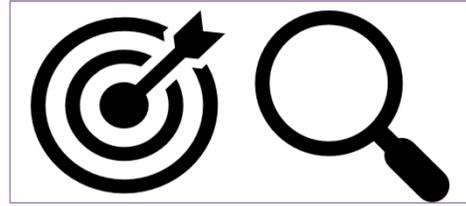


Badging and Gamification of Medical Education

Richard N. Van Eck, PhD, MA; Jon Allen, MD, FACP; Eric L. Johnson, MD

University of North Dakota School of Medicine and Health Sciences



Our Project

THE PROBLEM

In January of 2017, SMHS adopted a new set of UME competencies based largely on the Physician Competency Reference Set. Since then, we have been conducting an analysis of the alignment of our old curriculum goals and objectives with our new domains and competencies.

Domain 7 is based largely on the (IPEC) Core Competencies for Interprofessional Collaborative Practice (IPC), which has driven our IPE efforts throughout the curriculum and which themselves are anchored by our first-year Interprofessional Health Care course (IPHC) and our third-year IPE experience called Interprofessional Student Community based Learning Experience (ISCLE).

While our IPE curriculum is well-developed, the recent addition of an entire IPC domain to our curriculum has necessitated an intensive curriculum design process to formally align these activities with new program competencies and to establish a set of appropriate assessment activities.

Domain 8 of our new curriculum is also largely attitudinal in nature and can only truly be demonstrated through the ongoing choices our students make.

THE SOLUTION

We are developing badging for the competencies in these domains and employing principles of gamification to promote adoption, engagement, and mastery orientation. In support of this, we have developed Interprofessional Consult Cohorts, groups of 8 students from each of our medical and health care professions within each of our 8 learning communities. These cohorts are resources that can be tapped by any instructional activity to add an IPC component, each of which accrues toward the competency badge. We are piloting the use of an IPE Competency Checklists that students will use to document behavioral and cognitive evidence of IPC competency over the course of their academic career.

GUIDING PRINCIPLES

It is challenging to identify opportunities in the existing curriculum for additional mandatory, didactic, formal learning experiences. More significantly, the nature of IPC is partly attitudinal in that we want learners to self-identify the need and value of IPC, to seek out other professions routinely, and to support and manage collaborations independently. These two factors suggest the need for a mix of formal (e.g., IPHC) and informal self-directed learning. If we are successful in our IPC curriculum, our learners will adopt an IPC professional stance which will lead to routine IPE activities; thus, our curriculum and assessment must reflect and measure these choices and behaviors.

Grant Team Members

Richard Van Eck, PhD; Associate Dean for Teaching and Learning
Jon Allen, MD; Director, North Dakota Simulation Center
Eric Johnson, MD; Director, Interprofessional Education (IPE)
Michelle Montgomery, MSW, LCSW; Assistant Director, IPE; Wellness Advocate
Jane R. Dunlevy, PhD; Year 1 Basic Sciences Medical Curriculum Director
Adrienne Salentiny, PhD, MS; Instructional Designer

Process and Results to Date

BADGING

We will first develop a set of badges using the *Credly*[®] badging system in use currently at UND, each tied to a competency in Domain 7 and Domain 8. Consistent with best practices guidelines, each badge will employ rigorous, clearly articulated criteria and guidance for required elements.

We rely on a mix of three approaches to assessing these competencies within each badge:

- **Validated instruments** for measuring key constructs over time (e.g., at matriculation, mid-point, and at graduation)
- **Curriculum touch-points** which currently have or can be modified to include assessment items that reflect these competencies
- **Student documented evidence** of demonstration or (opportunity for demonstration) of behaviors consistent with these competencies



CURRENT PROGRESS

We are designing badges, piloting instruments, and implementing prototypes of gamification for both Domains. For example, with Domain 7, we use:

- **Instrumentation** to measure IP attitudes at matriculation, pre-clerkship phase, and graduation (counts toward Level One)
- **Curriculum events** provide evidence as part of mandatory curriculum:
 - AMA-funded, three-part ROBOTS longitudinal continuity of care interprofessional telemedicine simulations with five professions
 - Interprofessional Health Care (IPHC) course (mandatory 5-week course, 8 professions; 4,000 students since inception)
 - IPE Consult Cohorts are integrated into course assessments.
- **Student-Identified Behaviors**
 - IPC checklists based on the IPEC competencies are used by students to document evidence of competence in daily activities

GAMIFICATION

We will take each competency badge and gamify them. Badges will be earned by completing "quests" aligned with our checklists and self-identified and managed by our students. Each quest will require 3-5 incremental steps (levels) of increasing complexity, culminating in a badge, and badges and levels will themselves be incentivized with rewards (gold, powerups) that are tied to real-world benefits (e.g., pizza parties for the Learning Community with the most students achieving milestone competence each year). Learning communities will be incentivized to "compete" with each other for competency level attainment in areas such as community service, wellness, work-life balance.



Gamification requires careful design to achieve seamless integration of cognitive and behavioral outcomes with authentic assessment and motivational components.

Conclusion

Our efforts will continue to inform our ongoing design of badging and will be incorporated into a gamification framework that seamlessly integrates knowledge, behavior, assessment activities with motivational and engagement methods that promote a mastery-orientation.

We are piloting the cohorts and IPC checklists in fall of 2018 and will complete the design of our badges during the 2019-2020 year for rollout in Fall of 2020.

While this work is preliminary and driven by the needs of our own institution, we hope that the the results will help inform medical education competency assessment efforts at other institutions and perhaps eventually change the face of the UME-GME transition.

The New Match?



Institutional Contacts

Richard Van Eck, PhD, richard.vaneck@und.edu

Jon Allen, MD, jon.allen@und.edu

Eric Johnson, MD, eric.l.johnson@und.edu

Michelle Montgomery, m.montgomery@und.edu

Jane R. Dunlevy, jane.dunlevy@und.edu

Adrienne Salentiny, adrienne.salentiny@und.edu

