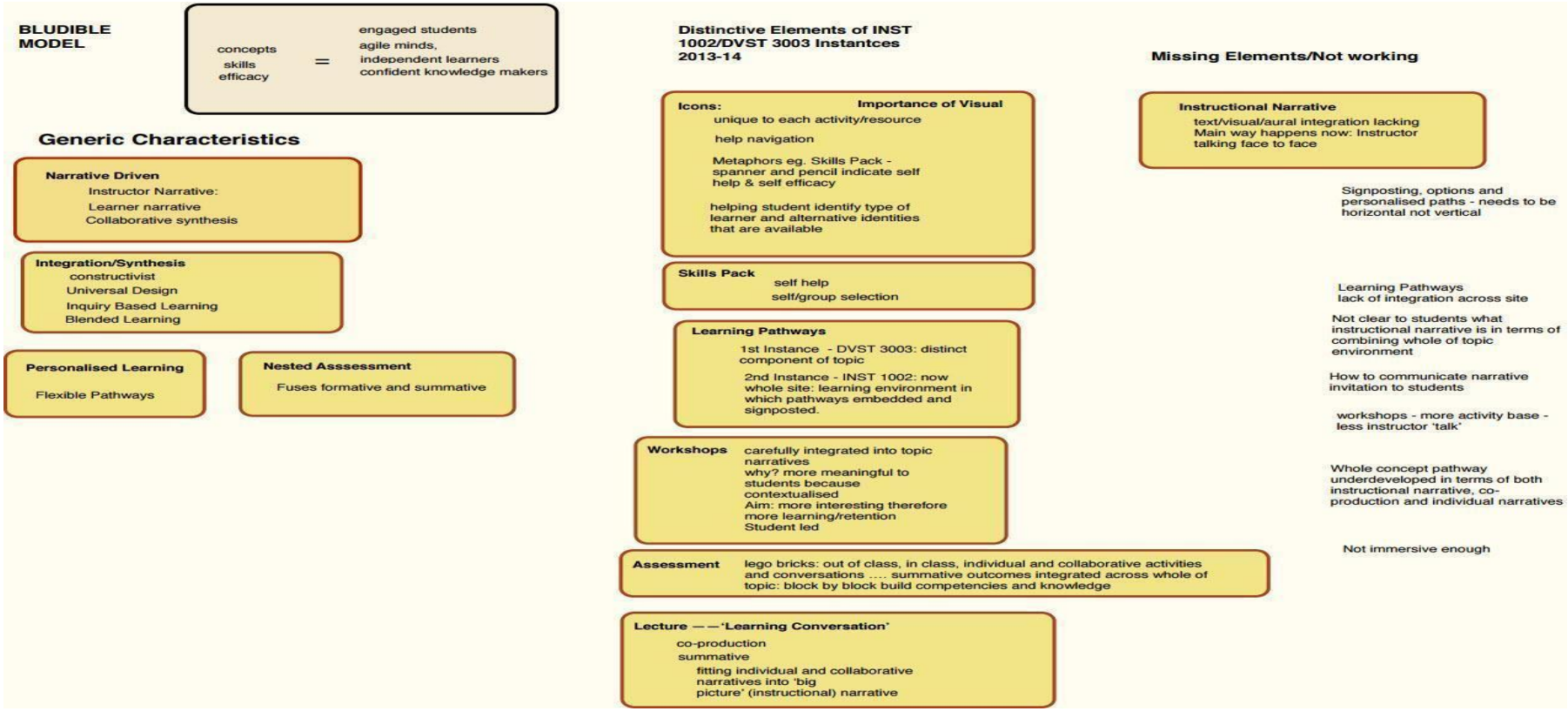

Figure 2. "Bludible" model (topic coordinator and project officer)

In parallel with Figure 2, the educational designer developed Figure 3, the design principles (considerations) planning diagram. She drew on the shared understandings of the team outlined above, with the aim to pinpoint the key features of these learning design principles and "translate" them into what this might look like in FLO using a range of Moodle interactive resources and activities. The IBL (inquiry-based learning) toolkit featured in module 1 ("FLO look and feel" column) particularly meets the requirements of the 2015 curriculum grant's transition and design principles, aiming to provide resources and activities as a basis for understanding that spans the whole topic. The toolkit's priority positioning in the topic makes it readily accessible for students to revisit during the topic's lifespan. Follow-on modules unwrap/expand on a student's initial understanding through experiences and explorations using metaphors such as 'learning passport". Whilst this diagram appears to be quite linear, design principles are "mixed and matched" in the FLO topic site (providing a different perspective on "blended").

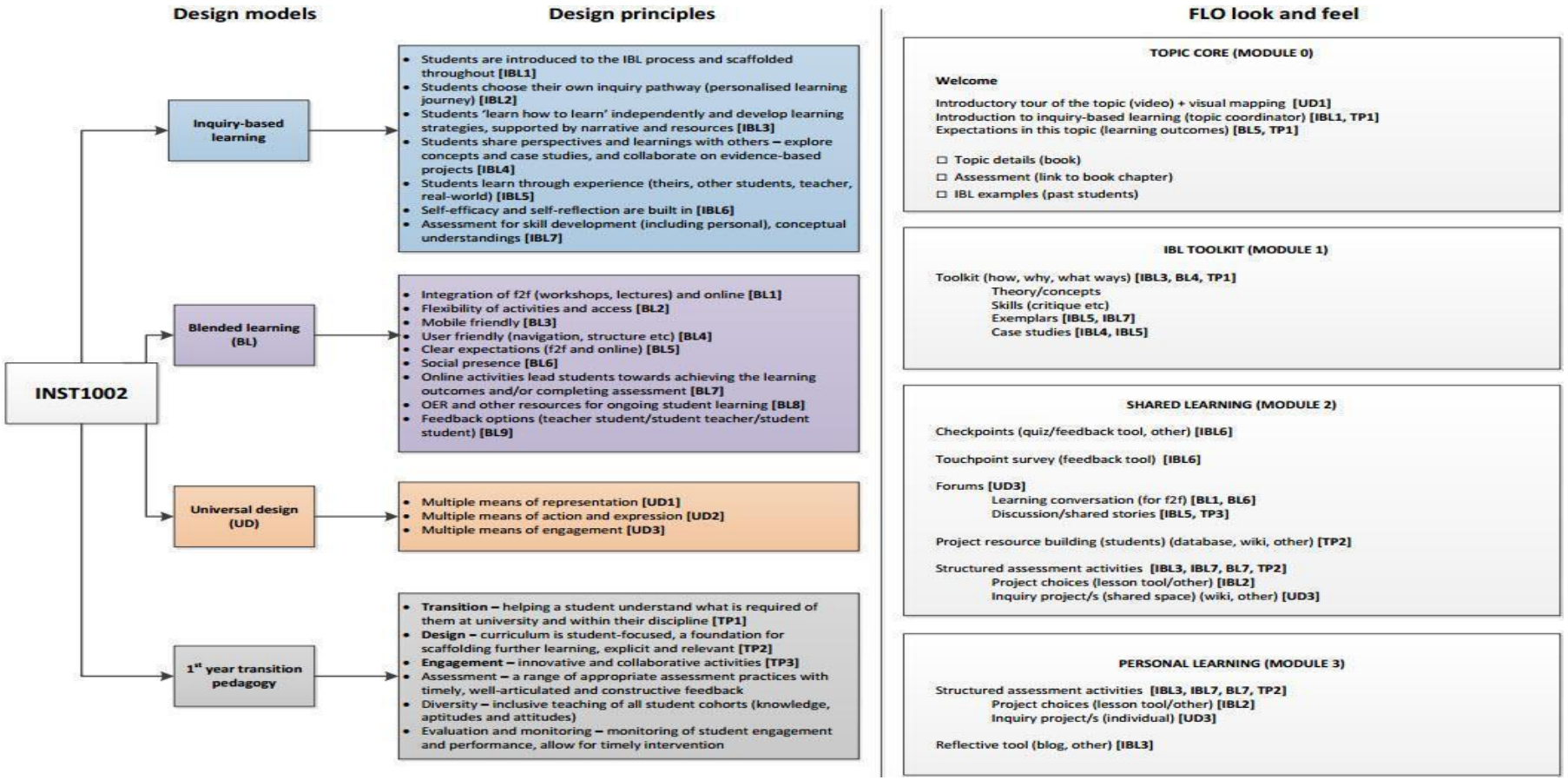

Figure 3. Design principles (considerations) *(educational designer)*

Figures 2 and 3 illustrate the emergence of a "big picture" approach. Out of meetings, team members visually expressed shared understandings and "cherry picked" learnings from previous topic iterations. As team member perspectives merged into common understandings, it became possible to work in a shared online collaboration space on the visual representation of the topic. The team used *RealtimeBoard*[5] for this purpose (**Figure 4**).

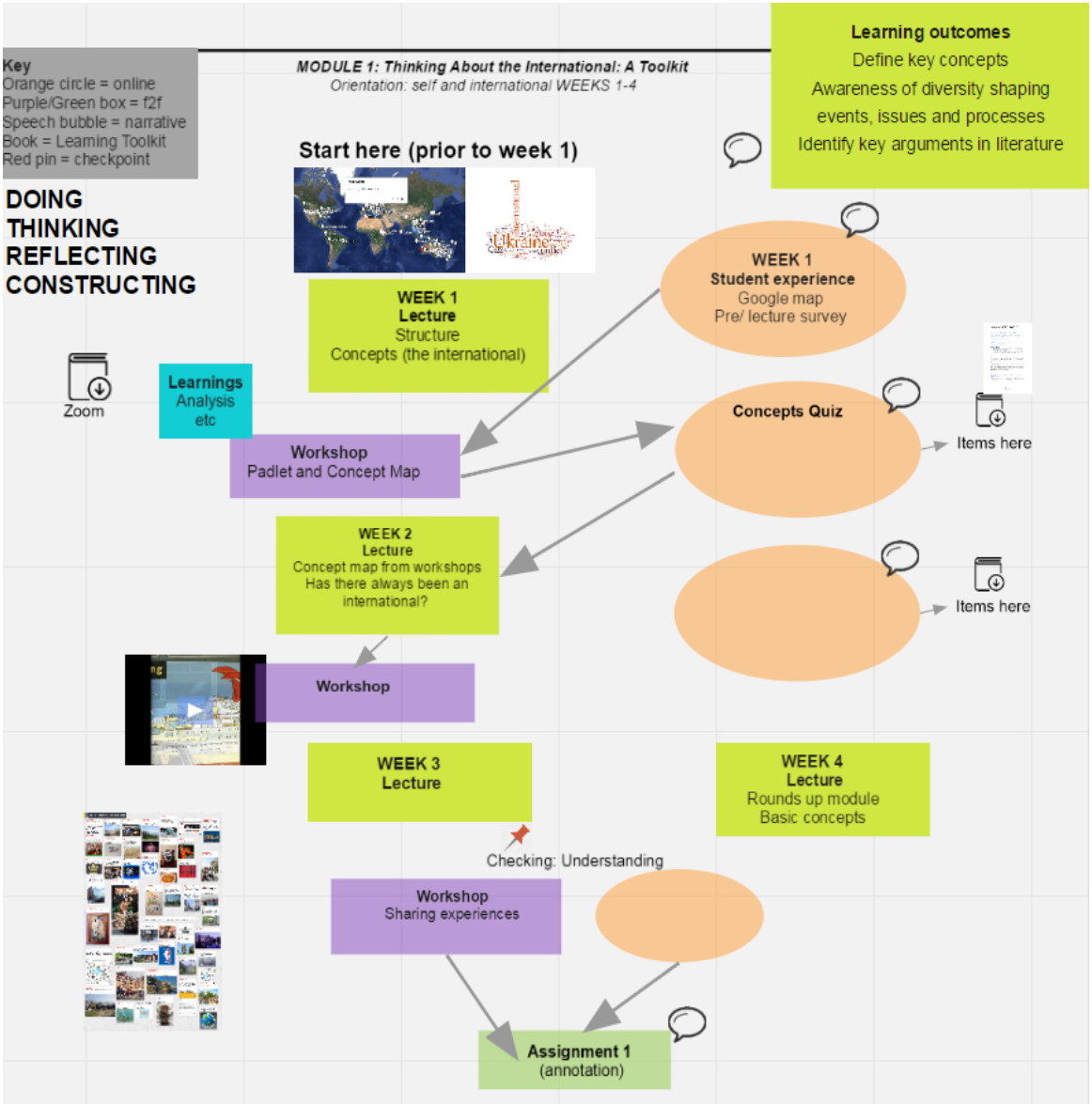

Figure 4. Early mapping of Module 1 in RealtimeBoard (all team members)

This non-linear structure emerged from a meeting where the topic coordinator and first-year specialist were dialoguing the pedagogy. The educational designer and project officer worked visually with this conversation to produce a whiteboard artefact, which was transferred to the "virtual" (RealtimeBoard) after the meeting. It became a shared online space for topic development planning. This planning diagram best illustrates a breakthrough moment of serendipity for the team (Radio National, 2016).

[5] See https://realtimeboard.com, a visual collaboration platform.

Discussion

The outline of our planning and design process presented in this paper demonstrates its messiness. The process was a longitudinal one which, for us, strongly illustrates that narrative is conducive to visual outcomes (products) (Levy et al., 2009). It also reflects the importance of Conole's (2013) breakdown of the design process into mediating artefacts. We found it particularly interesting that in the "back and forth-ness," "joined-upness" and non-linearity of the team's practices, the process we went through mirrored possible student experiences of a learning journey and reflective practice cycle. The unexpected convergence of our own experiences and that of the students brings authenticity to the design process, generating a first-hand empathetic understanding of the design principles in practice for the project team. A pattern approach (Goodyear, 2005) also emerged, not just in the outcomes of the project (our educational goals) but also in our team's way of working in an educational design space.

The "organicity" of the process captures the kinds of pedagogy the team is endeavouring to implement; a connection emerged between the planning and design process and the pedagogy/ies for the topic. Our experience demonstrates how a sound approach to pedagogy (even where a variety of pedagogical approaches are applied) can inform the process as well as the outcome. The team shared (or developed) the "same pedagogical philosophy" (Chatteur, n.d.) as a base, and worked together over a period of time in the same design space (FLO) with common materials, which contributed to our individual learning and reflective experiences.

Reviewing the methods the project team adopted, individually and together, dual processes of divergence and convergence can be identified. Each team member brought their own perspective (and skill set) to meetings, and took away a revised or enriched perspective that they further developed between meetings. This process generally happened organically rather than as a meeting action.

Conclusion

This paper attempts to capture the process of planning and design across a multi-disciplinary team with some members unaccustomed to working collaboratively on topic design. The team also explored whether it is possible to bed down a pattern as an effective design process for sharing with other higher education practitioners (Goodyear, 2005).

We started from different points (subject specialist-topic coordinator, professional-educational design specialist, computing science student-project officer, academic-higher education and first-year specialist) but were brought together around a specific project with a unique set of problems and objectives. Our "method" was not our starting point, but emerged out of the nature of our engagement as a team. Adopting a creative collaboration model of iterative conversations, sharing and individual engagement, we found ourselves variously diverging and converging in ways that brought us to a productive synergy that nevertheless allowed for moments of serendipity to occur. Our experience supports Beetham and Sharpe's (2013) observation that "the computational facilitation or capture of the design process … remains elusive" (p. 13).

Our planning and design process is suggestive of a culture of shareability that emphasises design partnerships around and through models/shells. We blended conversations and visualisation, harnessing cross-fertilisation in dispersed spatial and temporal forms. This blending led to a framework (pattern) for planning and design which includes:

- *"freestyle" patterning* rather than bedded-down procedures, allowing for synergy and serendipity
- *diversity of starting points, perspectives and directions* captured as strengths rather than weaknesses
- *divergences and convergences* captured at iterative moments and worked across, using planning and design tools that facilitate a combination of visual and conceptual elements
- *agile linking of thoughts and ideas* in unanticipated "moments" that progress the design in leaps and bounds rather than in linear procedures

- *feedback loops* between educators, designers, technical support and student users that break down the boundaries between planning, design, pedagogy and learners.

Our pattern, as outlined above, acknowledges the view of design as a messy and iterative domain but refutes the idea that this necessarily means design must remain "ill-structured" or "ill-defined" (Masterman et al., 2013, p. 14). We describe an approach to the design process for blended learning that is potentially shareable and reusable for multiple contexts and purposes whilst avoiding a prescriptive approach. However, one question remains in our minds: Can our specific, and seemingly idiosyncratic, planning and design process be generalised and repurposed for use in other contexts (institutional, disciplinary and pedagogical) by teaching and design teams? This question can only be answered, and modifications put in place, once others attempt to adopt our approach.

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