ACADEMIC HEALTH CENTER
Best Practices

Case Study

TRAINING HEALTHCARE PROVIDERS OF THE FUTURE

Creating Interactive, Engaged Interprofessional Health Science Teaching and Learning in a Digital Age Through the Use of E-Modules and Flipped Classrooms

UNIVERSITY OF NEBRASKA MEDICAL CENTER

KEY POINTS

Any successful program must strategically include the following:

- ✓ **Strong institutional leadership support and financial commitment to hiring appropriate support personnel**
- ✓ **Identification, training, and deployment of faculty and staff champions**
- ✓ **Focus on improving attitudes and on building needed support structures and processes**
- ✓ **Attention to analyzing impact of changes made and modifying processes as needed to improve outcomes**

ISSUES AND CHALLENGES

Adapting Teaching and Training Methods that Engage Future Health Practitioners

Information is changing at a rapid pace, making the use of the lecture style of teaching increasingly outdated. The current generation of millennial and post-millennial digital native health-science trainees more readily embrace technology and learn differently than earlier generation of students. As a result, there is a need to engage and equip these students with alternative methods to enhance their continued learning and competency in real-time within the changing and increasingly complex health care system.

THE UNMC APPROACH

Engaging Faculty and Students to Develop Innovative Models

In 2013, the University of Nebraska Medical Center (UNMC) began a strategic effort to enhance faculty teaching skills through the use of interactive e-learning and blended learning methods to enhance student experience. The success of the program hinged on a proactive effort to impact attitudes and improve structures and processes to enable adoption of a new culture of innovation *(Figure 1)*.

Change was accomplished through: a) a series of campus dialogues, **b)** formation of an interprofessional steering

Figure 1: This figure identifies the rough order (by number) of the triad of attitudes, structure and process in which each of the steps taken occurred, although the process was very iterative in nature. The height of the bar is intended to illustrate the relative amount of effort – both initial and ongoing – needed to ensure a successful implementation of each component of change.

committee of instructional designers, educational faculty, staff, and student champions led by the Vice Chancellor for Academic Affairs, **c)** numerous just-in-time and multi-day intensive faculty development lectures and workshops to build efficacy, **d)** strong institutional support consisting of central funding for the initiative for seed grants, creation of an e-learning development laboratory equipped with hardware and software for use by faculty, students, and staff, and hiring of full-time instructional designers supported by skilled student workers and **e)** public showcase and recognition ceremonies.

Funding Established for Interactive E-learning Modules

The e-learning steering committee used Requests for Applications (RFA) to fund the development of blended courses and/or e-learning modules. Module requirements, by design, were outlined as 10-15-minute interactive e-learning components targeting no more than one or two learning objectives. An e-learning course consisted of a specific curricular unit comprised of several individual modules that could be used either independently or combined in blended learning approaches including flipped classrooms. The RFA process outlined the structuring of work between interprofessional development teams, peer reviewers, instructional technologists or designers, "gamification" experts, or other collaborators across the University of Nebraska system. Development of individual modules was funded at $2,500 each, with full courses at multiples of this amount, determined by the project scope.

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Additionally, 50 percent of all campus-wide faculty development training sessions focused on new techniques in e-learning and flipped classrooms during the initiation year.

The results of these investments were the development of a variety of inter-professional, interactive e-learning modules, with high faculty engagement and adoption of these new educational approaches. The modules were implemented within colleges initially as adjunct to core curriculum, but increasingly have been strategically incorporated into college curriculums and used with flipped classrooms where students interact in group learning exercises building off the content of the modules.

Through the first couple of RFAs, only faculty were invited to develop modules. While the products were satisfactory for participating faculty, the time commitment to create a single module (up to 100 hours) was seen as a rate limiting step for widespread adoption. For this reason, students were invited to participate in subsequent cohorts under faculty supervision. This effort successfully allowed faculty to focus their limited time on content development and allowed the students to be active participants in creation of modules with support of instructional designers.

Partnerships and Collaborative Efforts Expanded Modules

Since inception of the program, more than 400 modules have been created by more than 300 faculty members and students, impacting almost 6,000 learners. Of these modules, about half were created through UNMC funded grants, while the remainder were created outside of the program by faculty using other resources. All six colleges on the UNMC campus have been represented among the grantees. Additionally, collaborators from other institutions have been increasingly included. Educational strategies utilized in the modules have included learning objectives, lecture and video, quizzing, text with narration, mouse interactions, animations, video simulations, storytelling and gamification. Many grantees have presented their modules or aspects of development at regional and national meetings and several have won awards.

High Positive Response Rate Achieved

Both faculty and students expressed satisfaction with the program, with 81 percent of faculty reporting that they would participate in e-module development again. Improvements in learner assessments and satisfaction were reported by 70 percent of faculty and none reported a decrease. One key element of our process has been an annual showcase where development teams of students and faculty have presented their e-learning modules and campus faculty, staff, and students have been invited to engage, see finished modules and learn how the technology can enable them to innovate within their own classrooms. Our success in this program has also set the stage for a bigger vision of an interprofessional experiential center for enduring learning (IExcel) that will utilize virtual and applied reality and other newer technological tools to enhance competency based learning.

RESULTS/OUTCOMES

- 400 e-modules created for interdisciplinary use either as stand-alone or within curriculum
- Almost 6,000 learners impacted with excellent reports of satisfaction from faculty and student creators and learners
- Ability to access information from modules in real time through an elearning gallery
- Innovation has increased among faculty with national presentations and awards
- Has enabled attainment of national and foundation grants
- Partnerships forged within the University of Nebraska System, and with other institutions including George Washington University, Mayo Clinic, and Rush University
- Most recent UNMC grants awarded build in component of assessment of impact
- IExcel, a concept to train for competency in an interdisciplinary fashion using simulations and virtual and applied reality is being implemented through a new Global Center for Advanced Interprofessional Learning

Attendees at the 2017 Annual E-Learning Awards Event

FOR MORE INFORMATION AND RELATED MATERIALS ABOUT THE PROGRAM

https://www.unmc.edu/elearning/about/annual-report.html

https://www.unmc.edu/elearning/egallery/

https://www.insidehighered.com/digital-learning/article/2018/01/24/nebraska-medical-school-puts-students-charge-creating-elearning

https://foundation.asrt.org/news-stories/full-story/asrt-foundation-funds-imaging-science-education-study

https://www.unmc.edu/news.cfm?match=21275

https://www.unmc.edu/iexcel/

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