13 INTEGRATION OF SUSTAINABILITY IN CREAN COLLEGE OF HEALTH AND BEHAVIORAL SCIENCE

Maria J. Hurtado

13.1 INTRODUCTION

Many universities have had difficulties in trying to incorporate sustainability in their curriculum. However, it is a topic that needs to be addressed and introduced to the new generation of students because they are the future environmental leaders. The main challenge in trying to incorporate sustainability in other majors is the breadth of the term. The definition of sustainability when entering it in a search engine is, “the ability to be maintained at a certain level or rate.” One positive about this term is that it can be molded to connect any major and be relatable. Sustainability in curriculum has also recently become a topic addressed in many books. Additionally, there are other tools available to help apply this concept to all majors, and although it may seem that there is not link between sustainability and behavioral sciences, there are ways to link them together.

The Association for the Advancement of Sustainability in Higher Education (AASHE) has developed strategies to help universities incorporate sustainability in their curriculum. They have established recommendations that can be taken and apply them to Chapman University. Some examples include:

- Bring faculty together with sustainability oriented staff
- Include sustainability in strategic documents
- Educate trustees/regents and solicit their support
- Develop a better public understanding of sustainability

Crean College of Health and Behavioral Science became its own independent college in 2014, where before it was linked with Schmid College of Science and Technology. Crean focuses on “Teaching, learning, and research at the intersection of the brain, behavior, health, and disease.” The majors that are included in the college are psychology and health sciences. Incorporating sustainability in courses that are required can give knowledge to students on how to carry on sustainable practices in their major.

13.2 HISTORY AT CHAPMAN

The mission statement of Chapman University says, “The mission of Chapman University is to provide personalized education of distinction that leads to inquiring, ethical, and productive lives as global citizens.” One criteria of all incoming freshman is that they must enroll in are Freshman Foundation Courses (FFC). This allows students to explore a variety of programs offered throughout the university and can expand their ideas of what major suits them, but it can also introduce the idea of sustainability. This structure would allow students to choose
a general course within a major they are interested, but to also learn a bit about sustainability. The first Chapman Environmental Audit, conducted in 2013, reported that many FFCs had started to include topics of sustainability and the environment, thus giving students the opportunity to explore different avenues.

![Graph showing occurrences of terms 'sustain' and 'env' in course names or descriptions from Fall 2013 to Spring 2013.]

**Figure 13.1 - The frequency of the terms “sustain” and “env” in the course names or descriptions from Fall 2013 - Spring 2013**

The first environmental audit that was conducted in 2013 looked at the number of occurrences of the term “environm” and “sustainab” in the course catalog for various years and it was shown that it increased over the years as shown on Figure 13.1. For this research, the same concept was applied but just focused on Crean College.

### 13.3 Current Status

The course catalog was analyzed to look at how many course incorporated sustainability in Crean College. Other chapters in this audit look at different colleges and see how much sustainability curriculum has progressed throughout the years as well. When analyzing the course catalog for Crean College, the past three years have been the same and have not changed. When the terms “sustain” and “env” where searched, only three matches were found. These matches were not in the course title; they were in the course description. As mentioned, Crean College became its own college in 2014, therefore it does not have many changes, but since it is still a relatively new college, it can adopt new changes and carry them on throughout the years.

The following courses are the ones that matched when searched for the term “env”. These came up because the term was either in the course title or in the course description.

**PSY 327 Life Span Development**: the purpose of this course is to introduce students to the major theories, concepts, and research methods in life-span developmental psychology. Students will learn to understand cognitive, emotional, and social development and changes...
across the entire life span from infancy to late adulthood. This course examines the biological and environmental foundations of development including cross-cultural issues and highlights empirical research to integrate theoretical and applied perspectives

**HCOM 338 Nonverbal Communication in Health Care Environments:** Nonverbal communication is the study of nonverbal cues in terms of observing, interpreting, responding appropriately to, and sending nonverbal messages to convey meaning. This course takes a cognitive behavioral approach to investigating nonverbal communication in health care environments.

The only course that matched when searched for the term “sustain” was the following course which matched because the term was found in the course description.

**HSK 310 International Approaches to Health:** Prerequisite, health science major. Course addresses key factors in planning and implementation of health-related programs, both globally and in domestic cross-cultural settings. Issues addressed: health beliefs and behaviors, sustainability of remedial health practices and impact on mortality and morbidity. Emphasis on analytical thinking and writing.

### 13.3.1 Student Status

Questions were designed to get input from staff and students to understand the campus views on sustainability and to inform possible recommendations. Although it is important to look at responses from all students, this section specifically analyses the responses of the students who listed Crean College as their primary college.

When analyzing the data, 54% of students were interested in taking an experimental course that involved sustainability within their major as shown in Figure 13.1. This is a huge percentage and since there is a large group of students that want to learn about sustainability then there should be courses offered for these students. About 20% were very or somewhat unlikely to take a course that involves sustainability and this could be because they are not sure what sustainability really means based on the responses from Figure 13.3.

![Figure 13.2 - In response to “How likely are you to take an experimental course that incorporated sustainability with your major?” (n=50)](image-url)
Since it was stated that there are no courses in the catalog that involve sustainability, Figure 13.3 shows that 68% responded that sustainability has not been brought up in their upper division courses. There is a small percentage where sustainability was brought up in their upper division courses but it could be that they chose an elective or have a minor that involves sustainability.

**Figure 13.3 - Response to “Has sustainability been brought up in any of your upper division courses?”**

![Figure 13.3](image_url)

Based on Figure 4, it is noticeable that sustainability is not being practiced because of the level of sustainability that students perceive they have. Figure 13.3 illustrates that sustainability has not been brought up in upper division courses, therefore level of sustainability is low or neutral.

**Figure 13.4 - Response to: “How would you rate your level of sustainability?” (n=50)**

![Figure 13.4](image_url)
13.3.2 Staff/Faculty Status
The responses for staff/faculty were analyzed, but was not specific for Crean College.

![Chart showing responses to "Would you be willing to teach a course that integrates sustainability into the curriculum? (n=42)"]

**Figure 13.5 - In response to: "Would you be willing to teach a course that integrates sustainability into the curriculum? (n=42)"**

Taking a look at Figure 13.5, there is faculty interest in teaching a course that involves sustainability. It is really interesting to see that the numbers are almost equivalent. There were some comments that were mentioned that professors would not know how to integrate sustainability with some majors such as music. Based on this date it can inferred that there is a knowledge gap for some faculty in trying to incorporate sustainability into their course.

![Chart showing responses to "Would you be interested in integrating sustainability into the courses you currently teach at Chapman? (n=43)"

**Figure 13.6 - In response to: "Would you be interested in integrating sustainability into the courses you currently teach at Chapman? (n=43)"**

Figure 13.6 is somewhat similar to Figure 13.5, but this shows the interest in integrating sustainability into courses the faculty already teach. The majority responded with yes but there is also a large amount that responded with maybe. For those that responded “NO”, four of them said it was because they don’t have the knowledge or skills to teach that subject. Only one responded that they felt that sustainability is not important in the area they teach.

13.3.3 Case Studies/Comparisons
Colorado State University has been ranked as being the greenest college. Colorado has made significant changes in order to be a sustainable campus. When it comes to curriculum, they have have applied sustainable related majors and minors in all the eight colleges. From the course list, 35% of courses are sustainable related. In comparison to Chapman they have a College of Health and Human Science with includes undergraduate majors such as B.S. in Health and Exercise Science or B.S.W. in Social Work. Although it may seem that these majors have no way to include sustainability in their curriculum, they have developed many courses that do tie in such topics.
PSY 316 Environmental Psychology
  - Emphasizes human-environment interaction. Areas of focus include strategies for effective management of natural resources, psychological factors in the valuation of public environmental goods.

SOWK 410 Social Welfare Policy
  - Course integrates social and ethical aspects of sustainability via issues and processes shaping social welfare institutions; definitions of social welfare policy; analytical framework for policy analysis.

FSHN 150 Survey of Human Nutrition
  - Basic nutrition principles and concepts; their application to personal health and interactions with societal and environmental issues.

These are some courses that can be taken as electives and some are requirements for the major.

13.4 CONCLUDING ASSESSMENTS

13.4.1 Areas where Chapman is doing well
From the first Environmental Audit in 2013, there were areas where the university had many gaps, but throughout the years we have seen progress. There have been many changes to make the campus more sustainable.

- Recycling bins in most rooms and buildings on campus have been added.
- There are some workshops for staff/faculty involving sustainability.
- Currently there are some clubs and activities that spread awareness about sustainability.
- An experimental, “Corporate Sustainability”, was offered for one semester.

13.4.2 Areas in which to improve
There still seems to be a gap between the different schools when it comes to sustainability. Also, after looking at survey data, there seems to be interest from both students and faculty in wanting to include sustainability into curriculum.

- Increase awareness about sustainability to Crean College and other colleges.
- Development of experimental course that integrate sustainability to behavioral science.
- Increase the attendance of students that attend sustainability events/ informational talks.
- Variety of sustainable courses that students can choose from that will count for their major.
13.5 Recommendations

13.5.1 Low Cost and/or Effort

- Strive to have students from other majors attend sustainability informational talks and provide incentives. This will spread awareness about sustainability across campus and can reach students from all majors.
- Compile sustainable courses on a spreadsheet that inform students if it satisfies with their major like Colorado State University

13.5.2 Medium Cost and/or Effort

- Sustainability knowledge should be available: sustainability workshops should be scheduled in each department to make it available to professors in order to increase their knowledge about sustainability.
- Including sustainability topics in suitable upper division courses: This option would include sustainability in a course that sustainability can be included. Ideally the topic would be introduced for at least 3 class meetings

13.5.3 High Cost and/or Effort

- Creating an experimental course between sustainability and another major: This would take some time to consider possibilities but seems more feasible than creating a new course.
- Create new sustainability courses: this goal would be the last step because it would take more work to create new course. Many things would need to be considered such as cost and who is going to teach the course

13.5.4 Future Areas of Research

- If more courses are added and sustainability awareness is increased, then research can be done to see individual actions/behavior have changed.
- Determine if students or staff use sustainability outside of school and still practice it in a daily basis.
- Conduct studies to assess attitudes towards sustainable behavior and determine if more classes with sustainability can be added to the curriculum.
- Continue to survey students about their knowledge about sustainability and see if it has increased over the years.

13.6 Contacts

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13.7 References


Chapman Environmental Audit 2013
14 ENVIRONMENTAL HEALTH CURRICULUM

Tessa L. Oliaro

14.1 INTRODUCTION

There is a very important intersection between the environment, public health, and socioeconomic factors (Braveman, 2014). These include waste disposal, water use and quality, road safety, ecosystem services, and many more. Environmental health stresses, “the health impacts of physical, chemical, and biological agents in the environment and workplace, and learns to develop strategies to measure and control major environmental health problems both locally...and in settings around the globe” (UC Berkeley School of Public Health, 2017). This overarching umbrella can have emphases in environmental epidemiology, exposure science, climate change, ergonomics, home and industrial hygiene, and molecular epidemiology. Exploring each of these branches will prove that sustainable curriculum within an interdisciplinary environmental health approach, is essential for educational institutions.

Additional research shows how public health can be important to citizens inside of an academic institution. According to a TED-talk by Bill Davenhall, a health and humans services expert, where a person lives is very fundamental to understanding the total health status of a person, but is very undervalued in traditional health professions. This factor is even as important as diet and genes, but is not taught effectively in schools. Bill Davenhall terms this idea “geo-medicine” (Davenhall, 2017). By utilizing geographic data from geographic information system software, communities can better plan for and assess the needs of the surrounding people. Likewise, public health and responding to environmental hazards is important to Chapman’s aspirational schools, including: Tufts University, University of San Francisco, Gonzaga University, and Occidental College. Tufts University has many tracks for Environmental Science students including food systems, nutrition, and the environmental, as well as sustainability policy and equity that focus on human well-being with the negative effects of the natural ecosystem (Tufts University, 2017). Gonzaga University has a diverse group of classes including Native American Government and Politics, Environmental Health, and Politics of the Pacific Northwest that all highlight health’s connection to the environment.

Chapman University has a wide range of majors and minors that do not capitalize on the environmental health aspects of an interdisciplinary approach. Research labs are available that emphasize the effects of environmental hazards on humans, but this theme does not infiltrate into curriculum as strongly. The development of a public health framework will help guide the process for this project. According to the Center of Disease Control, the most effective programs have procedures that are “useful, feasible, ethical, and accurate” (U.S. Department of Health & Human Services, 1999).
14.1.1 Objectives
- Make current classes more robust with environmental health ideology in College of Educational Studies, Wilkinson College, and Schmid College of Science & Technology
- Creating a solidified global health pathway for students across varied disciplines: Public/Global Health Minor

14.2 History of Environmental Health

Upon reviewing Chapman’s sustainability mission statement, it is clear that sustainable curriculum is a pertinent goal of the university: “Chapman University is committed to a campus culture that promotes a sustainable future. This commitment is instrumental to Chapman’s mission to educate ethical and informed global citizens.” (Chapman, 2017). Additionally, the Chapman University 2013 Environmental Audit, states that global health issues are key when considering the format and content of classes. One of the basic excerpts from the AASHE Call to Action within the 2013 audit was, “Higher education should provide graduates with the skill set, knowledge, and habits of mind for them to prepare for challenges presented by climate change, loss of biodiversity, a world population of 9 billion in 2050, limited water resources, global health issues, and extreme poverty” (Campus Audit, 2013).

Moreover, the university stresses that global health issues can also be considered at the local level through sustainable living taught in curriculum. At the local level, faculty and students are encouraged to act upon the knowledge generated through sustainable curriculum to live healthy and just lives within their sphere of influences, and beyond the university. Although these initiatives were strong, the corresponding results of these directives focus more heavily on energy conservation, and less on environmental health as a means to address environmental sustainable curriculum at Chapman.

14.3 Current Status of Environmental Health

Currently, Chapman’s Teacher Education Master’s program is strongly tied to an ecological design as outlined in the department’s vision statement: “Our vision is to develop reflective and transformative teachers capable of working collaboratively with children, youth, their families and communities for the sustainable well-being of educational, social and ecological systems”. Additionally, this program strives to develop “physically, mentally, intellectually, and emotionally healthy and safe areas to enable all students to learn”. (Curwen, 2017). This is a key step to the program’s goal to utilize socioeconomic backgrounds as a platform for learning about the ecological relationships between the environment and the community.

Furthermore, the graduate leadership studies program emphasizes a unique eco-leadership model. This model focuses on “environmental or systems factors of peace leadership” as well as system thinking and fostering environmental based leadership to develop sustainable organizations (McIntyre-Miller, 2017). In order to develop sustainable institutions, the use of multiple disciplines is required including biology, ecology, peace studies, and social nonviolence. This model is capable of developing communities immune to groupthink, in which
the people are decision making for the best of the environment and for future health. As the world continues to grow and respond to environmental changes, financial and economic, social and political, and local and global ecosystems must be able to adapt through interdependence based on organizational ecosystem learning and leadership.

Likewise, a study conducted by the National Center for Biotechnology Information (NCBI), highlighted the dire need for environmental health education. As our population continues to grow, there becomes an ever-demanding economic development rate. This in turn has dramatically altered the demand for goods in developed and developing countries. Challenges that arise because of an exponentially growing population, relate directly to public health and environmental health concerns (Fleming, 2009). The health concerns are typically overshadowed by the economic means that result from capitalistic competition. This article also stressed the importance of documents, such as the Earth Charter, that are necessary for shaping curriculum within universities, in order to produce more well-rounded citizens. The Earth Charter highlights the need for global ethics as a part of curriculum, as well as democracy, nonviolence and peace, economic and global governance, ecological integrity, and many other initiatives (Earth Charter International, 2009). The Earth Charter and the NCBI study will be highly influential for developing an environmental health curriculum at Chapman.

Chapman has many programs that exemplify the characteristics in the Earth Charter, but these programs are independently recognized and not cohesively adaptive. These groups include Student Government Association, Mission Environment, California Coastal Commission, J Street U, and Chapman Oxfam Club. Environmental health education should stress the economic investments and the costs and benefits for “population health outcomes, greater equity in health, and sustainable use of resources” (Earth Charter International, 2009). Curriculum that emphasizes these characteristics will in turn provide graduates with a more holistic social and economic perspective as to how to deal with environmental issues in the future.

Currently, there are classes that greatly reflect and address environmental health. These classes include: FSN 201: International Nutrition: World Health Crisis, HON 389: Grand Challenges Initiative, PCST 354: Nonviolent Social Change, HESC 310: International Health, POSC 335: Political Economy. International Health (HESC 310) is important to environmental health because it teaches “planning and implementation of health-related behavior change programs both globally and in domestic cross cultural settings” as well as addresses issues such as “health beliefs and behaviors and sustainability of remedial health practices”. Likewise, Political Economy (POSE 335) is vital to environmental health because the course emphasizes the “how the gap between the rich and poor might be decreased” which would decrease the environmental degradation in third world countries. In regard to public health and the environment, the Grand Challenges Initiatives supplements a student’s learning experience with a “project designed to leverage their growing individual (disciplinary) knowledge bases, skill sets, and problem-solving abilities”. These projects emphasize the need to deliver healthcare alternatives to hard-to-access areas that suffer the most from low socioeconomic barriers and environmental hazards.
14.4 Concluding Assessment of Environmental Health

Based on the Chapman University 2013 Curriculum Audit, Chapman has done a good job of improving the environmental education on campus to help students and faculty learn about sustainability. The classes that were highlighted in the 2013 audit only focused on the classes within the environmental students’ program and major. The knowledge gap that exists is whether or not students outside the environmental major are fully equipped with the knowledge of how environmental hazards are affecting human health (Campus Audit, 2013).

Another knowledge gap, as identified by the Chapman University 2015 Audit, is if faculty are not being effectively trained to teach classes in sustainability (Campus Audit, 2015). Additionally, the 2013 audit displayed that only 23% of faculty responded to whether they teach a course in sustainability, theory or practice. The gap that exists here is why the percentages of respondents were so low. This question will dictate the Chapman University 2017 Environmental Audit’s success to produce more statically advantageous results. Moreover, only 20% of studies from the College of Humanities and Social Sciences said that they have learned about sustainability in classes, and even more alarming is the 20% of students from the College of Education Studies, as these will be the future teachers on our campus and throughout our community.

The figure below shows student responses to whether the knowledge of environmental health through ergonomics will help students in the future workplace. The results showed that most students voted maybe and yes, with an underwhelming 14% of students voting no.

14.4.1 Figures & Tables

![Figure 14.1 - Student responses to if the environment can affect a person's health trajectory](image-url)

The figure below shows student responses to whether the knowledge of environmental health through ergonomics will help students in the future workplace. The results showed that most students voted maybe and yes, with an underwhelming 14% of students voting no.
Figure 14.2 - Student responses to whether learning ergonomics will help within the workplace

Figure 14.3 - Student responses to the relationships between Environmental Health, Policy, Economics, and Peace Studies

There was a myriad amount of responses to the questions in Figure 14.3 three that provided unique information as to the significance of environmental health. Some of the key responses include:

- “These all play a role in environmental health because the way in which policies are shaped, eventually affect[s] the environment and how people use it”
“When the concerns of environmental health aren't profitable for policy or economics, it can unfortunately be detrimental because people prioritize capital over environmental security”

“We need to be smart enough about using our resources to maintain a stable economy and all of this can be regulated through policies established by higher figures”

“I would imagine they play a large role in environmental health concerns, but I do not have a background in any of these areas”

“They affect each other like a domino effect”

These responses correlate strongly to a necessary need for an interdisciplinary approach to produce an environmental health curriculum at Chapman. Nearly 90% of students think environmental health is important because the environment can impact human health. Moreover, student responses from the question emphasizing the interdisciplinary approach to environmental health with policy, peace studies, and economics shows that students are ill-prepared to bridge these gaps and conquer grand challenge with a comprehensive approach. If these perspectives are taught in classes, students will be better prepared for careers and future academic pursuits. Furthermore, the knowledge generated from this redefined curriculum will you utilize an ecological system that addresses how economic and social groups impact the incidence of asthma, cancer, diabetes, or other diseases.

14.5 Recommendations about Environmental Health

14.5.1 Easy cost/effort

Education to faculty about what environmental health is and how it can be applicable to curriculum in different fields, specifically Peace Studies, Biology, and Education

Looking at the current classes that address environmental health and refine the class descriptions

Conducting more research on issues and topics that could be incorporated in classes. These could include: allergens, environmental disease, environmental factors that increase breast cancer risk, lead health effects, cellular radiofrequency radiation, climate change at the local level, and growth and disease

14.5.2 Moderate cost/effort

Implement these classes as a public health/environmental health minor

- HON 389: The Grand Challenges Initiative
- PCST 354: Nonviolent Social Change
- HESC 310: International Health
- POSC 335: Political Economy
- ENV 329: Pollution and Environmental Health
These classes can serve as a template for students to develop their own minor

14.5.3 High cost/effort

- Develop classes that reach multiple departments and stress that carcinogens and toxins within the environment can have a large role on environmental sustainability in students’ lives
  - Looking at environmental justice issues through case studies and developing policy plans to influence adverse environmental factors
  - Building upon classes in the Peace Studies department would be uniquely helpful. Including a class that looks at the disease and democracy as it relates to collaborations between policy makers, healthcare professionals, and community members that seek wellness at a holistic level
  - Classes such as genetics could have a stronger emphasis on how human genetics and the physical environment in tandem plays a role in the development of asthma, cancer, and other health problems.

- Redvelop current class titles and add more environmental sustainable actions to the class content.

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