Moving from Teacher-Centered to Student-Centered Learning

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Acknowledgements

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The discovery and translation of knowledge and skills pertaining to physical activity and exercise as strategies for prevention and treatment of health risk factors in general and selected special populations is a focus of the course.

Objective – to create a course that focused on student-centered learning

Two Principal Components:

Student Driven Knowledge Generation

Student Driven Knowledge Translation

Academic Colleagues (students)

General Public
Guiding Principles

That most (all) knowledge gained during the course would be student generated.

That students would work in teams to generate knowledge.

Students will be evaluated as a member of a group, and individually.
Learning Objectives

Compare and contrast the various applications of physical activity as a treatment strategy for the prevention and treatment of lifestyle-based, chronic disease and associated risk factors.

Discriminate between different strategies used to discover/search, interpret and present scientific literature/data to answer a question specific to the application of exercise science/kinesiology in clinical settings.

Describe the processes involved in moving knowledge derived from high quality evidence into practice.
Class Meeting Times / Location
Monday 90 Minutes Ellis 333
Wednesday 90 Minutes Mac-Corry

Teams generated alphabetically

Team 1
5-6 Students

Team 2
5-6 Students

Team 3
5-6 Students

Team 4
5-6 Students

Team 5
5-6 Students

Team 6
5-6 Students
Course Structure

Knowledge Synthesis / Translation Projects 65%

Group Projects/ Evaluation

- Research Paper ........................................................................................................... 20%
- Research Presentation ................................................................................................. 20%
- Infographic .................................................................................................................. 10%

Single topic assigned to each team (Example: Physical Activity and Breast Cancer)

Evaluating Evidence

Guest Speaker
Amanda Ross-White
Research Librarian - Bracken

Literature Search Strategies
Research Paper

Team assigned a topic.

Team required to obtain no less than 10, and no more than 20 references addressing topic.

Length of the paper will vary between teams but should be the length required to answer the question.

See Research Paper Rubric for guidance.

Single Lecture – How to construct a research paper
Research Presentation

Each team will prepare a 25-30 minute presentation of their research paper to classmates, followed by a 20-25 minute question and answer / critical review – same topic ~12 slides (Powerpoint).

The lecture presentation will be graded on clarity and scientific merit.

The presenting teams’ response to questions (understanding of the material presented) will also be evaluated.

See the Research Presentation Rubric for guidance.

Single Lecture – How to construct a research presentation
Infographic: Each team was required to generate an infographic based on the findings of their research paper.

Infographic Session: Guest Speaker, Sujani Siva (skype)

Tool Set Access Provided to all.

https://piktochart.com/formats/infographics/

Team 6: Physical Activity and Breast Cancer
Course Structure

Knowledge Synthesis / Translation Projects 65%

Research Paper ................................................................. 20%
Research Presentation ....................................................... 20%
Infographic ........................................................................ 10%
Oral Exam .......................................................................... 10%
Professionalism (Peer-Review) .......................................... 5%

Final Exam 35%
Assessing teamwork in undergraduate education: a measurement tool to evaluate individual teamwork skills

Emily Britton, Natalie Simper, Andrew Leger & Jenn Stephenson

Provided to students at beginning of year.
Matt worked with Selina to create an OnQ version for student to complete online.
Matt sent class email list to Andy, who then emailed survey link to students, who completed survey during the last class.

RR did not have access to results until after the final exam.
This course could be improved by...

I don't feel as though I learned that much about the other groups' topics because of how the course was laid out. I'm still a personal fan of... I know of a person in another group who rarely showed up to class/group meetings/hardly contributed, but despite their lack of contribution they received a very good mark --> this is unfair for students in other groups who worked substantially harder and received lower marks.

More guidance on how to select good research - maybe a small assignment where you submit a paper you think you should use and explain why you think it's a good paper - feedback from this would help in selecting good research.

A refresher on how to interpret statistics - the librarian lecture was not helpful, I recommend replacing this with a lecture explaining odds ratios, p values (/p trend) - despite having taken some research methods and stats courses, I will wholly unprepared for understanding tables from papers.

A little more guidance with regards to how to judge the strength of a paper. As well, some of the topics could improved. I feel like some topics were significantly easier than others and less restrictive with regards to exercise. For example, group 1 got to look at exercise duration, intensity, type and frequency where as group three had to specifically look at exercise intensity.

- more guidance at the beginning of the course
- first three/four weeks were difficult, I found many groups felt lost and frustrated about how to approach the project
- *** NEED A COURSE ON DATA INTERPRETATION (i.e. different p-values, confidence intervals etc) this would have been helpful as we misinterpreted data and proceeded to write a full research paper based off of our wrong interpretations.
Question 3

As a result of this course I have learned about...

Like I said in the previous question, I don't feel I learned a lot about other topics, so I really only learned in depth about my topic.

How to work as a group to gather information from the available literature and present it in a way to the public that they can understand

I have learned how to better evaluate scientific evidence and find papers that provide strong evidence

how to efficiently read research papers

how to summarize results from papers that have different methodologies

how to do the work of 5 people

I have learned more about the topics we covered and the process of reviewing literature and writing papers

This course gave me new insight and skills in terms of how to write and search for literature in research, something I had not previously done before. I also learned how to work in a bigger group over the long-term, especially through the fact that I was not overly familiar with the group member before having the opportunity to work with them.
Question 4

Please comment on the group activities/projects in this course.

| I liked the breakdown of the project. I'm happy it wasn't all based on the paper. |
| I really liked this aspect, and it was really great that a peer evaluation was encouraged. Some people worked harder than others, and this should be recognized and reflected in grades. |
| it was somewhat frustrating at times to create a paper as a group but i think it reflected real-world research well. |
| group projects (research paper, oral presentation, infographic)  |
| diversity of project types allowed individuals of group to showcase their strengths at different times |
| I think it is important to get experience with group work since a lot of our work done later in life will be in group. However, its difficult when there are so many different levels in the course. There was quite a gap between people who had some research experience and were interested in the topics and those who just took the course because it fit their schedule. As such, there were quite a lot of people who worked really hard and then didn't necessarily get an amazing grade, while others didn't do much but had a strong group so ended up with a great grade. Its difficult to make group activities work at an undergraduate level |
Question 6

Please comment on the use of Team-Q and teamwork in this course?

It was good to have a peer assessment component to keep everyone accountable.

I think that this was a great component. The course needs this as all work in done within a team.

team-q was a good way to reflect on how well our group worked together

team work suited the content and assignments of this course well. however i personally would have liked individual opportunity to showcase my knowledge/learning during the term (apart from the oral exam which i believe is not suited for all people/not a good indicator of learning). i would have also liked to have had more lectures from the professor as i took the course with the intention of getting to hear lectures on topics that he is an expert in.

- team-Q survey was easy to use
- teamwork was frustrating for the most part
- it got to the point where i was surprised if some members met the deadlines we set

I had a great group and it was easy to get along and achieve our academic goals throughout the semester

Team Q helped me evaluate my teammates more thoroughly and fairly, as the questions asked made me realize that they may have been good teammates in ways I hadn’t considered. It isn’t necessarily the teamwork aspect, but rather the disparities in ability within a randomly assigned team that caused frustration, as I had to end up doing multiple persons’ worth of work.

Unsure what Team-Q is. But, teamwork went well for me specifically. I cannot speak for all groups though; and I had an unusually fair group, with very even distribution of tasks that did not reflect my experiences in other team projects throughout my undergraduate career. To prevent a &dquo;bad&dquo; group scenario there should be more individual assessments or availability to recap and assess group members’ performances because the grade of the individual essentially depends wholly on their group for this course. If one person carries the group it’s not fair.

Everyone in my group was absolutely wonderful! The Team-Q was very easy to use.

It was enjoyable to work as part of a group and have the opportunity to teach the rest of the class on a topic that I had become largely familiar with - something that is not common for typical university students.
Take Away(s) – If I knew then what I know now...😊

Team work on this level was challenging for some – need to gauge individual contribution to Teams earlier.

Identification of strengths and weakness within a given manuscript/study – challenge for most teams – how to correct an incorrect interpretation of the literature?

Team Presentation Feedback – Opportunity to submit a revised presentation – good idea

Feedback to students regarding performance comes late in the course

KNPE 455 will continue to focus on student-driven learning, and will use feedback to improve course structure.
Thank You