



Application of best practices in blended and online learning in a public health course

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Abstract

The purpose of this review is twofold to investigate the literature for best practices for online blended learning format in higher education institutions and examine a graduate public health course that was national peer reviewed and received Quality Matters (QM) recognition. This narrative review supported positive influences of implementing QM standards for best practices in a blended learning format. The instructional design of blended learning and assessing student learning in the course shows greater promise when QM and best practices are used.

Keywords: online best practices, quality matters, blended learning, public health course

Introduction

The researchers are investigating best practices for blended and online course design in our higher education institutions today. This study reviews the application of Quality Matters (QM) eight standards of best practices for instructors and course designers to help foster positive student learning experiences. The phrase 'blended learning has been defined as 30% to 70% of instructions delivered online and the remaining learning taking place in a traditional face to face classroom (Online Learning Consortium, 2017). Higher Education institution such as the University of Washington at Bothell, defines it as 25% to 50% of the traditional face-to-face class time is replaced with online class work. These guidelines may not be sufficient to cover every blended learning configuration (Online Learning Consortium, 2017). The term Hybrid course in some higher education institutions has been used interchangeable with blended learning. The Hybrid model of course design combines traditional, face-to-face class time with online and out-of-class course work (Garnham & Kaleta, 2002^[6], Graham, Woodfield, & Harrison, 2013)^[8] The above definitions of blended teaching and hybrid course design is an alternative teaching format that can provide a positive learning experience for higher education students. According to Stein and Graham (2014)^[7] any kind of onsite teaching with introduction of online activities could be considered blended teaching and learning and vice-a-versa. Reducing the number of onsite meetings by replacing with online activities by using discussions, videos, and case studies is a common blended approach. The Literature discusses a variety of models, which fit into the domain of hybrid/blended Teaching and Learning formats. One such model is the hyflex blended learning format which provides an option for students to attend onsite sessions if and when they choose. The hyflex blended learning format design principles favor student choice, equivalency, reusability, and accessibility (Abdelmalak & Parra, 2018^[1]; Beatty, 2010). Best practices in blended teaching/learning

course

The obvious question to ask is why use a blended teaching format? Evidence suggests that the blended form of course delivery is more effective than both 100 % online and 100% face to face. The impact of blended teaching and learning approach on student learning was examined using a quasi-experimental research design. The findings from Moskal and Cavanaugh, (2014) supported that student academic performance under the blended learning format approach had an increase of positive student feedback from the participants. Perez, Lopez and Ariza,^[17] (2013) assessed the effects of blended learning on student outcomes in an accounting course for first year undergraduate students in four different degree programs. The results demonstrated that in every degree program that the use of blended learning format that used QM best practices had a positive effect on student learning, reduced the dropout rate, and improved exam marks. The following QM best practices that were considered: alignment of course components, moderation of interactivity and expectations, use and application of intentional classroom technology, and supporting course redesign. The meta-analytic study by Spanjers, Konings, Leppink, Verstegen, Jong, Czabanowska and Merrienboer (2015) tried to assess the overall effectiveness of blended learning format as opposed to the traditional learning format. This study supported that the blended learning format was scored higher than the traditional learning format. The application of blended teaching and learning in the field of health sciences has shown mixed results. In the Cathorall, Xin, Blankson, Kempland and Schaefer study (2018)^[5] assessed student learning outcomes via web-facilitated courses vs hybrid (blended learning format). The study results showed that there were no significant differences between the two formats when it came to objective quiz scores and final grades. While this study didn't specifically compare and contrast a hybrid blended learning approach to a traditional face to face approach, it did

provide some significant insights towards using the hybrid blended learning format for higher education courses. Although the above studies, are not in any way representative of the vast literature of blended learning formats; they provide a slice of the approaches taken specifically in a health disciplinary field where published literature is scarce at this point in time. Hybrid course delivery has its own advantages and disadvantages. Some of the advantages of hybrid courses include greater engagement through personalized interactions and greater customization through online components delivering distance education (Aoun, 2018) ^[3]. Faculty opportunities for student-faculty interaction, increased student engagement in learning and flexibility in teaching and learning environments (Vaughan, 2007) ^[25]. The challenges that are faced by higher education institutions of higher education in implementation of blended teaching and learning formats across health curriculum deal with an increased workload for the instructors. The lack of pedagogical and technical skills, provide difficulty in finding the right blend between face-to-face and online learning.

2. Adoption of blended learning format

The steps for higher education institutions to adopt blended learning curriculum format normally follow the following steps: awareness/exploration, adoption/early implementation, and mature/implementation. However, there are barriers in these adoption steps. The participating faculty may not have sufficient time to prepare the course using technology. The Online Learning Consortium provides guidelines for the adoption of blended learning by faculty and institutions. The quality scorecard provides important information to guide his or her education the faculty, administration and institution designers about the strength or weakness on developing blended learning programs. The quality scoreboard has metrics for 70 indicators in each evaluation category. The OLC Quality scorecard provides the following features:

- a. Organization by category with supporting artifacts
- b. Store information in one location and
- c. Download report with all

Information that can be used for accreditation or other reporting (Online Learning Consortium, 2015) ^[15]. The following studies of Alebaikan and Troudi, 2010 ^[2] and Korr, Derwin, Greene and Sokoloff, 2012 ^[9] were similar in that these studies were transforming the higher education programs to becoming 100% blended. The differences between these 2 studies were the targeted participation and the culture of the countries the studies were performed. The studies of Alebaikan and Troudi & Korr, Derwin, Greene, and Sokoloff, 2012 ^[9], clearly indicates that the adoption of blended learning does not have to fall into the same steps of implementation.

2.1. Quality matters best practices for blended and online learning formats

The Quality Matters (QM) Program is a faculty centered peer-review process that is designed to certify the quality of online courses and online components (Quality Matters, 2018) ^[19]. Evidence-based practices, deployed by the Quality Matters, revolves around eight general standards: course overview and introduction, learning objectives (competencies), assessment

and measurement, instructional materials, course activities and learner interaction, course technology, learner support and accessibility and usability (Ralston-Berg, Buckenmeyer, Barczyk, Hixon, 2015 ^[20]; Shattuck, Zimmerman, & Adair, 2014) ^[22]. A primary focus of the rubric is the concept of alignment in which core course components are balanced in support of the stated learning objectives. The 2014 rubric contains eight general categories, forty-three specific standards, and can be used as a tool for course review as well course development. Quality Matters (QM) Eight General Standards are: course overview and introduction, learning objectives, assessment and measurement, instructional materials, course activities and learner interaction, course technology, learner support, and accessibility and usability. The Higher Education QM rubric course design standards are intended for use with courses that are fully online or have a significant online component such as hybrid or blended courses. In the implementation issues of blended course design in higher education found that faculty use of technology was not as proficient in using the new electronic resources. One of the best practices for developing a blended course design is to use and have good technology support. According to McGee & Reis (2012) ^[11] “the impact of technology use may be relegated to the individual instructor whose focus may be more on how to manage an unfamiliar course design (p. 15). The technology support and professional development of its instructors should be current on best practices and one the most efficient way to implement new technology features. The Online Learning Consortium (2017) supports that assessing the impact of student learning from any course that uses blended learning format is critically to measure the impact and influence on students. The Online Learning Consortium Quality Scorecard (2015) ^[14] measures blended course effectiveness can provide data to use for future changes and higher education Institution support.

2.2. Design of a quality matters certified graduate public health course in a blended format

This study examined the in-depth Quality Matters standards implemented in a graduate Public Health Course that was peer reviewed at a national level and received QM recognition.

1. The instructor used the Replacement blended learning model while designing a graduate Public Health course. This model included: reduction of in-class meeting time, replacement of face-to-face class time with online activities and involved flexibility of online activities for a computer lab or home (Graham, Henrie, & Gibbons, 2014) ^[7]. After teaching the course for a semester it went through the Quality Matters Review process and received Quality Matters Certification which is a national benchmark for evidence-based best practices in online and hybrid teaching (Quality Matters, 2018). Below are the highlights of this course
2. Course overview and introduction: This QM course was required to have an introductory page where learners were introduced clearly to the purpose and the structure of the course, The course syllabus had details about the minimum course technical requirements and links to institutional policies. The instructor self-introduced themselves via the introductory page as well as via a self-

introductory course discussion. Students were asked to introduce themselves as well as instructor via a course-based discussion. This is a good example of learner-content, learner-learner and learner-instructor interaction.

3. **Learning objectives (Competencies):** The instructor worked closely with the instructional designer in designing learning objectives at the course level and at the module/unit level. Objectives were designed and written from the learner's perspective. The instructor used Bloom's taxonomy framework for designing course and module learning objectives. It was made very clear that the module-based learning objectives aligned with the course-based learning objectives and this was depicted for all the course modules using Trello as an application tool (<https://trello.com>).
4. **Assessment and measurement:** The course assessment in terms of activities and assignments were assessed using a course-based grading policy (which was clearly mentioned in the syllabus). Specific evaluative criteria were established for evaluation of course assignments such as course discussions, activities using a rubric explaining the assignment and discussion expectations and the grading criteria. There were varied assessment instruments used such as self-evaluative quizzes, comprehensive open-book exams (evaluated by rubric) and objective exams.
5. **Instructional Materials:** The purpose of the instructional materials and their alignments with the course goals and module objectives was clearly demonstrated using Trello tool (<https://trello.com>). All the instructional materials such as course textbook, website links to relevant course and chapter related material along with course supplementary videos was current and was updated to reflect current and best practices in the field of community and public health. The instructor used numerous open education resources to supplement the course-text materials.
6. **Course Activities and Learner Interaction:** The learning activities designed in the course such as text-book and PowerPoint readings, videos related to case-based teaching, self-test quizzes (for online component) along with in person-class discussions and debriefing sessions (in person activities) greatly enhance student learning and understanding of the course material. Again, the relationship between learning activities and stated learning objectives at the course and modular level is clearly shown using the trello tool (<https://trello.com>). Learner interaction with the course material is additionally demonstrated via student discussions (active learning) and research-based assignments. Instructors plan for classroom response time and feedback on assignments is clearly mentioned in the syllabus
7. **Course Technology:** Instructor used a tab provided by the scholarly and technology resources here at the University, which provides a detailed guide of all the software tools used in the course and their currency. This was further mentioned in the syllabus as well. **Learner Support:** Instructor provided multiple links in the menu bar of the course to technical support and institutions academic support services along with student services and Student

support.

8. **Accessibility and Usability:** The course instructor provided accessibility and usability in terms of ease of course navigation, introduction/begin here page, consistent week modular format and clear assignment guidelines). Information about technology access was provided in the syllabus and mentioned in-person during the face-to-face class sessions. To keep interest and enhancing motivation of diverse learners, multimedia such as audio-visuals had associated transcripts. The videos were clearly titled and the location of transcripts were easily viewed

3. Conclusion

Originally, blended learning was viewed as a face-to-face class that added an online component. This review of the literature and examination of a Quality Matters designed graduate public health course indicates that technology offers a variety of options for a blended learning instructional format. Assessing what and how higher education faculty teach can be challenging but can provide unlimited knowledge of learning outcomes, institution data, and program effectiveness (McGee & Reis, 2012) ^[11]. Program assessment and adopting best practices for blended learning formats is essential for higher education institutions to implement to support teaching effectiveness. Adopting existing standards such as Quality Matters (an evidence-based framework) (<https://www.qualitymatters.org/>) or creating institutional standards will support the future of blended learning formats. The authors see the future holding great promise for the designing of courses using blended format and adoption of blended course delivery at institutions of higher learning to accommodate diverse student needs.

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