Course redesign to promote 1) student responsibility for learning and 2) applied learning, given curricular/credit hour reduction

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Background
- Challenging, entry-level biochemistry course in the first semester of the undergraduate Pharmacy program (MDCM 601: Medicinal Biochemistry)
- Curriculum/scheduling/pressures force transition from 4 credits (MTWRF) to 3 credits (TWR)

Student Profile
- 155 synchronous students on two campuses and 3 asynchronous (online) students
- Enter with widely varying backgrounds in basic chemistry
- Smart students, but often with poor study skills and little previous expectations in application of basic knowledge

Goals
- Retain course standards with respect to student knowledge gain in the face of 15 fewer lectures and compressed pacing
- Encourage students to take more responsibility for their own learning and to study more effectively out of the classroom
- Retain and increase emphasis on student transition from memorization and short-term learning (at which they already excel) to developing the ability to apply basic information to new scenarios (a challenging new skill for most of these students)

Old Version
- Primarily based on in-class lectures
- First two weeks were a review of foundational chemistry knowledge from previous courses that is essential for success with new material in the course
- Weekly paper in-class quizzes encouraged student currency
- E-textbook end-of-chapter questions from publisher often not optimal for these students
- Discussion/applications sessions generally well received, but threatened by course compression
- Students did not take advantage of instructor availability for help sessions; reluctant to ask questions
- Electronic exams on iPads

New Version
- Course redesign support of Agnes Walsh: Funded by the KU Center for Teaching Excellence Best Practice Institute; Recording, editing, online posting of classroom lectures; Brad Sager, Damien Zanter, KU School of Pharmacy
- Technical support for online learning materials: Romie Hewitt, Missy Combs, John White at the KU Center for Online and Distance Learning
- Technical support editing publisher-provided materials: Elaine Fiduci, Jeff Silberman, Macmillan Education
- Support of electronic testing via Examsoft: Millinda Fowles, Brian Barnes
- Reflection:
  - Summer Chemistry Online Review:
    - Student survey, participation indicate positive impact
    - Reduced, optimized necessary review time in class
    - Students performed as well on the most problematic topic as in previous years (when more time was devoted to review)
    - Improved correspondence between instructor expectations for student ability to apply content, actual student performance, and major graded evaluations
    - Out-of-class lectures, quizzes, problems functioned well, thereby improving class time efficiency
    - Student attendance, participation in active learning sessions MUCH higher than previous passive sessions
    - Less course depth/content loss than would have otherwise been necessary, given the mandated credit hour reduction

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