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Re-envisioning an Instructional Design System for Higher Education: A Case Study for Online Course Curriculum Development

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Introduction

Instructional design has significantly evolved in recent years. Currently, more than 20 different instructional design models or theories have been developed for different situations, environments, and/or sectors. After World War II, Edgar Dale (1946) established the foundation of instructional design by creating a methodology for organizing instructional hierarchy which, helped inform the more recent empathic and integrated learning design framework (2009). Models such as ADDIE, Kemp, Dick and Carey, ASSURE, ARCS and Goal Based Scenarios have have been commonly referred to as traditional or frequently referenced as instructional design models or theories. These models are still relevant to online course design; however, these traditional models or theories seem to be designed in a linear fashion with limited feedback loop during the design process. The ADDIE Model and Kemp Design Model are sequential, which start with analysis, and designers are expected to proceed in specific steps towards evaluation. These models have long been regarded as the most practical instructional design theory for new lesson or course development.

In the late 1970s through the early 90s, many scholars focused on how students' learn and how learning process affects course development. These scholars developed theories such as Algo-Heuristic Theory, Conditions of Learning and Elaboration Theory, which were designed to incorporate activity that facilitates students' reception of knowledge in to the lesson design process. While students' learning is an important design aspect, there are other components such as tool compatibility and other considerations that go into online course development that might be ignored by such models.

The remaining instructional design theories reviewed in this paper include component-based or are dynamic in nature. Some of the well-known theories or models include 4C ID Model, Component Display Theory, Hannafin-Peck Model and Discovery Learning. These theories attempt

to break the course development process into various tasks that might occur simultaneously and are not required to follow any specific order. This dynamic approach is more realistic when it comes to curriculum design but lacks the emphasis on accreditation standards, program requirements and institutional goals.

A majority of the design models are very well suited for face-to -face delivery, lesson-based, or course development where the faculty or trainer is the designer. For online curriculum development at the program-level or course-level, there are factors that might prevent designers from following the traditional design models such as ADDIE to their process. Most online instructional design models are designed for instructors or trainers who are designing for their own course and do not consider other stakeholders in the development process. There is a lack of appropriate models for instructional designers who are working with the faculty and program coordinators to design course-level or program-level curriculum. Older models follow linear development, whereas, online education needs a multistage approach that supports simultaneous development and incorporates the priorities of all those involved in the curriculum development process.

Higher education institutions traditionally consist of several schools or colleges with continuing education or extension units. Online instructional designers can be housed in various campus divisions such as Academic Affairs, Online Campus, Global Campus, Information Technology, or locally at the college/department level or continuing education division. The authors of this case study come from a campus with over 15,000 FTE, with more than 54% of students taking at least one or more online/hybrid course, and 25% of students are fully online or hybrid degree program seeking students. The Office of the Online Campus is a part of the Academic Affairs and serves close to 1,000 faculty who are required to use a learning management system to place all course materials.

Often times our campus' limited design resources have to meet the overwhelming demand of faculty who are teaching online courses while considering the requirements from Chancellor's Office, as well as quality assurance (QA) transformation initiatives. These QA initiatives have been instituted for the past three years and currently have over 100 faculty committed and almost 500 grants completed to resdesigning their online or hybrid courses to meet quality standards. All Online Instructional Designers/ eLearning Specialists are working with more than 20 courses in multiple programs at any one time. This significant load requires project management skills and additional training on QA facilitation.

In addition to redesigning courses to meet quality standards, Online Instructional Designers/ eLearning Specialists are working with faculty to convert their courses from quarter to semester courses. California State University- East Bay started the quarter to semester conversion process in 2014 and will start its first semester courses in Fall 2018. The implication of this conversion is that all programs and courses need their curricula redesigned, including online and hybrid courses. Previously, the University did not have a comprehensive system to handle such a monumental task until the creation of the Office of the Online Campus. The quarter to semester conversion was a great opportunity for the Online Campus team to develop an instructional design model that works for Online instructional design team, program, and faculty members. Faced with increased design projects and converting from quarters to semesters, the team identified a need to have a better model or process to follow for assisting the curriculum development projects that benefits learning and teaching online. The Online Campus Design Team provides the required services and resources to faculty and students and has been made a priority in recent Cal State East Bay Faculty Senate approved an Online &

Hybrid Course Policy, which make the quality assurance and training to be the important tasks to the Online Campus.

At the very beginning of our existence, the Online Campus frequently used elements from multiple instructional design models to meet the needs of our diverse campus. However, the need for a more comprehensive model that supported online instructional designers became apparent during the three years of online and hybrid transformation initiatives. Faculty must meet deadlines for each step of the course redesign process based on best practices and the Quality Matters rubric. Today, the University has committed close to $750,000 to course redesign efforts and a team of four Online Instructional Designers/ eLearning Specialists that play various roles and take on additional project managers, course builders, program coordinators and liasons with outside vendors. An additional four course builders were hired to facilitate such tasks as well. Between 2015 and 2017, there were seven cohorts of faculty members who received the course redesign quality assurance grants and many others who also worked with the instructional design team without grants. The quality transformation grant requirements included participating in a quality assurance workshop, collaborating with online instructional designers to redesign courses, and getting their semester courses certified by Quality Matters, Inc. Each one of these mini grants is an opportunity for the design team to fine tune our best practices and ensure that the model works well in our highly demanding work environment.

With the challenges and concerns of current models and theories, the authors have developed a system that works for our complex environment over the last three years. A final comprehensive system (Figure 1) came to light after numerous iterations and is based on previous research, observational evidence, and lessons learned that is more suited for the online learning environment. It is the authors' intent to share this system with other designers in the field and exchange other best practices.

System

The evolution of the proposed online course redesign system took almost three years to flourish. The process of developing and finalizing such a system is an organic process that might be considered as an evolving life cycle. The system in this white paper combines the previously discussed linear theories or models while considering students learning and various components that need to be accomplished during the dynamic design process. In addition to the traditional instructional design schools of thought, a successful or well-developed curriculum requires a team approach with a support team that is composed of system administrators, administrative assistants, and/or special projects coordinator to provide all necessary services in order to complete the course redesign process in a timely manner.

Reflecting on what have been done over the last three years, our system is a dynamic and organic evolution that can be adapted and applied for other universities' online course development team. This system maintains the spirit of System Theory, ADDIE, ASSURE, and other design models, while considering the ongoing life cycle of the course design process and development into a sustainable re-growth model. To illustrate this process, we have compared this system to a plumeria flower, where the flower petals blossoming represents the life cycle of the course development over time. The sepal represents our design team's individualized care/efforts, support, services, and our proactive approach to the course rebuild or re-design. The five petals represents the major system design components that we have re-envisioned as the focal point of this paper. Components of the system include status, opportunities, alignment, development, and reflection. All of these components are in no particular sequence and might occur simultaneously.

Status

When online instructional designers are assigned or receive a project request, a series of meetings are usually scheduled. These meetings with faculty or program chairs involve reviewing the course inventory, such as course description, objectives, course materials, assessments, desired teaching strategies, project outcomes, logistics, prior student feedback, etc. Faculty and online instructional designers will also review some of the subject matter restrictions including learning outcomes, program requirements, credential requirements, accreditation standards and funding sources. In these meetings, the faculty member and online instructional designer will discuss what has been designed and developed between meetings, what worked and did not work. By discussing and analyzing any feedback, evaluation data, or anecdotes from the faculty member, online instructional designers can help identify areas that can be improved or expanded throughout the duration of the design project.

Opportunities

In previous instructional design models, linear approaches are generally more suitable for "faculty as the designer" at lesson-level design. At most major universities with a large number of online courses, the collaboration and components of the online course design process may all happen simultaneously. However, in this system the status, opportunities, and other components might occur at the same time allowing for multiple considerations.

Typically, faculty may come in with concerns related to student performance, engagement, and use of educational technology tools in the course. For example they might say, "My students were not able to answer the essay question in the final exam correctly" or " They didn't know the material that they were supposed to know." Online instructional designers use this information to inform the opportunities that could enhance the course or project. Addressing the faculty concern about student

performance, the online instructional designers might begin by reviewing the assessments in the course to see if these are aligned with the course materials and the course objectives. Online instructional designers incorporate ideas, required standards, and other requirements into an organized format or project plan that is suitable for student learning and the desired project outcome.

Depending on the results of the status review, the online instructional designer will discuss ideas, design concepts, tools that are available on campus, online teaching strategies, and best practices with the faculty. Faculty are then presented with areas for improvement, program area requirements, and possible tools/pedagogy that can be applied to their course. These simultaneous exchange of ideas between the faculty and the online instructional designers in assessing the teaching and learning experience is the central point for this opportunity component.

Alignment

Traditionally, instructional design models focus on the alignment of the course and unit level objectives; however, this proposed system component also considers the program-level requirements and accreditation alignments. It also addresses the alignment to the timeline of the project, technical standard operating procedures set forth by the department and the Online Campus, and the funding requirements by the Chancellor's office or University.

At a high level with quality assurance standards, university and program requirements must be considered and analyzed in order to begin the development process. Some of our program-level accreditation alignment includes programs such as Education and NCATE, Nursing and the BRN, and Business and the AACSB, which must be incorporated at the course level. Alignment to the program accreditation requirements, program goals, institutional learning outcomes, and national quality online course design standards must be the foundation of all course development. To ensure

quality assurance throughout the online course design process, alignment with the standards from the Quality Matters Higher Education Rubric, assures that all materials, activities, assessments and course level objectives are contributing to student success. Faculty may come in having heard about someone in their department using a new technology and is excited to implement it in their class; however, careful consideration must be taken when adding new technology to the course. Online instructional designers work with faculty to ensure each tool that is being used is directly aligning with the course objectives and is not creating a barrier to student success.

Development

Instructional design frequently evolves when instructional technology advances with new tools and ideas. Such innovation happens when the online instructional designers are collaborating with faculty, project team members, campus entities, and outside vendors. In this component design team begin to see the marrying of new tools and ideas with pedagogy that is influenced from our reflections. At Cal State East Bay, the design team takes on projects as part of a pilot and brings these new ideas to fruition. This has included projects that involve adaptive learning tools, artificial intelligence, and high impact practice. Part of the development component requires that the instructional design team consistently retrain themselves and take these new ideas and bring faculty courses to the forefront of the development process.

The development component also includes the hands-on course building process, quality assurance alignment, brainstorming ideas, and coordinating with various institutional entities. A majority of the instructional design models focus their efforts primarily on the development component, while the system presented here, incorporates the additional elements that are vital the to instructional design process and highlights that these components are constantly evolving. No matter

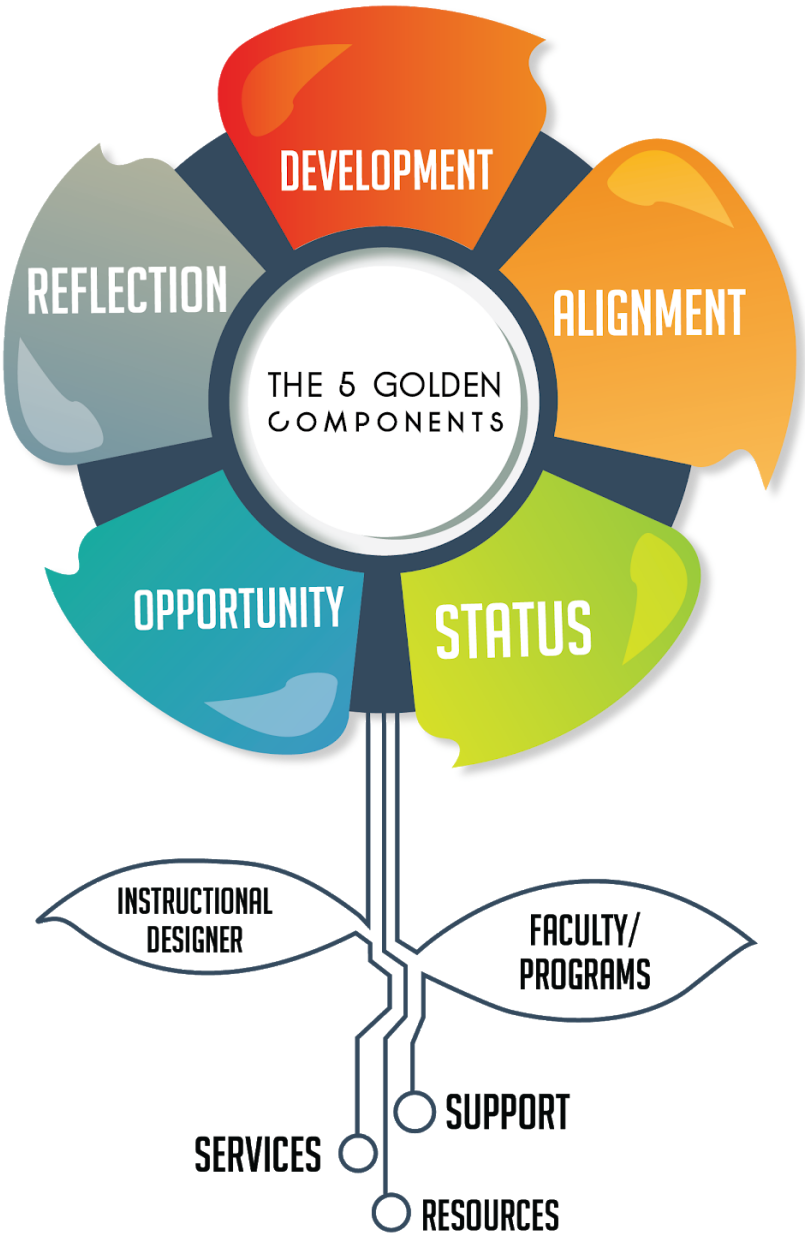
where the flower is in the life cycle, it always needs water and sunlight to support its growth, similarly to how humans need love and logic. This organic cycle is something that we cannot always predict and it demonstrates the need for a system that considers the reality of the additional elements that are present in the daily instructional design process.

Reflection

In this revised instructional design system, all of the components are occurring simultaneously. Similar to how a flower does not grow one petal at a time but blossoms all at once. While determining the status and development and alignment opportunities, another critical component is the Reflection Component. Online instructional designers must reflect at all times during the design process. Reflections provide realistic feedback about what is possible, what will work in an individual course or program, and how well we have developed the course thus far as well as how well the course builders are doing their job. The reflection component provides a filter for the opportunities that results in a relevant, robust course development.

Reflection occurs in a variety of interactions both ways between students, faculty, course builders, institutions, and instructional designers that constantly provides guidelines, feedback, and opportunities for improvement. In this component, we begin to see the application of quality assurance rubrics and best practices for quality course design. Application of quality assurance is not the final step, but rather a recurring constant during the course design process. The quality assurance standards, faculty/program requirements, and institutional requirements are considered with every decision that is made about the course development. The informal and formal results of applying the quality assurance standards determines the path of course design. Reflection provides opportunity for iterative design and continuous improvement to ensure student success.

Figure 1 Graphical representation of the Online Course Redesign System



Conclusion

In this article, the authors reviewed instructional design and curriculum design models that are currently available in the field, highlighting their weaknesses and disadvantages. Based on the review of

most available instructional design models and on significant experience working in collaboration with faculty, the authors propose a revised online course redesign system for online instructional designers currently working in the field. The focal point of this proposed system is represented as an organic life cycle with five components: status, opportunities, reflection, alignment and development. The significant foundation is made up of the instructional design team, faculty, and program support and services working together to help flourish the development of a high quality online course for the benefit of students' learning. As a recommendation, other universities could benefit from this design system by applying this proposed system and/or making any improvements in order to benefit the field of instructional design.

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