

Educational Technology & Instructional Design Committee

Executive Summary to Curriculum Redesign Committee, June 2018

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Charge

The Educational Technology & Instructional Design committee focused on two key areas: 1) to form guiding principles that would inform decisions in subsequent phases of curriculum reform, and; 2) to explore, critically appraise, and recommend trends in educational technology and instructional design that would foster optimal learning outcomes at CU SOM and, in some cases, put CU at the leading edge of being an innovative program of medical education.

Definitions

- Educational Technologies are the tools and infrastructure that support learners & learning, teachers & teaching, as well as the administrative operations of the CU SOM.
- Instructional design is the formal practice of incorporating evidence-based educational principles cohesively into the multiple layers of the educational mission: individual lessons, courses, programs, and assessments.

Guiding Principles

The following principles should be used to guide the subsequent phases of curriculum reform:

- Technology should be thoughtfully incorporated into the education mission where it supports learning and teaching, using evidence-based principles and human-centered design.
- Instructional design should be incorporated comprehensively within curriculum and assessment redesign.
- Universal design and Universal access practices should be implemented for curriculum delivery and assessment.
- CU SOM must work toward simplifying and integrating systems, towards decreasing the complexity of the technology ecosystem.
- When creating or adopting curricular assets (e.g. lessons, modules, etc), and in purchasing curriculum support systems, CU SOM should consider the economic scalability of these investments.
- As learners and faculty are distributed across campus, clinical spaces, public and personal spaces, the digitally enriched CU SOM curriculum should incorporate a mechanism for social presence. That is, students and faculty must continue to develop community through rich conversations and interactions within and across digital learning experiences. The backbone to this community is real, in-person relationships.

Recommendations

Essential

- Make strategic educational technology purchases that allow CU SOM to:
 - **Support digital education** assets (e.g. interactive modules, adaptive quizzing, portfolios, dashboards) that give learners and faculty insights into what learning is – and isn't – happening (e.g. visualization of progress, success, competencies, etc through **learning analytics and portfolios/performance dashboards**).
 - Continue to develop the CU SOM education data warehouse to achieve interactive data visualizations for all education stakeholders; administration, faculty and students
 - Explore systems, processes and resources that would help CU SOM move thoughtfully into effective use of dashboards and a culture of data use
 - **Foster higher-order learning outcomes.** Electronic Health Record sandbox, Virtual reality, augmented reality, virtual patients extend CU SOM's current continuum of simulation offerings to develop higher-order and complex skills relevant to clinical practice. These also allow CU SOM to offer consistent learning experiences across distributed clinical and institutional learning spaces.
 - Support the **efficient and effective administrative operations** (e.g. assessment system and learning management systems that report into the education data warehouse)
- Partner instructional design experts with faculty and educational administrative leads to design, develop, implement and evaluate new curriculum and assessments
 - Hire instructional designer(s) into an instructional design group
 - For **Universal Design**, work with the CU Online Universal Design expert and set these guiding principles and best practices as standards within the CU SOM community
- Given that students are curating their own curricular paths using third party platforms (e.g. Osmosis, SketchyMicro, Firecracker, etc) and open education resources (e.g. YouTube, Massively Open Online Courses, etc):
 - Partner with instructional designers to develop a thoughtful approach to the macro (e.g. program, year, course levels) and micro design (e.g. week, day, and individual lessons) of the new curriculum
 - **Make strategic investments** into educational technologies should consider using or creating open education resources. Leverage existing resources within SOM and CU.
 - Actively seek and develop areas where **social presence can be improved** across both new and existing digital education experiences. Digital connections should foster learners and faculty in ongoing conversations and proximal development (i.e. Cognitive apprenticeship; [Brown, Collins & Duguid, 1989](#))

Suggested

- Pilot educational gaming strategically into the curricula to foster learner engagement and learning outcomes
- Review specific mobile apps for incorporation into curricular activities. Some mobile apps might also be focused on education administration; e.g. connecting learners into teams and for doing quizzes for team-based learning.

Educational Technology & Instructional Design Committee Video Report

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