

AFTER SHOW AND TELL: OUTCOMES OF AN INNOVATIVE COMPETENCY-BASED SELF-PACED EDUCATIONAL FORMAT

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Abstract:

The Credit By Exam 2.0 format is an educational approach to competency-based credit and online course completion. Using a two-phase process, the initial phase allows a student to complete a pre-test to demonstrate competency for course content modules. The second phase requires the student to complete the modules for which competency was not demonstrated in a self-paced flex start/finish online setting. The Credit By Exam 2.0 format also offers students a variable tuition rate for course payment based on pre-test competency demonstrated. We provide student data from nearly four years of operation as well as successful practices and ongoing challenges.

Keywords: *competency-based credit, Credit By Exam, flex start/finish, self-paced education, variable tuition rate*

The changing landscape of education has resulted in the need for institutions of higher learning to be more adaptable as they encounter new realities in their core product (see, e.g., Anderson, 2016). In response, colleges and universities have explored prior learning assessment as an avenue for offering students academic credit for the meaningful and legitimate learning that takes place outside the traditional classroom setting such as from prior or current employment, civic activities, and volunteer service (Council for Adult and Experiential Learning, 2010). While prior learning assessment offerings vary, common methods for earning academic credit include experiential learning portfolio assessment, evaluation of corporate or military training, and standardized exams (Council for Adult and Experiential Learning, 2010).

Certainly, prior learning assessment in higher education is non-traditional; yet, research provides empirical evidence of several student success benefits. For instance, the Council for Adult and Experiential Learning (2010, 2011) revealed that students earning academic credit via prior learning assessment demonstrated better academic outcomes than students without prior learning assessment as evidenced by higher graduation rates, increased persistence, and lower time to degree completion. Notably, standardized exams in the form of credit by exam are central prior learning assessment methods within many colleges and universities (Haynie, 2013). Research specific to credit by exam has also revealed a variety of student success benefits including higher GPA (Barry, 2013; Scammacca & Dodd, 2005), better course performance (Moulder, Abdulla, & Morgan, 2005; Scammacca & Dodd, 2005), higher graduation rates (College Board, 2004), and lower educational costs (College Board, 2004).

The Credit By Exam 2.0 Format

In 2018, we published an article chronicling the concept and initial creation of an innovative education format offered at an urban university in the southern portion of the United States called Credit By Exam 2.0 (CBE 2.0) (see Hutchinson et al., 2018). As one of many university initiatives to reduce student attrition and time to degree completion, the goal of the format was to expand application of traditional credit by exam by allowing students the opportunity to demonstrate competency for modules of course content rather than an all or nothing approach to earning course credit. To briefly summarize the two-phased CBE 2.0 format, a student begins the first phase by completing a course pre-test. A course's pre-test is divided into specific modules based on content in the course. Rather than course credit being awarded on competency (i.e., 70% or higher) of all pre-test content, the student need only demonstrate competency of content in a specific module to test out of the module (i.e., 70% or higher of module questions answered correctly). In the second phase of the format, the student is responsible for completing the modules for which competency cannot be demonstrated (i.e., less than 70% of module questions answered correctly) in a self-paced flex start/finish online course setting to be completed at any point in the calendar year. A student can earn a Satisfactory (S) or Unsatisfactory (U) grade based on his/her combined performance from the pre-test and self-paced flex start/finish online course.

Beyond reducing student attrition and time to degree completion, the CBE 2.0 format also addresses another university initiative pertaining to higher education affordability in offering a reduced and variable tuition rate. Students are provided two incentives to

enroll in CBE 2.0 format courses: a maximum course tuition rate of \$1,000 (compared to a per course range between \$1,200 and \$1,500) and tying the tuition rate to a student's pre-test performance (e.g., a student demonstrating competency for 30% of the pre-test modules would only be required to pay 70% of the maximum \$1,000 tuition rate [\$700]). Unfortunately, due to operating the format through the Office of Professional and Continuing Education (which allows for the reduced and variable tuition rate as well as the self-paced flex start/finish online component), financial aid cannot be offered for students to pay course tuition. Initially, the CBE 2.0 format was operated as an 18-month pilot program within the Bachelor of Science in Sport and Leisure Management major. At the time, five Sport and Leisure Management core courses were selected as CBE 2.0 format offerings and 18 students completed 26 course offerings.^[1]

Based on the success of the pilot program, the university approved an extension and expansion of the CBE 2.0 format. To date, the format has been operating for nearly four years and has expanded to offer the format for nine core courses and one elective course in the Sport and Leisure Management major. This has resulted in a total of 51 students completing 80 course offerings. In total, these students have demonstrated a 30.63% median (*Mdn*) competency of course content on the pre-test and, upon completion of the self-paced flex start/finish online course portion, earned an overall final grade^[2] of 82.19% (*Mdn*). Students' time to course completion is 7.43 (*Mdn*) weeks and they have paid \$694 (*Mdn*) per course. Further, the 51 students have completed on average just over 1.5 courses via the CBE 2.0 format. For additional overall and course specific information, see Table 1 in the Appendix.

Reflecting on Credit by Exam 2.0

The CBE 2.0 format has proven to be a useful addition to existing ground, online, and hybrid formats in the Sport and Leisure Management major. Students have been provided the opportunity to showcase competency of course content—thus bypassing modules of course content already learned—with the benefit of a variable tuition rate amidst more control in the overall time to course completion due to the self-paced flex start/finish online course offerings. As we approach four years of offering coursework via the CBE 2.0 format, our experience offers a series of successful practices and recurring challenges. Below, we highlight recommendations for successful practices and present ongoing challenges for administrators and faculty interested in implementing a similar educational format. Among successful practices, we explain the need for (1) reliance on online delivery, (2) incorporating the self-paced flex start/finish course completion option, and (3) integrating the variable tuition rate.

Successful Practices

Beginning with successful practices, we believe that a substantial—if not exclusive—reliance on online delivery is essential. The Sport and Leisure Management major population most interested in this educational format maintain wide-ranging non-educational commitments (e.g., full-time employment, family, community responsibilities). Therefore, we structured all phases of course completion to be online using the university's online learning management system (Desire2Learn). Beginning with pre-test preparation, students were provided access to an online course shell that included recorded video lectures, course study guides, and other course-specific resources. When ready, students then completed the course's pre-test in the online course shell. To maintain standards of academic integrity, we explored use of facial recognition technology (e.g., Proctortrack by Verificent Technologies) for administering the pre-test in any online location without proctor. Ultimately, however, we decided to have students complete the online pre-test under proctor at a location convenient for the student due to the expense of facial recognition software/services. Based on the pre-test performance, and as noted above, the student then completed the remaining course modules for which competency could not be demonstrated in a self-paced flex start/finish format using the online course shell. Thus, online delivery was a central and fundamental feature of the CBE 2.0 format.

Beyond online delivery, a second successful practice is offering students a self-paced flex start/finish course completion option. Operating CBE 2.0 through the Office of Professional and Continuing Education allows for courses to not only be self-paced but also started and finished without regard for traditional academic year deadlines. Consequently, students are not limited to beginning or ending a course in accordance with traditional institutional registration or completion time periods. To ensure students are provided course progression structure, the overseeing faculty member corresponds with each student to determine a desired course completion timeline and subsequently creates a recommended course completion schedule to serve as a guide. Although select students exercise their opportunity to progress at a moderate pace through course material, most students seem motivated to achieve course completion in a shorter duration (as indicated by the "Completion Time" column in Table 1). This seems to indicate the self-paced flex start/finish component to be a central motivation for completing coursework via the CBE 2.0 format.

A third and final successful practice is our integration of the variable tuition rate. We should preface this successful practice by noting that each institution will be differently motivated by a variety of external (e.g., state funding benchmarks) and internal (e.g., student population status quo) factors in determining the pricing structure of a variable tuition rate. For example, prior to beginning the CBE 2.0 format, the university revealed alarming figures regarding attrition among students with an excess of 90

credit hours. Consequently, the CBE 2.0 pricing structure of the variable tuition rate was designed with an understanding that select students within one to two semesters of graduation may not complete their degree for a variety of reasons without a flexible, lower cost alternative. In the Sport and Leisure Management major, we identified roughly 15% of the 51 students completing a course via the CBE 2.0 format would have been lost to attrition. Therefore, coupled with the self-paced flex start/finish components, the pricing structure of the variable tuition rate was designed with the student in mind.

Having provided this explanation, offering a variable tuition rate based on pre-test performance is obviously marketable and generates interest from students. Yet, we believe it is important to note two observations regarding this unique tuition pricing method. First, it is imperative for a university's executive administration or division(s) of business and finance to be consulted regarding feasibility and approval. Motivated in large part by student attrition and time to degree completion, we have been provided generous tuition rate restrictions in operating the CBE 2.0 format. Second, we encourage institutions to consider the most strategic financial position prior to establishing a tuition pricing structure.^[3] As described, we offered a reduced per course tuition cap (\$1,000) in an effort to induce initial participation in the pilot program and as a result of being unable to offer financial aid. Although the reduced tuition cap remains, we do not believe it is necessary for implementing a format comparable to CBE 2.0. In fact, we believe maintaining standard university tuition rates as a cap should not negatively impact student interest as the opportunity to test out of course content and the self-paced flex start/finish online features alone appealed to students at our university. Of course, reservations concerning this pricing strategy resulting in lost revenue (due to pre-test performance) or diluting the educational product will and should exist. To alleviate these concerns, two considerations may be a pre-test fee and minimum tuition amount. Establishing a pre-test fee and minimum tuition amount may offset tuition revenue not generated due to students' pre-test performance. Currently, we do not charge a pre-test fee but do have a minimum tuition amount of \$300 regardless of pre-test performance.

Challenges

While we believe the CBE 2.0 format is an innovative alternative educational format, it has not been without challenges. Below, we provide an initial list and explanation of different challenges encountered over the life of the CBE 2.0 format. These challenges include (1) transitioning operation of the format to the university's enterprise resource planning (ERP) system, (2) commitment from major/program faculty, and (3) adapting to a more micro-level management of students.

From a macro perspective, one challenge has been transitioning the CBE 2.0 format from operation in the Office of Professional and Continuing Education to the university's ERP system (Ellucian Banner). As briefly explained above, and more comprehensively in Hutchinson et al. (2018), the Office of Professional and Continuing Education offered the most flexibility for the CBE 2.0 format regarding the variable tuition rate and self-paced flex start/finish online component with the greatest disadvantage being an inability to offer financial aid. In our efforts to transition CBE 2.0 course offerings away from the Office of Professional and Continuing Education and into the university's ERP system, we have experienced a series of challenges. For instance, a primary challenge pertains to a student's pre-test performance and the associated course credit hour registration. Due to students being permitted the opportunity to demonstrate competency for and test out of content on a course's pre-test, the university's ERP system capability would require many course sections due to the varying credit hours students would enroll in based on pre-test performance. As an example, assume a student demonstrates competency for and tests out of 30% of a three credit hour course based on his/her pre-test performance. In the university's ERP system, this would result in creating one section of the course for 2.1 credit hours. Consequently, and assuming we round students' pre-test performance to every tenth of a credit hour, there is a possibility of 30 sections (ranging from 0.1 to 3.0 credit hours) for one course. Further challenging is how to manage financial aid; specifically, how student grants, loans, and other aid may be differently distributed as a result of the non-traditional credit hour registration and variable tuition rate.

A second, more human resource-oriented challenge is commitment from major/program faculty to the CBE 2.0 format. Within the Sport and Leisure Management major, we were fortunate that all faculty were supportive and committed to offering courses in the CBE 2.0 format. Yet, we imagine this to be a particularly challenging obstacle for select educational institution faculty groups, as it would seem change and innovative approaches to learning in higher education are often initially met with resistance. Commitment from Sport and Leisure Management faculty provided many benefits; the most important of which that students were provided the opportunity to complete as many courses as possible via the CBE 2.0 format. For instance, while most students integrated one or two courses taught in the CBE 2.0 format within their traditional ground and/or online course load, several students have opted to complete many courses in the CBE 2.0 format as a result of non-educational responsibilities previously noted. Consequently, securing 'buy in' from major/program faculty is essential for the overall benefit to students.

Finally, and related to the second, the nature of CBE 2.0 format courses naturally lends itself to more micro-level management—as opposed to macro-level management—of students. For example, due to the pre-test and self-paced flex start/finish online components, there are a series of spillover effects impacting course oversight. Most notably, each student—rather than an entire class of students—has an individualized syllabus and recommended course completion schedule, as well as different assessments to be provided access in the educational institution's online learning management system based on pre-test

performance. The underlying result is the potential for a significant time commitment on behalf of the overseeing faculty member. Depending on an educational institution's available resources, one approach to course/student management is use of existing staff or graduate assistants. Due to the online nature of CBE 2.0 courses, course/student management can easily be standardized for a non-faculty member (assuming the individual[s] possesses mastery of a course's content for assignment assessment purposes). A second approach may be incentivizing existing faculty by offering extra compensation in the form of overload payment or a stipend. For under-resourced educational institutions, major/program faculty should be prepared for an added time commitment for CBE 2.0 section management.

Conclusion

We hope the information provided in this article fosters additional innovative advancements in non-traditional educational formats. While not all features of the CBE 2.0 format may be transferable to other educational institutions, we consider several to be valuable additions for many institutions. Notably for educational institutions in urban settings, we believe the competency-based, self-paced, and flex start/finish features to be a natural adaptation to and next step in online education given the higher education student of our day.

As many universities in urban settings enroll students who are under-resourced and come from economically impoverished areas, the CBE 2.0 format provides the opportunity for students to complete their degree with more flexibility, in a shorter timeframe, and at a reduced cost. At our university, for instance, nearly 45% of students come from households with a median income below the federal poverty line. Consequently, these students are balancing full- or multiple part-time employment positions alongside education and other personal household responsibilities (e.g., child and elder care). Believing education can be the great equalizer for addressing economic and otherwise inequities, the CBE 2.0 format affords students the opportunity to avoid common barriers in course and degree completion. We encourage others in urban and non-urban higher education institutions to implement similar formats and look forward to improvements on the CBE 2.0 format.

[1] For a more in-depth explanation of the CBE 2.0 format—notably the course pre-test, self-paced flex start/finish online course portion, and variable tuition rate—please see Hutchinson et al (2018).

[2] Note: Numerical grades were maintained to determine a “Satisfactory (S)” or “Unsatisfactory (U)” grade.

[3] We should also note that the variable tuition rate may not be necessary in offering a CBE 2.0 formatted course. The opportunity to demonstrate competency for and test out of course content alone may be sufficient appeal to induce enrollment.

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Appendix

Table 1

Course Information

Course Title	Students _a	Pre-Test Competency _a	Final Grade _b	Completion Time (weeks) _c	Tuition _d
Foundations of Sport and Leisure Management	10	40.63%	83.99%	07.93	\$594.00
		[40.63%]	[84.73%]	[09.91]	[\$605.20]
Sport and Leisure as Popular Culture	4	45.00%	87.00%	04.25	\$550.00
		[45.00%]	[88.00%]	[05.50]	[\$550.00]
Organization Analysis of Sport and Leisure	6	27.00%	77.00%	10.86	\$730.00
		[30.00%]	[76.16%]	[12.57]	[\$700.00]
Totals	80	30.63%	82.19%	07.43	\$694.00
		[34.05%]	[81.45%]	[10.14]	[\$661.86]

Course Title	Students ^a	Pre-Test Competency ^b	Final Grade ^c	Completion Time (weeks)	Tuition ^d
Financial Management in Sport and Leisure	2	35.00% [35.00%]	80.55% [80.55%]	03.50 [03.50]	\$650.00 [\$650.00]
Promotions in Sport and Leisure	7	25.00% [26.79%]	83.75% [84.60%]	19.00 [16.86]	\$750.00 [\$732.14]
Sport and Culture Global Perspectives	1	70.00% [70.00%]	70.00% [70.00%]	N/A	\$300.00 [\$300.00]
Sport and Leisure Governance	7	11.11% [14.29%]	79.44% [81.51%]	06.00 [09.71]	\$888.80 [\$857.13]
Legal Aspects of Sport and Leisure Management	35	25.00% [31.79%]	80.00% [79.63%]	06.86 [09.22]	\$750.00 [\$682.06]
Sport and Leisure Marketing	6	65.00% [58.33%]	N/A	N/A	\$350.00 [\$433.33]
Administration of Athletics	2	35.00% [35.00%]	87.20% [87.20%]	14.00 [14.00]	\$650.00 [\$650.00]
Totals	80	30.63% [34.05%]	82.19% [81.45%]	07.43 [10.14]	\$694.00 [\$661.86]

Note. Numerical data are presented first as median values (upper) and then as mean values in brackets (lower).

^a Maximum = 81.25% | Minimum = 00.00%

^b Maximum = 96.88% | Minimum = 50.94% (Numerical grades were maintained to determine a Satisfactory [S] or Unsatisfactory [U] grade.)

^c Maximum = 58.71 weeks | Minimum = 01.00 weeks

^d Maximum = \$1,000.00 | Minimum = \$300.00

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