Blended Learning Adoption Monitoring

Simon Douglas Smith
University of South Australia

A debate exists regarding blended learning definitions; current research relies heavily on concepts developed in online and distance education contexts. A recent review of blended learning studies reveals that colleges and universities do not readily keep records of who teaches blended courses, and faculty are not fully cognizant of whether they are teaching in blended learning format (Skrypnyk et al, 2015). Driven by needs such as improved course delivery and student retention, tertiary institutions are strategically increasing their blended learning offerings, yet there exists no widely accepted reporting mechanism to monitor blended learning adoption. This paper introduces a practical method for monitoring blended learning adoption at an institution, and recommends an approach towards semi-automating the process.

Keywords: Blended learning adoption, evaluation, monitoring

Introduction

Many tertiary educational institutions are currently developing and implementing digital learning strategies. These strategies encompass multiple modes of learning including the use of digital tools in more traditional on-campus modes through to online learning with no requirements for on-campus attendance. While these strategies embrace more contemporary use of technology and learning theory it is difficult to assess and evaluate the progress in increasing blended modes. For instance, some courses may appear to be “flipped”, or utilize technological resources to create active learning environments during lecture times, or may have included an array of interactive tools accessible via the online course site. Other courses may have barely scratched the surface when it comes to leveraging benefits that a blended learning approach may offer. How do we measure this effectively? How can we create a method to easily capture changes in blended learning adoption across programs and over time that assists us in making informed institution-wide decisions?

Managing the adoption of blended learning to understand return on investment requires an effective way to monitor and report on the rate of change. This paper addresses two specific issues that will reduce barriers in Blended Learning Adoption Monitoring (BLAM) at an institutional level. The first is the consideration of an applicable blended learning definition for this context, and the second is the judicious demarcation of what does and does not constitute progressive ‘blended learning categories’ for the purpose of semi-autonomously monitoring that utilizes readily accessible resources.

Defining blended learning contextually

Three competing approaches to defining blended learning exist (Graham et al, 2014) and are summarised as follows:

- Combining online and face-to-face instruction
- Combining instructional modalities (or delivery media)
- Combining instructional methods

The first approach predominates research, with attempts at refinement such as an institutionally defined percentage of face-to-face time being replaced by online activities, or the percentage of content being delivered online (e.g. 0% termed traditional, 1%-29% termed web facilitated, 30%-79% termed blended, and 80% or more termed online) (Allen and Seaman, 2007). Other more descriptive attempts have been made such as the thoughtful integration of classroom and online learning experiences (Garrison & Kanuka, 2004), or the planned, pedagogically valuable integration of traditional and online activities (Picciano, 2006). However, descriptions of various blends do not explain why specific models work within certain contexts, therefore we are left to approximate a best-fit based approach on the goal we are trying to achieve (Graham et al, 2014).

Blended learning concepts are often grounded in either online or distance education while lacking their own theories to address blending itself (Skrypnyk et al, 2015). Garrison and Kanuka (2004) emphasise the importance of effective integration of traditional face-to-face and technology whereby we are not just adding on to an existing approach; indeed, some blends seem to transform instruction (Bonk & Graham 2005). Transformative potential intimates the synergistic affordances possible in blended approaches.

A blended learning definition that assists in determining the rate of blended learning adoption should include a migratory path from the discrete components of traditional and online towards a synergistic combination that facilitates transformation of learning. For instance, a mobile learning activity can consist of traditional synchronous components, yet be mediated online to facilitate geographic flexibility. In this situation a level of transformation occurs via geolocation and sharing attributes that facilitate active learning, whilst also retaining some traditional face-to-face guidance. We cannot predict where along the continuum of *traditional to online* a transformative blend will occur, as this depends on how a blend is applied and not by the percentage of component parts. It is therefore of limited value to derive a scaled measurement from traditional, to a percentage of online, to transformed blended learning. We can, however, map an ordinal set of categories to represent in the broadest sense, traditional learning, an intermediate blended learning stage without transformation, then finally transformed blended learning. This method is not only inclusive of transformative blended learning, but also identifies a progressive stage towards it. The following section discusses a literature-based approach to determining appropriate blended learning categories to distinguish these three levels of adoption.

Judicious demarcation of blended learning categories

Various exploratory models have been formed that characterise categories of blended learning (Graham et al, 2014). Examples include models that categorise based on activity, course, program and institutional level blends (Graham, 2006, as cited in Graham et al, 2014), physical and pedagogical characteristics of blended learning (Sharpe, Benfield, Roberts and Francis, 2006), and pedagogical interventions distinguishing enabling, enhancing, or transforming blends (Graham and Robison, 2007). Other models exist that consider both physical and pedagogical structuring of blended learning.

The need for a categorical approach that recognises at minimum an initial state (traditional), and a progressive state towards a synergistic state that transforms learning has been presented above. The approach determined via observational best-fit by Graham & Robison (2007) indicates that there is a progressive blended learning pathway of three categories; enabled, enhanced and transformed, and is considered as being strongly aligned to the above described need to determine blended learning adoption categories in that it represents a migration path from traditional learning to transformed blended learning. These three categories have been regarded as observable archetypes. Graham & Robison (2007) did not attempt to categorise all seventy case studies used to formulate these categories as it was regarded that each case did not neatly fit into one of the categories. In this paper an attempt is made to co-opt Graham & Robison's three categories, with some modification to fit into a schema that can be applied to BLAM based upon analytics and course site category indicators. Graham & Robison (2007, p.96, 100, 104) use themes of scope, purpose and nature to illuminate criteria used to evaluate cases as belonging to the categories of enabled, enhanced or transformed blended learning; the enhanced category being divided into two levels. A summary of criteria is presented below:

Transformed Blend: Large scope, purpose is to improve pedagogy, affordances move towards active learning.
Enhanced Blend I: Similar to Transformed Blends although the scope is small.
Enhanced Blend II: Small or large scopes that improve productivity within the traditional paradigm. For example: greater content provision, increased communication, flexible access to content, visual demonstrations.
Enabled Blend: Focus primarily on providing access and convenience to students.

The institutional wide blended learning adoption framework developed by Graham et al (2013) identifies a range of areas to address via three stages of adoption. These stages are Awareness/Exploration, Adoption/Early Implementation, and Mature Implementation. The categories

for each stage are listed as Strategy (purpose, advocacy, implementation, definition, policy), Structure (governance, models, scheduling, evaluation), and Support (technical, pedagogical, incentives). This framework represents a comprehensive picture of institutional-wide dependencies for successful blended learning adoption. However, for our purposes, we are only interested in the area of evaluation component within such a framework, and specifically in potential monitoring capabilities that can be semi-automated from available online resources.

Evaluation measures include inputs such as quality standards, and outputs such as reported levels of satisfaction, student opportunities and achievement (Graham et al, 2013). While these measures address the wider institutional goals of a blended learning environment, without the inclusion of any course delivery specific data it is difficult to map these measures to practical course level implementations. Learning management systems are currently embedded within higher educational institutions and allow for increasingly sophisticated learning analytics capabilities. As educational technologies have an increased presence in active learning situations, we can anticipate access to richer learning analytics data that can further inform blended learning adoption status. We can therefore expect continual development of adoption monitoring that utilises increasingly available data to provide an aggregated, and therefore richer institutional wide overview of the state of blended learning. As such, this paper seeks to determine the extent to which course site information and associated analytics can be utilised to determine the adoption state of blended learning as a specific focus, rather than using the broader evaluation measures described above. This requires a rethink of the three blended learning categories outlined above in order to repurpose within the course site and associated learning analytics context.

An observational best-fit process (Graham & Robison, 2007) determined blended learning categories that informs the institutional wide blended learning adoption framework. To determine evaluative measures for adoption monitoring based upon course site and analytics data, a similar observational best—fit process was conducted. This consisted of a review of four hundred course sites (approximating 40% of all courses offered during a single study period within an Australian university) to determine a practical approach of assigning courses to progressive levels within the three aforementioned blended learning categories. The review process was guided by site resources analytics that summarised *what* resources were in the course, followed by individual course site visits to determine *how* resources were being applied. Review observations resulted in a set of criteria for necessary modifications to the original three blended learning category descriptions, and a four star system for each category being derived.

The **Transformed Blend** is described above as being large in scope, improving pedagogy, and containing active learning affordances. During the review process it was found that the scale of scope was difficult to determine from course site information alone. However, sophistication of scope can be approximated via an aggregate of transformed components wherein each transformed type identified receives a single star rating within a four star system. Pedagogy was considered to have been transformed via blended learning if there was evidence of affordances that are above and beyond what might have been achieved via traditional or online implementations alone. Examples include identification of technology integrated activities such as eSims (educational simulations), integrated role plays, gamification, integrated mobile learning, and even virtual classrooms to the extent that it integrates geographically disperse students and facilitate real-time interactions. Finally, the presence of active learning as a goal in the original criteria has been expanded upon, as it was considered to be just one of the many possible examples of improved pedagogy possible via transformation. A course exhibiting four differing types of transformative elements would be regarded as highly transformed (4 stars).

The **Enhanced Blend** description above contains two levels, the first given as a smaller scale version of the transformed blend. In our modified transformed description there is a differing approach to describing scope, such that a four star system approximates sophistication of scope. Therefore, the first level of enhanced blend described becomes absorbed into the transformed blend category, and is likely to be represented via a low star rating. The second level is described as non-transformative enhancements such as greater content provision and video demonstrations that improve productivity. The course site review process determined observationally four types of productivity improvements: content inclusion, facilitated interactions, site navigation (look & feel), and personal presence to assist with course engagement. A course site that exhibits all four components would be regarded as highly enhanced (4 stars).

The **Enabled Blend** description above focuses on access and convenience. During course review observations it was regarded that the Enabled Blend best-fit representation would be via a four star system consisting of the following four criteria respectively: some course materials in the course site, all necessary course materials in the course site, guidance text associated with the course materials, and a brief course orientation in the form of introduction or welcome. A course exhibiting all four components would be regarded as highly enabled (4 stars). A summary of the modified description of blended learning categories for BLAM is presented below:

Transformed Blend (BLAM): Primary purpose to improve pedagogy, affordances include synergistic delivery.
Enhanced Blend (BLAM): Improved productivity within the traditional paradigm. For example: greater content provision, increased communication, flexible access to content, video with visual demonstrations.
Enabled Blend (BLAM): Focus primarily on providing access and convenience to students.

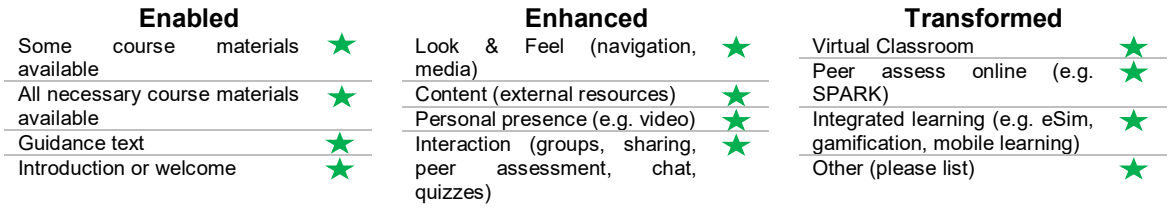

Figure 1: Blended Learning Rating Form (abbreviated)

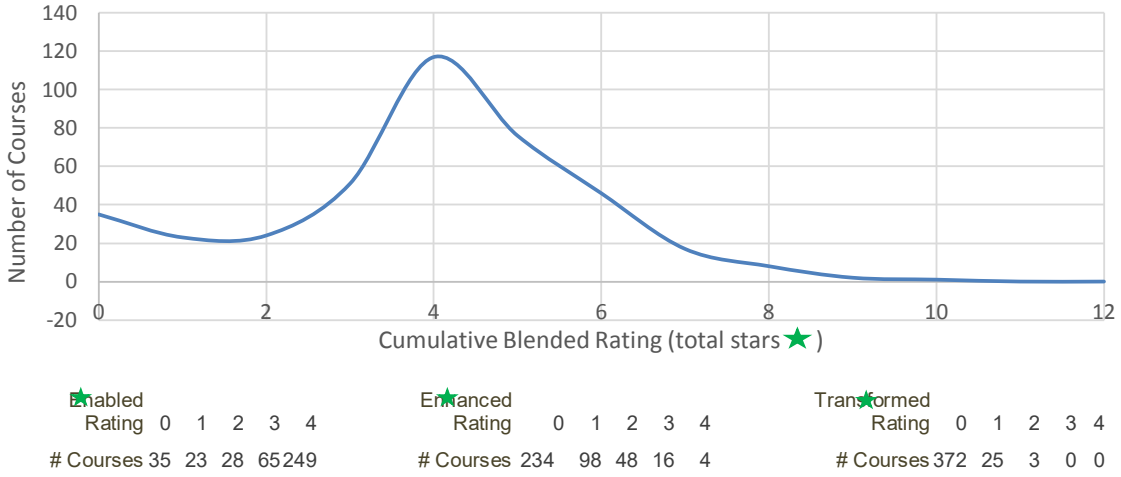

Figure 2: Blended learning ratings distribution – SP2 2015 (~40% of all courses)

The graph above provides a snapshot in time of the level of blended learning adopted institutionally as determined by the BLAM process. Data may also be viewed in different ways, for example at division level, program level, or individual course level, and over time. Mapping review data to learner, teacher, course, and curriculum analytics may reveal correlations that will automate part or all of the review process.

Next Steps & Conclusion

The current process is semi-automated as it is guided by analytics and uses a form. The next step is to seek correlations between the review process output and other existing analytics data to predict review results, thereby reducing or eliminating review effort. In conclusion, a blended learning adoption monitoring method has been devised that is non-invasive, utilises readily accessible resources, has the potential to increase semi-automated reporting, and is useful in providing progress reports during blended learning deployment initiatives.

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