Utilizing the AECT Instructional Design Standards for Distance Learning

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Abstract

Amid the continued growth of online learning—and concerns about its quality—a number of different groups have moved to establish tools, such as rubrics and standards for online course quality. This paper highlights the development of the *Instructional Design Standards for Distance Learning* by the Association for Educational Communications and Technology. AECT is the leading international professional association for the scholarly study and practice of instructional design. Also featured is a comparison with other popular tools and suggestions for use of the AECT Standards

Introduction

With approximately 30% of college and university students nationwide enrolled in one or more online courses, it is safe to say that distance learning has become fully institutionalized into the fabric of U.S. higher education (Piña, 2008; Seaman, Allen & Seaman, 2018). In spite of the national trend of decreased enrollments at colleges and universities during the past few years, enrollments in online courses have continued to increase (National Center for Education Statistics, 2019).

Notwithstanding the growing ubiquity of distance learning, and an ever-increasing body of research indicating that students can learn well online (e.g. Means, Bakia & Murphy, 2014; Means, Toyama, Murphy, Bakia & Jones, 2009), skepticism regarding its quality persists. Opinion polls continue to report that many postsecondary faculty members feel that learning online is inferior to learning in a traditional classroom (Jaschik & Lederman, 2018).

Advances in distance learning research and practice, and efforts to address the elusive concept of "quality," have inspired professional communities, organizations and vendors to establish quality standards and rubrics for online courses. Standards "provide people and organizations with a basis for mutual understanding, and are used as tools to facilitate communication, measurement, commerce and manufacturing" (CEN-CENELEC, 2018, p.1). Popular distance learning standards and rubrics include: Quality Matters (Maryland Online, 2017), the Open SUNY Course Quality Review (OSCQR) rubric (Online Learning Consortium, 2018; Open SUNY, 2018); the OLC Quality Scorecard for Online Programs (Shelton, 2010), the iNACOL Standards for Quality Online Courses (iNACOL, 2011) and Blackboard's Exemplary Course Program (Blackboard, 2017).

AECT Instructional Design Standards for Distance Learning

The Association for Educational Communications and Technology (AECT) is the most established international professional association for instructional design and technology (www.aect.org). It was established in 1923 as the Department of Visual Instruction of the National Education Association and later rebranded as the Department of Audiovisual Instruction (DAVI), with an initial focus upon the use of audio-visual technologies in classroom instruction (Reiser & Dempsey, 2017). As a result of evolution and progress in the areas of learning theory, communication technologies and an emerging field of instructional design, the Association for Educational

Communications and Technology emerged in 1970 as an independent professional association (AECT, 2001; Molenda, 2008).

AECT launched the Journal of Instructional Development, the first scholarly journal dedicated to instructional design in 1977 (AECT, 2019) and the association maintains a position of leadership in research and practice in the field with its five journals: Educational Technology Research and Development, Tech Trends, the Journal of Applied Instructional Design, the Journal of Formative Design in Learning, and the International Journal of Designs for Learning.

How the AECT Standards Came to Be

During a series of discussions between AECT members and association staff, a recurring topic was that online courses at colleges and universities were being developed without the benefit of research-based instructional design guidelines. A small task force of AECT members researched and produced a first draft of ten instructional design standards for distance learning. An edited version of the standards was approved by AECT's Executive Committee, by the board of its Division of Distance Learning, and by the association's full Board of Directors (Harris, 2017a).

Once approval has been obtained by the association's Directors, several leading AECT member scholars and practitioners were invited to write chapters providing evidence and justification for each of the ten standards. Those who contributed chapters were Saul Carliner, Yuan Chen and David Price (2017), Peggy Ertmer, Judith Lewandowski and Jennifer Richardson (2017), Phillip Harris (2017a; 2017b); Michael Molenda (2017), Gary Morrison (2017), Jennifer Morrison and Steven Ross (2017), Anthony Piña (2017b; 2017c), Wilhelmina Savenye and Yi-Chun Hong (2017), and Michael Simonson (2017).

Each chapter underwent a double-blind peer review process by a combination of faculty members from graduate programs in instructional design and technology and practicing professional instructional designers. Final corrected drafts of the standards chapters and a set of rubrics for their application (Harris, 2017b) were compiled into an edited book, *Instructional Design Standards for Distance Learning* published by AECT (Piña, 2017a). Members of AECT have access to a free e-book version of the book through the publications area of the AECT website (www.aect.org).

What are the Standards?

Standard 1: Purpose. Effective course design begins with a clearly articulated purpose. This is the standard to which all other standards must align. Purpose may be thought of as two-dimensional: institution or instructor and student. The design should include both the purpose of the course as envisioned by the institution or instructor and the purpose as viewed by the student. As the purpose is articulated through goals and objectives, collaboration between instructor and student will set a firmer foundation than can be achieved through a one-dimensional purpose statement.

Standard 2: Assumptions. Course design must take into account assumptions that shape the purpose and subsequent course development. Most assumptions are based on students' prior knowledge and established understandings and skills. Articulating these content assumptions provides a starting point for new learning. Assumptions in the case of online learning also encompass students' ability to use delivery technology.

Standard 3: Sequence. Learning opportunities must be sequenced in a manner that promotes efficient knowledge acquisition consistent with the prior-knowledge assumptions. Various models of sequencing—linear, spiral, scaffold, etc.—should be considered, and the course design should incorporate those strategies best suited to the content within the constraints of online delivery.

Standard 4: Activities. Learning is achieved through activities both passive (reading, listening, viewing) and active (experimenting, rehearsing, trying). Activities should be chosen that best suit the content, students' levels of knowledge, experience, and ability, and online delivery constraints, particularly accommodating synchronous, asynchronous, and mixed course participation. Student self-selected or self-developed learning activities should be incorporated along with instructor-selected and instructor-developed activities, consistent with a two-dimensional purpose.

Standard 5: Resources. A range of resources should be articulated to foster deep learning and extend course-centered experiences and activities. Resources should be multimodal to accommodate students' interests, understandings, and capacities, consistent with course content and technological accessibility. Resources should allow students to go beyond the constraints of the formal course structure to engage in self-directed, extended learning.

Standard 6: Application. Consistent with providing for active learning, students should have integral opportunities within the course design to apply new learning. Effective course design incorporates opportunities to practice newly acquired understandings and skills, both independently and collaboratively. Online collaborative application opportunities should be developed using social media, and offline collegial groups also should be structured whenever physical proximity of students affords this opportunity.

Standard 7: Assessment. Regardless of the model of sequencing learning opportunities, the sequence should include points of assessment for purposes of feedback and review, with instances of re-teaching as necessary for students to acquire full understanding. Formative assessment, whether formal, informal, or incidental, allows teachers and students to give feedback to one another and to review the operationalized design in order to revise the course design based on students' input with regard to knowledge acquisition and effective use of new understandings and skills.

Standard 8: Reflection. Effective course design must include opportunities for reflection as an extension of the Feedback/Review/Reteach standard. Reflection involves both instructor self-reflection and student self-reflection related to achievement of the purposes that have been articulated as the basis for the course. Such reflection is intended to deepen the learning experience and may serve as reiteration of purpose at key points during the course.

Standard 9: Independent Learning. Effective course design incorporates opportunities for independent learning, both instructor- and self-directed. Online course development, particularly in the asynchronous mode, should epitomize independent learning, which should include opportunities for feedback, review, and reflection—all of which should resonate with the purpose.

Standard 10: Evaluation. Course evaluation must be purpose-driven. Alignment with the purpose should be threefold: a) based on acquisition of new knowledge, understandings, and skills; b) based on instructor self-evaluation; and c) based on student self-evaluation. Multidimensional evaluation offers a fully articulated basis for judging the success of the course and the students as well as providing information that can help shape future iterations of the course.

How the AECT Standards Compare to Other Tools

The International Board of Standards for Training, Performance and Instruction (ibstpi), Maryland Online/Quality Matters, The Open SUNY Center for Teaching Excellence, the International Association for K-12 Online Learning (iNACOL) and Blackboard, Inc. have developed widely-used and helpful tools for those concerned about online course quality. These are compared with the AECT Instructional Design Standards for Distance Learning in the table below.

Instructor Competencies: Standards for Face-to-Face, Online & Blended Settings	International Board of Standards for Training, Performance and Instruction (ibstpi)	Professional development and evaluation of instructors	Instructors, academic leaders, human resource development and professional development personnel
Instructional Designer Competencies: The Standards	International Board of Standards for Training, Performance and Instruction (ibstpi)	Professional development and evaluation of instructional designers	Instructional designers; ID managers; academic leaders
Quality Matters Quality Matters Higher Education Course Design Rubric	Maryland Online/ Quality Matters	Formative evaluation of online course quality	Course evaluation reviewers or teams; instructional designers, instructors developing courses
OSCQR Course Quality Review Rubric	Open SUNY Center for Teaching Excellence. Also distributed by Online Learning Consortium (OLC)	Formative evaluation of online course quality	Course evaluation reviewers or teams; instructional designers, instructors developing courses

INACOL National Standards for Quality Online Courses	International Association for K-12 Online Learning (iNACOL)	Help constituent groups make informed decision regarding blended and online learning	Educators administrators and policymakers
Blackboard Exemplary Course		Summative evaluation of online course quality	Blackboard Exemplary Course Competition
Instructional Design Standards for Distance Learning	**Association for Educational Communications and Technology (AECT)**	**Provide research-based guidelines for developing distance learning courses**	**Instructors developing courses; instructional designers; educational leaders; course reviewers**

The ibstpi standards emphasize competencies that can be demonstrated by instructors, instructional designers, evaluators, training managers and online learners (Klein, Spector, Grabowski & de la Teja, 2004; Kozalka, Russ-Eft, & Reiser, 2013). The Quality Matters Higher Education Course Design Rubric and the OLC OSCQR Course Design Review Scorecard are comprehensive tools providing a large number of assessment items by which the features of online and blended/hybrid courses can be evaluated formatively for improvement of summatively for judgment and awards (Blackboard, 2017; Maryland Online 2017; Online Learning Consortium, 2018). The iNACOL Standards (2011) are intended for use in K-12 schools, but have much in common with the aforementioned standards and rubrics.

The AECT *Instructional Design Standards for Distance Learning* are intended to inform and provide guidance before, during and after the design and development of online and blended/hybrid courses. They can be used in tandem with other tools to assure that empirically sound principles of learning and instruction are "baked" into courses designed for learners at a distance. There is also a set of accompanying sample rubrics that have been developed for practical application of the standards (see the next section).

Utilizing the AECT Standards

A set of rubrics has been developed to provide guidance for instructional designers and others who wish to incorporate the Instructional Design Standards for Distance Learning (Harris, 2017b).

Standard 1: Purpose.

Purpose statement is multi-dimensional.	Statement incorporates multiple viewpoints and clearly articulates purpose as specifically applicable to the institution, the instructor, and the student.	Statement recognizes multiple viewpoints and is generally applicable to the institution, the instructor, and the student.	Statement is generally applicable but does not adequately address one or more viewpoints among the institution, the instructor, and the student.
Purpose statement incorporates collaboration.	Statement is made through collaboration between the instructor and the student.	Statement is a generalized reflection of instructor and student views.	Statement is not reflective of collaboration.
Goals and objectives are articulated.	Statement includes comprehensive elaboration through specific goals and objectives that are coherent and fully articulated.	Statement includes basic goals and objectives that are comprehensive and at least partially detailed.	Goals and objectives are missing or only partially developed.

Purpose is aligned with external requirements.	Statement aligns fully with external requirements, such as state or federal standards, and alignment is detailed and specific.	Statement generally aligns with external requirements with at least partial one-to-one correspondence.	Statement either does not fully align with external requirements, or there is little or no evidence that such requirements have been considered.

Standard 2: Assumptions.

Students' prior knowledge	Students' prior knowledge is assessed in detail and such information is used as a primary factor to shape course design.	Students' prior knowledge is assessed in general terms and such information is used to help shape course design.	Students' prior knowledge is assumed rather than assessed.
Curricular expectations	Curricular expectations are clearly articulated and incorporated into the course design.	Curricular expectations are generally stated and used to shape the course design.	Curricular expectations are unstated or non-specific.
Institutional requirements	Institutional requirements are clearly articulated and incorporated into the course design.	Institutional requirements are generally stated and used to shape the course design.	Institutional requirements are unstated or non-specific
Technology skills	Students' ability to use required technology is assessed and such information is a factor in course design.	Students' ability to use required technology is basically assessed and used to help shape course design.	Students' ability to use required technology is assumed rather than assessed

Standard 3: Sequence.

Sequence is consistent with prior knowledge.	Students' prior knowledge assessment is fully incorporated into the learning opportunities sequence.	Students' prior knowledge assessment is used in general terms to sequence learning opportunities.	Students' prior knowledge is not a major factor in determining the sequence of learning opportunities.
Sequence is varied in accordance with learning needs.	Various models of sequencing are chosen, based on the student's learning needs.	The sequencing model is chosen based on the student's learning needs but is relatively static.	The sequencing model is based on factors other than the student's learning needs.
Sequence compliments content.	The sequence models are well matched to content for optimal learning.	Sequencing generally compliments content.	Sequencing is determined independent from content.
Sequence optimizes delivery.	Sequencing is determined in order to provide a best fit within online delivery constraints.	Online delivery constraints are taken into consideration when choosing sequence.	Online delivery constraints are not well matched to chosen sequence.

Standard 4: Activities.

Activities are varied.	Activities combine a variety of passive and active forms of engagement.	Activities combine some forms of active and passive engagement.	Activities tend to be mostly limited to either active or passive engagement, not both.
Activities are matched to knowledge, experience, and ability.	Activities are chosen based on the student's specific level of knowledge, experience, and ability.	Activities generally suit the student's level of knowledge, experience, and ability.	Activities tend to be predetermined, rather than specifically related to the student's knowledge, experience, or ability.
Activities are self-selected or self-developed by the student.	Activities balance self-selected/self-developed options and instructor-selected/instructor-developed options.	The student's self-selected/self-developed activities are given consideration and included whenever possible.	Instructor-selected/instructor-developed activities dominate, with little accommodation for the student's self-selected/self-developed activities.
Activities match online delivery constraints.	Activities are highly adaptable and provide for synchronous, asynchronous, and mixed delivery.	Online delivery constraints are taken into consideration when choosing activities, and synchronous and asynchronous activities are included whenever possible.	Online delivery constraints do not accommodate both synchronous and asynchronous activities.

Standard 5: Resources.

Resources foster deep learning.	Resources offer multiple, rich avenues to deepen understanding and extend learning beyond course content.	Resources are varied and provide avenues to deepen and extend course content learning.	Resources tend to be limited to course-centered content.
Resources are multimodal.	Resources are based on the student's specific understandings and capacities of knowledge, experience, and ability.	Resources generally suit the student's level of knowledge, experience, and ability.	Resources are general, rather than specifically related to the student's knowledge, experience, or ability.
Resources are consistent with technological accessibility.	Resources fully take into account technological accessibility to ensure that the student can use the resources both within the course structure and independently.	Resources generally recognize limits of technological accessibility and ensure that the student can fully use the resources.	Resources do not fully take into account technological accessibility, making some resources difficult or impossible for the student to use.

Resources encourage self-directed learning.	Resources are consistent with course content and provide avenues for the student to engage in self-directed, extended learning.	Resources are consistent with course content and at least some offer ways the student can extend learning through self-direction.	Resources are consistent with course content but may be difficult or impossible for the student to use in independent learning.

Standard 6: Application.

Application is integral to the course design.	Application offers multiple, rich opportunities to deepen understanding through practice of newly acquired skills and knowledge.	Application provides varied opportunities to deepen and extend course content learning through practice.	Application tends to be limited or isolated from course content.
Application provides for collaborative and independent learning.	Application provides many opportunities and encourages the student to work with others and independently to practice new skills and knowledge.	Application offers multiple opportunities for independent and collaborative practice of new skills and knowledge.	Application is limited and includes few opportunities for either collaboration or self-directed learning.
Application includes feedback.	Application includes rich feedback from the instructor and multiple student peers.	Application incorporates instructor and peer feedback.	Application includes only limited feedback.
Application incorporates collaboration outside the course setting.	Application is enriched through multiple opportunities for the student to interact with peers outside the course setting, using face-to-face as well as electronic modes of communication.	Application incorporates collegial interaction, both face to face and through electronic communication.	Application includes few if any opportunities for collegial collaboration outside the class setting

Standard 7: Assessment.

Assessment is formative.	Assessment is an integral part of the learning sequence to ensure that the student's acquisition of knowledge and skills is optimal.	Assessment provides for logical points of feedback and review over the learning sequence.	Assessment is limited or tends to be summative rather than formative.

Assessment is formal, informal, and incidental.	Assessment provides multiple opportunities for formal and informal review as well as encouraging incidental review whenever the need arises.	Assessment incorporates both formal and informal review and allows for incidental review when the need arises.	Assessment tends to be one-dimensional, either formal or informal rather than both.
Assessment fosters review of operational design.	Assessment is key to reviewing both the student's learning and the operational design of the course, which is flexible and subject to adjustment.	Assessment is used to review not only the student's learning but also the operational design of the course.	Assessment is limited to the student's learning.
Assessment makes use of student input.	Assessment is largely driven by student input in order to ensure optimal learning through operational redesign of the course on an ongoing basis.	Assessment incorporates the student's input in the revision of course design as needed.	Assessment is largely instructor-directed or instructor-determined.

Standard 8: Reflection.

Reflection is an integral part of the operational design.	Reflection is integrated into the course design so that it occurs naturally at significant intervals as well as spontaneously when the need arises.	Reflection is included at regular intervals in the course design.	Reflection seems to be an after-thought, if it is included at all
Reflection extends feedback and review.	Reflection provides a regular means of extending feedback and review activities and contributes to reshaping the operational design.	Reflection actively extends feedback and review activities.	Reflection may extend the feedback and review activities but that does not seem to be its central purpose.
Reflection includes both instructor and student self-reflection.	Reflection offers multiple opportunities for instructor and student self-reflection, both shared and individual.	Reflection incorporates opportunities for instructor and student self-reflection.	Reflection, when it occurs, is limited.
Reflection deepens learning.	Reflection is regularly employed as a means of deepening learning at all stages.	Reflection is consciously used to deepen significant learning experiences.	Reflection only serendipitously deepens learning.

Standard 9: Independent Learning.

Independent learning is incorporated into the operational design.	Independent learning is as important in the operational design as structured learning.	Independent learning opportunities are regularly occurring in the operational design.	Independent learning occurs or is encouraged only serendipitously or occasionally.
Independent learning includes feedback, review, and reflection.	Independent learning, through feedback, review, and reflection, helps to direct or redirect the course's operational design.	Independent learning parallels the operational design in terms of feedback, review, and reflection.	Independent learning is unstructured
Independent learning is included in both synchronous and asynchronous activities.	Independent learning is incorporated in both synchronous and asynchronous activities but is particularly emphasized in asynchronous activities.	Independent learning is encouraged in both synchronous and asynchronous activities.	Independent learning, if it occurs, tends to happen only during either synchronous or asynchronous activities but not both.
Independent learning is both instructor- and self-directed.	Independent learning is equally valid and essential whether instructor- or self-directed.	Independent learning includes both instructor- and self-directed learning activities.	Independent learning, if it occurs, is either instructor-directed or self-directed but not both.

Standard 10: Evaluation.

Evaluation is purpose-driven.	Evaluation is fully aligned with the stated purpose(s) of the course and based on multiple factors; evaluation is used to shape future iterations of the course.	Evaluation is aligned with the course purpose(s).	Evaluation is only somewhat related to the stated purpose(s) of the course.
Evaluation is based on student acquisition of new knowledge, understandings, and skills	Evaluation incorporates multiple factors to judge the success of the student's acquisition of new knowledge, understandings, and skills.	Evaluation is multidimensional and fully takes into account the student's acquisition of new knowledge, understandings, and skills.	Evaluation does not fully incorporate an accounting of the student's acquisition of new knowledge, understandings, and skills.
Evaluation is based on instructor self-evaluation.	Evaluation is based on the instructor's self-evaluation as a co-equal element in the multidimensional evaluation of the course and its design.	Evaluation incorporates the instructor's self-evaluation of the course and its operational design.	Evaluation does not include or only partially considers instructor self-evaluation.

Evaluation is based on student self-evaluation.	Evaluation is based on the student's self-evaluation as a co-equal element in the multidimensional evaluation of the course and its design.	Evaluation incorporates the student's self-evaluation of the course and its operational design.	Evaluation does not include or only partially considers student self-evaluation

Conclusion

The *Instructional Design Standards for Distance Learning* represents a unique and notable entry into the design and development of online learning by the leading international association for the study and practice of instructional design and technology. The authors actively solicit feedback regarding the experiences of those who use the standards and rubrics and who have recommendations for their utilization and improvement. Feedback can be sent to AECT@aect.org.

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