International Journal of E-Learning & Distance Education
La Revue internationale de l'apprentissage en ligne et de l'enseignement à distance

**ISSN: 2292-8588** **Vol. 32, No. 2, 2016**

# Redesigning Design: Field Testing a Revised Design Rubric Based on iNACOL Quality Course Standards

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**Abstract:** Designers have a limited selection of K-12 online course creation standards to choose from that are not blocked behind proprietary or pay walls. For numerous institutions and states, the use of the iNACOL *National Standards for Quality Online Courses* is becoming a widely used resource. This article presents the final phase in a three-part study to test the validity and reliability of the iNACOL standards specifically to online course design. Phase three was a field test of the revised rubric based on the iNACOL standards against current K-12 online courses. While the results show a strong exact match percentage, there is more work to be done with the revised rubric.

**Keywords:** K-12 online learning, K-12 distance education, virtual school, cyber school, online course design

**Résumé :** Les concepteurs ont une sélection limitée des normes K-12 de création de cours en ligne à choisir qui ne sont pas bloqués derrière des propriétés exclusives ou des péages informatiques. Pour de nombreuses institutions et états, l'utilisation des Normes nationales pour les cours en ligne de qualité iNACOL devient une ressource largement utilisée. Cet article présente la phase finale d'une étude en trois parties pour tester la validité et la fiabilité des normes iNACOL spécifiquement liées à la conception de cours en ligne. La phase trois était une mise à l'essai sur le terrain de la rubrique révisée établie en fonction des normes iNACOL par rapport aux cours en ligne K-12 actuels. Bien que les résultats montrent un fort pourcentage de correspondance exacte, il y a plus de travail à faire avec la rubrique révisée.

**Mots clés :** iNACOL, rubriques, cours en ligne, qualité, K-12

## Introduction

The use of online courses in the K-12 environment continues to grow, with supplemental online course enrollments at roughly 4.5 million in the United States alone (Gemin, Pape, Vashaw, & Watson, 2015). This influx of online courses into the United States education system has led to a realization of the differences between traditional and virtual environments. These differences would include the issue of the design of asynchronous course content. However, what is somewhat surprising is that the research into this critical aspect of K-12 online learning has been both minimal (Barbour, 2013; Barbour & Adelstein, 2013a), and narrow in scope, mainly focusing on specific schools (Barbour, Morrison, & Adelstein, 2014; Friend & Johnston, 2005; Zucker & Kozma, 2003).

There are current foundations and associations, such as the Michigan Virtual Learning Research Institute (MVLRI), that have taken up the task of researching further into course design. For example, since 2013 the MVLRI has included recommendations into educational delivery models and instructional design standards in their yearly directives for the Michigan Legislature (MVLRI, 2016). To date, the recommendations made by the MVLRI have focused primarily on the International Association for K-12 Online Learning's (iNACOL) (2011) *National Standards for Quality Online Courses*. At present, the iNACOL online course design standards are one of the most popular, non-proprietary and publically available standards – both in the United States and internationally. Yet, the iNACOL standards were not developed using a traditional process that examines the validity and reliability of

the standards and any instruments (i.e., rubrics) designed to measure those standards (Barbour, 2013; Barbour & Adelstein, 2013b; Molnar, Rice, Huerta, Shafer, Barbour, Miron, Gulosino, & Horvitz, 2014).

The following article outlines the third, and final phase, of a research study designed to begin the process of examining the iNACOL online course design standards for validity and reliability. The first phase of research of this study provided a cursory review of the iNACOL standards to determine the level of support for each of the standard elements within the K-12 online learning literature, as well as the broader online learning literature (see Adelstein & Barbour, 2016). During the second phase of this research study, two panels comprising eight experts from a variety of sectors in the field of K-12 online learning, examined the standards based on the outcome of phase one over a cycle of three rounds of review (see Adelstein & Barbour, in press). This second phase generated a revised list of specific design standards, as well as a revised rubric. In this article we describe the third phase of this research study, where four groups of two reviewers applied the phase two revised rubric using current K-12 online courses to examine the instrument for inter-rater reliability.

## Literature Review

As indicated above, the research focused on K-12 online course design has been sparse. This can possibly be attributed to the idea that online course design has not been stressed in teacher professional development (Dawley, Rice, & Hinck, 2010; Rice & Dawley, 2007; Rice, Dawley, Gasell, & Florez, 2008). While it has been suggested that design should be a completely separate role from the classroom instructor (Davis, Roblyer, Charania, Ferdig, Harms, Compton, & Cho, 2007), this notion has only been promoted in a handful of models. For example, the Teacher Education Goes Virtual Schooling[1] and Supporting K-12 Online Learning in Michigan[2] programs focused primarily on the role of the online learning facilitator, while the Iowa Learning Online[3] and Michigan Online Teaching Case Studies[4] initiatives focused on the role of the online teacher. However, there are several design trends that can be gleaned from the available literature. The release of a variety of general design standards, practitioner- and advocacy-generated literature, and limited research, provide initial suggested guidance in online course design with enough commonalities to help form a larger picture, albeit one that is completed in broad strokes.

The first theme in the literature focused on keeping navigation simple. The design of the course should be formatted in a way that allows for intuitive, easy navigation of the site. For example, course designers from the Centre for Distance Learning and Innovation (CDLI) used a template providing a consistency, so that it "doesn't frighten the kids with a different navigation menu on every screen" (Barbour, 2007a, p. 102). To add to the understanding, it was recommended that designers give students a tour of the course, explaining how the virtual classroom is organized (Elbaum, McIntyre, & Smith, 2002). When used by VHS, the majority of students agreed that the orientation gave them the comfort level to successfully navigate a course (Zucker & Kozma, 2003). This was also found to be important for students with special needs, as consistent navigation patterns curbed frustration (Keeler & Horney, 2007). One of the positive aspects of courses with clarity and simplicity was that it not only worked for students with disabilities, but was also appropriate for all users (Keeler, Richter, Anderson-Inman, Horney, & Ditson, 2007). It was noted that a simplistic, linear approach should not necessarily bleed into content delivery, as a variety of activities allows for a more interesting course, as well as tapping into different student learning styles (Barbour 2007a; Elbaum, McIntyre, & Smith, 2002; Barbour & Cooze, 2004).

[1] See http://itlab2.coe.wayne.edu/it6230/TEGIVS/
[2] See http://itlab2.coe.wayne.edu/it6230/michigan/
[3] See https://web.archive.org/web/20100716072923/http://projects.educ.iastate.edu/~vhs/index.htm
[4] See http://itlab2.coe.wayne.edu/it6230/casestudies/

The second theme focused on less text and more visuals where appropriate. The use of a visual over text can offer advantages to students enrolled in an online course. The perception from educators that students ignore text-heavy sites plays into the notion that online courses are, and should be, presented differently than traditional courses (Barbour, 2007a). Online information may be presented in unique formats, and using solely text is akin to assigning a reading from the textbook (Barbour, 2005). It was therefore not surprising to see online educators ask for additional training so they could create and add multimedia into their courses (Barbour, Morrison, & Adelstein, 2014). Students agreed and indicated that they found visuals and multimedia, "really interesting and a lot better than sitting down and reading the book" (Barbour & Adelstein, 2013a, p. 60). A graphically intensive course also allows visual learners to flourish (Barbour & Cooze, 2004), as well as helping to provide structure to students with disabilities (Keeler et al., 2007). However, graphics should be used only when appropriate, and not just because they are readily available (Barbour, 2007; Elbaum, McIntyre, & Smith, 2002). Too many or over-stimulating visuals and backgrounds may distract students with attention deficit disorders (Keeler & Horney, 2007), which is why a mix of audio, text, and visuals is recommended.

The third theme focused on clear instructions. The nature of online courses, especially asynchronous courses, means that clear and detailed directions are needed to help move students along (Elbaum, McIntyre, & Smith, 2002). For example, Barbour (2007a) indicated that "the directions and the expectations [need to be] precise enough so students can work effectively on their own, not providing a roadblock for their time" (p. 104). Clarity was also a concern for students, who worried that online content, was not as straightforward as the textbook, or that it was not easily accessible (Barbour & Adelstein, 2013a). In fact, the notion of clarity was relevant enough for VHS to include it as one of the 19 standards used for their course review process. The standards asked designers to judge if, "the course is structured in such a way that organization of the course and use of medium are adequately explained and accommodating to the needs of students" (Yamashiro & Zucker, 1999, p. 57). The use of consistent, explicit expectations was also important for exceptional students to stay on track as well (Keeler et al., 2007). The idea is that clarity of expectations will remove instructions as a possible barrier for students, allowing the student and instructor to focus on the learning.

This leads into the final theme, which focused on providing feedback to students. Since the students do not have the ability to talk directly with the teacher in classroom as in a traditional course, it is important to provide frequent, reliable and predictable feedback (Elbaum, McIntyre, & Smith, 2002). As was the case with the previous suggestion, VHS reviewed courses with feedback in mind, checking that "the structure of the course encourages regular feedback" (Yamashiro & Zucker, 1999, p. 57). Feedback can be accomplished in a variety of ways, from self-assessments to built-in auto-graded exams found in certain learning management systems (Elbaum, McIntyre, & Smith, 2002). A self-assessment feature that gives instantaneous feedback, for example, was highly touted by online students (Barbour & Adelstein, 2013b), who appreciated knowing immediately if they were on the right track. Immediate feedback can be a beneficial formative assessment for students (Huett, Huett, & Ringlaben, 2011). Regardless of the form it takes, reliable feedback to students is vital to a course, as it keeps the students up-to-date on their progress and engaged in their learning (Elbaum, McIntyre, & Smith, 2002).

The four principles outlined are a small but important collection of common elements of K-12 course design literature. However, there is clearly more that should be taken into consideration for online delivery, which is the focus of the overall study. This article will focus on phase three, which looks to field test the revised rubric designed in phase two. The revised rubric contains elements determined to be vital by an expert panel in regards to specifically K-12 online course design.

## Methodology

Upon completion of phase one and two, which tested content validity through a comparison to the standards in the literature and then expert review, the third and final phase of this study examined the reliability of the rubric based on the revised iNACOL standards. When evaluating the rubric, it was important to test not just the validity, but the reliability as well (Taggart, Phifer, Nixon, & Wood, 2001). Further, Legon and Runyon (2007) noted that having instructors review online course design rubrics not only helped the instrument, but was also beneficial to the instructors. These instructors mentioned feeling stimulated and motivated to improve their own courses based on their learning from participation in the review process. Simply put, inter-rater reliability is a form of triangulation (Denzin, 1978), which is a method used to assess the accuracy of a specific point using different inputs.

Inter-rater reliability for pairs of reviewers using multiple responses can be determined in different ways, with kappa being one of the more popular methods. Initially, the kappa coefficient appeared the most appropriate, as it, "indicates whether two judges classify entities in a similar fashion" (Brennan & Hays, 2007, p. 155). However, as the data was reviewed, it became obvious that using kappa would be impossible to accomplish. Kappa cannot be calculated if a rater gives the same rating to what is being tested, as the rater changes from a variable to a constant. Since the study took the details of each specific element into account, there was an increased likelihood of the same rating being applied by one or both reviewers (this issue is discussed in further detail in the results). Understanding the limitations of using such a small pool of results, the results were ultimately shared through percentage agreement. As noted by Neuendorf (2002), "coefficients of .90 or greater are nearly always acceptable, .80 or greater is acceptable in most situations, and .70 may be appropriate in some exploratory studies for some indices" (p. 145 as cited by Moore, 2015, p. 26).

The purpose of this phase of the study was to field test the revised rubric using online courses that were already in use by K-12 online learning programs. The reviewers were K-12 online designers and/or K-12 online instructors who were not involved with the second phase of this study (see Table 1).

**Table 1. Description of the Four Groups of Reviewers**

| Group A | Group B |
|---|---|
| Bob (all names are pseudonyms)<br>• High school educator with K-12 online experience<br>• Midwest region<br>Hilary<br>• K-12 online educator<br>• Northeast Region | Ashley<br>• Secondary educator with online design experience<br>• West Region<br>Andrea<br>• Educator and Administrator in K-12 online education<br>• West Region |

| Group C | Group D |
|---|---|
| Donald<br>• High school educator with K-12 online experience<br>• Midwest region<br>Nancy<br>• High school and online educator with design experience<br>• West region | Josh<br>• Educator and Administrator in K-12 online education<br>• West Region<br>Sarah<br>• Educator and Administrator in K-12 online education<br>• West Region |

Designers and instructors were selected because they were representative of the population who would most likely use the newly revised rubric. The specific sample represented both a convenient and purposeful group of individuals.

As the reliability of an instrument is actually improved upon when the users undergo training (Taggart et al., 2001), the groups were trained in the different areas of measurement as well as the use of the rubric. After each reviewer agreed to participate, they were sent a training packet that included the revised rubric, examples on how to grade specific elements, and a sample course to test the rubric against (see Appendix A for a copy of this training packet). One week later, a *Google Hangout* meeting was scheduled with each group to discuss the results of their application of the rubric to the sample course.

Upon completion of the meeting, each group received five courses to review. Reviewers had up to two weeks to individually complete the process. Courses reviewed covered core academic areas, as well as electives for both middle school and high school, from two different online course providers[5] (see Tables 2 and 3).

[5] An application process to use a third provider to supply elementary courses for this phase of the study was completed, but ultimately the provider stopped communicating. Contact was attempted multiple times over the course of two months, but eventually the study moved forward without the third provider.

**Table 2. Types of Courses Reviewed**

| Grade Level | Subject Matter | | | | |
|---|---|---|---|---|---|
| | Elective | Language Arts | Mathematics | Science | Social Studies |
| 6 | X | | X* | | |
| 7 | X | X* | | | X |
| 8 | X | | | | |
| 9 | X | | | | X* |
| 10 | | | X | X | X |
| 11 | | | X | X* | |

*X* = Course was designed to fit within multiple areas of middle school (MS) or high school (HS).*

**Table 3. Courses Reviewed by Groups**

| | Subject Matter/School Level | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MS Elect | MS ELA | MS Math | MS Sci | MS SS | HS Elect | HS ELA | HS Math | HS Sci | HS SS |
| Group A | X | X | | | | | | X | | X, X |
| Group B | X | | | | X | | X | X | X | |
| Group C | | X | X | | | X, X | | | X | |
| Group D | | X | | | X | X, X | | | X | |

Each group used the revised rubric to review the five courses and rated the measurements on a three-point Likert type scale (see Appendix B). If the element was evident in the course it was rated a '3' for applied, a '2' was for elements that were partially applied, and a rating of '1' meant the element was not applied.

The results between group members were coded using three levels. According to Bresciani, Oakleaf, Kolkhorst, Nebeker, Barlow, Duncan, and Hickmott, (2009), if the rubric is well-designed, even untrained evaluators will find a significant level of agreement. As such, results were tabulated by the size of difference per rating, looking at 'exact match,' 'different by one,' and 'different by two.' Of particular importance were the exact matches as well as those that were different by two. In the latter situation, it would suggest that one reviewer in the group found no evidence of the element while the other believed that it was fully applied.

## Results

The results of the field test are presented by section titles as used in the revised rubric.

### Section A: Content

Overall, Section A did not have strong consistency across the groups (see Table 4).

**Table 4. Section A Element Size Difference per Group**

| | 1 | | | | | | 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count |
| A1 | 40.0% | 2 | 20.0% | 1 | 40.0% | 2 | 20.0% | 1 | 40.0% | 2 | 40.0% | 2 |
| A2 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 20.0% | 1 | 20.0% | 1 | 60.0% | 3 |
| A3 | 40.0% | 2 | 0.0% | 0 | 60.0% | 3 | 20.0% | 1 | 20.0% | 1 | 60.0% | 3 |
| A4 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 |
| A5 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 40.0% | 2 | 40.0% | 2 | 20.0% | 1 |
| A6 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 |
| A7 | 20.0% | 1 | 20.0% | 1 | 60.0% | 3 | 20.0% | 1 | 40.0% | 2 | 40.0% | 2 |
| A8 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| A9 | 60.0% | 3 | 20.0% | 1 | 20.0% | 1 | 40.0% | 2 | 20.0% | 1 | 40.0% | 2 |

| | 3 | | | | | | 4 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count | Row Valid N % | Count |
| A1 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 60.0% | 3 | 20.0% | 1 | 20.0% | 1 |
| A2 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| A3 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| A4 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 | 40.0% | 2 | 0.0% | 0 | 60.0% | 3 |
| A5 | 40.0% | 2 | 0.0% | 0 | 60.0% | 3 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 |
| A6 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| A7 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 80.0% | 4 | 0.0% | 0 | 20.0% | 1 |
| A8 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 40.0% | 2 | 0.0% | 0 | 60.0% | 3 |
| A9 | 80.0% | 4 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 | 20.0% | 1 |

Still, more than half of the ratings were exact matches for groups one, three, and four. Two elements in particular, A6 (i.e., the course is free of bias) and A8 (i.e., privacy policies are stated), scored high – with 80% complete agreement across all groups (see Table 5). Taken as a whole across all groups, Section A had 58% complete agreement.

**Table 5. Section A Size Difference Cross Tabulation All Groups**

| | | Size of Difference | | | |
|---|---|---|---|---|---|
| | | .00 | 1.00 | 2.00 | Total |
| A1 | Count | 11 | 4 | 5 | 20 |
| | % | 55.0% | 20.0% | 25.0% | 100.0% |
| A2 | Count | 12 | 5 | 3 | 20 |
| | % | 60.0% | 25.0% | 15.0% | 100.0% |
| A3 | Count | 12 | 2 | 6 | 20 |
| | % | 60.0% | 10.0% | 30.0% | 100.0% |
| A4 | Count | 8 | 9 | 3 | 20 |
| | % | 40.0% | 45.0% | 15.0% | 100.0% |
| A5 | Count | 8 | 8 | 4 | 20 |
| | % | 40.0% | 40.0% | 20.0% | 100.0% |
| A6 | Count | 16 | 4 | 0 | 20 |
| | % | 80.0% | 20.0% | 0.0% | 100.0% |
| A7 | Count | 9 | 5 | 6 | 20 |
| | % | 45.0% | 25.0% | 30.0% | 100.0% |
| A8 | Count | 16 | 1 | 3 | 20 |
| | % | 80.0% | 5.0% | 15.0% | 100.0% |
| A9 | Count | 13 | 2 | 5 | 20 |
| | % | 65.0% | 10.0% | 25.0% | 100.0% |

While every group had at least one element from Section A with 60% of the scores off by two, no specific element was off by two with a majority of the groups or all the groups. A3 discussed having materials available at the course start and was flagged by two groups; while A4, A5, A7, and A8 each had one mention.

**Section B: Instructional Design Elements**

Much like Section A, there was not a notable consistency of exact agreement in Section B (see Table 6).

**Table 6. Section B Element Size Difference per Group**

| | 1 | | | | | | 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| B1 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 |
| B2 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| B3 | 60.0% | 3 | 20.0% | 1 | 20.0% | 1 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| B4 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 20.0% | 1 | 60.0% | 3 | 20.0% | 1 |
| B5 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| B6 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 |
| B7 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 |
| B8 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 |
| B9 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 |
| B10 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 80.0% | 4 | 0.0% | 0 | 20.0% | 1 |
| B11 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 |
| | 3 | | | | | | 4 | | | | | |
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| B1 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| B2 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 |
| B3 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 |
| B4 | 20.0% | 1 | 20.0% | 1 | 60.0% | 3 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| B5 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 40.0% | 2 | 20.0% | 1 | 40.0% | 2 |
| B6 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| B7 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 |
| B8 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| B9 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| B10 | 40.0% | 2 | 0.0% | 0 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 60.0% | 3 |
| B11 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 |

Three of the four groups once again had over a 50% exact match. Group two was again under 50% for this section. Looking across all groups, Section B had a 57% exact match overall, yet none of the groups attained more than 75% on any given element (see Table 7).

**Table 7. Section B Size Difference Cross Tabulation All Groups**

| | | Size of Difference | | | |
|---|---|---|---|---|---|
| | | .00 | 1.00 | 2.00 | Total |
| B1 | Count | 11 | 9 | 0 | 20 |
| | % | 55.0% | 45.0% | 0.0% | 100.0% |
| B2 | Count | 14 | 6 | 0 | 20 |
| | % | 70.0% | 30.0% | 0.0% | 100.0% |
| B3 | Count | 12 | 7 | 1 | 20 |
| | % | 60.0% | 35.0% | 5.0% | 100.0% |
| B4 | Count | 8 | 8 | 4 | 20 |
| | % | 40.0% | 40.0% | 20.0% | 100.0% |
| B5 | Count | 14 | 4 | 2 | 20 |
| | % | 70.0% | 20.0% | 10.0% | 100.0% |
| B6 | Count | 15 | 5 | 0 | 20 |
| | % | 75.0% | 25.0% | 0.0% | 100.0% |
| B7 | Count | 10 | 10 | 0 | 20 |
| | % | 50.0% | 50.0% | 0.0% | 100.0% |
| B8 | Count | 13 | 7 | 0 | 20 |
| | % | 65.0% | 35.0% | 0.0% | 100.0% |
| B9 | Count | 13 | 7 | 0 | 20 |
| | % | 65.0% | 35.0% | 0.0% | 100.0% |
| B10 | Count | 10 | 3 | 7 | 20 |
| | % | 50.0% | 15.0% | 35.0% | 100.0% |
| B11 | Count | 7 | 13 | 0 | 20 |
| | % | 35.0% | 65.0% | 0.0% | 100.0% |

There were significantly less 'different by two' counts for Section B. B4 attained the 60% threshold with one group. Only B10, which discussed explicit communication, activities, and tools in the course at multiple intervals, had 60% of the scores separated by two numbers for more than one group. Overall, most of the elements fit into the exact match or one off.

**Section C: Student Assessment Elements**

The level of inter-rater reliability in Section C significantly improved compared to the prior two sections, with 'exact match' being the highest ranking for all four groups (see Table 8).

**Table 8. Section C Element Size Difference per Group**

| | 1 | | | | | | 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| C1 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| C2 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 |
| C3 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 |
| C4 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| C5 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 |
| C6 | 20.0% | 1 | 60.0% | 3 | 20.0% | 1 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| C7 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 |
| | 3 | | | | | | 4 | | | | | |
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| C1 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| C2 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| C3 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| C4 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| C5 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| C6 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| C7 | 40.0% | 2 | 60.0% | 3 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |

C1 (i.e., consistency of student evaluations in regards to goals and objectives) and C4 (i.e., students are continuously aware of progress) were both at 95% exact match across all groups (see Table 9).

**Table 9. Section C Size Difference Cross Tabulation All Groups**

| | | Size of Difference | | | |
|---|---|---|---|---|---|
| | | .00 | 1.00 | 2.00 | Total |
| C1 | Count | 19 | 1 | 0 | 20 |
| | % | 95.0% | 5.0% | 0.0% | 100.0% |
| C2 | Count | 12 | 8 | 0 | 20 |
| | % | 60.0% | 40.0% | 0.0% | 100.0% |
| C3 | Count | 12 | 8 | 0 | 20 |
| | % | 60.0% | 40.0% | 0.0% | 100.0% |
| C4 | Count | 19 | 1 | 0 | 20 |
| | % | 95.0% | 5.0% | 0.0% | 100.0% |
| C5 | Count | 14 | 6 | 0 | 20 |
| | % | 70.0% | 30.0% | 0.0% | 100.0% |
| C6 | Count | 12 | 7 | 1 | 20 |
| | % | 60.0% | 35.0% | 5.0% | 100.0% |
| C7 | Count | 12 | 8 | 0 | 20 |
| | % | 60.0% | 40.0% | 0.0% | 100.0% |

Overall, the four groups came out with a 71% exact match agreement. Nearly all groups showed results that were an exact match or off by a score of one. C6, which looked for a suggested grading rubric, was the only element that had a pair of scores two apart. This only occurred once, with group one, out of twenty total reviews across all groups.

**Section D: Technology**

The results for Section D were both consistent and inconsistent in comparison to the other sections of the rubric. To start, Section D had high exact match agreements for all four groups (see Table 10).

**Table 10. Section D Element Size Difference per Group**

| | 1 | | | | | | 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| D1 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 20.0% | 1 | 20.0% | 1 | 60.0% | 3 |
| D2 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D3 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| D4 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D5 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 20.0% | 1 | 60.0% | 3 | 20.0% | 1 |
| D6 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 | 0.0% | 0 |
| D7 | 40.0% | 2 | 20.0% | 1 | 40.0% | 2 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D8 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D9 | 80.0% | 4 | 0.0% | 0 | 20.0% | 1 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D10 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 |
| | 3 | | | | | | 4 | | | | | |
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| D1 | 20.0% | 1 | 0.0% | 0 | 80.0% | 4 | 60.0% | 3 | 20.0% | 1 | 20.0% | 1 |
| D2 | 60.0% | 3 | 20.0% | 1 | 20.0% | 1 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D3 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| D4 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D5 | 40.0% | 2 | 20.0% | 1 | 40.0% | 2 | 80.0% | 4 | 0.0% | 0 | 20.0% | 1 |
| D6 | 40.0% | 2 | 0.0% | 0 | 60.0% | 3 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| D7 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D8 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| D9 | 60.0% | 3 | 0.0% | 0 | 40.0% | 2 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| D10 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |

For example, element D8, which discussed clearly stated copyright status, was an exact match for all 20 sets of reviews (see Table 11). Seven of the elements had at least a 75% exact match agreement across the groups, putting Section D at 81% overall agreement, the highest level for any section.

**Table 9. Section D Size Difference Cross Tabulation All Groups**

| | | Size of Difference | | | |
|---|---|---|---|---|---|
| | | .00 | 1.00 | 2.00 | Total |
| D1 | Count | 5 | 6 | 9 | 20 |
| | % | 25.0% | 30.0% | 45.0% | 100.0% |
| D2 | Count | 16 | 3 | 1 | 20 |
| | % | 80.0% | 15.0% | 5.0% | 100.0% |
| D3 | Count | 17 | 3 | 0 | 20 |
| | % | 85.0% | 15.0% | 0.0% | 100.0% |
| D4 | Count | 18 | 2 | 0 | 20 |
| | % | 90.0% | 10.0% | 0.0% | 100.0% |
| D5 | Count | 11 | 5 | 4 | 20 |
| | % | 55.0% | 25.0% | 20.0% | 100.0% |
| D6 | Count | 11 | 6 | 3 | 20 |
| | % | 55.0% | 30.0% | 15.0% | 100.0% |
| D7 | Count | 17 | 1 | 2 | 20 |
| | % | 85.0% | 5.0% | 10.0% | 100.0% |
| D8 | Count | 20 | 0 | 0 | 20 |
| | % | 100.0% | 0.0% | 0.0% | 100.0% |
| D9 | Count | 16 | 1 | 3 | 20 |
| | % | 80.0% | 5.0% | 15.0% | 100.0% |
| D10 | Count | 15 | 0 | 5 | 20 |
| | % | 75.0% | 0.0% | 25.0% | 100.0% |

However, Section D also had a high percentage of 'different by two' scores in the individual groups. For example, element D10, which discusses the course following Family Educational Rights and Privacy Act (FERPA) regulations and posting the information, was at 100% disagreement in group two. Group three had 80% disagreement in regards to D1, the element that relates to the course architecture allowing the instructor to add content, activities, and assessments. Looking across all the groups, D1 was at 45% with a score size difference of two.

**Section E: Course Evaluation and Support Elements**

With the lowest element count, Section E also had the lowest exact match scores (see Table 12).

**Table 12. Section E Element Size Difference per Group**

| | 1 | | | | | | 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| E1 | 0.0% | 0 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 |
| E2 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 | 20.0% | 1 | 60.0% | 3 | 20.0% | 1 |
| E3 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 20.0% | 1 | 80.0% | 4 |

| | 3 | | | | | | 4 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size of Difference | | | | | | Size of Difference | | | | | |
| | Exact Match | | Different by One | | Different by Two | | Exact Match | | Different by One | | Different by Two | |
| | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count | Row Valid N% | Count |
| E1 | 0.0% | 0 | 0.0% | 0 | 100.0% | 5 | 80.0% | 4 | 20.0% | 1 | 0.0% | 0 |
| E2 | 20.0% | 1 | 20.0% | 1 | 60.0% | 3 | 100.0% | 5 | 0.0% | 0 | 0.0% | 0 |
| E3 | 60.0% | 3 | 0.0% | 0 | 40.0% | 2 | 60.0% | 3 | 40.0% | 2 | 0.0% | 0 |

Only groups 1 and 4 had over 50% exact matches. Across all groups, element E3, making sure the course offers technical support and assistance to the students and instructor, had the highest exact match rating at 55% (see Table 13).

**Table 13. Section E Size Difference Cross Tabulation All Groups**

| | | Size of Difference | | | |
|---|---|---|---|---|---|
| | | .00 | 1.00 | 2.00 | Total |
| E1 | Count | 4 | 6 | 10 | 20 |
| | % | 20.0% | 30.0% | 50.0% | 100.0% |
| E2 | Count | 10 | 6 | 4 | 20 |
| | % | 50.0% | 30.0% | 20.0% | 100.0% |
| E3 | Count | 11 | 3 | 6 | 20 |
| | % | 55.0% | 15.0% | 30.0% | 100.0% |

Overall, Section E had a 41% exact match agreement. While Groups A and D did not have any two-point size differences, Groups B and C proved troublesome. Both Groups B and C had 100% two-point disagreement for E1, the element that checked for multiple means of assessing course effectiveness. Group B also disagreed on E3, scoring 80% of reviews with a two-point size difference.

Looking at the reviews as a whole, Groups A, C, and D were in exact agreement over 60% of the time (see Table 14), with group 4 at nearly 75%.

**Table 14. Overall Size Difference per Group**

| | | Size of Difference | | | |
|---|---|---|---|---|---|
| | | .00 | 1.00 | 2.00 | Total |
| 1 | Count | 123 | 62 | 15 | 200 |
| | % | 61.5% | 31.0% | 7.5% | 100.0% |
| 2 | Count | 95 | 71 | 34 | 200 |
| | % | 47.5% | 35.5% | 17.0% | 100.0% |
| 3 | Count | 136 | 32 | 32 | 200 |
| | % | 68.0% | 16.0% | 16.0% | 100.0% |
| 4 | Count | 149 | 35 | 16 | 200 |
| | % | 74.5% | 17.5% | 8.0% | 100.0% |
| Total | Count | 503 | 200 | 97 | 800 |
| | % | 62.9% | 25.0% | 12.1% | 100.0% |

Group B, however, was under 50% exact agreement. Group B also had the highest two-size difference, sitting at 17%. There are many reasons why Group B was so far off in exact matches, including personal bias or inadequate training from the principle researcher. If exact match were only taken into account, the 62.9% would not be acceptable for reliability.

## Discussion

The overall results had numerous outcomes where there was a difference of two between the scores of the two reviewers. Many of the elements did not feed into opinion and bias (e.g., appropriate course rigor, high variety of learning pathways), but rather were based on whether the item was present or not (e.g., FERPA laws are posted, privacy policies). This would imply muddled course navigation, with some reviewers unable to find important course items. To help negate confusion, designers may use a standard template for their courses, much like those implemented at CDLI (Barbour, 2007b). CDLI designers insisted that navigation should be simple and minimal to avoid confusion (Barbour, 2007a). A basic document, with all the navigational procedures and important document locations outlined, for example, that would also be beneficial for students and instructors (Elbaum et al., 2002). Another option for a course would be to utilize unit checklists of expectations and indicate which should be effectively communicated to relevant stakeholders, including students (Huett et al., 2011).

On the other hand, there were yes/no or simple direction elements (e.g., use of copyright materials) that were close to a 100% exact match. These elements were able to show proper modeling of how to apply the element in a clear and easy to understand fashion. The use of proper modeling is important for a course, since this is a concern not just for instructors but also for the students (Barbour & Adelstein, 2013a). When expectations are modeled correctly, it helps to remove the guesswork behind the meaning (Barbour, 2007a). Explicit expectations and modeling can extend to having a pacing guide that provides a clear overview of the requirements (Huett et al., 2011), which can have a positive impact on all students – including exceptional learners (Keeler et al., 2007).

The elements that discussed use of appropriate multimedia and technology had some of the highest exact match scores, implying that the use of visual cues made rating the elements easier. Due to the unique medium of online courses, media should be used to enhance the course (Barbour, 2005; Barbour, 2007a). Courses that take advantage of multimedia foster student engagement (Barbour & Adelstein, 2013a), while those without multimedia may be bland and may make it difficult to sustain student interest (Huett et al., 2011). Notably, the overuse of multimedia can be a negative (Keeler & Horney, 2007), causing overstimulation.

However, when used appropriately multimedia visuals can offer structure for students (Keeler et al., 2007). Unfortunately, the ability to design various media elements is one of the most commons aspects that online teachers identified as requiring specific professional development (Barbour, Morrison, & Adelstein, 2014; Dawley, Rice, & Hinck, 2010).

## Conclusion and Implications

The iNACOL (2011) *National Standards for Quality Online Courses* were compared to current literature in phase one (see Adelstein & Barbour, 2016), while an expert panel helped redesign a revised rubric that looked specifically at the course design standards (see Adelstein & Babour, in press). Phase three had K-12 online educators and course designers apply the revised rubric to existing online courses. Four teams of two applied the rubric to five courses each, which allowed the researcher to review the rubric for percentage agreement. This allowed the researcher to test the inter-rater reliability of the revised rubric. While the overall results do not meet a reliability threshold, there are still lessons to take away from the initial field test. The number of instances where there was agreement (i.e., 62.9%) or a differences of only one (i.e., 25%), strongly outweighed the number of instances where the reviewers had a difference of two (i.e., 12.1%). There are individual elements throughout the rubric that met the reliability threshold (i.e., 90% or 80%), while other elements may need to be revised and/or improved. Other considerations, such as bias or elements that were difficult to determine (e.g., course rigor, course assessment), need to be taken into account for the next revision. Overall, the revised rubric provided a narrow focus on course design elements only, which reinforced ideas that are currently promoted in K-12 online education.

To discover the full potential of the revised rubric, further field tests are required to address the limitation of this initial study. One of the limitations was the small number of participants, which limited how inter-rater reliability could be calculated. Adding additional courses for each group, as well as expanding the number of groups, would allow for more reliable results. Another limitation was the use of the revised rubric with existing courses. While using existing courses was an appropriate place to begin the study, a true test would be to design multiple new courses utilizing the revised rubric. This would allow for future studies to compare designer and student opinions between courses created using the revised rubric with courses created using other standards.

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## Appendix A

### Overview

The overall goal will be to create a revised K-12 online course design rubric based on the iNACOL National Standards for Quality Online Courses. The first phase of research was to review the iNACOL standards based on the research literature to determine the level of support within the K-12 online learning literature, as well as the broader online learning literature. For the second phase, eight experts in the field from a variety of sectors examined the standards in regards to course design beginning with the results of phase one. This second phase resulted in a revised list of standards and a revised rubric. In the third phase, 3-5 teams of two reviewers on the application of the revised rubric from phase two.

### Volunteers Needed for Phase Three

- Educators with K-12 online teaching experience required
- Educators with online course design experience preferred

### Phase Three Outline

- Three to five teams of two reviewers
- Each reviewer will apply the rubric independently to the content of four or five online courses
- The rubric will be measured using inter-rater reliability

**Phase Three Training**

- Reviewers will receive the rubric and examples of a course review
- Each team will have a practice course to apply the rubric
- Using Google Hangout, each team and the researcher will review the practice course

**Phase Three Time Commitment**

- Each reviewer will have approximately two weeks to complete all four or five reviews
- Estimated time to review one course is approximately 60-90 minutes
- Estimated total time to review all courses is four to eight hours

**Items to Keep in Mind**

- It is asked that you do not share information regarding the revised rubric, results, courses, or any other aspect of the research
- Please contact the PI with any questions regarding training, commitment, or the review process

**Sample Application of Rubric**

While the main training will be come in the form of a group course review, this area will show examples of how to use the rubric.

*Example #1: Alignment with specific standards*

The first element in the revised rubric lists the following:

| SECTION A: CONTENT | |
|---|---|
| **Element** | **Further Explanation** |
| ***Subsection: Academic Content Standards and Assessments*** | |
| **A1: The course content and assignments are aligned with the state's content standards, common core curriculum, or other accepted content standards set for Advanced Placement courses, technology, computer science, or other courses whose content is not included in the state standards.** | **The content and assignments for the core courses are explicitly and thoroughly aligned to the credit granting state's academic standards, curriculum frameworks and assessments. Advanced Placement® courses must be approved with the College Board and other elective courses should be aligned to other nationally accepted content standards such as computer science, technology courses, etc.** |
| **A1 Rating (1 = not applied, 2 = partially applied, 3 = applied):** | |

Logging into the course up for review, there is an area labeled Standard Alignment. Looking further, the LMS shows how each of the course areas line up with the state standard ID code:

| Grade Level | State ID |
|---|---|
| 9 | N-Q.1. |
| 9 | N-Q.2. |
| 9 | N-Q.1. |
| 9 | N-Q.2. |
| 9 | A-CED.2. |
| 9 | A-CED.3. |
| 9 | F-BF.1(a) |
| 9 | A-CED.2. |
| 9 | A-REI.10. |
| 9 | F-IF.4. |
| 9 | F-IF.7(a) |
| 9 | N-Q.1. |
| 9 | F-IF.1. |
| 9 | F-IF.2. |
| 9 | F-BF.4(a) |
| 9 | F-BF.4(b) |
| 9 | F-BF.4(d) |
| 9 | F-IF.2. |
| 9 | F-IF.4. |
| 9 | F-LE.5. |
| 9 | F-IF.1. |
| 9 | F-IF.4. |
| 9 | F-IF.5. |
| 9 | F-IF.1. |
| 9 | F-IF.4. |
| 9 | F-BF.1(a) |
| 9 | F-BF.2. |
| 9 | F-IF.3. |

In this example, element A1 would receive a score of 3 (applied).

*Example #2: A complete overview and syllabus*

Some elements will have multiple items to look for, such as the one listed below:

| | |
|---|---|
| **A4: A complete course overview and syllabus, which clearly states course goals and objectives, are included. Course goals are consistent with course requirements and are measurable in multiple ways.** | **Within the learning management system the syllabus and overview objectives are present, explicitly stated, and can be easily found by students. The syllabus and overview objectives include: course objectives and student learning outcomes; assignments; student expectations; time requirements; required materials; the grading policy; teacher-student, teacher-parent contact policies; the intended audience; and the content scope and sequence.** |
| **A4 Rating (1 = not applied, 2 = partially applied, 3 = applied):** | |

Looking at the course in question, there is an included syllabus that clearly states course goals and objectives:

**Course Objectives**

Throughout the course, you will meet the following goals:

Reviewing the individual lessons, the goals are consistent with the requirements. However, when discussing a complete course overview, there are missing areas. The syllabus does not cover communication and contact policies. It might seem logical to have the teacher in charge of the course add this information on their own but as a reviewer you are strictly looking to see if the element was applied as listed.

In this example, element A4 would receive a 2 (partially applied).

*Example #3: Privacy policies*

Element A8 asks if privacy policies are posted:

| | |
|---|---|
| **A8: Privacy policies are clearly stated.** | **A policy statement is posted on the course provider's website and/or in the learning management system disclosing the organization's information gathering and dissemination practices.** |
| **A8 Rating (1 = not applied, 2 = partially applied, 3 = applied):** | |

Looking through the included documentation and the course itself, it is clear that the privacy policy is not listed. However, the element text mentions that the policy can be listed on the course provider's website. As mentioned in example two, your review is limited to strictly the course and the areas of the learning management system (LMS) you have access to. You will not have access to the provider's website.

In this example, element A8 would receive a 1 (not applied).

*Example #4: Students' needs and a variety of ways to learn*

There are elements that look at concepts that are slightly more abstract. A variety of methods, materials, and assessments is not as concrete as locating a syllabus. For example:

| | |
|---|---|
| **B1: Course design reflects a clear understanding of all students' needs and incorporates varied ways to learn and master the curriculum.** | **A variety of instructional and assessment methods, materials and assessments are used throughout the course, which allow students to demonstrate their achievement of the goals and objectives of the course.** |
| **B1 Rating (1 = not applied, 2 = partially applied, 3 = applied):** | |

Each unit in the course includes a warm-up, instruction, summary, assignment, and quiz. While each unit does show a variety of learning methods (interactive assignments, listening comprehension, reading, etc.), the format does repeat for all units. The assessment methods utilize multiple choice for the majority of the quizzes and exams during this course.

In this example, B1 would receive a 2 (partially applied).

*Example #5: Communication opportunities*

In some instances, you will need to look outside the course at the LMS itself to review the element:

| Element | Further Explanation |
|---|---|
| **B11: The course provides opportunities (e.g. student-instructor, student-student interaction, student-course content, student-LMS) for mastery and application of the material.** | **Learning activities and other learning opportunities are developed to foster student-instructor, student-student, and student-LMS interaction. The technology and course content encourage exchanges amongst the instructor and students through email, discussions, synchronous chats, simulations, lab activities and other group projects. Within the grading policy, guidelines defining student participation and expectations are provided.**<br><br>**Threaded and/or synchronous discussions are available for developing community, asking and finding answers to questions about the course, and around the content. Access is available to groups or individual students based on the purpose of the activity. Rules, roles, and expectations for the discussion are clear and posted within the discussion forum.** |
| **B11 Rating (1 = not applied, 2 = partially applied, 3 = applied):** | |

While the course does not have student-student or student-instructor interaction, the LMS does offer a communications area where email, group discussions, and chats can be set up by the instructor.

In this example, B11 would receive a 3 (applied).

## Appendix B

| SECTION A: CONTENT | |
|---|---|
| Element | Further Explanation |
| *Subsection: Academic Content Standards and Assessments* | |
| A1: The course content and assignments are aligned with the state's content standards, common core curriculum, or other accepted content standards set for Advanced Placement courses, technology, computer science, or other courses whose content is not included in the state standards. | The content and assignments for the core courses are explicitly and thoroughly aligned to the credit granting state's academic standards, curriculum frameworks and assessments. Advanced Placement® courses must be approved with the College Board and other elective courses should be aligned to other nationally accepted content standards such as computer science, technology courses, etc. |
| A1 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| A2: The course content and assignments are of sufficient rigor, depth and breadth to teach the standards being addressed. | The course components (objectives, assessments, instructional strategies, content, assignments and technology) are sufficiently broad, deep and rigorous such that successful students will have the knowledge and skills required by the standards upon completion of the course. |
| A2 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| A3: All course materials are available to students at course start. | Before the course begins, students are provided learning resources that are utilized during the online course. These could include textbooks, instructional materials links to browser plugins, and other software, which students must install. |
| A3 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Course Overview and Introduction* | |
| A4: A complete course overview and syllabus, which clearly states course goals and objectives, are included. Course goals are consistent with course requirements and are measurable in multiple ways. | Within the learning management system the syllabus and overview objectives are present, explicitly stated, and can be easily found by students. The syllabus and overview objectives include: course objectives and student learning outcomes; assignments; student expectations; time requirements; required materials; the grading policy; teacher-student, teacher-parent contact policies; the intended audience; and the content scope and sequence. |
| A4 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION A: CONTENT | |
|---|---|
| Element | Further Explanation |
| A5: Information is provided to students, parents and mentors on how to communicate with the online instructor and course provider. | Instructor information is provided to students with contact, availability, and biographical information. Information on how to contact the instructor via phone, email, and/or online messaging tools is provided within the contact information. If regular contact with the instructor is required as part of the course, clear expectations for meeting this requirement are posted within the course. |
| A5 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Legal and Acceptable Use Policies* | |
| A6: The course reflects multi-cultural education, and the content is accurate, current and free of bias or advertising. | The course creates equal educational opportunities for students from diverse racial, ethnic, social-class and cultural groups. The content is up to date, accurate and free of any bias. |
| A6 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| A7: Expectations for academic integrity, use of copyrighted materials, plagiarism and netiquette (Internet etiquette) regarding lesson activities, discussions, and e-mail communications are clearly stated. | A "Code of Conduct" including netiquette standards, copyright and academic integrity expectations is provided. |
| A7 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| A8: Privacy policies are clearly stated. | A policy statement is posted on the course provider's website and/or in the learning management system disclosing the organization's information gathering and dissemination practices. |
| A8 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION A: CONTENT | |
|---|---|
| Element | Further Explanation |
| *Instructor Resources* | |
| A9: Online instructor resources (e.g. assessment, assignment answers and explanations, notes) are included. Pedagogy behind the resources are shared with instructors. | Resources and notes, including assessments and access to answers, explanations to aid online instructors in teaching and facilitating the course are included within the learning management system. |
| A9 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION B: INSTRUCTIONAL DESIGN ELEMENTS | |
|---|---|
| Element | Further Explanation |
| *Subsection: Instructional and Audience Analysis* | |
| B1: Course design reflects a clear understanding of all students' needs and incorporates varied ways to learn and master the curriculum. | A variety of instructional and assessment methods, materials and assessments are used throughout the course, which allow students to demonstrate their achievement of the goals and objectives of the course. |
| B1 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Modules and Resources* | |
| B2: The course is organized by modules. Course design provides students with resources (e.g. alternate assignments, multimedia, simulations) that enrich course content. Each module includes an overview of the key objectives that incorporate a variety of activities, assignments, and resources to provide multiple learning opportunities for students to master the content. | The course is organized by modules that fall into a logical sequence. At the start of each module, an overview is posted describing the activities, assignments, assessments, and resources to be used to complete the key objectives. A variety of activities, assignments, assessments, and resources are used to provide students with different paths to master the content. A wide variety of supplemental tools are clearly identified and readily available as well. |
| B2 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Instructional Strategies and Activities* | |
| B3: The course instruction includes activities that engage students in active learning. | The course provides multiple opportunities for students to be actively engaged in the content that includes meaningful and authentic learning experiences such as collaborative learning groups, student-led review sessions, games, analysis or reactions to videos, discussions, concept mapping, analyzing case studies, etc. |
| B3 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION B: INSTRUCTIONAL DESIGN ELEMENTS | |
|---|---|
| Element | Further Explanation |
| B4: The course provides options for instructors to adapt learning activities based on student needs, allowing for the course and instructors to offer learning paths that engage in a variety of ways. | Students are given a variety of activities, assignments, assessments and resources to allow them to successfully master the content. If a student is unsuccessful with mastering a particular concept or is not challenged with the current module, the course content provides the instructor with suggestions they are able to use in order to provide additional remediation activities or alternative assignments. The instructor has access to adapt the course to meet the students' needs by providing additional assignments, resources and activities for remediation or enrichments for the course. |
| B4 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| B5: The course provides opportunities for students to engage in higher-order thinking, critical reasoning activities and thinking in increasingly complex ways. | Assignments, activities and assessments provide opportunities for students to elevate their thinking beyond knowledge and comprehension into the realm of analyzing situations, synthesizing information or evaluating an argument. Activities should include open-ended questions and encourage students to categorize and classify information. Opportunities for group work, decision-making and finding patterns should also be included in the course activities. |
| B5 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| B6: Readability levels, written language assignments and mathematical requirements are appropriate for the course content and grade-level expectations. | The course content should be written at appropriate readability levels for the grade level of the student audience and the grade level should be prominently explained within the course description. |
| B6 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION B: INSTRUCTIONAL DESIGN ELEMENTS | |
|---|---|
| Element | Further Explanation |
| B7: The syllabus promotes a student plan of work with attainable expectations. | The syllabus provides an academic outline for students in the course, which includes academic expectations at specific intervals. |
| B7 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| B8: Activities are designed to encourage students' individual interests and goals. | The course provides activities and assignments which are broad enough to allow for student connections. The connections are real world, such as personal interests, goals, or situations. |
| B8 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Communication and Interaction* | |
| B9: The course design provides opportunities for appropriate instructor-student interaction, including opportunities for timely and frequent feedback about student progress. | Learning activities and other opportunities are created to foster instructor-student interaction. Students receive timely and frequent feedback on their progress that emphasizes the intended learner outcomes. The feedback is highly individualized, detailed, and recommends specific, individualized improvement, and strategies to encourage continued progress toward mastery. |
| B9 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| B10: The course design includes explicit communication/activities/tools at multiple intervals throughout the course. The instructor confirms whether students are engaged and are progressing through the course. The instructor will follow program guidelines to address non-responsive students. | Instructor-student interactions begin early enough in the course to confirm active participation by all students and continue throughout the course. |
| B10 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION B: INSTRUCTIONAL DESIGN ELEMENTS | |
|---|---|
| Element | Further Explanation |
| B11: The course provides opportunities (e.g. student-instructor, student-student interaction, student-course content, student-LMS) for mastery and application of the material. | Learning activities and other learning opportunities are developed to foster student-instructor, student-student, and student-LMS interaction. The technology and course content encourage exchanges amongst the instructor and students through email, discussions, synchronous chats, simulations, lab activities and other group projects. Within the grading policy, guidelines defining student participation and expectations are provided.<br><br>Threaded and/or synchronous discussions are available for developing community, asking and finding answers to questions about the course, and around the content. Access is available to groups or individual students based on the purpose of the activity. Rules, roles, and expectations for the discussion are clear and posted within the discussion forum. |
| B11 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION C: STUDENT ASSESSMENT ELEMENTS | |
|---|---|
| Element | Further Explanation |
| *Subsection: Evaluation Strategies* | |
| C1: Student evaluation strategies are consistent with course goals and objectives, are representative of the scope of the course and are clearly stated. | The strategies used to assess students throughout the course are consistent with and aligned to what is presented in the course goals and objectives document posted within the course. |
| C1 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| C2: The course structure includes adequate and appropriate methods and procedures to assess students' mastery of content. | Assessment types are matched to the level of knowledge being tested. Both formative assessments (that inform and support learning) and summative assessments (that demonstrate mastery) are a part of the course structure. Student-selected assessment options, enabling learners to demonstrate mastery in different ways, are available. |
| C2 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Feedback* | |
| C3: Ongoing and varied quality assessments aligned with course learning outcomes are conducted throughout the course to guide student instruction. | The course provides quality and ongoing formative assessments to check for student understanding and to ensure they are prepared for the next lesson. Initial pre-tests may be provided to assess student readiness. |
| C3 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| C4: Assessment strategies and tools make the student continuously aware of his/her progress in class and mastery of the content. | Feedback tools and procedures are built into the course to allow students to periodically self-monitor their academic progress. |
| C4 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Assessment Resources and Materials* | |
| C5: Assessment materials provide the instructor with the flexibility to assess students in a variety of ways. | Multiple versions of tests, test banks and other resources that support alternative evaluation methods are available. |
| C5 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION C: STUDENT ASSESSMENT ELEMENTS | |
|---|---|
| Element | Further Explanation |
| C6: Suggested grading rubrics are provided to the instructor. The instructor will share a chosen grading rubric with students. | Rubrics, rationale, and/or characteristics are provided for each graded assignment. The instructor will make the final selection, which will then be shared with the students. |
| C6 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| C7: The grading policy and practices are easy to understand and clearly communicated to students and parents. | Grading policies and practices are easy to read and clearly defined and may include any penalties that may be assessed to grades and/or extra credit opportunities. |
| C7 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION D: TECHNOLOGY | |
|---|---|
| Element | Further Explanation |
| *Subsection: Course Architecture* | |
| D1: The course architecture permits the online instructor to add content, activities and assessments to extend learning opportunities where applicable. | The instructor of record for the course has access to make additions to the content within the learning management system (LMS). Access should allow the instructor to add content, activities, and assessments, where appropriate. The content from the "original" base course is left unchanged. |
| D1 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: User Interface* | |
| D2: Clear and consistent navigation is present throughout the course. | The course utilizes consistent and predictable navigation methods. Students can move logically and easily between areas of the course; color, graphics and icons are used to guide the student through the course; and a consistent look and feel exist throughout the course (consistent text, colors, bullets, and heading styles). Minimal training is required to navigate the course. |
| D2 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| D3: Rich media are provided in multiple formats for ease of use and access in order to address diverse student needs. | Course makes maximum use of the robust capabilities of the online medium and makes these resources available by alternative means (video, CDs, podcasts). |
| D3 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| D4: Technology is used to help increase self-efficacy of students. | Technology used in the course does not hinder the student's ability to accomplish the academic goals set forth by the syllabus. |
| D4 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Technology Requirements and Interoperability* | |
| D5: All technology requirements (including hardware, browser, software, etc.) are specified. | All technology requirements (including hardware, browser, software, etc.) are identified in the course description or during the student registration process and specified to students before they begin the course. |
| D5 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION D: TECHNOLOGY | |
|---|---|
| Element | Further Explanation |
| D6: Prerequisite skills, course tools, and course software are identified and appropriate in relation to the students and course. | All prerequisite technology skills, software, and online tools necessary for the specific class are identified in the course description or during the registration process and are shared with students before they begin the course. Tools should be appropriate, necessary for teaching and/or enriching the lesson, cross-platform and free to the student (or built into the course). |
| D6 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| D7: The course is designed to meet internationally recognized interoperability standards. | Interoperability technical standards allow sharing content among different learning management systems and ensure sharing of questions, assessments and results with others. |
| D7 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| D8: Copyright and licensing status, including permission to share where applicable, is clearly stated and easily found. | Course developers or publishers clearly state the copyright and licensing status of all content, including permission to share where applicable. Copyright and licensing information should be readily available, understandable and standardized in terms of use. |
| D8 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Accessibility* | |
| D9: Course materials and activities are designed to provide appropriate access to all students. The course, developed with universal design principles in mind, conforms to the U.S. Section 504 and Section 508 provisions for electronic and information technology as well as the W3C's Web Content Accessibility Guidelines (WCAG 2.0). | Through the use of web accessibility evaluation tools, all web pages required for students to engage in online education (e.g., registration, library, course materials, grade retrieval) are validated to conform to accessibility standards. NIMAS is used to ensure textbooks and other instructional materials are accessible to the visually impaired. |
| D9 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION D: TECHNOLOGY | |
|---|---|
| Element | Further Explanation |
| *Subsection: Resources and Materials* | |
| D10: Student information remains confidential, as required by the Family Educational Rights and Privacy Act (FERPA). | Defined course procedures for reporting grade and student information comply with the Family Educational Rights and Privacy Act (FERPA) http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html) posted within the course. |
| D10 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |

| SECTION E: COURSE EVALUATION AND SUPPORT ELEMENTS | |
|---|---|
| Element | Further Explanation |
| *Subsection: Accessing Course Effectiveness* | |
| E1: The course provider uses multiple ways of assessing course effectiveness. | A combination of student, instructor, content experts, instructional designer and outside reviewers may be used to evaluate the course for effectiveness. A variety of methods may be used including course evaluations, student completion rates, satisfaction surveys, peer review, teacher and student feedback, and student performance on in-course as well as state or national assessments. University researchers have been encouraged to conduct studies on the effectiveness of the course. |
| E1 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Course Updates* | |
| E2: The course is evaluated using a continuous improvement cycle for effectiveness. The findings are used to improve and update the course content as needed. | The provider indicates the frequency of course evaluations, whether reviews are conducted internally or externally, and how the provider uses evaluation results to improve courses. Courses should be reviewed to keep the content current, engaging, and relevant. |
| E2 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |
| *Subsection: Instructor and Student Support* | |
| E3: Technical support and course management assistance are provided to students, the course instructor, and the school coordinator. | Online technical help and support should be available any time. If 24/7 support is not available, support hours are clearly posted within the course or on the online program's website and a maximum response time is noted. Assistance may take the form of Frequently Asked Questions, training resources, mentors, or peer support. |
| E3 Rating (1 = not applied, 2 = partially applied, 3 = applied): | |