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RESEARCH ARTICLE

Derivation of electronic course templates for use in higher education

Robin K. Hill[a]*, Jill W. Fresen[b] and Fawei Geng[b]

[a]*Ellbogen Center for Teaching and Learning, University of Wyoming, Laramie, WY, USA;*
[b]*IT Services, University of Oxford, Oxford, UK*

Lecturers in higher education often consider the incorporation of web technologies into their teaching practice. Partially structured and populated course site templates could aid them in getting started with creating and deploying web-based materials and activities to enrich the teaching and learning experience. Discussions among instructional technology support staff and lecturers reveal a paucity of robust specifications for possible course site features that could comprise a template. An attempted mapping from the teaching task as understood by the instructor to the envisaged course website properties proves elusive. We conclude that the idea of an initial state for a course site, embodied in a template, remains useful and should be developed not according to a formula but with careful attention to the context and existing pedagogical practice. Any course template provided for the use of lecturers should be enhanced with supporting instructions and examples of how it may be adapted for their particular purposes.

Keywords: course template; learning platform; pedagogical dimensions; course site properties

Introduction

As the World Wide Web is pressed into greater service for teaching and learning, instructors in higher education who want to explore the potential of a course site and do not know where to start often seek help from their institution's learning technology support team. The instructional technologist in the team generally reaches for an illustration of a course site, one that shows how the institutional course platform might support teaching and learning, and how a particular course site might be built with the instructor's own materials. A course template derived from that illustration would provide a starting point that can be adapted to the needs of the instructor, the course and the target students. Our aim is to analyse the concept of a course template and its possible components and to examine the factors that influence its design and structure.

This article is intended to be the first of a short series, with the following articles offering more template examples and evaluations of their use.

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*Corresponding author. Email: hill@uwyo.edu

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Background

The authors of this article are educational technology specialists, with experience in teaching in higher education. We have, individually and collectively, deep and broad experience in addressing diverse requests from academic staff members and, in particular, providing assistance in conceptualising electronic course sites and how best to integrate these into a blended learning situation.

We are based in two different higher education institutions, in two different countries:

- University of Wyoming – An American land-grant research university with a mission to serve the state's residents at low cost
- University of Oxford – A British university of strong collegiate structure, practising traditional face-to-face pedagogy in the form of non-compulsory lectures and small group tutorials

The particular course platform known and used in common is Sakai, called *WyoSakai* at Wyoming and *WebLearn* at Oxford. Our collective past experience includes time spent at other institutions and work with a variety of other course platforms.

Research question: a guiding scenario

We frame our research question in terms of a "guiding scenario", as follows. Instructors dipping into technology-supported teaching are often at a loss as to what they need to know, need to have and need to do – and even what questions to ask. They may only vaguely know of the existence of the instructional technologist, whose task it is to support academics in their desired uses of technology to complement their teaching practices. They may attend demonstrations and workshops, speak directly to instructional technologists or perhaps only consult the help website and supporting documentation provided as part of the electronic teaching and learning platform.

We (the instructional technologists) might make a statement such as this one:

If you want a website for a course like yours, start with this template.

The variables in this statement are:

- "you" – the instructor
- "website" – the resulting course site dedicated to the teaching task (defined more fully below)
- "a course like yours" – the teaching task currently faced by the instructor
- "this template" – a starting point for a course site

The research question can be phrased according to the principles of systems design, in terms of input, process and output. We seek to identify the input and output parameters, and to design the process to map from the input ("a course like yours") to the required output ("this template"), which the instructor will ultimately build into the final course site (Figure 1):
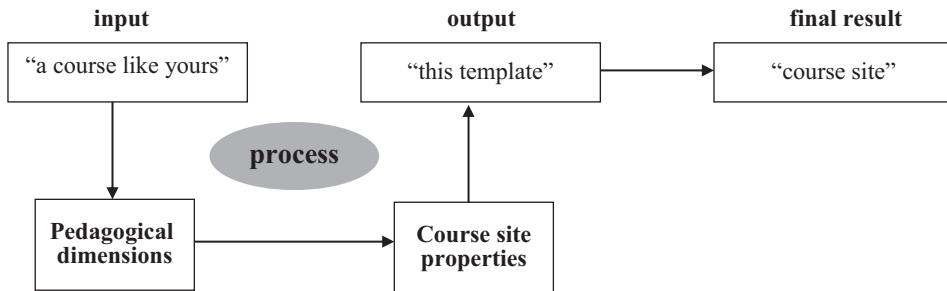
Figure 1.   Process diagram representing our research question.

Conceptual framework

Terminology

To avoid confusion, particularly regarding the US–UK nexus, and in the hope of making our research accessible to the greater educational community, we clarify our understanding and use of terms that are central to this discussion.

Course platform

We use the term "course platform" to refer to a web-based application to support teaching and learning. Such a platform is often referred to as a Learning Management System (LMS), Virtual Learning Environment (VLE), Collaborative Learning Environment (CLE) or Course Management System (CMS).

Course (web)site

A "course site" (or "course website") refers to a site on the course platform that provides collaborative space for a defined academic unit of teaching, usually circumscribed by time span and membership. Such a course site recognises roles and procedures found in most higher education institutions and provides pedagogical functionality for use by instructor, student and other roles.

Instructor

We use the generic term "instructor" to refer to a teacher in higher education, formally called "faculty" or "academic staff"; a professor, lecturer, tutor or other category of pedagogical professional who leads classes with materials authored, selected and assembled by him- or herself, with the aim of providing effective learning experiences for students. The category of instructors includes teaching assistants who may be graduate students, that is, they are still students themselves but may perform teaching and assessment duties.

Institution

An "institution" refers to a higher (or tertiary) education institution, a community college, four-year college or university. Alternatively, it may refer to an organisational unit within a university, for example, the College of Medicine. A college may also

refer to an institution of further education and training, for example, a vocational college or a "college" in Oxbridge terminology, namely an autonomous and independent locus of residence and tutoring (allied to the university which is the degree-conferring body).

Instructional technologist

An "instructional technologist" is an expert in higher education practice, in particular the use of learning technologies to support teaching and learning. Instructional technologists are employed by an educational institution to support and assist academic staff in designing and reflecting on their teaching practice and its enhancement by the appropriate use of instructional technology. Such experts are also referred to as "instructional designers" or "learning technologists".

Course template

We use the term "course template" to refer to a framework for, or initial state of, a course site, at the point of delivery from the instructional technologist to the instructor. A template is more developed than a blank site that is available in the course platform, but it awaits the teaching and learning content – the body of knowledge that constitutes the core materials and activities in the course.

Academic group

An "academic group" refers to a university department, or college, or faculty (in British terms), or a team of staff working together to deliver an academic programme. When referring to students, the academic group is the envisaged target group of students who will be enrolled in a particular course.

Context and motivations

Course templates are not restrictive. Any course site can be developed from any template. While some institutions may look to course templates to enforce standards, we make no particular accommodation for this case. We assume that the course platform defines a default role suitable for instructors, comprising a set of privileges. Thus, instructors building course sites based on templates will still have control over all aspects granted by those privileges. The purpose of a course template is to suggest, not to prescribe.

Course site construction and deployment is under the control of the educational institution. At least some of the setup of course sites can be done locally. Commercial products with proprietary code, such as Blackboard, Pearson Learning Studio, Desire2Learn and others, do not afford the customisation options afforded by an open-source platform but still exhibit the properties that we discuss and may provide some means of configuration before course site deployment.

No special teaching and learning design is required of the instructor. We do not assume that the "course like yours" is necessarily the outcome of a thoughtful design process on the part of the instructor. While that circumstance is desirable, we wish to meet a wide range of faculty needs and preparation levels. The faculty member may be unguided and may have an inchoate view of the upcoming teaching task, a view that

is "weakly manifest," or "opaque", in the terms of Masterman and Vogel (2007); even so, the instructor's perspective drives the development.

Literature sample

Many mentions of course templates propose only interface elements, such as application screens that guide an instructor through the creation process. Examples are the wizards that are widely used for the construction or configuration of software tools but are not necessarily pedagogical in nature or purpose. Many of the pedagogical treatments of course templates with which we are acquainted address theoretical or conceptual dimensions in the abstract, without suggestions for accompanying implementation. Some articles adopt a perspective with a particular goal, such as minimising the barriers encountered by students who are learning to use new technology. Such studies are useful but none coincides exactly with the aim expressed in our motivating scenario. This article takes as its point of departure broad considerations of how to find, describe and categorise course design dimensions that will inform our construction of electronic course templates, embracing the widest variety of notions that are expressed informally by instructors. In a course template project at the University of Glamorgan (Woodward 2010), the first goal was "To provide students with a consistent, accessible overview within their own modules" (p. 1), but the project team recognised that "academic staff should retain flexibility and choice in how they present the detail of their content, and that the template should facilitate the work of building a module and not restrict it" (p. 2). This approach aligns with our assumption of offering a suggested outline or framework, without prescribing the complete format or content of the course site.

Our approach is similar to that of Jara and Mohamad (2007), who present a list of course components leading to a list of suggested pedagogical templates for e-learning, which they deem to be models of technology integration (Jara and Mohamad 2007). They disclaim comprehensive coverage: "These templates do not attempt to cover the full range of possibilities nor to consider all variables …" (n.p.). We attempt to provide a broader spectrum of dimensions, led by faculty practice that we have observed.

Wright (2011) offers a comprehensive list of course components, intended for reviewing existing course sites, for example accessibility, organisation, layout, instructional strategies, and so on. We can interpret his work as contributing to either the pedagogical course dimensions that form the teaching task ("a course like yours" in our scenario) or the desired course site properties to build into "this template".

Wright's (2011) list of components resonates with the design and pedagogical factors presented by Fresen (2005) who synthesised six categories of factors – institutional, technology, lecturer, student, instructional design and pedagogical – that determine the success of the design process which is ultimately realised in a web-supported course. In this article, we focus more sharply on the instructor's concept of the task, and how an electronic template can support development of a course site by offering components for consideration and adaptation by individual instructors.

The extensive literature on learning design may yield ideas as to what components could be included in initial course templates. Brouns *et al.* (2005) discuss how learning design patterns could be detected and reused for new learning designs. In our article, templates, a similar concept to patterns, are explored to help

instructors who are not ready, willing or able to undertake formal learning design to get started with developing a course site. Similarly, Hernandez-Leo, Asensio-Perez and Dimitriadis (2005) propose a structured and scripted method of incorporating collaborative teaching methods into standards-based learning design. This detailed process pre-supposes instructors eager to undertake the exercise, who, indeed, call for such methods to be available in their initial course sites, whereas our own experience uncovered few such instructors. While Hernandez *et al*. (2005) do not provide a general mapping from course dimensions to course site properties suitable for broad circumstances, as in our initial goal, they do offer a fine-grained mapping for a related task. Both Brouns *et al*. (2005) and Hernandez-Leo *et al*. (2005) provide scenarios for successful re-use of learning designs already known to work, encouraging our own effort and prompting, as the next logical step, the design of practical course templates.

Vogel and Oliver (2006) conducted a study that investigated practitioners' designs for learning in terms of using a VLE. They note that "For most teachers, a VLE gives them an unprecedented opportunity to create and to publish a representation. Yet it is this very control over the representation, encouraging spontaneous, incremental, reactive design straight into the VLE, that makes it difficult to retrospectively piece together the stages of a given course area's design" (Vogel and Oliver 2006, p. 39). A course template could constructively channel that control by providing a more structured starting point.

Masterman and Vogel (2007), commenting on Vogel and Oliver's (2006) and other studies, note that representations of learning designs are often dispersed and fragmented, rendering clear implementations problematic. This finding resonates with our difficulty in coaxing ideas from academic staff as to what elements they would like to see in a course site template – although academics know that they want an electronic course site, they do not always work to a detailed design or "gestalt", to use the term of Masterman and Vogel (2007).

Methodology

To develop the ideas expressed in this article, we shared our own experiences among our team and in conversation with fellow user support and technical staff. One of us had already described rudimentary course templates in instructor workshops (at Wyoming) for a few years (Hill 2011). These were born of questions and requests from instructors themselves, and verified by approval from those instructors, but not distributed in any formal way. During early 2011, we conducted exploratory and unstructured user interviews with ten individuals at Oxford – eight lecturers/tutors and two departmental administrators – and a short exercise at a WebLearn user group meeting. In some cases, we mentioned our goal of designing templates. In other cases, sample sites shown or described to us served to reveal some structure, layout and content of possible templates. We undertook no systematic examination of course sites themselves. We found no opportunity to discuss the question of course templates or their desirable properties with students.

Our academic informants did not prove to be a rich source of suggestions that probed the potential of technology-enhanced pedagogy in any depth; in fact, they articulated only hazy ideas about the type of template that might help them. Most suggestions addressed "look-and-feel" aspects, commonly requesting display of their

departmental name and images, or a particular layout for a course home page, or limiting their consideration to the placement of banners, menus and links.

Even those with some skills in technology-assisted teaching did not distinguish sharply between the course site in the VLE and other websites employed by them and their students. They sometimes requested modifications to web services and applications external to the course platform (such as browsers and reader clients) or integration with commercial products (such as publishers' materials) that are beyond the control of the instructional technologist. Quite a few requests dealt with administrative tasks involving calendars, accounting and reporting, and integration with other information systems that prevail at the institution.

In short, instructors do not carefully consider course site properties *per se* as they develop strategies for teaching and learning. The question is: Why should they? They are well-versed in their fields, not necessarily in education or educational technology. Unprompted, instructors do not expect technology to support their teaching but rather to facilitate their administration and paperwork.

A defender of user engagement would argue that we need to rethink the objectives of the interviews. We should not expect the users to dictate the format and structure of templates, as such development is our task. A car manufacturer who wants to design a new car does not ask the customers what the next model should be like. Instead, they ask about customers' driving experience in the current model, which is then used, along with other elements, to design the next one. In our project, we took the most that we could from our academic user data under the circumstances.

Pedagogical dimensions: input — "a course like yours"

We now consider what serves as the input in our scenario, the instructor's conception of the teaching task that he or she faces ("a course like yours"), regardless of technological considerations. The variety of large and small specifications that might be articulated, or inferred, makes the synthesis a daunting task, but the set of use cases is the result of that synthesis. While we attempt a classification that is as broad as possible, we acknowledge that it is not exhaustive and encourage other practitioners to offer alternative formulations depending on their institutional circumstances.

What are the distinguishing features that the instructor might identify as he or she informally describes the teaching task at hand, with encouragement to elaborate? We suggest the following framework of 12 pedagogical dimensions grouped into four main categories, each of which is discussed below Table 1:

Table 1. Pedagogical dimensions.

Logistical	Practice-based	Pedagogical purpose	Participation
Size of student enrolment	Course activity type	Pedagogical plan	Contact environment
Duration	Participant	Guidance to	Extent of web work
Academic group	expertise	instructors	
Academic schedule	Analogue of		
Academic programme	familiar service		

(1) Logistical
(2) Practice-based
(3) Pedagogical purpose
(4) Participation

Logistical

This category captures simple superficial dimensions, which may be quantitative, bureaucratic or institutional, and yet are reported by instructors with the implication that they inform the teaching task.

(1) *Size of student enrolment* – a simple count, where a class of few students would appear at the low end of the scale and a large class at the high end. This parameter will influence the tools deemed to be desirable, as well as the extent of interaction and activity in the site, thus placing varying demands on the instructor's time.
(2) *Duration* – the hours, days or weeks of teaching time allocated to the course from start to finish. Some short courses take a few days or weeks (or one or two credit hours, amounting to five to ten contact hours, in American terms), some professional programmes take several years.
(3) *Academic group* – subdivisions that might be mentioned as an instructor describes a course, as perhaps for "the College of Agriculture", or "remedial algebra students" or "the Department of Molecular Biology". (The actual features that distinguish the needs of that group from others are often difficult to tease out or specify.)
(4) *Academic schedule* – the distribution of *Duration* over the calendar. At universities where courses are regimented, with three credit hours covering 45 contact hours, for example, those 45 hours can be plotted on a calendar in many different ways – one hour per week, three days a week, or two consecutive days over four long weekends or compressed into a summer schedule of consecutive full days for two weeks. Instructors also view a fall semester course as following a different pattern than does a spring semester course.
(5) *Academic programme* – institutions often name their degree or course programmes, or sets of courses, to reveal the academic commitment undertaken or the qualification to be gained. These labels may include a Taught Master's, Research Master's, Undergraduate Defined-Length, Lecture Series, Tutor's Course or the degrees themselves, such as B.A., M.Sc., D.Phil, and so forth.

Practice-based

This category emerges from what instructors do, or intend to do, either in normal settings or under pressure of expedience.

(6) *Course activity type* – the traditional categories of course type, commonly displayed by the institution for registration purposes, such as "lecture", "lab", "tutorial", "seminar", "recitation", and so forth. This dimension

implies the classroom type, or learning space, as a variable, ranging among "lecture theatre", "seminar room", "tutor's office", and so forth.

(7) *Participant expertise* – the degree of skill on the part of the known and prospective site users, both instructor/s and students. The degree of experience, aptitude or interest in technology on the part of the users may give rise to different course templates (although a strict application of our scenario, would treat this as a factor not of the course "like this", but rather of "you", the instructor, and of the other main participant, the student).

(8) *Analogue of familiar service* – distinguishes course sites by their similarity to other web applications and services. Instructors may envision courses that "are organised like a textbook" or "look like a WebCT course" or "contain a Facebook-style wall". This does not seem to be a "description of the teaching task" as such, but some instructors will present this kind of specification by proxy of their goals.

Pedagogical purpose

This category adopts, or fosters, an underlying educational theory or teaching strategy.

(9) *Pedagogical plan* – includes teaching philosophy or methodology, which may be reflected in the form of educational paradigms such as constructivist, associative or situative (Conole 2011). It also includes pedagogical intentions articulated by an instructor, such as active learning, "lots of discussion", formative assessment opportunities, elements of gaming, and so forth. It may also include particular requests from an instructor, for example, "Cooperative-exchange classes that are to be team-taught by two instructors in two different languages."

(10) *Guidance afforded to instructors* – an instructor (perhaps under prompting or in frustration) may ask for a course site that guides him or her on what to do, in other words, a "recipe". Initial course sites may provide instructions to the instructor building the site, with certain elements already sketched, some populated with suggestions for technique and content, for example, "Explain participation expectations here", "Link content to relevant Discussion on Calendar", and so forth.

Participation

This category deals with planned and expected activities, and instructor and student participation on the course site, both individual and collaborative.

(11) *Contact environment* – the predicted location and circumstances of the teaching and learning experiences. Depending on their reliance on the course platform in conjunction with classroom teaching, courses with an online component are often classified into:
- *campus* or *face-to-face*: traditional classroom models,
- *hybrid* or *blended*: combination models and
- *distance education* or *distance learning*: courses delivered wholly via the electronic course site.

(12) *Extent of web work* – the type and degree of activities that the instructor plans for the electronic course site, with concomitant expectations for the extent of student interaction with the site. This list aligns closely with *Contact Environment*, and long-standing practice conflates the two dimensions, but we would like to treat them as independent. A class designated by the institution as a *campus* course might be taught as *web-dependent*, transferring all materials and performing all recorded work on the web and using scheduled classroom sessions only for group meetings or tutorials, as in the assimilation phase of the "flipped classroom" paradigm – inverting the traditional classroom model of in-class and out-of-class activity (Widmaier 2012). The instructor of a *hybrid* course might choose any degree of web work. Some possible types of *extent of web work* follow:

- *web-supported:information sharing and communication*
- *web-enhanced:more communication, group work and some assessment activities*
- *web-assessment:online assessment activities*
- *web-dependent:organisational information, content, learning activities, communication and assessment.*

Now that we have attempted to crystallise the instructor's expectations of his or her teaching task, elicited as raw data and interpreted by us, we focus on properties to be considered in designing an electronic course site template to support the teaching task.

Course site properties: output — "this template"

The properties of a course site form the components of a course template, comprising various settings, policies and procedures, and initial content. As mentioned earlier, this is the output from our scenario ("this template"). Our goal is the formulation of a template that attempts to address the pedagogical dimensions of the instructor's course ("a course like yours"). The delivered template will consist of a set of site properties instantiated in a course site, bundled with accompanying help documentation and guidance on how to use the template.

Since any aspect of an information system might play a part, it is difficult to write an exhaustive list of properties that instructional technology professionals might consider relevant. We enumerate five properties to address in constructing course site templates (Table 2), shown vertically for combining with the pedagogical properties (Table 1) into our model presented in Figure 2.

Table 2. Course site properties.
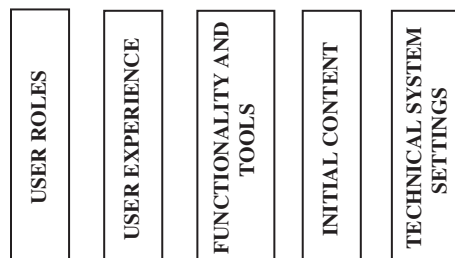
(1) *User roles:* There will undoubtedly be pre-defined, standard roles in a particular institutional course platform, which the instructor needs to consider, such as "designer", "instructor", "teaching assistant" and "student". Each role will have associated default permissions which instructors may be able to withhold or grant, to assistants or students – for example, authority to upload files, to edit and delete discussion postings (in addition to default permission to post in the first place), to invite and add participants, to define groups and to make other changes and contributions in various tools such as Wiki and Chat.

(2) *User experience:* This property encompasses those aspects that support and enhance the instructor's and student's learning experience using an online course site, in the sense of the added value conferred by accessing the site and participating in activities. It includes:

 - Documentation, procedures and expectations: Explanations and instructions regarding what to do in the course site and how to do it, provide direction and minimise possible confusion or frustration.
 - Web interface and layout: This includes aspects of the "look-and-feel" of the course site, such as being aesthetically pleasing, engaging, accessible and easy to navigate.

(3) *Functionality and tools:* Most course platforms include standard online teaching tools, such as a home page, announcements, messaging, and e-mail for communication; discussion, wikis and blogs for collaborative work; assessment and grading tools; and myriad others. Those selected, and their entailed configuration, form this set of properties. We assume that the basic nature and functions of these tools are now widely understood and no longer require a description.

(4) *Initial content:* This property allows for the "seeding" of site components with some model elements for students from the course domain, such as

 - Boilerplate text: A common syllabus or library guidelines or institutional policy statement
 - Initial guidance: Links to critical or common materials, or to the starting discussion
 - Leading questions: Thought-provoking items in a discussion forum or blog.

(5) *Technical systems settings:* From the perspective of an information system, a course platform includes roles and permissions, file types and storage and integration with other institutional systems, all of which can affect its teaching utility. An institution's view of a course template should extend as far into technical site properties and configurations as its expertise and judgment allows, to exploit potential pedagogical benefits. Because system management decisions are generally made at an institutional level, many instructors (or instructional technologists) will take such decisions as a *fait accompli*. However, instructors at some institutions, especially those who are experienced or advanced in their skills, exercise scrutiny, influence and even have the final word over configuration of course sites.

The lattice model of pedagogical dimensions and course site properties

The pedagogical dimensions that might be elicited from the instructor (the "input" in our scenario) form a set that one would expect to align closely with the course site properties intended to meet the instructor's needs. We attempted to draw a logical mapping between the two sets of parameters, such as a matrix; however in a table or matrix, the expectation is to "fill each cell" with a "product" of the row and column items, and these proved to be elusive. How does the Logistical value "Duration" influence the course site property "User Roles?" – Not in any meaningful way; nor did other robust associations between pedagogical dimensions and course site properties emerge.

Jara and Mohamad (2007, Table 3, p. 8) provide a mapping table that associates their course components with their templates, for which the values of the associations are the delivery modes "most likely to be used". While useful to programme administrators and professionals in learning design, their work is not directed to the construction of a course template from scratch, and so their mapping serves a different purpose.

We came to the realisation that each parameter influences others in "organic" ways, implying that a *lattice* is a better metaphor to adopt, producing a more multi-dimensional texture. Thus, our goal of providing a "mapping" between the two sets of parameters gave way to a more organic interwoven lattice, which neatly displays the interconnectedness of both sets of dimensions (Figure 2).

Various authors in the field of learning design have sought a visualisation of learning designs. In particular, Cross (2012) developed a lattice model (and subsequently the Lattice II framework) to represent the "designed learning problem space". Cross's (2012) model is a comprehensive collection of interconnected boxes, with "learning activity and tasks" at the centre of a learning design.
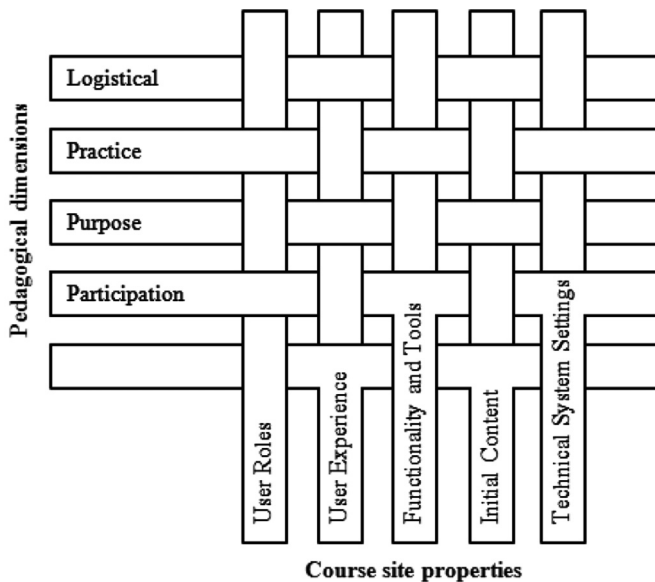

Figure 2. Lattice model for course templates.

Example 1 . Template: "Cornerstones"

Purpose: The **Cornerstones** course template displays reference materials such as the syllabus, definitions, and other summary materials that students might find useful throughout the course time span

Description in terms of key pedagogical dimensions:
- Contact Environment: Campus
- Extent of Web Work: Web-Supported
- Pedagogical Plan: Delivery of lecture notes and references, instructor-to-student.

Expectations: It is not compulsory for students to check the course site, and no class activities are conducted online.

User Permissions: Default instructor and student permissions for all tools

Details:

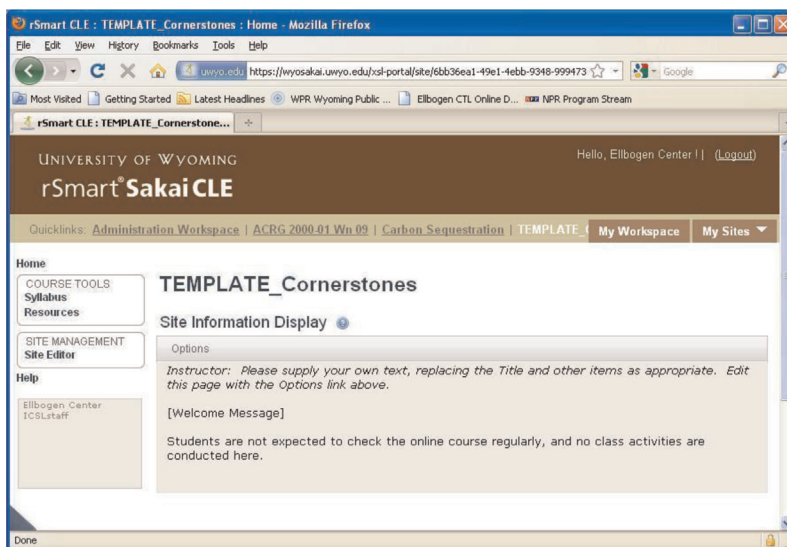| Course Site Properties	Description
User Roles	Instructor Student (only read-only access is necessary) Staff (to upload; could be Teaching Assistant role)
User Experience: Documentation Procedures Expectations Web Interface and Layout	1. Give explanation in class: Use course site as a reference and resource. No online activity required. 2. Repeat expectations on home page. 3. Show brief demo in class. Simple layout. No menus or lists. Outline or Glossary or Syllabus or Lecture Notes
Functionality and Tools	Homepage and File Storage area
Initial Content	Welcome message identifying course, with instructions. Folders in the file storage areacalled something like "References" and "Selected Lecture Materials".
Technical Systems Settings: File Types and Organisation Administration	Text and images; all files are static (no scripting). Materials are uploaded for display only, and can remain there relatively permanently. They must show as a list, which can be ordered arbitrarily, with dates attached. For students, membership mirrors course registration. In addition, the instructor and staff assistant will be authors. The course site will be available… (for example,"to the instructor and staff for three months before the first day of the term, to the students on the first day of the term, and will persist for one week after the end of the term").

Figure 3. The "Cornerstones" Template.

Figure 3.   The "Cornerstones" Template. (*Continued*)

Course template examples

Our investigation has revealed no algorithm for mapping from the pedagogical dimensions ("a course like this") to the course site properties ("this template"), but rather a more intricate journey. We offer two examples that have emerged from University of Wyoming's experience. There, we see a strong need for a simple course template for distribution of materials, teacher-to-student, as expressed by instructors who conduct the interactive teaching and assessment activities in the classroom. We also see a need for a course template for those instructors who want to foster collaborative student work online, for sharing and assessment.

Major distinctions between these two templates are found in the instructor-controlled property "User Roles" and different values of the pedagogical dimensions "Pedagogical Plan" and "Extent of Web Work". The fact that Jara and Mohamad (2007) found similar distinguishing features suggests primacy of those dimensions over the others listed. These dimensions may indeed be the most significant or perhaps they are simply the most vivid to instructors not yet familiar with the landscape. The asymmetry of features may indicate that our notion, of course sites expressed in terms of properties and teaching tasks expressed in terms of dimensions, is not the best way to ask the question about how to construct course templates. We invite other research to elaborate or even dispute the ideas presented herein.

The course templates provided are merely sketches for illustration, as the level of detail involved in a full specification exceeds the scope of this article (Figure 3 and Figure 4).

Mechanics of course templates

Construction and delivery of a course template can take many forms, from manual to automated, static or dynamic. Simple duplication of an existing object is a common method for creating any sort of data structure. Many institutions probably follow this

Example 2. Template: "Web 2.0"

Purpose: The **Web 2.0** course template fosters collaboration inside and outside the classroom, with file space, announcements, calendar, discussions, project assignments, and (asynchronous) messages, all keyed to groups if desired; plus wikis, blogs, polls, and social networking for student use.

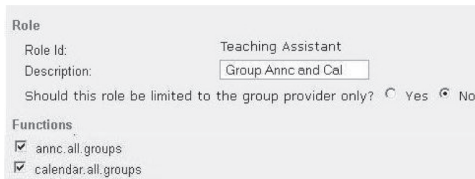**Description in terms of key pedagogical dimensions:**
- Contact Environment: hybrid
- Extent of Web Work: web-enhanced
- Pedagogical Plan: Collaboration, student-to-instructor and student-to-student, social interaction among students; group project work.

Expectations: Students are expected to check the course site and exchange ideas and documents often, in order to do class work of all kinds.

User Permissions: The course site contains a 'student leader' role that is authorised to rename and delete files in group folders. Instructors may add external participants by e-mail address.

Additional Component:
In the course platform administrative interface, additional functions were enabled for the Teaching Assistant role for this course template, as shown. These authorise a user in that role to add announcements and calendar entries for all groups.

Details:

| Course Site Properties	Description
User Roles	Instructor, student, teaching assistant. Teaching assistants can add announcements and calendar entries for groups.
User Experience: Documentation Procedures Expectations Web Interface and Layout	Regular activity required. Two introductory demos in computer lab, the first showing the course site and the My Workspace site with the Profile2 tool, the second showing wiki work. Short documentation handout for main tools [not shown in image below]. Teaching materials elsewhere, but discussion and wiki here. First access to course site prompts for setup of Profile.
Functionality and Tools	Portal with recent updates, File Storage, Discussion forum, Wiki, Chat, E-mail—all group-sensitive. For social networking, the Profile tool.
Initial Content	Class portal and group portals, with sets of tools. Groups will be formed by the instructor before class starts.
Technical Systems Settings: File Types and Organisation Administration	Text and images, static. All files contributed by students will have meta-data showing tags and and comments; these materials will include links, animations, and video. Copyright? Instructor and contributed materials may come from anywhere, including personal student space on the course platform and other course sites. Membership mirrors registration, but must allow for temporary external members. Student work will be connected to personal profiles, configured by the students themselves.

Figure 4.   The "Web 2.0" Template.
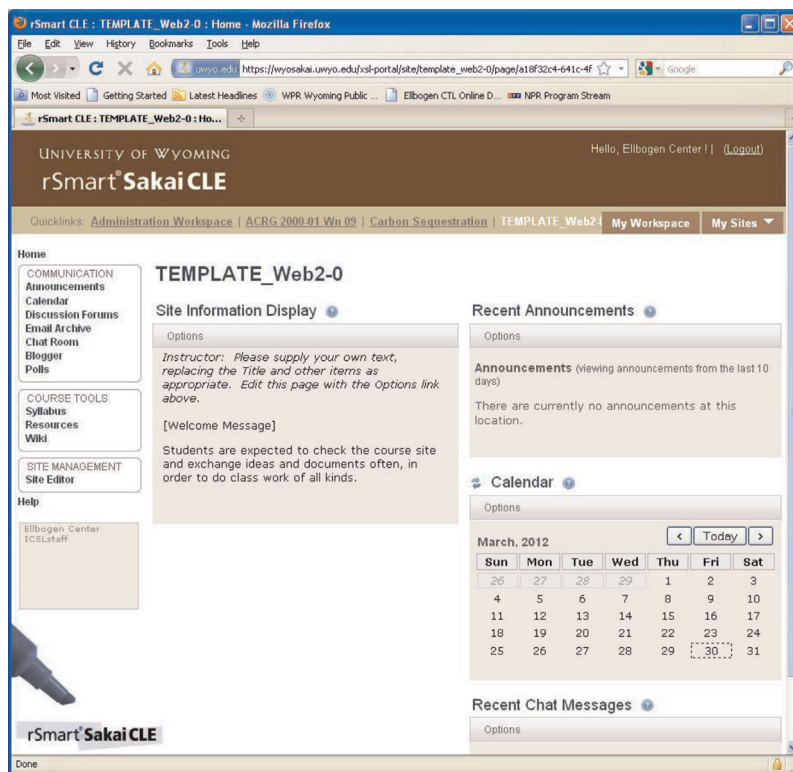
Figure 4.   The "Web 2.0" Template. (*Continued*)

practice already, taking as the template some "base" course site, constructed and saved in advance. A course site could be built from scratch and delivered to an instructor through a completely manual process as well, the template taking the form of written instructions. In a more advanced setting, a course site might be built from a dynamic template, requiring some selection and insertion of components such as user roles and initial discussion prompts. We hope to explore those options in future research.

However, in all cases, we urge the delivery of user guidance to accompany the template, either built in or delivered separately along with other supplementary materials.

Discussion and conclusions

It appears, to instructors and instructional technologists, that a course template would be a good way to get started in developing a course website for a given teaching task. We have identified parameters associated with the teaching task, and course site properties enabled by an electronic course platform, dimensions which are organically interwoven and interdependent.

As no universal mapping between pedagogical dimensions and course site properties has emerged, we suggest that an institution adapt the pedagogical dimensions or classifications, and consider the course site properties, that matter locally, avoiding restriction to any single dimension. An institution should allow the

best course templates to emerge from practice judiciously guided, observed and implemented.

Related questions include whether course templates can promote good pedagogy and how course platform design principles might affect templates. Our discussions of course templates with users were often couched in conversations about the general improvement of teaching and learning. However, we attempted to capture teaching practices in general rather than verifiably *good* teaching practices. We would like to see investigation of the fostering of good practices through course sites, and how to apply design principles such as the social constructivist teaching philosophy adopted by Moodle, and the collaborative, open and re-mixable design of the Sakai Open Academic Environment (OAE) to the challenge of designing initial course states.

In addition to the course site, a course template should include other elements bearing on its successful deployment such as user guidance and policy explanation. Instructional technologists fielding requests that are based on superficial dimensions should probe for more substantive pedagogical objectives to select or formulate a course template that will offer beneficial teaching and learning guidance and scaffolding.

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