

The Nightmare is Over: A Simple Guide to Design Effective Subject Outlines

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Abstract: Higher education institutions worldwide are continuously implementing evidence-based educational approaches and quality control of subjects, courses, and programs. In this regard, a subject outline is a learning design document and an agreement between academics and students. It needs to address the subject structure, what are the requirements, assessment tasks, expectations and so on. A useful subject outline requires sound pedagogical and instructional approaches and to be clearly written, succinct, and conversational when possible. If information is missing or is not easily accessible, it will cause student confusion, unnecessary email traffic and potentially, loss of interest in the subject. Anecdotal reports indicate that students do not engage in the reading subject outlines and their attitude towards the usefulness of this document is not well-known in the literature. This paper covers five sections commonly used in subject outlines in Australian universities. Each of them presents evidence-based practices to help the design process considering educational taxonomies, constructive alignment, principles of active learning, authentic assessments and levels of feedback for learners. The aim of this paper is to guide early career academics new to teaching in higher education but also traditional academics moving towards a blended learning approach.

Keywords: subject outlines, course outline, syllabus, program of study, curriculum, learning design, blended learning

Introduction

A subject outline is a guide that represents core documentation of subject requirements and must provide comprehensive and accurate information to students to help them to complete the subject satisfactorily. In Australia, it is the official communication with students, serving as a critical document based on the [Higher Education Standards Framework](#) (Threshold Standards) 2015 (TEQSA Act, 2011). Subject outlines have different sections and vary within institutions, but most of them include (1) Subject description; (2) learning outcomes; (3) teaching and learning strategies; (4) timetable; (5) assessment tasks, and; (6) additional information.

The current tendency in higher education in Australia is to develop an outstanding student-centred and innovative learning experience. This strategy requires to know student's educational needs, the communities they belong to, how they learn, what are their aspirations, and the use of technology-enhanced learning environments. Educational practices need to be valid and relevant to the 21st century and to be monitored by reflection, research and industry engagement. Uncertainty is challenging the world (Bauman, 2013), the rapid and continuous development of digital technologies (Selwyn, 2015), the need to be able to adapt to change rapidly (Ting, 2015), and the multicultural nature of our nation, are some of the drivers of this trend.

Designing a subject outline does not only require expertise on the topic but sound pedagogical and instructional approaches. The idea behind is to enhance the learning experience for the students. In tertiary educational settings across Australia, academics have the support of educational designers, learning designers, instructional designers and learning technologist to prepare their subject outlines and teaching materials. It is usually an iterative process based on student's feedback and institutional strategies.

Current pedagogies and instructional approaches that inform the design of subjects include:

- (1) Blended learning methods (Bonk & Graham, 2012; Garrison & Vaughan, 2008)
- (2) Taxonomies for learning such as SOLO (Biggs & Collis, 2014), Bloom's (Krathwohl, 2002) and SAMR (Romrell et al., 2014)

- (3) Constructive alignment of curricula (Biggs & Collis, 2014).
- (3) Active learning pedagogies (Goodsell, 1992; Hmelo-Silver, 2004; Mennella, 2016)
- (4) Flipped learning (Bergmann & Sams, 2012; Reyna et al., 2015)
- (5) Authentic assessments (Herrington & Herrington, 1998; Wiggins & McTighe, 2011)
- (6) Levels of feedback for learners (Hattie & Timperley, 2007).

These approaches represent the core component of any learning design that aims to engage students in higher order thinking and the development of problem-solving skills, critical thinking, professional skills, self-regulation, motivation and so on. Also, the writing style of the subject outline is important; it is desirable to be elegant, professional, expressive, readable and understandable.

The process to write a subject outline from the very beginning can be an overwhelming task for new academics. Adapting existing subjects from the 'osmotic' to active learning teaching style could be challenging as well. Learning designers need to work in close collaboration with academics supporting the transition and to address the misconception that blended learning is about saving money. There is evidence that shows that blended learning can be as effective as traditional methods of teaching (Bonk & Graham, 2012; McCutcheon et al., 2015), and, in some cases, superior (Means et al., 2013). Education and technology it is usually framed in an optimistic way, although there is no substantial evidence that is transforming learning (Selwyn, 2015). Nevertheless, we need to make education relevant to the times we live. People who can afford technology in today's world, are seamless connected. The use of educational technology represents in many cases, the flexibility to experiment with innovative ways of teaching. As responsible educators, we need to take advantage of the affordances of the digital age.

The aim of this paper is to propose a simple guide to help new to teaching and experienced academics to embed blended learning principles in their teaching practices. It takes into consideration five sections in the subject outline: (1) subject description; (2) learning objectives; (3) teaching and learning strategies; (4) a timetable, and; (5) assessment tasks. Each section discusses the pedagogy/instructional strategy and presents some examples to illustrate good practices.

Subject description

The starting point of the subject outline is the introduction. No matter what the nature of the subject is, it is possible to write it elegant, professional, expressive, readable and understandable. An excellent introduction will explain what the subject is about, why is important, how students will be learning and how this will translate into the real world. If the subject has an activity that is engaging and fun for the students, e.g.: field trip, consider to mention it as a selling point. This section needs to be engaging for the students to motivate them to read and understand how the subject will run during the semester.

There are strategic writing rules to engage students in reading subject outlines; the first rule is to write the content succinctly, which means clear writing using active sentences to attract student's attention. The writing needs to stay focus, distill content and eliminate redundancy. It is crucial to use a conversational style and means writing the information as having a conversation. This principle is called personalisation in multimedia learning and has been found to have a positive impact on learning (Clark et al., 2011). Using precise terms when writing and considering the audience is important as it may be students with English as an Additional Language (EAL). They will respond better to terms that are easy to understand and quick to read. Listing terms rather than embedding them into a paragraph and chunking ideas is an effective practice. This principle is known as segmentation principle in multimedia learning (Mayer, 2008). Finally, keeping sentences short and to the point helps readers to understand and engage with the content.

The biosphere is subject that belongs to the Faculty of Science, School of Life Sciences and it is an example of a good subject description. It has been reproduced with permission of the subject coordinator:

Biosphere is a collective term which encapsulates all living organisms on Earth. Of the thousands of planets discovered so far, Earth is truly unique in that it is the only planet which has a biosphere. This subject has been designed to introduce students to the environmental sciences at a tertiary level. It explores the evolution of Earth's structure and species and contrasts these ancient patterns with modern environmental changes that are occurring right now. The interactions among the various living and non-living components within the biosphere,

and with external factors such as the atmosphere and solar energy, are also examined. Throughout the subject, there is an integrated focus on the science of the biosphere and the effects that humans and our activities have on the biosphere, including vitally important issues such as climate change, sustainability, and the resources crisis (Phillips, 2016).

Learning objectives

Design learning objectives that are objective and measurable can be challenging. Often tasks are confused with learning objectives. The SOLO Taxonomy (Structure of Observed Learning Outcomes) is a model that describes levels of increasing complexity in student's understanding of a topic (Biggs & Collis, 2014) (Table 1). Other taxonomies include Bloom's Taxonomy (Krathwohl, 2002) and SAMR model (Romrell et al., 2014).

Table 1: SOLO Taxonomy and the levels of understanding

Pre-structural (Fail, missing point, incompetent)	The task is not attacked appropriately; the student has not understood the point and uses too simple a way of going about it.
Uni-structural (Identify, name, follow simple procedure)	The student's response only focuses on one relevant aspect.
Multi-structural (combine, describe, enumerate, list)	The student's response focuses on several relevant aspects, but they are treated independently and additively. Assessment at this level is primarily quantitative.
Relational (Analyse, apply, argue, criticise, relate, justify)	Different aspects have become integrated into a coherent whole. This level is what is normally meant by an adequate understanding of some topic.
Extended abstract (Create, formulate, hypothesise, reflect, theorise)	The previous integrated whole may be conceptualised at a higher level of abstraction and generalised to a new topic or area.

From Table 1, it will be desirable that subject learning objectives use active verbs from the multi-structural, relational, and extended abstract boxes. These verbs are considered higher order thinking. For example, subject learning objectives that use obscure words such as 'be familiar', 'appreciate,' 'have knowledge' cannot be mapped against an assessment task and may create confusion and anxiety for students (Reyna et al., 2016). Subject learning objectives in conjunction with Graduate Attributes and Course Intent Learning Objectives (CILOS) will be handy to align the assessment tasks using constructive alignment (Biggs & Collis, 2014).

An example of learning objectives for a business subject:

Before applying the SOLO Taxonomy:

- Understand how to create a new product
- How to take a product to the marketplace
- How to prepare a business plan
- How to protect intellectual property
- How to establish a start-up company

- How to pitch an idea to investors, industry, the media and the public.

After applying the SOLO taxonomy:

- Understand and apply principles, rules, and knowledge on how to create a new product
- Formulate a strategy on how to take a product to the market
- Generate a business plan
- Understand and apply principles of intellectual property in business contexts
- Design a strategy to establish a startup company
- Communicate clearly a business idea to investors, industry, the media and the public.

In summary, subject learning objectives need to be designed using a taxonomy and active verbs that are possible to map and measure with assessment tasks. These learning objectives will explain clearly to the students what they will achieve at the end of the subject.

Teaching and Learning Strategies

The teaching and learning strategies are the core area of a subject outline, and the intent is to communicate to the students how they will be learning during the semester. Whether the subject is fully online or blended mode, this section needs to spell clear how the learning design is organised. The principles discussed before such as writing elegant, professional, expressive, readable and understandable will be applied in this section. Key concepts to consider to write this section are:

- (1) Preparation before the classroom (flipped classroom) and how this is linked to face-to-face sessions
- (2) How students will engage in active and collaborative learning during the classroom, lab or practical
- (3) How the Learning Management System (LMS) will be used to support student's learning
- (4) How formative and summative feedback will be given to the students
- (5) What additional tools and resources will be available for them such as library workshops, software download, and so on.

Language to be used is conversational and active, avoiding phrases such as: 'Students who do not attend lectures often do not pass university subjects.' This type of statement could create unnecessary anxiety to students, especially the ones with competing schedules such as family and work commitment or students with disabilities (Reyna et al., 2016). Language to communicate with the students should be positive, encourage them to engage for their benefits not for fear to fail.

Flipped classroom (FC) is a pedagogical and instructional approach in which the student engages in the preparation material (before classroom), active participation (during classroom) and post classroom activities (Reyna, 2015). Flipped learning is becoming very popular in the last five years in higher education, and it is highly desirable to include in the curricula due to several advantages:

- (1) Offers flexibility and more time to consolidate ideas (Lane, 2015)
- (2) Encourages students to gather, select, evaluate, and interpret information, and to develop independent learning skills (Bergmann & Sams, 2012; Du et al., 2014)
- (3) Develops a logical and analytical approach to problem-solving (Huang & Hong, 2016; Moraros et al., 2015)
- (4) May helps students with English as an Additional Language (EAL) (Du et al., 2014; Guan, 2013)
- (5) Could lead to better management of working memory (Clark, 2015).

However, the real value of FC is that develop student's independent life-long learning skills required to be a successful professional. When using FC, no need to flip the whole subject, 2-3 weeks will be desirable. The Flipped Teacher and Flipped Learner Framework can be used to implement FC with an evidence-based approach (Reyna et al., 2015).

Whether using or not FC, active learning pedagogy is required to engage students ‘by-doing’ rather than watching passively (Bishop & Verleger, 2013). Active learning include a wide range of pedagogies such as Problem-Based Learning (Hmelo-Silver, 2004); Collaborative Learning (Goodsell, 1992), Cooperative Learning and Peer-Assisted Learning, debates, self-reflection, and case studies (Klegeris et al., 2013; Kolb & Kolb, 2005; Ofstad & Brunner, 2013) (Table 2). The pedagogy of choice should be explained clearly in the Teaching and Learning section.

How the LMS will be used to support student’s learning, need to be described. For example, students will require completing weekly quizzes online before coming to the classroom or to write a reflective journal every fortnight and so on. Highlight to the students that the preparation material will be uploaded onto the LMS, this can be videos, PDFs, audio podcasts, and PowerPoint slides.

Table 2: Active learning pedagogies

Problem-Based Learning (PBL)	Students are working to solve complex and authentic problems that help develop content knowledge as well as problem-solving, reasoning, communication, and self-assessment skills.
Collaborative Learning (CL)	Based on socio-cultural learning principles (Vygotsky, 1978), allows students to progress beyond what they would have could learn alone by sharing mental models and observing the thought processes of others.
Project Based Learning (PoBL)	Allows teachers to work more closely with active, engaged students doing high-quality, meaningful work, and in many cases to rediscover the joy of learning alongside their students.
Inquiry Based Learning (IBL)	Increase intellectual engagement and foster deep understanding through the development of a hands-on, minds-on and ‘research-based disposition’ towards teaching and learning.
Peer Learning (PL)	A form of cooperative learning that enhances the value of student-student interaction and results in various advantageous learning outcomes.
Case Studies (CS)	Based on Adult Learning Principles: why they are learning something, learning by experiencing, solving problems, seeing the applicability of the knowledge.

When implementing blended learning designs, it is crucial to provide targeted, specific and timely feedback. The purpose of feedback is to reduce discrepancies between understanding, performance and a goal (Hattie & Timperley, 2007). It is highly desirable to deliver early feedback during the semester for the students to track their progress and to self-regulate their learning (Zimmerman, 2008). There are different ways to provide feedback to students, for example, a quiz inside the LMS or during a lecture using a polling system and addressing misconceptions. Additionally, during the practical component or lab, students can receive feedback from instructors and peers. When, how and by who the feedback will be provided need to be explained in this section.

Additional support for the subject should be explained to students, for example, library workshops on citation management, software required and IT support, Open Educational Resources (OER), Lynda.com training and so on.

Tertiary institutions in Australia require to list policy links in this section and standard information about minimum requirements, recommended text, references, statement of copyright, plagiarism, and so on. This content is usually provided on a subject outline template.

Schedule/timetable

Consider to keep the schedule up to date, if the institution allows for labels activities by week, there is no need to change it every semester. Including the weekly activities of the schedule and whether they will occur face-to-face and online is a desirable practice. If the semester has breaks, label it per institutional policy, for example, student vacation (STUVAC). When students read the timetable, they should have a clear idea how the activities will be planned during the semester. Carefully review that all dates are correct, a mistake can cost a hundred of e-mails or more for large cohorts of students.

Assessment tasks

Writing realistic and measurable subject learning objectives will facilitate the mapping of assessment tasks. Each assessment task should be linked to the relevant subject learning objectives, Faculty/School graduate attributes and ideally with Course Intended Learning Outcomes (CILOS). Constructive alignment ensures that learning outcomes are aligned with assessments and task the students will perform during the semester. This approach is globally required in higher education institutions, as it will ensure the quality of teaching and learning (Biggs & Collis, 2014).

Authentic assessment is a task that represents a real-life scenario and should satisfy the following criteria:

- (1) Transferable to real-life situations
- (2) Requires problem-solving and higher order thinking skills
- (3) Produce does not reproduce knowledge
- (4) Requires group work and collaboration
- (5) Promotes depth of knowledge
- (6) Provides multiple indicators of learning (Herrington & Herrington, 1998).

The GRASP Model can be used to design the task (Wiggins & McTighe, 2011) (Table 3):

Table 3: The GRASP model to design an authentic task.

Goal	Provide a statement of the task. Establish the goal, problem, challenge or obstacle in the task.
Role	Define the role of the student in the task. State the job of the student for the task.
Audience	Identify the target audience within the context of the scenario. Example audiences might include a client, committee, community agency or funding organisation.
Situation	Set the context of the scenario. Explain the situation.
Product or performance	Clarify what the students will create and why they will create it.

Standards and Criteria	Provide students with a clear picture of success. Identify specific standards for success. Provide a rubric to the students or develop them with the students.
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Good examples of authentic assessments can be considered:

- Conduct, write and present an experiment
- Develop a digital media presentation
- Write a grant application
- Analyse, discuss and present a data set
- Develop a brochure to communicate to the public
- Write a blog posting
- Design a website
- Produce an audio podcast
- Produce a conference poster

Authentic assessments could disadvantage students with visual impairment, dyslexia, anxiety or physical disabilities. There are three approaches to support students with disabilities in higher education regarding assessment tasks. The first approach is adjustments and adaptations (accessibility for a group of students through modifications). The second approach is additional arrangements (accessibility for a group of students through additional means). Finally, an alternative assessment can be considered (accessibility for a group of students through substitution) (Inclusive Assessment, University of Teesside 2007). Other suggestions include having more options and smaller tasks and clear guidelines for scaffolded approach (Reyna et al., 2016), which will benefit all learners. It is important to keep this in mind as it will make the subject inclusive and improve student's learning experience.

Exams cannot be counted as authentic assessments, in most of the cases as measures how students perform under pressure. This type of assessment is less frequent in subjects that are taking a blended learning approach. If exams are still required due to institution's policy, a strategy could be to lower the weight and balance authentic assessments, so students can learn 'by-doing' rather than sit on an exam.

Finally, levels of feedback (Hattie & Timperley, 2007) are an important point to be addressed in this section. Will students receive early feedback and able to incorporate into their assessments? How will the feedback be given? Automatically by the LMS? GradeMark? By the tutors? By their peers? Verbally or written?

Discussion

This paper covered the pedagogical and instructional approaches to be used when designing subject outlines. It considered five key sections of the subject outline and presented examples covering how to address each section with sound pedagogy for maximum student engagement. Each institution has its format but the sections covered can be used irrelevant to this. The idea is to empower academics to experiment with evidence-based educational interventions and new ways of teaching using blended learning approaches. It is highly recommended for academics to draft their subjects and then contact their learning designers to seek feedback before submitting for Faculty/School Committee review.

The rationale behind this paper is to facilitate the application of educational design into subject outlines. For an enhanced learning experience, a combination of subject content and educational design is required. The process of learning design is iterative, and it will be informed by student's feedback and new pedagogical models, technological affordances and institutional policies.

It is important to emphasise the writing style of the subject outline that needs to be succinct, use a conversational style, precise and plain terms, list items and chunking of information for maximum impact on student's reading and understanding.

It will be necessary to gauge student's use of subject outlines and their attitude toward them as could potentially inform the improvement. Additionally, consider having a subject outline in a different format such as blended media format (talking head + still images) or interactive presentation with a table of contents. Students will have a more visual experience, and it is likely they will engage in it.

Conclusion

Following the core pedagogies and instructional strategies discussed will ensure an improvement of student's learning experiences. This paper provided a repertoire of pedagogical and instructional approaches to be used to improve the design of subject outlines and hopefully, enhance the student experience.

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