DESIGNING A THEORY BASED PUBLIC HEALTH CURRICULUM FOR SECONDARY SCHOOL STUDENTS

by

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DESIGNING A THEORY BASED PUBLIC HEALTH CURRICULUM FOR

SECONDARY SCHOOL STUDENTS

Andrea Casas Arrington, MPH

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During a two-year term as an admissions counselor, I had the opportunity to interview over 60 students at Armand Hammer United World College (UWC) of the American West in Montezuma, New Mexico. I learned that the internationally diverse population of secondary students there and at ten other UWCs across the globe were united under the UWC mission: to become responsible citizens, politically and environmentally aware, and committed to the ideals of peace and justice, understanding and cooperation, and the implementation of these ideals through action and personal example. All that I learned, combined with personal aspirations to a career in public health and an interest in helping young people reach their potential, led me to set a goal of some day teaching public health to UWC students, and students with a similar sense of purpose at other schools. This thesis addresses my aspirations as it presents a public health curriculum that could be applied to the UWC movement.

Within the thesis, I summarize existing public health curricula that target youth; describe theories and concepts that demonstrate the importance of public health curricula for adolescents; present my current progress in creating a partnership with the United World Colleges, basing the discussion in community development concepts; consider project limitations and devise strategies that may drive the collaboration process forward in the future; outline the curriculum development process; and present the preliminary course. This work is of great public health significance because existing and future public health issues the world over require the most creative, culturally sensitive professionals for solutions. I argue that the future professionals best suited to tackle such an important task are the adolescents of the present because they stand in a unique position to realize their potential as individuals, family and community members, citizens, and future leaders in their chosen vocations. Investing in the public health education of adolescents is a health intervention we can all participate in and benefit from with dividends to spare.

TABLE OF CONTENTS

LIST OF FIGURES

PREFACE

Many thanks to Dr. Robert Goodman, Dr. Joanne Nicoll, Dr. Martha Ann Terry, Dr. Seunghyun Yoo, and the friends, classmates, and staff who provided invaluable input and support during the course of this project.

1.0   INTRODUCTION

During a two-year term as an admissions counselor at Middlebury College, from July 2000 to July 2002, I was given the assignment of making autumn visits to the Armand Hammer United World College of the American West in Montezuma, New Mexico, to recruit students and conduct interviews of potential candidates. I had the opportunity to interview 30 or more candidates during each of the two visits, and to learn more about the United World College (UWC) movement and mission. All that I learned, combined with personal aspirations to a career in public health and an interest in helping young people reach their potential, led me to set a goal of some day teaching public health to UWC students, and students with a similar sense of purpose at other schools. This thesis addresses my aspirations as it presents a public health curriculum that could be applied to the UWC movement.

German educator Kurt Hahn created the United World College movement in the early years of the Cold War. His inspiration arose while he was addressing a NATO Defense College and he witnessed collaboration among international leaders once considered adversaries.[1] He and several colleagues contemplated creating a similar collaborative environment to foster international understanding among adolescents, who were young enough to be concurrently rooted in their cultures and uniquely receptive to new knowledge. Hahn and his colleagues intended to create a secondary level global microcosm where 16 to 18 year olds of every race, religion, nationality, and background would be prepared for university studies anywhere in the world. Merit and potential were key admissions criteria, and socioeconomic status was unimportant. In 1962, Atlantic College opened in Vale of Glamorgan, Wales to great acclaim. *The Times* called Atlantic College "the most exciting experiment in education since the Second World War.[1]" Today ten United World Colleges operate world wide; the other nine are located in New Mexico, Singapore, British Columbia, Swaziland, Italy, Venezuela, Hong Kong, Norway, and India. Two more UWCs will open in coming years in Bosnia-Herzegovina and Costa Rica.

Each school has its own distinct characteristics, service-learning opportunities, and extracurricular activities, but all are dedicated to the complementary missions of the International Baccalaureate Organization (IBO) and the United World College movement. Founded in Geneva, Switzerland in 1968, the IBO is a non-profit educational foundation. The IB founders created the curriculum to prepare secondary students to attend universities anywhere in the world, and the IBO now offers a program for elementary and middle school aged students as well. The IBO mission states:

> The International Baccalaureate Organization aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. To this end the IBO works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment. These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.[2]

Similarly, the United World College Mission states:

> Through international education, experience and community service, United World Colleges enable young people to become responsible citizens, politically and environmentally aware, and committed to the ideals of peace and justice, understanding and cooperation, and the implementation of these ideals through action and personal example.[3]

When I drove away from Armand Hammer United World College in the fall of 2002, it seemed that an opportunity existed to further realize the goals of Mr. Hahn and his colleagues by teaching these remarkable young people about public health and its mission to "fulfill society's interest in assuring conditions in which people can be healthy.[4]" Responsible citizenship, political and environmental awareness, commitment to the ideals of peace and justice, compassion, caring, and international understanding are all elements that contribute to conditions in which people can be healthy.

My goal for the thesis requirement is to design a public health curriculum based in locality development concepts and rooted in public health theory. It is intended for UWC students and other high school aged students with a similar personally- or organizationally-based mission, so they will be informed about the ways in which the health of individuals, communities, nations, and the world are directly linked to the kinds of ideals espoused by the UWC and IBO missions. In the following chapters, I will summarize existing public health

curricula that target youth; describe theories and concepts that demonstrate the importance of public health curricula for adolescents; present my current progress in creating a partnership with the United World Colleges, basing the discussion in community development concepts; consider project limitations and devise strategies that may drive the collaboration process forward in the future; outline the curriculum development process; and present the preliminary course.

2.0   LITERATURE REVIEW

2.1   EXISTING PROGRAMS

Although many programs exist that teach young people about public health, they are loosely incorporated into such programs with the curricula focusing primarily on careers in medicine. The Stanford Medical Youth Science Program and the Pennsylvania Governor's School for Health Care are examples. After an extensive search through Ovid and internet search engines, three programs emerged that were designed for the purpose of teaching adolescents in a high school setting about public health and public health careers. They are:

- The Public Health-Health Professional Partnership Initiative (PH-HPPI), funded in several high schools by The Robert Wood Johnson Foundation (RWJF), the W.K. Kellogg Foundation, and the Association of American Medical Colleges (AAMC);[5, 6]

- The Health Careers Opportunity Program (HCOP), funded in several high schools by the Health Resources and Services Administration Division of Health Careers Diversity and Development (HRSA-DHCDD);[6, 7] and

- The Health in Education Initiative, a partnership between the Association for Supervision and Curriculum Development (ASCD) and The Robert Wood Johnson Foundation.[8]

The first two listings, while not curricula, are grant programs that funded initiatives to create curricula for high school students. The Health Education Initiative stands out as a unique project designed for the purpose of developing public health curricula for young people. While youth of all school ages were included in the project, a curriculum was designed exclusively for high school students. Descriptions of each program follow.

2.1.1   The Health Professional Partnership Initiative (HPPI)

According to the RWJF website, the AAMC developed HPPI, or Project 3000 by 2000 as it was formerly known, to address a dearth of racial and ethnic minorities in the health professions. Through HPPI, graduate health professions schools, K-12 school systems, undergraduate colleges, and community-based organizations collaborate to provide students with improved learning opportunities that increase their potential to become medical health professionals. When RWJF co-sponsored the third cycle of HPPI funding in 2000, it influenced the addition of public health career awareness to the initiative, and the PH-HPPI grant program commenced. PH-HPPI awarded grants to five accredited schools of public health that planned to integrate public health into allied health professions training and the curricula of students from the kindergarten level to post-doctoral fellowships.

Many of the programs developed from the PH-HPPI grants broadly introduce youth to the health professions, however, one program implemented at the University of Illinois at Chicago (UIC) through the School of Public Health and the Urban Health program focuses on public health. The UIC program founders designed their program to:

> encourage under-represented minorities to enlist in academic programs leading to masters and doctoral degrees in public health. The main purpose of both programs is to substantially increase the number of African Americans and Latinos who are accepted, enrolled, retained and graduated with Masters/Doctorate degrees in public health. The programs are targeted towards the West and South sides of the city of Chicago, which represent 95% of the Health Profession Shortage Areas (HPSA) in the state of Illinois and have a very small number of individuals with Masters and Doctorate degrees in public health.[6]

The programs begin their mission in elementary schools and follow students through their academic careers into graduate school, increasing awareness of public health issues the entire way.

2.1.2   The Health Careers Opportunity Program (HCOP)

The HRSA-DHCDD created the HCOP grants program to generate a workforce better able to meet the needs of underserved populations by increasing racial and ethnic diversity in the health professions, and developing the academic potential of students from disadvantaged

backgrounds.[7] Like HPPI and PH-HPPI, the HCOP also supports its students as they prepare for, apply to, and graduate from undergraduate and graduate level health professions programs. The use of the grants by schools was much more varied. The University of Illinois at Chicago HCOP is unique because it specifically concentrates on high school students.

2.1.3   The Health in Education Initiative

ASCD and RWJF created the Health Education Initiative (HEI) to:

> encourage the development of dynamic curriculum models that promote awareness of public health among middle, junior, and high school students. The initiative awarded 10 two-year grants—$20,000 for each year—to schools or districts that partnered with community-based public health organizations to educate students about the public health field. Through this project, students identified and explored public health issues affecting their communities while also learning about careers in public health.[8]

In *Education and Public Health: Natural Partners in Learning for Life*,[8] Jenny Smith outlined the rationale and outcomes of the projects undertaken by schools awarded funding under the HEI. She explained that the HEI is based on sound public health concepts and models such as the ten essential public health services and locality development. The ten essential public health services are:

- Monitoring health status to identify community health problems;
- Diagnosing and investigating health problems and health hazards in the community;
- Informing, educating, and empowering people about health issues;
- Mobilizing community partnerships to identify and solve health problems;
- Developing policies and plans that support individual and community health efforts;
- Enforcing laws and regulations that protect health and ensure safety;
- Linking people to needed personal health services and assuring the provision of health care when otherwise unavailable;
- Ensuring a competent public health and personal health care work force;
- Evaluating effectiveness, accessibility, and quality of personal and population-based health services; and
- Researching for new insights and innovative solutions to health problems.[9]

Since the services provided by public health professionals are so broad, Smith emphasized that students have an equal number of opportunities to learn how public health is relevant to them.

The primary method HEI uses to educate students about public health is service-learning. Students complete projects in their own communities, which provides a win-win opportunity for the students and the organizations they volunteer with. Locality development, a central public health model, also advocates this kind of capacity building. Instead of merely carrying out a project in a community, public health professionals who use capacity building involve community members in every stage of their work. As a result, lay people gain skills and tools they can continue to use to enrich the public health of their communities in the long term. Partnerships between the fields of education and public health increase community capacity by engaging students in their own neighborhoods and communities. Personal satisfaction and confidence gained from their experiences spur youth to reinvest their energy into positive personal and community-building endeavors. The relevance of Smith's book, written to encourage educators, public health and medical professionals, and service organizations to collaborate in an effort to engage American youth, extends to all adolescents in any nation and any school district.

The Health Education Initiative seeks to enable students to address health concerns in their own communities with the support of their schools. Its efforts to integrate public health into all areas of their schooling, increase the efficacy of students to take on personal and community based challenges, and influence students to contemplate their world in a more comprehensive, thoughtful fashion indicates that it is implicitly rooted in theoretical frameworks such as social cognitive theory, social ecological theory, and the transtheoretical model, which are described in Chapter 2.2. As I strive to take my own curriculum from prototype to extant program, the Health Education Initiative model will influence my work.

2.2   CREATION: PUBLIC HEALTH THEORY AND CONCEPTS

2.2.1   Creating a Partnership: Interdependence/Social Exchange Theory

In his book *Theorizing Health and Culture*, Airhihenbuwa stated, "It is more effective to adapt preventive health programs to fit community needs and cultural contexts than the reverse, hence the need to ensure that health promotion programs are culturally appropriate.[10]" The goal of the

public health curriculum designed here is to be applicable in a multitude of settings around the world, whether United World Colleges, parochial or public high schools. My first task was to seek partnerships with schools that might benefit from adopting a public health curriculum. The educational setting of the curriculum determines the courses taught and the applications used since service-learning opportunities vary according to school locations. For example, a course on malaria may be taught in India, but covered only briefly in a broader course in an American high school. I conveyed to each school that although my proposal contained detailed sample course objectives, the proposal (Figure 1) should be viewed as a work in progress that will be shaped by their input as well as mine. I viewed each school as an expert in the development process.

"Mutuality" is a precept discussed by Lewis, et al. in their explanation of Interdependence Theory.[11] Interdependence is "the process by which people influence each other's experiences, or the effects an individual exerts on another person's motives, preferences, behavior and outcomes.[11]" Interdependence Theory explains how one's capacity to communicate with another person or group affects whether or not a desired outcome is achieved. When I submitted proposals to different UWCs, I communicated that my educational vision benefited their schools and complemented the IBO and UWC missions.

Purpose

To develop an ongoing partnership with the United World College of … to design a customized public health curriculum for your students.*

*At your discretion, the option exists to extend the partnership to the University of Pittsburgh Graduate School of Public Health.
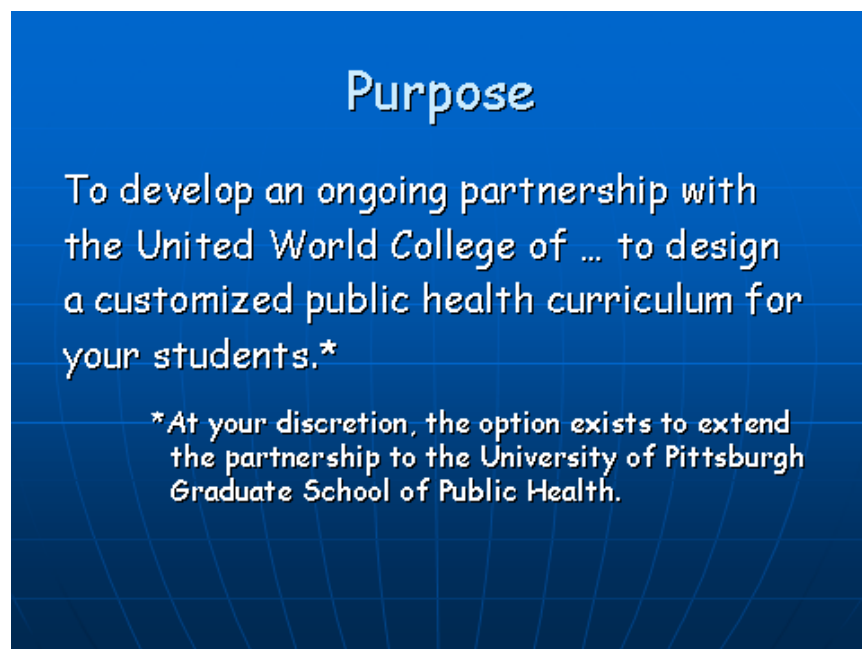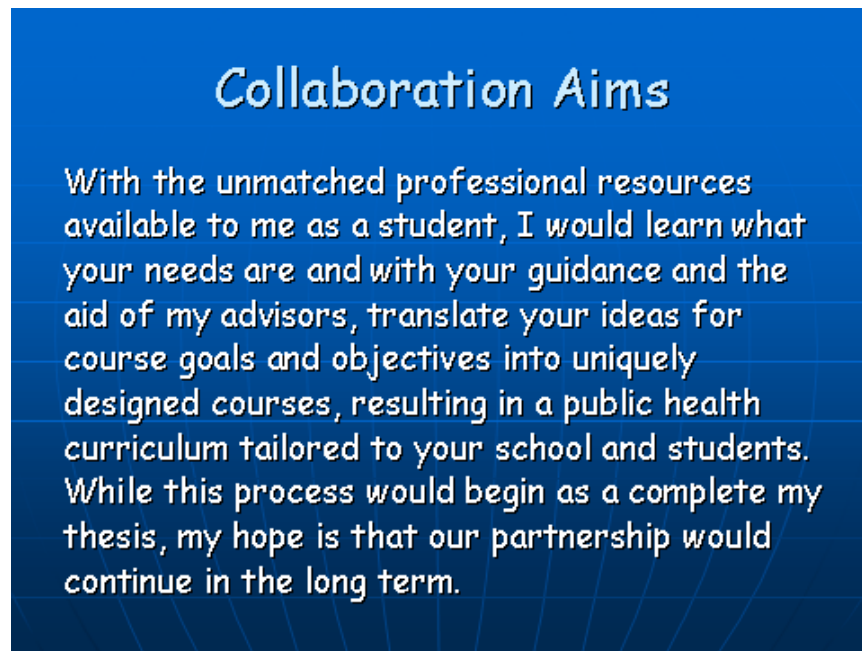
Figure 1. Purpose of Proposal

Figure 2. Collaboration Aims

Figure 2 shows the collaboration aims I composed were based on referent power, one of six "bases of power" described by French and Raven in 1959 and elaborated on in 1993.[11,12] It is "viewed as the most effective source of influence or power in informal dyadic relationships, based on one's identification with the professional [on a personal level], and may generate feelings of communality, security and trust.[11]" When the UWC administrators recognized my intentions as trustworthy, they could conclude that our partnership would enhance their current programs. On its own, however, referent power is not sufficient to convince a party that an idea should be adopted. Implicit within French and Raven's other five bases of power—expert, legitimate, coercive, reward, and informational power—is the requirement that the other party is convinced that the benefits of collaboration outweigh the costs.
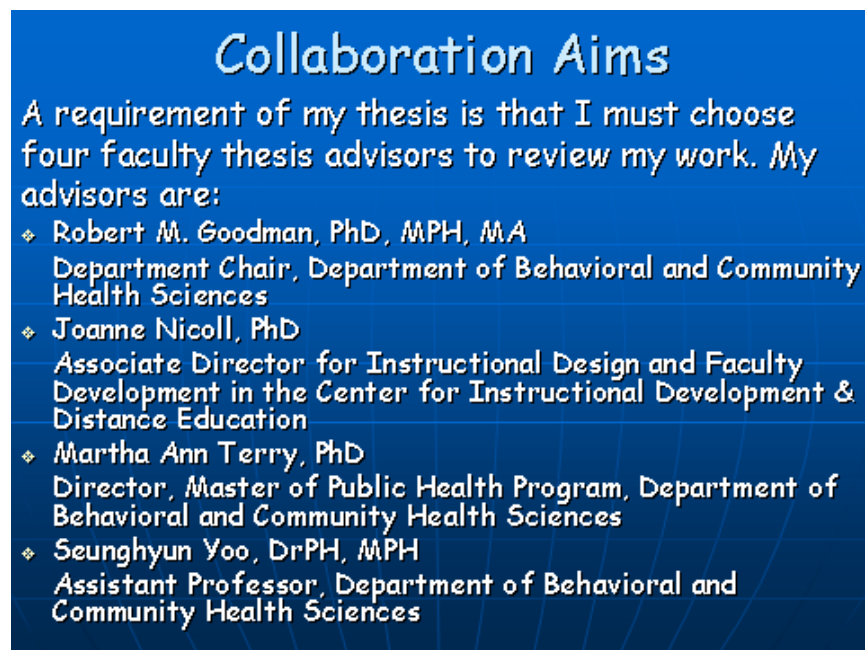
2.2.2   The Five Phases of Entrée and Institutional Decision Making Processes

Goodman, et al. confirmed the supposition that benefits must outweigh costs in their article titled *Recruiting school districts into a dissemination study*.[13] They examined the recruitment process of 28 school districts into a project created to disseminate tobacco prevention programs in North Carolina. They found that the decision makers in school districts decided whether or not to join the study based on a "five-phased decision making process of legitimacy, information seeking,

expressions of limitations, expressions of engagement, and commitment,[13]" or the five phases of entrée.

Legitimacy is meant to enable researchers to establish both their own credibility and that of their research. This stage is characterized by an extended period of time needed for the researcher to prove s/he is committed to the collaboration process and is sensitive to the concerns and needs of the potential partner. "Expert power" is a useful tool for the researcher during this period because it helps the professional communicate to an audience that s/he can provide knowledge that they lack and require.[11] During the legitimacy process, s/he should expect to hear doubts and reservations expressed by the population of interest that are based on the perceived costs of engaging in the project. The professional then employs "informational power" by clearly and concisely communicating answers to any questions or concerns.[11] Next, the relationship between the party of interest and the researcher will become guided by referent power, and expressions of engagement may be heard. Commitment to the project is the ideal result of this carefully cultivated process. Goodman, et al. found commitment occurred most when "key decision makers" such as superintendents, principals, and school board members perceived their project as beneficial.

In my proposal to the United World Colleges, I established the legitimacy of myself and my project by introducing the team of professional advisors with whom I would work (Figure 3).

Collaboration Aims

A requirement of my thesis is that I must choose four faculty thesis advisors to review my work. My advisors are:

- Robert M. Goodman, PhD, MPH, MA
  Department Chair, Department of Behavioral and Community Health Sciences
- Joanne Nicoll, PhD
  Associate Director for Instructional Design and Faculty Development in the Center for Instructional Development & Distance Education
- Martha Ann Terry, PhD
  Director, Master of Public Health Program, Department of Behavioral and Community Health Sciences
- Seunghyun Yoo, DrPH, MPH
  Assistant Professor, Department of Behavioral and Community Health Sciences

Figure 3. Team of Experts Supporting the Proposal and Project

I exerted expert power by including two highly experienced public health professionals and a curriculum development specialist on my team. Thus, the UWC administrators could recognize that our cumulative expertise would contribute greatly to the curriculum development process, and that collaboration would produce outstanding long-term results.

2.2.3   Collaboration and Synergy

Goodman emphasized that collaboration is important because of its inherent benefits and its propensity to reduce project costs and increase social capital, or the camaraderie and feelings of trustworthiness that arise from quality interactions between working partners.[14,15] Collaboration increases diversity, facilitates critical mass, increases resources through sharing, facilitates division of labor through shared responsibility, increases expertise through sharing, reduces duplication of effort, enables creative responses to innovation, and leads to partnership synergy.[14] As collaboration enriches the process of completing a project, synergy enhances the functionality and effectiveness of a team of people by "leveraging, combining, and capitalizing on their complementary strengths and capabilities.[16]" Synergy is "the proximal outcome of partnership functioning that gives collaboration its unique advantage.[16]"

A challenge unique to this project is that it seeks to create transcontinental collaborations. United World Colleges are individual schools of unique character under one organizational umbrella, academic curriculum, and mission. My attempts to gain entrée are therefore aimed at eleven to thirteen separate organizations in up to thirteen separate cultures with one common mission. As the project continues, I hope to move beyond phase two of the entrée process by broadening my network of contacts to the IBO and International Headquarters of the UWC movement. This could result in consolidation of efforts to the UWCs' oversight organizations. I anticipate that the process of seeking collaboration will continue beyond the scope of this thesis.

2.2.4   Creating a Comprehensive Public Health Curriculum: Social Ecological Theory

The Social Ecology Model developed by Yoo et al. greatly influenced my development of the course design and curriculum. "The model [is] built around the interactions between people and their environments, the interactions between people and groups within their environments, and

11

interactions between causes and effects within a community.[17]" Figure 4 shows how the health of a community is influenced at a variety of social levels beginning with the individual or family level, and including the community, organizational, and policy levels. Thus, public health professionals beginning comprehensive community health interventions at any level of society must take into account the surrounding influences.

At the beginning of any project, there is an initial condition and a desired outcome that is the antithesis of the initial condition. The initial condition is an undesired circumstance. Change agents work to alter it via mediating factors, which are interventions planned to reach the desired outcome. Initial conditions on each tier influence each of the other levels. Change agents must be cognizant of this relationship and will likely need to work with it if they are to achieve their desired outcomes. When change agents appreciate the larger picture, they are best equipped to strategize ways to achieve their aims by identifying key decision makers and stakeholders, and tapping influence at surrounding levels.
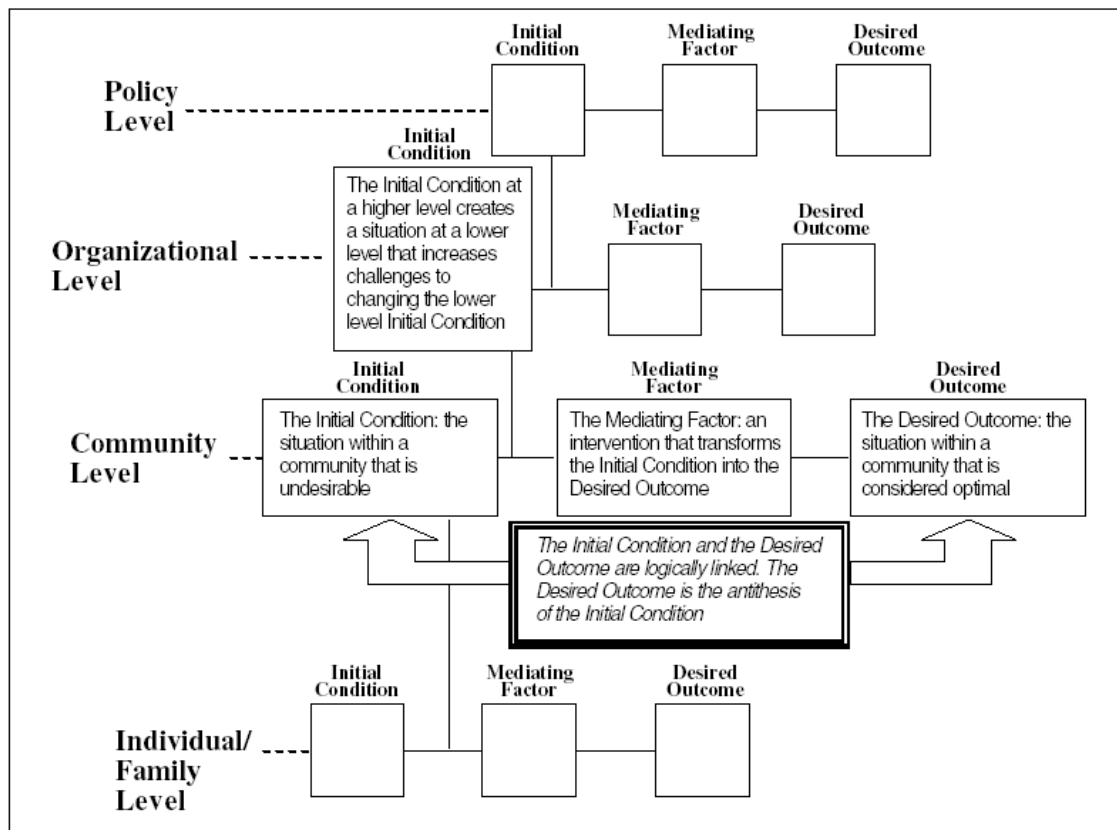

Figure 4. Yoo, et al. Social Ecological Model[17] (Used by Permission of Sage Publications)

The final line of the IBO mission statement reads, "These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.[2]" In comparison, the UWCs aim to make their students "politically and environmentally aware, and committed to the ideals of peace and justice, understanding and cooperation, and the implementation of these ideals through action.[3]" Appreciating other people and their differences, and political and environmental awareness include understanding the interaction of different levels of society. The public health curriculum and course presented in Chapter 4 utilize the social ecological model by encouraging the intended audience to consider health on multiple societal levels.

2.2.5 Creating Future Leaders in Adolescents: Social Cognitive Theory and the Transtheoretical Model

Social Cognitive Theory is similar to Social Ecological Theory because the decisions people make and the behaviors they adopt are "dynamic, depending on aspects of the environment and the person, all of which influence each other simultaneously.[18]" Implementing a public health curriculum in a setting where students' values and beliefs are developing is a great responsibility and opportunity. The underlying long term outcome desired when teaching adolescents to adopt and practice public health concepts is that they will continue to practice those concepts both in their future careers and in all of their interactions with the world around them. Whether they become actors, teachers, business executives, clergy members, parents, economists, skilled laborers, or political leaders, if students understand that their influence matters, they can make great positive contributions to the betterment of the socioeconomic, environmental, physical, mental, and spiritual health of individuals, communities, nations, and the world. The key is teaching students to understand their importance and that they can create positive change when they are taught a few skills and given the proper tools.

In an article titled *Self-Efficacy Beliefs as Shapers of Children's Aspirations and Career Trajectories*, Bandura et al. stated:

Among the mechanisms of human agency, none is more focal or pervading than people's perceived self-efficacy…Whatever other factors may operate as guides and motivators, they are rooted to the core belief that one has the power to

produce effects by one's actions. Perceived self-efficacy is…posited as a pivotal factor in career choice and development.[19]

Self-efficacy strengthened by practice in making difficult decisions in complicated situations results in reinforcement of one's belief that s/he will consistently succeed at a given endeavor.[19] One way to help students gain the confidence to integrate public health into their personal philosophies and everyday activities is to incorporate service-learning opportunities that schools can realistically create into the curriculum. The UWCs have these opportunities in abundance. Author Jenny Smith pointed out that service-learning not only serves others, it offers the participants personal benefits, too.

> Service-learning, as a teaching strategy, is also a powerful way to motivate youth and build self-esteem. Studies indicate that in many cases, students who participate in high-quality service-learning programs are more likely to attend class punctually, initiate questions, and complete assignments. They care more about doing their best and show greater concern toward others. Because service-learning boosts self-esteem and self-efficacy, students are less likely to engage in risky behaviors.[8]

Increased self-esteem leads to increased ability to socialize with one's peers. Thus it is likely that well developed public health courses could result in a diverse group of international students forming a community of identity, or shared purpose, ultimately producing a global network of altruistic thinkers and actors. An Ethiopian proverb states, "When spider webs unite, they can tie up a lion." The potential benefits of such a network are intriguing in a conflicted world. Bandura, et al. wrote, "modeling supplemented with guided mastery experiences provides an especially effective vehicle for building resilient self-efficacy.[19]" While this was written in reference to the positive effect experiential learning can have on the student, Smith's above statement indicates that students who are motivated to model health behaviors themselves will become role models to those they seek to influence in their school or home communities. This ripple effect is what I hope for, and what the curriculum described below is intended to achieve.

3.0   METHODS

In the following section, the methods used to create a partnership with the UWCs and to design the public health curriculum are outlined. The steps listed reflect the recruiting strategy described by Goodman et al.[13]

3.1   DEVELOPING A PARTNERSHIP

3.1.1   Step 1: Homework

In the earliest stages of the development of this project, I completed an extensive search of the United World College website and the internet to look for existing public health coursework in any of the United World College curricula. While I did not find evidence of formal coursework, I found many references to students who pursued or are pursuing public health in their undergraduate and graduate studies. Emmanuel Drabo, an alumnus of the Armand Hammer United World College of the American West (UWC-USA) is an outstanding example. He is currently a student in the class of 2008 at Bates College in Lewiston, Maine. Drabo, a native of Ouagadougou, Burkina Faso, created an independent, interdisciplinary major in public health. "Here [at Bates] I can mix political science and economics with mathematics and biology," he said.[20] He understands that public health is a multidisciplinary field. Drabo intends to pursue graduate studies in public health and then return to Burkina Faso to improve the health of his nation's people.

Interestingly, Drabo's tuition is funded in part by a UWC-Davis scholarship. Drabo is one among many UWC alumni who earn either full or partial UWC-Davis Scholarship aid from the Davis Scholars Program. Founded by Shelby M.C. and Gale Davis, the program

provides students with a scholarship equal to their full financial aid as their college of choice assesses it. "Davis Schools" are US colleges handpicked by Mr. and Mrs. Davis to educate UWC alumni admitted to Colby College, Princeton University, College of the Atlantic, Wellesley College, or Middlebury College. The origin of such generosity lies in a visit Mr. Davis paid to UWC-USA in 1998. "He arrived early, encountered two boys sitting by the pool talking and asked them if they were students. It turned out one was from Israel, the other from Palestine. 'We're roommates here,' one told him, 'and we are friends—and this could never happen in our country,' Davis recalls hearing.[21]" "Wherever they end up, these students will be different. Our American students will be different too," Davis said.[21] Such an opportunity eliminates economic disparities between students, and enables any student admitted to Davis Schools and many other colleges and universities to reach their career aspirations. The program also provides an opportunity to help students interested in public health achieve degrees in higher education so they can enrich and/or lead the profession in their own nations in the future.

3.1.2   Step 2:   Priming the Pump

Equipped with the knowledge that UWCs do not explicitly teach public health, and that interest in public health is demonstrated in alumni biographical sketches, I called UWC-USA, the school I was most familiar with, to attempt to garner support for the proposal process. If I could identify an enthusiastic supporter of my idea at UWC-USA, I might also find in that person a knowledgeable intermediary who could help me approach other UWCs. In the fall of 2005, I attempted to contact the guidance counselor I knew while I was an admissions counselor, but discovered he had left the school.

A secretary connected me with the Registrar/IB Curriculum Coordinator at UWC-USA. I introduced myself and explained that I had visited her school during my fall 2000 and 2001 admissions travel seasons. I asked her if she knew whether UWC-USA or other UWCs taught public health in their courses. She explained that UWC-USA taught health classes in which students learned basic personal health and hygiene concepts. Her comment reminded me that many people do not understand the full scope of public health as a discipline. I related my idea to her, giving examples of how general health classes and the public health classes I proposed are different. She told me that while UWCs are relatively limited in the kinds of electives they can

offer due to the structured nature of their curriculum, if I sent the proposal to her she would review it and schedule a date to present the proposal to the UWC-USA board. She also related that her daughter had recently returned from the future site of the UWC in Costa Rica, and that her hosts indicated an interest in incorporating public health into the program. She assured me she would send the contact information to me through e-mail.

3.1.3 Step 3: Making Contact and Establishing Legitimacy

Encouraged by my initial contact, I wrote my thesis proposal and assembled the team of public health and curriculum development advisors listed in Section 2.2. I drafted the following letter of intent in November of 2005:

Dear _____:

In the fall of 2000, while traveling as an Admissions Counselor for the Middlebury College Admissions Office, I visited the Armand Hammer United World College of the American West in Montezuma, New Mexico. Over two years, I interviewed over 60 young men and women who expressed desires to go on to careers in political science, medicine, and the arts. Some also wanted to study public health, an area of study I intended to pursue when my two-year appointment as an Admissions Counselor expired. In fact at least one student, Emmanuel Drabo, a graduate of UWC-USA went on to design his own major in public health at Bates College (see http://www.bates.edu/x60727.xml).

The common undertone of every interview was each student's hope that s/he would one day have the opportunity to contribute to his/her own community in some way. Driving away from the UWC, I was deeply moved by the students I met, and by the United World College mission. I continued to be impressed with the Davis Scholars admitted to Middlebury. At one point I asked the guidance counselor what the requirements were to earn a position at a UWC, and he told me that teachers should have a master's degree.
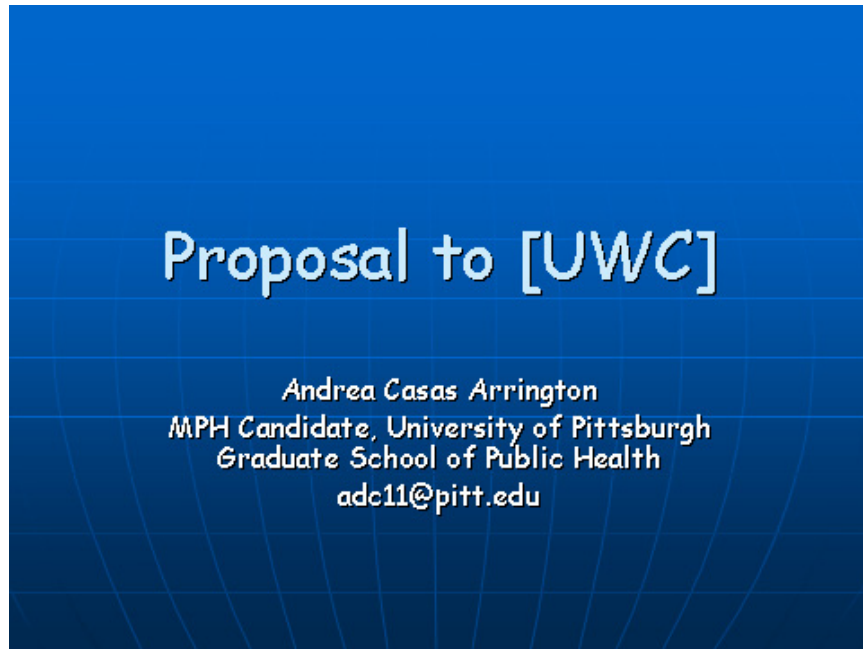
Throughout the time I have spent earning my master's degree in public health at the University of Pittsburgh, UWC students and the UWC mission have remained at the front of my mind. As I approach an April graduation date from the University of Pittsburgh, I seek to focus my thesis on developing a lasting partnership with _____ and other UWCs with the goal of collaboratively designing a public health curriculum tailored to each individual school and its students. Existing and future global public health issues such as AIDS and malaria will require the most creative, culturally sensitive professionals for solutions. I can think of no better up and coming professionals than United World College students to meet such a vast need.

Attached to the e-mail is a brief Microsoft PowerPoint presentation that I put together to familiarize you with my proposal. If your computer is not compatible with the attachment, please e-mail me at adc11@pitt.edu and let me know which format would be best for you. Also attached is my résumé so you can learn more about my background and experience. I will follow up with you in the next few weeks by e-mail to learn your thoughts. It would be an honor and a pleasure to collaborate with your school to work on this idea, and I welcome your questions and feedback.
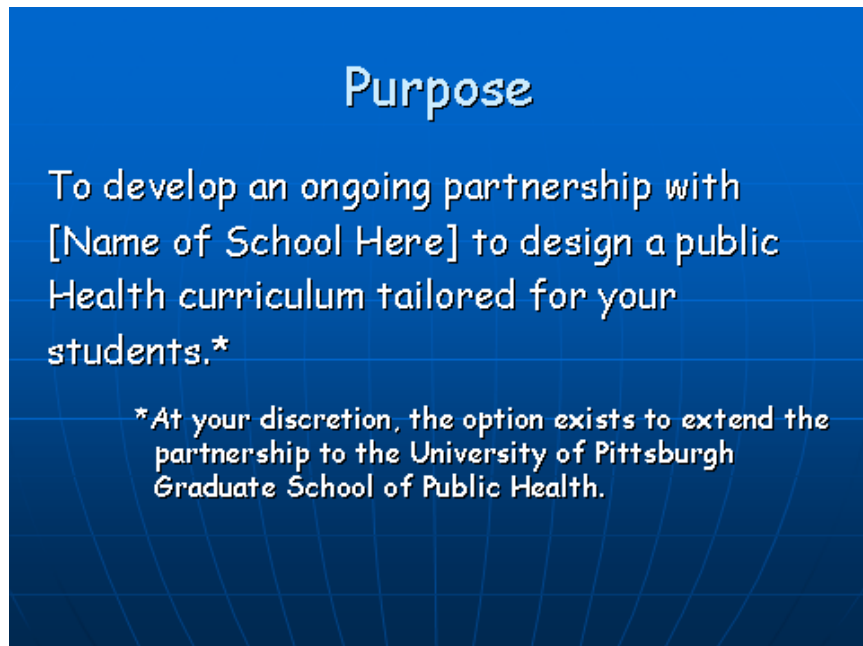
Respectfully yours,

Andrea Casas Arrington

I also prepared a short PowerPoint presentation to define public health for my audience, and to provide a visual aid of my idea (Figures 5-13). The presentation contained the following slides:

Figure 5. Slide 1-Title Page

Figure 6. Slide 2-Purpose of Proposal

Figure 7. Slide 3-Definition of Public Health

Figure 8. Slide 4-Team of Experts Supporting the Proposal and Project

Figure 9. Slide 5-Collaboration Aims 2

Figure 10. Slide 6-Sample Course Topic and Objectives I

I changed the objectives for *What is Public Health?* as I developed the course, which is described in Chapter 4 and shown in Appendix B.
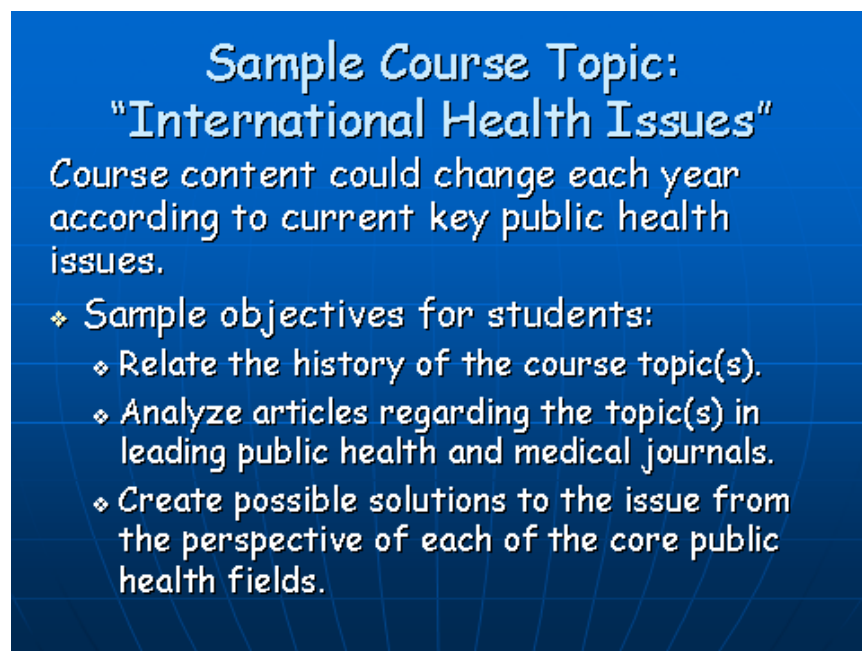
Figure 11. Slide 7-Sample Course Topic and Objectives II

Figure 12. Slide 8-Sample Course Topic and Objectives III

I also added a fourth course, a practicum experience, to the curriculum, described in Chapter 4.
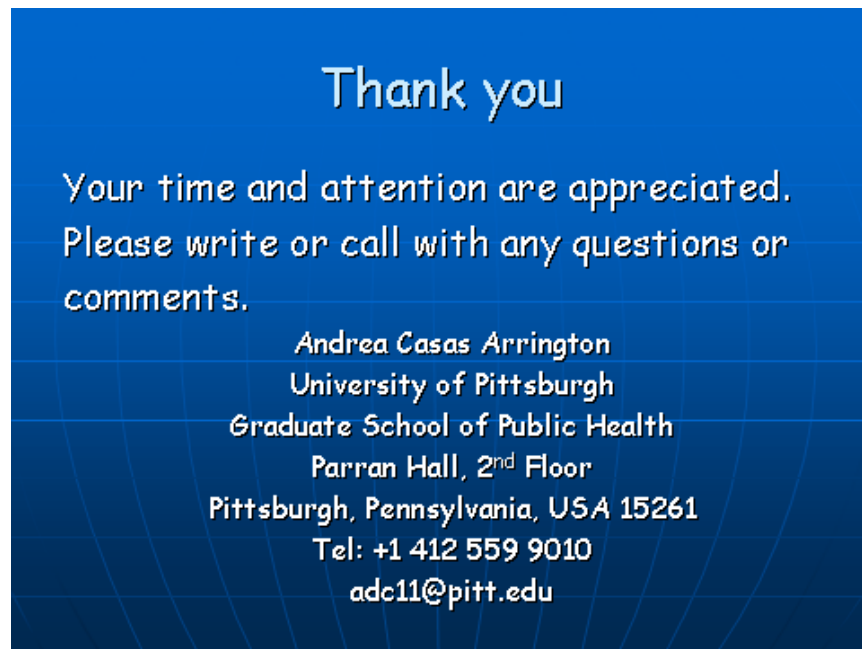
Figure 13. Slide 9-Acknowledgement and Contact Information

Once I completed the PowerPoint presentation, I contemplated how to deliver it to international locations. I considered mailing the letter along with a CD containing the PowerPoint Presentation, but was unsure of whether customs issues would be a problem, or if the CD would break in transit. I decided to send the materials via e-mail along with my resume, to add legitimacy to my proposal, and to give recipients the convenient option of forwarding the e-mail and its contents to others in distant locations. The body of the e-mail, sent November 7, 2005, read as follows:

Good day to you.

I am a master's degree student at the University of Pittsburgh Graduate School of Public Health in Pittsburgh, Pennsylvania, USA. I am in the process of beginning my thesis, the final project that will lead to my degree.

The intent of the thesis is to begin a collaboration with [United World College] and other UWCs in an effort to develop a public health curriculum for UWC students. In 2000 and 2001, when I had the opportunity to interview students at UWC-USA, I was inspired by UWC students and the UWC mission.

Please see the attached documents which include a letter of intent and resumee describing my background and thesis proposal. Also attached is a brief Microsoft PowerPoint presentation which more specifically outlines details of the program of study that could result from the proposed partnership.

Sincere thanks for your time and attention. I hope that we may find a way to work together in the future.

The e-mail and attachments were sent to eight of the ten existing schools. I excluded UWC Adriatic in Italy because their website was down, and I was unsure whether the school was in operation. I also excluded the sustainable agriculture school in Venezuela because their specialized curriculum would not align well with my proposal. I included a special greeting to the Registrar at UWC-USA, reminding her of our correspondence and added a postscript asking a third time for the contact information for the Costa Rican site administrators or other more appropriate associates.

3.1.3.1 Information Seeking and Expressions of Limitations

In the early hours of November 28, three weeks after I sent the initial letters of intent, I e-mailed a follow up message to each UWC. Following is a sample of that e-mail:

> Dear ___,
>
> As per the message and attachments forwarded to you three weeks ago by [name],
> I hope to learn your thoughts regarding my proposal to design a public health
> curriculum for [name of United World College] students.
>
> Please let me know your thoughts even if you decided that the proposal is
> not suitable for your school at this time. A part of my thesis is mapping the
> process of bringing an idea to reality, and your comments are valuable. I would be
> happy to address any questions you have as well.
>
> Your feedback is appreciated.
>
> Thanks sincerely,
>
> Andrea Casas Arrington
>
> MPH Candidate
> Department of Behavioral and Community Health Sciences
> Graduate School of Public Health
> University of Pittsburgh
> Pittsburgh, Pennsylvania USA

I received two immediate responses. The principal at Atlantic College in Wales wrote that the Personal Social and Health Education (PSHE) curriculum at Atlantic College was sufficient for their needs. The principal at Pearson College in British Columbia wrote, "I cannot

see the immediate fit with our institution. We do not have any additional time to allocate for such a program. We currently teach the academic program in 65% of the time that the IBO suggests. We already are conducting a rudimentary health program." I thanked both principals immediately after reading their responses.

On December 9, 2005, I received a response from the principal at Waterford Kamhlaba UWC in Swaziland. He wrote: "Your proposal arrived at a very busy time for the College, and I passed it on to the head of Life Skills who is now departing from Waterford. I would be interested in taking this further, but am not in a position to say anything sensible until school resumes on the 24th January 2006 and I can consult with the life skills teachers." I replied that I would contact him after the holiday, and did so on February 13, 2006. The principal forwarded my e-mail to the new life skills teacher at Waterford. On February 28, 2006, she asked me for more information and an outline of the responsibilities Waterford would take on in the partnership. I responded to her on March 1, 2006, with the e-mail in Appendix A. I followed up again on March 20, 2006, and have not yet heard back from her.

After UWC-USA students returned from the winter holiday I made another contact attempt in early February 2006. Since I had not heard from the Registrar at UWC-USA since the time of our conversation in the fall of 2005, I sent two envelopes containing a modified copy of my letter of intent, my resume, and a CD containing the PowerPoint presentation. I addressed one envelope to the Registrar and the other to the President of UWC-USA. Neither person has contacted me to date.

3.1.4 Step 4: Holding a Summit

Convening a meeting of the parties interested in the project is a step I hope to reach in the future. After I receive my master's degree I plan to send modified letters of intent printed on official letterhead and PowerPoint slides to the IBO and UWC World Headquarters. My degree may add legitimacy to my proposal. I will also compose letters to the administrators of the UWCs in Costa Rica and Bosnia-Herzegovina.

3.1.5   Step 5: Establishing Follow-up

While following up with contacts is always important, Goodman, et al. set this step apart in their review of the partnership development process.[13] Maintaining quality, consistent communication with partners who *commit* to the partnership is its own brand of follow-up. Once an idea takes root, it needs special care to grow to its potential. I will pursue partnerships with secondary schools, continue to follow-up with schools/organizations I previously contacted and have not heard from yet, and will take special care to foster any new partnerships.

4.0   CURRICULUM DEVELOPMENT

Whereas the original intent of the thesis was to develop public health courses only after a partnership with one or more UWCs was established, the prolonged nature of the process thus far prompted me to practice designing one course in preparation for a future partnership. *Public Health 101: What is Public Health?* is a sample introductory course. I created ten classes to demonstrate the kinds of activities and topics such a course could cover, although the course is viable in its current state. Depending upon the time allotted to each class, and the number of weeks in a semester, the course could realistically be altered to meet the appropriate schedule.

I envision the entire curriculum to contain four courses, beginning with *Public Heath 101: What is Public Health?* Other courses might be similar to those outlined on the slides in Chapter 3.1.3: *The Global AIDS Epidemic* and *International Health Issues*. The topic of the latter course could change each time it is offered. I also envision a fourth, capstone course entirely based in service-learning opportunities. A 4,000 word Extended Essay is required of all students studying for the IB Diploma. Students can choose to address a topic in one of their Higher Level courses, or choose an approved topic related to their own interest. The public health capstone would provide one venue for students to write about their interest in a health issue. If the curriculum is adopted by a public school or other system without built-in service-learning opportunities, creating them is an option with its own unique learning prospects. Jenny Smith stated, "The best outcomes [occur] when students initiate their own interventions in their school or community.[8]" The content and number of courses within the curriculum, however, will ultimately be determined by the schools themselves.

The course syllabus in Appendix B was designed between February 2006 and April 2006 in close collaboration with Joanne Nicoll, PhD, Associate Director of Instructional Design and Faculty Development at the University of Pittsburgh Center for Instructional Development and

Distance Education (CIDDE). The CIDDE developed the instructional design (ID) model that guided my course design process (Figure 14).[22] The model shows that instructional design is an iterative process centered on the learner. Course content and learning activities, goals and

Instructional Design Model
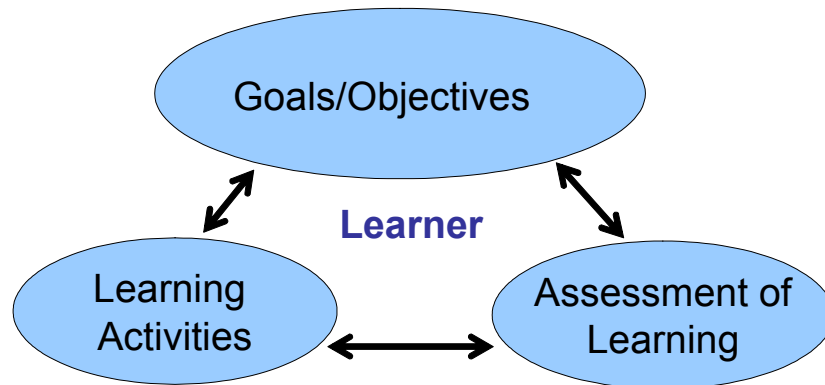
Figure 14. CIDDE Instructional Design Model

objectives, and learning assessment are components of the course. The focus, however, is on what the learner will walk away with at the end of the course. There are eight steps in the ID process, described in the sections below.

4.1   DESIGN PROCESS

4.1.1   Step 1: Stating the Course Description ad Rationale

Approaching the design of a new course requires an instructor to consider a) what his or her intentions are in creating the course, b) who his or her intended audience is, and c) the students' reasons for taking the course. My intention as I designed *Public Health 101: What is Public Health?* was to teach secondary students with an interest in public health how the field works, the educational background required to become a public health professional, and how the field is relevant to their lives and future pursuits. Regardless of whether students pursue a career in

public health or harbor a general, ongoing interest in it, my hope is that they will leave the course with a greater sense of their role in affecting the well being of others.

Public health is a broad field that encompasses so many disciplines and activities that it is difficult to summarize the question "What is public health?" in a few sentences. Russell Fernald, a Stanford University professor and author of *Designing and Teaching a New Course* cautioned instructors of survey courses to avoid the "tyranny of coverage," or "forcing students to know everything the instructor knows in some modified form.[23] One way to avoid overwhelming students is to set course goals and objectives.

4.1.2   Steps 2-3: Setting Course Goals and Objectives

Goals and objectives structure a course. Course goals are broad statements of the overall outcome of a course.[24] My goal for *Public Health 101* is for students to be able to demonstrate how the history and mission of public health relate to them as individuals and as citizens of their communities, nations, and the world. Narrowing down such a broad statement is accomplished by setting course objectives; statements of the measurable behaviors the instructor intends students to carry out at the end of a course.[24] In *Preparing Instructional Objectives: A critical tool in the development of effective instruction*, Robert F. Mager states that setting objectives is useful for providing:

- A sound basis for selection of instructional materials and procedures,
- Room for instructor creativity and ingenuity,
- Measurable instructional results,
- Tools for guiding student efforts, and
- A basis for realizing instructional efficiency.[25]

Of the five reasons listed, providing measurable instructional results is the key to achieving the other four outcomes listed. Once the instructor knows his or her objectives are measurable, s/he can continuously cross check the materials and procedures, creative methods, and tools s/he plans to use with the objectives to judge whether they are appropriate.

Bloom's Taxonomy Guide, a CIDDE resource compiled from the work of educator Benjamin S. Bloom, provides examples of verbs that help instructors decide which level of

Figure 15. Bloom's Taxonomy

cognitive understanding they want their students to achieve. Bloom determined that there are six levels of thinking, illustrated in Figure 15.[22, 26] Knowledge is the simplest level of thinking, and evaluation is the most advanced. As students traverse one level, learning activities and assessment guide them to the next level. Therefore, an instructor should not ask students to *recommend* a course of action to address an issue (an evaluation level activity) before making sure they can *identify* the key concepts that make up that issue (a knowledge level activity). Course objectives can include verbs covering the spectrum of *Bloom's Taxonomy*, but revisiting the instructional design model is a reminder that instructional activities, course content, and assessment methods employed are meant to guide students through each level of thinking if they are to achieve learning objectives.

The *Public Health 101* course objectives state:

By the end of the course, students should be able to:

- *Identify* prominent, current public health issues and the historical influences that create them.
- *Explain* the roles and responsibilities of the core public health professions, the educational background necessary to pursue them, and examples of projects they may undertake.
- *Compare* sources such as news media, journal articles, and internet resources for credibility and reliability regarding information related to public health issues.
- *Connect* the core disciplines of public health with real world applications.

The actions of *identifying*, *explaining*, *comparing*, and *connecting* occur at the levels of knowledge, comprehension, analysis, and synthesis, respectively. Course activities and assessments will assure that students will be able to *apply* their knowledge, an activity that falls between *comprehension* and *analysis*.

4.1.3 Steps 4-6: Developing a Course Outline, Learning Activities, and Instructional Objectives

Once the instructor states course goals and objectives, the iterative process illustrated in the ID model begins again. Developing an outline of course content is a much more focused, directed process when larger course goals and objectives are established first. The next step is to devise learning objectives for each major topic in the content outline.[24] Instructional objectives guide the instructor's decisions about which learning activities to use. Lectures, discussions, role-playing, and case studies are all examples of activities that must connect with the class objectives if they are to prove useful. For example, in Class II of *Public Health 101*, titled *What is a Community?,* I stated the following class objectives:

- Define and describe the term **community**.
- Illustrate what community means to you.
- Explain the process of working with others to design an ideal community.

I stated the following class activities:

- Discussion: Students will engage in a discussion of community based on the readings and their own experiences.
- The instructor will divide the class into groups. Each group will work together to illustrate their ideal community.
- Students will present and describe their drawings to the class.

Each objective is matched by a corresponding activity. Students will define and describe "community" during class discussion, illustrate their perception of community during a drawing exercise, and explain their work in a class presentation. They will explain the community building process by means of an assessment, described below. Once my objectives and activities were established for each class, I proceeded to the final steps of the ID process.

4.1.4 Steps 7-8: Identifying Learning Materials and Assessment of Student Learning

The learning materials used by an instructor are determined by which class activities s/he selects. I assigned readings for homework after Class I, and a group illustration in Class II, as mentioned above. The materials I need, such as printing paper, poster paper, and markers, also help me determine whether I am providing opportunities for my students to actively engage in the

learning process. Other examples of learning materials include maps, slides, photographs, and videotapes.[24]

Assessment is another means used by the instructor to ensure that his or her students are fulfilling learning objectives. Methods of assessment include essays, research papers, and individual or small group projects, among others. These are tools the instructor uses to double-check that the learner is still at the center of the iterative ID process. Assessment takes place on a smaller scale during or after individual classes, and on a larger scale through cumulative assignments.

For example, while the class objectives in section 4.1.3 correlated with the class activities, the activities did not provide students with the chance to fully meet the third objective which stated: "Explain the process of working with others to design an ideal community." The third learning activity required students to present and describe their ideal community drawings to the class, but I did not ask them to explain anything about the *process* they went through to do so. Therefore, I assigned students a homework assignment requiring them to write a 2-page paper a) describing the process their group went through to illustrate their ideal communities, and b) explaining their contributions, and how their personal backgrounds and experiences influenced the suggestions they made. Reading their papers will help me determine whether students understood how they influenced the process of working with others to create an ideal community.

I also assigned students a final project that required them to apply what they learned throughout the course. As stated in Chapter 2.2.5, the underlying long term outcome desired when teaching adolescents to adopt and practice public health concepts is that they will continue to practice those concepts both in their future careers and in all of their interactions with the world around them. Regardless of whether students pursue public health as a profession, I want them to experience the process of solving public health issues that are relevant to their own communities. I assigned two options to give students this experience. The instructions for the assignment were as follows:

You will prepare a professional poster presentation explaining **EITHER**:

a. A public health issue of importance to you and your nation or community of origin. Your poster must include information regarding:

i.   why the issue is important to you and your community/nation,
ii.   the history of the issue,
iii.   the public health significance of the issue,
iv.   which of the six public health disciplines best play a role in addressing the issue, and how each profession does so, and
v.   how you could contribute the solution to the problem.

OR

b. a public health related service-learning project you are a part of. Your poster must include information about:

i.   the background of the organization you are working with,
ii.   the goals of your project,
iii.   your motivation for choosing the project,
iv.   the public health significance of your work, and
v.   applications of your service-learning experience to your future plans.

Option **a** offers students the chance to begin tackling an issue in their own community, and to imagine what they would do if they were a public health professional in their home community. Recall that Bandura, et al. stated:

> Among the mechanisms of human agency, none is more focal or pervading than people's perceived self-efficacy…Whatever other factors may operate as guides and motivators, they are rooted to the core belief that one has the power to produce effects by one's actions. Perceived self-efficacy is…posited as a pivotal factor in career choice and development.[19]

My intention is to increase students' perceived self-efficacy by providing them with the chance to practice creating solutions to multifaceted problems. Option **b** offers students a chance to learn how service-learning is akin to public health practice. Whereas option **a** asks students to take an issue they know has public health significance and then practice the process of solving the issue, option **b** asks students who are already practicing the solution to discover how their work has public health significance. Either option students choose allows them to satisfy the course goals and objectives. The entire course syllabus can be viewed in Appendix B.

5.0   FINDINGS AND DISCUSSION

When I proposed this thesis, I began a process I had never formally experienced. In the beginning, I wondered whether four months would be enough time to build collaborations with the United World Colleges. At this point it is certain that I need more time to determine the best course required to move the process forward. While time limitations were an unfavorable condition during the course of this thesis, I will consider other factors that may have limited the advancement of the collaboration process.

5.1   DIFFUSION OF INNOVATIONS

In their review of diffusion of innovation, Oldenburg and Parcel stated that "many health behavior change innovations ultimately fail because of the gap that is frequently left unfilled between the point where innovation development ends and diffusion planning begins.[27]" The means used to diffuse an idea such as a public health curriculum to a broader audience will ultimately determine how it is received and whether or not the idea is adopted. Haider and Kreps defined diffusion as "the process by which an innovation is communicated through certain channels over time among the members of a particular social system.[28]" United World Colleges are in and of themselves social systems because, like neighborhoods, cities, or nations, they are influenced by policies established at multiple levels. As international organizations, the IBO and UWC Headquarters exert widespread influence over the way each school operates. Each nation has laws and cultural norms that affect the schools in subtle or obvious ways. School administrators, like mayors or presidents, impact the policies of individual school activities; and individual students, staff, and faculty exert their own diverse influences on the atmosphere of campuses as well. Differences between UWCs based on their disparate locations present a

33

unique challenge to anyone attempting to introduce new ideas, or innovations, into the UWC social system.

Haider and Kreps listed four key factors in the diffusion of innovations: the innovation itself, communication channels, social systems, and time.[28] Of these four factors, I will further consider time and communication channels as factors in my own collaboration building process, and delve into the influence of cultural competence on choosing communication channels. As mentioned in Chapter 3.1.3.1, the principal of Pearson College in British Columbia wrote, "We do not have any additional time to allocate for such a program. We currently teach the academic program in 65% of the time that the IBO suggests." Almost two-thirds of the time students spend at Pearson College is allocated to IB courses. The other third of the academic program includes a wide variety of extracurricular and service-learning activities and a regular international affairs discussion.[29] Although activities and international affairs topics relate to public health and general health, explicit emphases are absent. Perhaps the niche for public health learning at UWCs with a schedule similar to that of Pearson College is somewhere in the other third of academic programming.

A second influence that may have slowed the collaboration process is what diffusion theorists call communication channels. A key consideration in diffusion theory is that the prospective audience influences the communication channels used to promote a program. Haider and Kreps cited "increasing understanding of adopter categories" as one challenge of the diffusion of innovations.[28] Perhaps I need to understand my audience better. I sent my proposal out by e-mail because I thought it might be a convenient means of communication, but I am not familiar with the etiquette of correspondence on other continents. Perhaps the fact that I heard from the UWCs in Canada and Wales and Swaziland first meant that e-mail is an acceptable means of beginning collaboration there. Oftentimes in the US, e-mail correspondence is eschewed because it is too impersonal. Perhaps the UWCs I did not hear from felt this way or perhaps not. The question is how the cultures of the different UWCs play a role in the entrée process.

Airhihenbuwa wrote, "When present values and practices are not seriously considered in health and development programs, their usefulness within the cultural context of…communities is at best questionable.[10]" He wrote this statement regarding health and development programs in Africa, but his statement is certainly applicable to any health innovation in any community.

Oldenburg and Parcel noted an innovative Australian cardiovascular disease-risk reduction program called Freshstart.[27] Of physicians who were introduced to the program through workshops and active learning processes, 80% reported that they were still using the program a year later. Only 42% of those who received the program in the mail were still using the program a year later. Perhaps Waterford viewed the e-mail as an invitation to a workshop. Perhaps others reacted as though I sent them the innovation in the mail. In my future correspondence with IBO and UWC entities, I will carefully consider how cultural norms and expectations play a role in my attempts to create collaboration.

5.2   RESOURCE LIMITATIONS

In Chapter 2.2.2 I discussed Goodman, et al.'s supposition that organizations that are the target of an innovation need clear evidence that the benefits of their participation outweigh the costs.[13] It is possible that individual UWCs did not know where the resources to collaborate would come from. Perhaps my correspondence with the United World College or International Baccalaureate World Headquarters will provide the opportunity for a partnership because they have more authority over resource distribution and changes within their schools.

One of the outstanding qualities of public health is that it is a field that applies to every person, whether s/he is aware of it or not. In public health, individual capital—the "inalienable or personal traits of persons,…such as skill, creativity, enterprise, courage, capacity for moral example, non-communicable wisdom, invention or empathy, non-transferable personal trust and leadership[30]"—and social capital are valued as highly if not more so, than economic capital. While the adoption of a public health curriculum will require financial capital, the goals of the curriculum are not solely reliant upon it. Perhaps if I convey this to prospective collaborators, their perception of the costs of developing a partnership will be more favorable.

6.0   CONCLUSIONS

Benjamin Franklin said, "Nothing can more effectually contribute to the Cultivation and Improvement of a Country, the Wisdom, Riches, and Strength, Virtue and Piety, the Welfare and Happiness of a People, than a proper Education of youth." Franklin's timeless quote might as well have come from the pages of a public health textbook. Teaching adolescents to adopt and practice public health values is an investment in health at every level of society, no matter where the students reside. Adolescents stand in a unique position compared with the rest of humanity because they are at the doorstep of realizing their potential as individuals, family and community members, citizens, and future leaders in their chosen vocations. Their roles in these positions are not yet fully formed. Thus each adolescent is akin to a microcosm of humankind. Their unique receptivity to new knowledge reveals a singular window of opportunity to steep their potential in altruism.

Research shows that the adoption of service-learning based public health curricula by schools facilitates the creation of an environment where students appreciate differences among one another. Existing and future public health issues the world over require the most creative, culturally sensitive professionals for solutions. Who better than young adults, who stand on the threshold of influencing future generations, to take on such a task? Investing in the public health education of adolescents is a health intervention we can all participate in and benefit from with dividends to spare.

APPENDIX A

LETTER TO LIFE SKILLS TEACHER AT WATERFORD KAMHLABA

March 1, 2006

Dear ___,

Thank you for your email. Congratulations on your new position!

I'm guessing [the principal] sent you my original letter, the PowerPoint proposal, and my resume. A lot of good background information is there. I wasn't able to find information on the Life Skills Program on Waterford's website to know how the proposal might fit into your schedule, curriculum, and program structure. While the email is rather long, I hope it answers some of your questions and gives you useful information. Please feel free to ask me for more specific information.

The proposal is the seed of a curriculum that would familiarize IB students with the principals and everyday applications of public health. At its most basic level it is a means of quilting public health into the fabric of everything else the students are learning, and showing them how it applies to all of their other interests, subjects, and activities. How many courses and classes that would ultimately entail and the subjects studied would have everything to do with what Waterford would want.

In my mind I imagine a three or four course series in which each course would build on the former one. In the first course students might learn what public health is, the careers one can

enter, and how their everyday lives and decisions influence and are influenced by the health of their families, communities, nations, and the world. A second course might be about a specific issue in Swaziland or a collection of nations in Southern Africa. A third might be about many international issues. Each might link up with the service-learning opportunities students have, perhaps through class projects based on their experiences and cultures of origin. Health and life are inextricably linked, and I think UWC students are uniquely suited to learn and understand how that is so because of their educational environment.

Once again, it would all depend on how such courses would fit into the overall Waterford schedule and curriculum. Based on your instructions and input, and the input of others at Waterford, I would use that information to design a curriculum and courses for you and with you. I would incorporate Waterford's requests first and foremost, and would be happy to suggest themes, readings, films, activities, etc. too. After that, my role would continue as much or as little as you wish, although a continued collaboration would be welcomed.

I'll give you an example. When I wrote the proposal, it seemed likely that each school would have its own needs since each is in a different nation and culture with its own unique political, health, and other issues. For Waterford, one of those national and international issues is AIDS. The early approach to learning about pandemics here in the U.S. is often biological and biochemical, with some emphasis on its history, what nations are doing to prevent its spread, fund vaccine research, and educate their citizens about it.

In public health, deeper learning takes place when we learn to look at the political, economic, and environmental impacts of the disease. Nations need funding, but while they are carrying out such an important search process, children who have lost parents to AIDS are raising themselves and their siblings, community networks are breaking apart due to loss, the workforce in many nations is diminishing, economies are at risk, there is a race to find cures in rain forests that are disappearing. Each of these events also have physical, mental, and emotional health considerations on many levels.

The decisions today's students make as they move on to their futures will determine how the story continues. Waterford and other UWC students are future leaders in their families, communities, and nations. Possessing knowledge of the big picture and their place in it will inform students in unique ways as they settle into and carry out their different leadership roles. I think that is such a hopeful concept.

Please ask me any questions. What interested you in the idea?

I look forward to hearing from you.

Best wishes,

Andrea Arrington

APPENDIX B

COURSE SYLLABUS FOR PUBLIC HEALTH 101: WHAT IS PUBLIC HEALTH?

Syllabus begins on page 41.

PUBLIC HEALTH 101: WHAT IS PUBLIC HEALTH?
Fall Term 2008
September 8, 2008 – December 19, 2008

Instructor: Andrea Casas Arrington, BA, MPH
Office, Phone ext

Course Description and Rationale

Nothing can more effectually contribute to the Cultivation and Improvement of a Country, the Wisdom, Riches, and Strength, Virtue and Piety, the Welfare and Happiness of a People, than a proper Education of youth. ~Benjamin Franklin

In 1998, the Institute of Medicine defined the mission of public health as "fulfilling society's interest in assuring conditions in which people can be healthy." A consequence of such a vast mission is that public health is a broad field. It is characterized by many disciplines that, in practice, apply to every area of life. Travels we undertake, foods we eat, cars we drive, paints and chemicals we use, medicines we take, sports we play, choices we make, safety equipment we wear, water we drink, and leaders we elect all have public health implications.

The purpose of this course is to engage students in the study and practice of public health by showing them how they already do so through their every day lives, decisions, and studies, and then teaching them ways in which they can apply their knowledge in lifelong personal and professional pursuits such as teaching, medicine, law, parenting, sports, religious studies, politics, the arts, and economics.

During the course, students will make use of skills developed in traditional school subjects such as English, sciences, history, geography, and language study. Lessons learned through extracurricular activities, employment, and community service will be drawn on as we discuss the core fields of public health: behavioral and community health sciences, epidemiology, infectious disease medicine, health services administration, environmental and occupational health, and biostatistics.

Course Goal

Demonstrate how the history and mission of public health relate to you as an individual and as a citizen of your community, nation, and the world.

Course Objectives

By the end of the course, students should be able to:
- Identify prominent, current public health issues and the historical influences that create them.
- Explain the roles and responsibilities of the core public health professions, the educational background necessary to pursue them, and examples of projects they may undertake.
- Compare sources such as news media, journal articles, and internet resources for credibility and reliability regarding information related to public health issues.

- Connect the core disciplines of public health with real world applications.

Organization and Content

Readings

Class readings will be taken primarily from international magazines and newspapers, textbook selections, internet-based documents, journals, and other sources. Students will learn to critically analyze different articles from different sources for bias, cultural considerations, and political "spin" and determine how these influences affect health behaviors and the spread of disease.

Grading

All students are encouraged and expected to participate and ask questions during class meetings. Students are considered experts on their own cultures, nations, and relevant issues. All assignments must be completed on time unless other arrangements are made with the instructor *at least two days* before assignments are due.

Grades will be assigned on the basis of:

1) **CLASS PARTICIPATION** (20%)

2) **WEEKLY ASSESSMENTS/ASSIGNMENTS** (50%)- Weekly assessments are due at the beginning of the class period following the class in which they are assigned. They should be typed in a font no less than size 11, and double-spaced.

3) **FINAL** (30%) - You will prepare a professional poster presentation explaining **EITHER**:

   a. a public health issue of importance to you and your nation or community of origin. Your poster must include information regarding:

   i. why the issue is important to you and your community/nation,
   ii. the history of the issue,
   iii. the public health significance of the issue,
   iv. which of the six public health disciplines best play a role in addressing the issue, and how each profession does so, and
   v. how you could contribute the solution of the problem.

   OR

   b. a public health related service-learning project you are a part of. Your poster must include information about:

   i. the background of the organization you are working with,
   ii. the goals of your project,
   iii. your motivation for choosing the project,
   iv. the public health significance of your work, and
   v. applications of your service-learning experience to your future plans.

If you chose option **(a)**, your poster presentation must be accompanied by, and will be based on, a 5-10 page paper regarding the information listed.

If you chose option **(b)**, you must submit a weekly journal of your experiences. Each journal must be *at least* 1½-2 typed, double-spaced pages. A weekly schedule of hours and dates worked must also be submitted.

The presentations will be completed in stages throughout the course through weekly assignments.

The grading scale is as follows:

90% - 100% = A	60%-69%= D
80% - 89% = B	Below 59% = F
70% - 79% = C	

ACADEMIC INTEGRITY

When creating reports or documents, you are responsible for properly attributing material--data, images, ideas, and verbatim text--that you find through all resources. The UWC's requirements and standards for the acknowledgment of sources in academic work also apply to all electronic media. At a minimum, you should provide a citation for an electronic source that includes the source's URL, author or site manager's name (if available) and the download date.

DISABILITIES

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify…

I.   Class Introduction: Who is affected by public health?

Class Objectives:
➢ In a class discussion, describe basic ways in which each individual member of the class, while different from each other, is connected to other students through health.
➢ Describe how major public health topics/concerns affect people around the world, and students as individuals.

Class Description
Health is a universal human pursuit. In order to function on a daily basis, a person must maintain a threshold of well being that enables her or him to go about daily work and activities. In today's class, we will take a preliminary look at public health issues that affect each one of us each day, and discuss the ways that these issues connect us all together, even if we live very different lives in different locations.

Learning Activities
- Instructor will welcome students, pass out the syllabus, a large index card, and a map pin, and briefly go over the purpose, expectations, grading practices, and outline of the course.
- On the front of an index card, each student will write his or her name; neighborhood/city, state, and country of origin, and one or two of his or her major life interests or goals.
- Instructor will introduce students to real world, current examples of public health issues as they have been related through media and other sources.
- Class will engage in a discussion of public health issues in their communities, and how their everyday activities are influenced by public health.
- At the end of class, students will write down a question they have about public health on the back of their index cards, and give them to the instructor. The instructor will use the questions to guide class discussions throughout the course.

Assessment For homework, students will choose one of the major public health topics discussed in class, and write a 1-page paper discussing:
  o how that issue affects people around the world, regardless of national borders or distance between people; and
  o how that issue affects you and your everyday activities.

Homework:
- Read handouts for next week's class.
- Students who chose final project option **(b)** must turn in their first journal entry next week. See instructor with questions.

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II. What is a community?

Class Objective:
- ➢ Define and describe the term **community**.
- ➢ Illustrate what community means to you.
- ➢ Explain the process of working with others to design an ideal community.

Class Description: The word "community" has many connotations depending on who is using the word and for what purpose. Today you will learn what community means from a public health standpoint, and think about what your role is in the communities you are a part of.

Learning activities:
- Discussion: Students will engage in a discussion of community, based on the readings and their own experiences.
- The instructor will divide the class into groups. Each group will work together to illustrate their ideal community.
- Students will present and describe their drawings to the class.

Assessment:
- Write a 2-page paper describing the process your group went through to illustrate your ideal community. Explain your contributions, and how your own personal background and experiences influenced the suggestions you made.

Homework
- Read case studies handouts for next week's class.
- Students who chose final project option **(b)** must turn in their second journal entry next week.

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III. Who makes up the public health profession?

Class Objective:
- ➢ Define and describe the core public health areas of **a)** behavioral and community health sciences and **b)** health services administration.

Class Description
We will begin to identify the core areas of public health as the Association of Schools of Public Health determined them. In other words, during the next few weeks we will learn who the people are at the heart of the profession. Today we will review **behavioral and community health sciences** and **health services administration**, professional areas rooted in "soft sciences" such as philosophy, anthropology, sociology, psychology, and law. As a class, we will discuss each of these professions based on the short case studies assigned last week.

Learning Activities
- Lecturette: Instructor will briefly explain the fields of community and behavioral health sciences and health services administration to the class. S/he will also explain the educational background needed to pursue these fields.
- The instructor will divide the class into two groups. Half will be designated behavioral and community health scientists, and half will be health services administrators. Based on their adopted roles, students will engage in a discussion of how these two professions work within the scenarios outlined in the articles.
- Video: 15-minute segment will show students a real-life example of where professionals in the two fields are effective and how they work with others to create change. Students in each of the two groups will pay special attention to how their assigned roles participated in solving the problem in the video.
- Class will discuss video. Once again, students will apply their knowledge of their given role to the discussion.

Assessment: Students will write a 1-2 page paper discussing a health problem in their home community, and describe ways in which behavioral and community health scientists and health services administrators might play a role in solving that problem.

Homework:
- Read handouts for next week's class.
- Students who chose final project option **(b)** must turn in their third journal entry next week.

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IV.　Who makes up the public health profession? Part 2

Class Objective:
➢ Compare and contrast the core public health disciplines of **a)** epidemiology, **b)** infectious disease medicine, and **c)** environmental and occupational health.

Class Description
We will continue to identify the core areas of public health as the Association of Schools of Public Health determined them. Epidemiology and Infectious Disease Medicine are the fields most people think of when they hear the term "public health." Today the class will consider these areas in addition to environmental and occupational health. Together, these three fields make up the group of public health professions that are rooted in "hard sciences" such as biology, chemistry, and physics.

Learning Activities:
- Group Definition: As a class, we will use the readings for the week to define and explain what professionals in the fields of epidemiology,

infectious disease medicine, and environmental and occupational health do. Students will learn about the educational background required to enter these fields.

- In small groups, students will be given case studies that discuss health events around the globe that required the expertise of each of these three professions. The instructor will designate members in each group to be epidemiologists, infectious disease experts, and EOH specialists. Based on their roles, students in each group will work together to come up with solutions to the problems presented in the case studies.

- Each group will present their findings to the class by summarizing their study problem and the solutions they devised based on the part each role played in solving the designated problem.

Assessment: Students will write 1-2 pages explaining which of the three professions they would have preferred to carry out in their given case study (even if it was the one they were given), and why. Comparisons and contrasts should be made with the other two roles.

Homework:
- Read case study for next week's class.
- Students who chose final project option **(a):** Write 1-2 paragraphs describing your project topic.
- Students who chose final project option **(b)** must turn in their fourth journal entry next week.

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V.   Who makes up the public health profession? Part 3: The Proof is in the Numbers, or Is It?

Class Objectives:
- ➢ Define and describe the core area of biostatistics.
- ➢ In a class discussion, compare quantitative and qualitative data as to the benefits and drawbacks of each.
- ➢ Given a case study, relate the role of biostatistics in addressing the issues presented.

Class Description
Today we will discuss the core public health field of biostatitics, the area of public health that specializes in "quantifying data, or using numbers to demonstrate the "statistical significance" of data. Mathematical formulas are considered by many to be the "proof" that helps public health professionals to show the world that their research was worth all of the money, time, and effort put into their research. We will also talk about another kind of data known as "qualitative data" that is increasingly considered to be just as important.

Learning Activities:
- Students will use class statistics to explain the field of biostatistics, and the terms qualitative and quantitative as they apply to public health.
- Instructor will briefly explain the educational background needed to pursue biostatistics as a profession.
- Instructor will divide the class into groups and designate students in each group to be biostatisticians and anthropologists/ethnographers. Based on their roles, each group will use a case study to discuss the benefits and downfalls of each kind of data.
- Students will discuss their findings as a class.

Assessment: Students will write a 1-2 page paper summarizing the case study, and the roles that biostatistics, quantitative and qualitative data played in addressing the given issue.

Homework:
- Students who chose final option **(a)**: write 1-2 pages describing why the issue you chose for your project is important to you and your community/nation.
- Students who chose final project option **(b):** turn in your fifth journal entry next week. Write ½-1 page describing the background (i.e. goals, mission, etc) of the organization you are working with.

VI.   Final Project Resource Search Day

Class Objectives:
- ➤ Identify the factors that make a resource reliable.
- ➤ Use reliable sources for gathering public health information and data.

Class Description: One of the most important skills you will need in any profession, especially public health, is an ability to discern which sources are reputable and reliable for research purposes. Today you will learn how to identify such sources.

Learning Activities:
- Lecturette: The instructor and/or the school librarian will use the internet to introduce students to key elements of a literature search.
- Students will search for sources for their projects using the internet and the school library.
- The instructor and school librarian will show students how to use PowerPoint and/or other similar software to compose a professional poster.
- Students will begin to create their PowerPoint slides for their posters.

Assessment: By the end of class submit a list of at least five resources you will use to complete your project. Briefly explain why each source is reliable.

Homework:
- Students who chose final option **(a)**: write 2 pages describing the historical background of your topic.
- Students who chose final project option **(b)**: turn in your sixth journal entry next week, and ½-1 page describing the goals of your project.

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VII.　When did public health enter the history books?

Class Objective:
- ➢ Identify important events in public health history that contributed to modern day public health.

Class Description: Before progressing forward, sometimes it is important to know where one has been. Today students will learn about important people, places, and events that lead to the creation of public health as a vital professional field of study and activity.

Learning Activities:
- Slideshow and Discussion: The instructor will lead students through a slideshow and discussion of historical photos and illustrations depicting key moments in public health history.
- The class will engage in a discussion of how these events contribute to modern public health in their own communities.

Assessment: Pick one of the major historical events discussed today, and write 1-2 pages about how that event is relevant to you and your home community in modern times.

Homework:
- Students who chose final option **(a)**: write 1-2 pages describing the public health significance of your topic.
- Students who chose final project option **(b)**: turn in your sixth journal entry next week, and ½-1 page describing your motivation for choosing your service-learning project.

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VIII.　How is Public Health Achieved?

Class Objectives: Identify the importance of engaging communities in public health efforts, and ways to engage communities in public health efforts.

Class Description: In the last weeks, we often emphasized the role of the community in public health. Today we'll take a look at two public health endeavors, one that succeeded and one that failed, and discuss how consideration of the community played a role. As

you watch the videos, keep in mind all that you learned about public health history, professions, and the meaning of community.

Learning Activities:
- 2-15 minute videos
- Discussion of why each endeavor succeeded, failed, or achieved more or less than the professionals set out to achieve.

Assessment: Write 2 pages comparing and contrasting the two programs discussed in class today. Base your discussion in the meaning of community, and describe at least one way the community could have been involved in the program that failed that might have made it more successful.

Homework
- Students who chose final option **(a)**: write 1-2 pages describing which of the six public health disciplines best play a role in addressing your topic, and how each profession (if more than one) does so.
- Students who chose final project option **(b)** must turn in their eighth journal entry next week, and ½-1 page describing the public health significance of your project.

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IX.   Course Summary and Project Work Day

Class Description: Students will have the majority of the class period to complete the final portions of their projects and to edit and put the final touches on them. We will wrap up the course with answers to any questions students have, including any remaining from index cards submitted on the first day of class.

Homework (if not finished in class)
- Students who chose final option **(a)**: write 1-2 pages describing how you could contribute to the solution of the issue you chose, and don't forget to include a slide in your poster presentation about this topic.
- Students who chose final project option **(b)**: You do not have to submit a journal next week, but please compile them and place a cover page at the front with your name, the title of your project, and the date submitted. Also write 1 page describing applications of your service-learning experiences to your future plans. Don't forget to include a slide in your poster presentation about this topic.

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X.   Poster Presentation Day- The instructor invited other teachers and their classes to come and see the great work you did this semester.

HAVE A GREAT VACATION!!! THANK YOU FOR A GREAT SEMESTER! ☺

BIBLIOGRAPHY

[1] United World Colleges. 2006. About UWC: History. Accessed March 30, 2006, at http://www.uwc.org/about_history.html.

[2] International Baccalaureate Organization. 2006. Mission. Accessed March 30, 2006, at http://www.ibo.org/mission/.

[3] United World Colleges. 2006. About Us. Accessed March 30, 2006, at http://www.uwc.org/about_intro.html.

[4] Association of Schools of Public Health. 2006. What is Public Health? Accessed March 30, 2006, at http://www.asph.org/document.cfm?page=300.

[5] Association of Schools of Public Health. 2006. Health Professions Partnership Initiative (HPPI). Accessed March 30, 2006, at http://www.asph.org/document.cfm?page=831.

[6] University of Illinois at Chicago. 2006. HCOP/HPPI Program Description. Accessed March 30, 2006, at http://www.uic.edu/sph/diversity/HCOP_HPPI.htm.

[7] US Department of Health and Human Services Bureau of Health Professions. 2006. Health Careers Opportunity Program. Accessed March 30, 2006, at http://bhpr.hrsa.gov/diversity/hcop/default.htm.

[8] Smith J. 2003. Education and Public Health: Natural Partners in Learning for Life. Accessed March 30, 2006, at: http://www.ascd.org/portal/site/ascd/template.book/menuitem.83f4b2b5537730a98d7ea23161a 001ca/?bookMgmtId=43e5b2cc2fcaff00VgnVCM1000003d01a8c0RCRD.

[9] Public Health Functions Steering Committee. 1994. Public Health in America. Accessed March 30, 2006, at http://www.health.gov/phfunctions.

[10] Airhihenbuwa CO. Health and Culture: Beyond the Western Paradigm. Thousand Oaks, CA: Sage, 25-43. 1995.

[11] Lewis AM, DeVellis BM, and Sleath B. Chapter 11: Social Influence and Interpersonal Communication, in Health Behavior in Health Behavior and Health Education: Theory Research and Practice. Ed. Glanz K, Rimer B, and Lewis FM. San Francisco, CA: John Wiley & Sons, Inc., 240-260. 2002.

[12] Raven BH. The Bases of Power: Origins and Recent Developments. *Journal of Social Issues*. 1993;49:227-251.

[13] Goodman RM, Smith DW, Dawson L, and Steckler A. Recruiting school districts into a dissemination study. Health Education Research. 1991;6(3):373-385.

[14] Goodman RM. Strategies for Sustaining Coalitions. Class Lecture. 7 October 2005.

[15] Stephens KK, Rimal RN, and Flora JA. Expanding the Reach of Health Campaigns: Community Organization as Meta-Channels for the Dissemination of Health Information. Journal of Health Communication. 2004;9:97-111.

[16] Lasker RD, Weiss ES, and Miller R. Partnership Synergy: A Practical Framework for Studying and Strengthening the Collaborative Advantage. *The Milbank Quarterly*. 2001;79(2):179-205.

[17] Yoo SY, Weed NE, Lempa ML, Mbondo M, Shada R, Goodman RM. Collaborative Community Empowerment: An Illustration of a Six-Step Process. *Health Promotion Practice*. 5(3):256-265. Copyright 2004 by Sage Publications, Reprinted by Permission of Sage Publications Inc.

[18] Baranowski T, Perry CL, Parcel GS. Chapter 8: How Individuals, Environments, and Health Behavior Interact, in Health Behavior and Health Education: Theory Research and Practice. Ed. Glanz K, Rimer B, and Lewis FM. San Francisco, CA: John Wiley & Sons, Inc., 165-184. 2002.

[19] Bandura A, Barbaranelli C, Caparara GV, and Pastorelli C. Self-Efficacy Beliefs as Shapers of Children's Aspirations and Career Trajectories. *Child Development*. 2001;72(1):197-206.

[20] Faces at Bates Student Profiles. 2004. Emmanuel Drabo '08 designs a major in public health. Accessed March 30, 2006, at http://www.bates.edu/x60727.xml.

[21] Colby Magazine. An Investment, Not a Giveaway. Winter 2006, 94(4). Accessed March 30, 2006, at http://www.colby.edu/colby.mag/issues/current/features.php?articleid=110.

[22] Nicoll J. Instructional Design Chapter in Progress. 2006.

[23] Stanford University Center for Teaching and Learning. Designing and Teaching a Course. *Speaking of Teaching: Stanford University Newsletter on Teaching*. Winter 1998;9(2).

[24] University of Pittsburgh Center for Instructional Development and Distance Education. Course Development: Instructional Design Model. 2002.

[25] Mager RF. Preparing Instructional Objectives: A Critical Tool in the Development of Effective Instruction. Atlanta, GA: The Center for Effective Performance, Inc. 1997.

[26] University of Pittsburgh Center for Instructional Development and Distance Education. Bloom's Taxonomy Guide. 2006.

[27] Oldenberg B, and Parcel GS. Chapter 14: Diffusion of Innovations in Health Behavior, in Health Education: Theory Research and Practice. ed. Glanz K, Rimer B, and Lewis FM. San Francisco, CA: John Wiley & Sons, Inc., 312-334. 2002.

[28] Haider M, and Kreps GL. Forty Years of Diffusion of Innovations: Utility and Value in Public Health. *Journal of Health Communication*. 2004;9:3-11.

[29] Pearson College. 2006. School Program-Service and Activities. Accessed March 30, 2006. at http://www.pearsoncollege.ca/activities.htm.

[30] Wikepedia. 2006. Individual Capital. Boston, MA: Free Software Foundation, Inc., Accessed March 31, 2006, at: http://en.wikipedia.org/wiki/Individual_capital.