Title - Cyber Wellness:
A Liberal Studies Course in Higher Education

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Abstract

The Liberal Studies curriculum at Indiana University of Pennsylvania (IUP) is a requirement to which all students must partake. This curriculum involves a range of 43 to 51 credits, divided among Learning Skills and Knowledge Areas. The Liberal Studies program is designed to meet the goals of the university and to provide a comprehensive curriculum that will provide all IUP students the opportunity to meet the Expected Undergraduate Student Learning Outcomes (EUSLO). This paper will discuss the development of a liberal studies course entitled Cyber Wellness. It is a three-credit liberal studies elective written in the category of 'Dimensions of Wellness'. This category's criteria include adaptations in behavior that can help promote and maintain good health and the knowledge of practicing the components of a healthy lifestyle through technology. Currently, six different departments teach a Dimensions of Wellness course; however, none of them cover health and fitness as it relates to technology. Since this course will be listed with all courses required by all freshmen, it should be a popular course. This paper describes the steps of creating this new course to meet the needs of relating health and fitness to technology. This course was taught as a special topics course in fall, 2015 and an online course in spring, 2016.

Keywords: cyber, wellness, health, fitness, liberal studies, technology

1. BACKGROUND

In 2012, the Liberal Studies (LS) program at IUP went through a curriculum update. Dimensions and Wellness is among the new categories created. The LS committee looks for courses which will challenge you; that make you think, that show you relationships between what you are learning and current issues, and that enable you to make responsible ethical choices. It also looks for courses which encourage you to continue reading and learning even after you leave college, because learning is a lifelong commitment. The primary focus of a Dimensions and Wellness course requirement is based upon one of the following: emotional, financial, intellectual, occupational, physical, social, or spiritual. Because wellness is a multidimensional concept, each course must clearly demonstrate how the dimension of primary focus relates to at least one of the other dimensions. All Dimensions of Wellness courses must require students to participate in active learning or experiential activities designed to enhance personal well-being. (Liberal Studies and You, 2016)

2. INTRODUCTION

The IUP computer science department has one LS course; namely, Computer Literacy. Based upon the new criteria mentioned above, the department saw a need for a course that meets the challenge of the Dimensions and Wellness category through technology. Upon researching existing general education courses that address technology in health and fitness, technology was only present in the 'delivery' of the course, not the content. In addition, articles were found that used one aspect of technology. An article was found that addressed the use of health apps in college students, stating "College students are already using existing health and fitness apps and therefore are an ideal population to utilize these tools as part of health education programming".

(Gowin, Cheney, Gwin & Wann, 2015) Another article explained how to use social media to enhance fitness and health knowledge (Polsgrove, Jay, Frimming & Elizabeth, 2013) Yet another article addressed Smartphone use in health and fitness (Cummiskey, 2011) The content of our course is to address the use of technology in health and fitness using seven topics, based upon the concepts outlined in the updated EUSLO of the LS program. The updated outcomes were broken down into three areas: Informed Learners, Empowered Learners and Responsible Learners.

I.   *Informed Leaners* understand nature and society through forms of inquiry fundamental to the sciences, the humanities, and the arts. Learners are informed by knowledge and ways of knowing that extend beyond core concepts enabling them to link theory and practice.

II.   *Empowered Learners* are critical thinkers who demonstrate intellectual agility and creativity and the ability to manage or create change. They are able to derive meaning from experience and observation. They communicate well in diverse settings and employ various strategies to solve problems. They are empowered through mastery of intellectual and practical skills.

III.   *Responsible Learners* are engaged citizens of a diverse democratic society who have a deep sense of social responsibility and ethical judgment. They are responsible for their personal actions and civic values.

3. DESIGNING THE COURSE

Course Description
The course description for the Cyber Wellness course is defined as:

> This course is designed to investigate the different categories of Cyber Wellness and how they affect emotional, physical, social and intellectual wellness. The primary focus will be on allowing the student to demonstrate intellectual agility and creativity in order to maintain physical wellness while using technology. The student will look at the effect technological changes have made on his/her respective disciplines and their impacts on society in relation to health and wellness. Theories and principles related to the physical, mental, social, and emotional aspects of personal computer usage including cyberspace will be discussed.

Course Outcomes and topics
Each EUSLO outcome is aligned with a specific topic as described here:

Students will recognize the health risks associated with Internet use. (Empowered and Responsible Learners). The millennial generation, also known as Generation Y, is the first to come of age with cable TV, the Internet and cell phones, so technology is essentially baked into every millennial's DNA. In fact, when asked what makes their generation unique, millennials ranked "Technology Use" first (24%). (Nielson, 2014) Even though students may have been using computers at a very early age, many do not recognize the health benefits or risks associated with Internet use. Course content and assignments will include analyzing various websites and how their behavior and input may encourage cyberbullying, cyberstalking and related dangers. Preventive measures will be discussed to facilitate making good judgments when on the Internet.

Students will describe how the use of technology has advanced the medical field. (Empowered and Responsible Learners). The use of technology in medicine is one of the fastest growing industries. Course content and assignments will explore current medical advancements like the VeriMed chip implant in Alzheimer patients, biomedical chips assisting the physically challenged individuals to walk, virtual operations, robotic checkups, even an electronic aspirin. Discussions will be held on the decision of the US Food and Drug Administration (FDA) to approve digestible microchips.

Students will examine the cause and effect of social media on health and wellness. (Informed, Empowered and Responsible Learners). Nearly two-thirds of American adults (65%) use social networking sites. (Perrin, 2015) Course content and assignments will have the students investigate the fifteen most common social media sites. (Rank, 2016) Topics discussed will be how social media affects self-esteem and the difference in physical exercise vs using social media by age and gender.

Students will be able to recognize websites created by social engineers that gather data and information for the intent of identity theft. (Empowered and Responsible Learners). One of the fastest growing crimes on the Internet is identity theft. An estimated 17.6 million persons,

or 7% of all U.S. residents age 16 or older, were victims of one or more incidents of identity theft in 2014. (Harrell, 2015) This is a clear danger to financial wellness. Social engineers create very convincing websites that gather information to be used for fraudulent purposes. Course content and assignments will have the student explore the pattern of rhetoric on websites that signify the sites as legitimate or not legitimate. Students will analyze the script on the website, evaluate the content and decide whether or not that site is phishing for information.

Students will investigate the use of mobile devices and their effect on health issues. (Empowered and Responsible Learners). Mobile devices, for the use of this course are defined as smartphones, tablets, watches; basically any handheld computer. A new Pew Research Center analysis finds that 66% of Americans own at least two digital devices – smartphone, desktop or laptop computer, or tablet – and 36% own all three. (Anderson, 2015) Course content and assignments will have the students review the Federal Communication Commission (FCC) wireless regulations on mobile devices in relation to radiation and the effects to health. Students will discuss the hazards of using mobile devices to text and walk and drive.

Students will be able to explain the causes of computer and Internet addiction and how it can be avoided. (Informed, Empowered and Responsible Learners). During the course of this class, computer addiction will include five categories: Cybersex addiction, Cyber-Relationship Addiction (including social media addiction), Net Compulsions (including online gaming), Information Overload, and addiction to the computer itself. Students do not realize the cause and effect of Computer Addiction. An average one in eight Americans show signs of being addicted to the internet. That is 12% of the United States population. (21 Computer Addiction Statistics and Trends, 2013) Course content will delve into the causes of Computer Addiction. In addition, they will discuss preventive measures as well as treatment of Computer Addiction.

Students will be able to apply healthy computing habits including ergonomic principles. (Informed, Empowered and Responsible Learners). There are many definitions of the word ergonomics. This course will delve into the correct ergonomics needed when using technology in the home and workplace. Many illnesses occur because of poor ergonomics. Course content will discuss measures to avoid computer-related illnesses.

Healthy computing techniques will be discussed as well. This unit will also cover hearing loss due to earbuds, earphones, etc.

Course Content
This course is designed for a typical university semester of fourteen teaching weeks leaving one week for the final exam/project. There are seven topics, which will allow each topic to have a two-week duration with an active learning assignment, and one culminating activity as the final project.

The rationale of the choice of topics was based upon the correlation to each specific outcome above. These topics, however, were chosen by the IUP computer science department. There may be dozens of alternative topics more specific to other universities. The first four topics below are used to give the student general computer knowledge.

- History of computer generations
- History the personal computer
- History of the origin of the Internet
- History of computers in healthcare
- Advancements in computers in medicine
- Social Media and health and fitness and methods of preventing and reporting cyberstalking and cyberbullying
- Awareness, prevention and actions to be taken of Identity Theft
- Social engineering websites that cause information theft
- Mobile device applications that promote health and physical fitness
- Computer and Internet addiction prevention and treatment
- Human factors and ergonomics, ways to improve efficiency providing comfort and safety while working at the computer

Technology in Medicine
A presentation is given by the instructor outlining several current trends in technology in medicine. Some of the topics given in this lecture include nanotechnology, electronic drug delivery, Cyberkinetics, biomedical implants, Verimed chip implants, the Physiome project, the DaVinci surgical system, healthcare robots, the bionic revolution, 3D bioprinted organs, even the use of google glass by doctors. Students are encouraged to choose a topic from the lecture or to research his/her own topic. In the fall, 2015 semester, one student did his topic on Lasik

Surgery of the eye because he was considering having the procedure done. Upon researching his topic, he found there was a new technique to this surgery. He asked his surgeon about the procedure and this particular doctor had not yet updated his technique. The student was very thankful for this information because it allowed him to make an informed decision on his procedure. He decided not to move forward with the surgery. This certainly meets the outcome of 'Informed Learner'.

Social Media in Health and Fitness and Cyberstalking and Cyberbullying
The lecture begins by showing the website that includes the top fifteen social media websites. (Rank, 2016). Further discussion will be generated through the writing of Perrin, 2015 on the subjects of differences in social media use by age, gender, socio-economic status, racial and ethnic similarities and community differences.

The lecture will continue with a discussion of social media vs health and fitness. Searching for health information is the most popular online activity for adults after e-mail and using search engines. (Perrin, 2015) Many users seek health information through social media, from online forums to online wellness programs, etc. Positive health effects will be discussed such as using social media to lose weight or engage in physical activity. A look at how health insurance companies are using social media to connect with clients by providing health advisors online will be discussed.

Students will observe the Mayo Clinic's Social Media Network site is a Health Care Social Media List that includes health-related organizations that actively use social networking sites and maintain officially-sponsored accounts listed by State. (Health Care Social Media List, 2016)

Another topic in this category introduced to the student will be how medical professionals use social media to monitor patients. Also an introduction to the Microsoft's HealthVault social networking website that allows users to gather, store, use and share health information online. (HealthVault, 2016)

Students will also explore how physicians are using social media. As physicians increase their use of social media, they use it in ways that benefit their patients as well as their practices. A June 2014 study done by MedData Group shows that 54% of physicians use social media for work purposes such as keeping up with healthcare

news, engaging in discussions with peers, marketing their practice and providing thought leadership to patients. (How are Physicians using Social Media? 2014)

Eight social networks for fitness freaks will be presented (8 Social Networks for Fitness Freaks, n.d.) as well as thirty-five social media sites for the health conscious. (35+ Social Media Sites for the Health Conscious, 2016) This is all in preparation for the active learning assignment for this topic.

A presentation on the power of social media to affect our health and fitness will entail how social media changes our health and four ways social media can be a force for good and bad. (Sabo, 2013) In addition, use of social media has been linked to psychological stress. Sometimes labeled *social stress.* There is more social pressure to disclose personal information. These technologies are said to takeover people's lives, creating time and social pressures that put people at risk for the negative physical and psychological health effects that can result from stress. (Hampton, Rainie, Lu, Shin & Purcell, 2015)

The final area in this two-week topic is cyberstalking and cyberbullying. The Foursquare social networking geo-location tool will be discussed. (How I Became a Foursquare Cyberstalker, 2016) A discussion will continue on cyberstalking legislation. The website 4Chan will be presented. This site is a public bulletin board and the creator of the group 'Anonymous' in 2008. 'Anonymous' is the most famous 'hacktivist' group in the world. (A History of Anonymous, 2016) A site of this nature can be a breeding ground for cyberstalkers and cyberbullies.

The What is Cyberbullying, n.d site is a good reference to discuss the causes and prevention of cyberbullying.

Identity Theft
An estimated 17.6 million persons, or 7% of all U.S. residents age 16 or older, were victims of one or more incidents of identity theft in 2014. (Harrell, 2015) The lecture will begin with the definition of identity theft and the completion by the students of an Identity Theft online quiz created by the Department of Justice. (Identity Theft Quiz: A Quiz for Consumers, 2015) Financial identity theft, the use of credit cards, bank accounts, and other similar financial accounts is the most common identity theft complaint. However, tax return fraud is coming in a very

close second. (Do You Need Help with an Identity Theft Problem? 2016)

Social Engineers

There will be a presentation of the seventeen most dangerous places on the web. Threat levels will be presented as Perfectly Safe, Slightly Dangerous, Moderately Dangerous, Very Dangerous, and Danger. (Mediati, 2010) Although the site is ten years old, this webpage discusses the theory behind good surfing techniques and is worth discussing.

Mobile Applications that Promote Health and Fitness

Thirty-four percent of all American adults ages 18 and older now own a tablet computer. This includes almost half (49%) of adults ages 35-44 and fifty percent of parents with minor children living at home. (Zickhur, 2013) Two years later, 88% of American teens ages 13 to 17 have or have access to a mobile phone of some kind, and a majority of teens (73%) have smartphones. (Lenhart, 2015) Fifteen percent of Americans ages 18-20 are heavily dependent on a smartphone for online access. Some thirteen percent of Americans with an annual household income of less than $30,000 per year are smartphone-dependent. Just one percent of Americans from households earning more than $75,000 per year rely on their smartphones to a similar degree for online access. Twelve percent of African Americans and 13% of Latinos are smartphone-dependent, compared with four percent of whites. Sixty-two percent of smartphone owners have used their phone in the past year to look up information about a health condition. Sixty-two percent of smartphone owners have used their phone in the past year to look up information about a health condition. (Smith, 2015) As you can see, in the two-year span of 2013 to 2015 Americans have increased mobile device use.

The 39 best health and fitness apps of 2016 will be presented to generate topics for the active learning assignment. There are four areas: Fitness, Food and Nutrition, Mind and Brain, and Overall Health. (Cattel & Watson, 2016) Students are to experience the app chosen for the assignment without spending any money. If someone has no smartphone, a case study must be completed discussing someone else's use of the app.

In addition to using a health and fitness app for this two-week period, the topic of the dangers of texting and driving will be discussed. Issues discussed will be statistics that show how many Americans are killed every day from motor vehicle accidents that involved distracted driving, the probability that a motor vehicle crash involves a cell phone, the percentage of teens who say they have been a passenger in a car whose driver used a cellphone in a way that put them in danger. Also in the presentation will be the percentage of U.S. drivers ages 18 to 64 who reported reading or writing text messages while driving in the previous month. In comparison, only 15 percent of drivers from Spain reported texting while driving in the same period. The number of motor vehicle crashes in 2013 that involved texting will be disclosed, as well as how much using a cell phone while driving increases the risk of a crash, and the number of seconds a driver can safely glance away from the road while operating a motor vehicle. The students will also discover the number of seconds drivers take their eyes off the road to send a text message, on average. A discussion will be held on the number of states where texting is banned for all drivers, regardless of age. And lastly, a discussion will prevail about which age group is most likely to send a text or email message while driving. (Schumaker, 2015)

Internet and Computer Addiction

An average of one in eight Americans show signs of being addicted to the internet. That is 12% of the United States population. In Asia, 30% of Koreans report their usage as being problematic.

Current Statistics

1. 13.7% find it difficult to stay offline for several days
2. 12.3% felt the need to cut back on internet usage
3. 8.7% attempted to hide their Internet usage from friends and family
4. 5.9% felt their relationship suffered due to their Internet use

Gender Disparities

Men:
   Addicted to games, porn, and online gaming
Women:
   Addicted to chatting, instant messaging, eBay, and online shopping

Usage Based on Age

- 18-29 years old: 93%
- 30-49 years old: 81%
- 50-64 years old: 70%
- 65 and older: 38%

Countries with Highest Number of Users
1. China – 360,000,000
2. United States – 27,719,000
3. Japan – 95,979,000
4. India – 81,000,000
5. Brazil – 67,510,400

Addiction to Computers Trends
Children addiction to computers has become a worldwide epidemic. Drug commissioners from worldwide have met on this growing epidemic to identify the issues. (21 Computer Addiction Statistics and Trends, 2013)

This addiction can be attributed to the fact that connectivity has grown since the Internet appeared in homes back in 1995. According to a January 2014 survey, 87% of American adults use the Internet, up from 14% in 1995. (Internet Use Over Time, 2014) Broadband connectivity has surpassed the dial-up connection. Three percent of Americans use dial-up at home. (3% of Americans use dial-up at home, 2013)

Students will choose from one of the five computer and Internet addiction categories listed in the lecture. The active learning assignment is to research a case study of an addict of the category from which they chose. They are to report the story and determine the causes of this addiction as well as preventive and treatment measures for that person.

The next part of the assignment is to take an Internet Addiction quiz. (Internet Addiction Quiz (IAT), 2013) This site will yield a numerical score that must be discussed in the paper.

Human Factors and Ergonomics in Health and Fitness.
The term "ergonomics" can simply be defined as the study of work. It is the science of fitting jobs to the people who work in them. Adapting the job to fit the worker can help reduce ergonomic stress and eliminate many potential ergonomic disorders (e.g., carpel tunnel syndrome, trigger finger, tendonitis). Ergonomics focuses on the work environment and items such as the design and function of workstations, controls, displays, safety devices, tools and lighting to fit the employee's physical requirements, capabilities and limitations to ensure his/her health and well-being. (Environmental Health & Safety, 2010)

A portion of this lecture will include hearing loss from earbuds and ear phones. Loud sounds can damage your ears. Typically, any sound louder than 85 decibels (dB) is considered dangerous to your hearing. Sounds above 120dB may cause pain. When using earbuds, the audio is transmitted directly to your ear canal. This close proximity reduces the amount of sound that escapes, thus increasing the loudness. Unfortunately, many people make the common mistake of increasing their earphone volume in an attempt to get better sound, or to block out external noise. If your ears are routinely subjected to loud noise for extended periods of time, they begin to adapt. This adaptation may lead people to further increase the audio of what they are listening to and risk damage to their hearing. To give you some perspective of sound and dBs, here is a chart: (Earbud Safety, 2016)

Volume levels of common sounds	
Whisper	20dB
Refridgerator	40dB
Speaking (average)	60dB
City traffic	80dB
Lawn Mower	90dB
Chain Saw	110dB
Firecracker	140dB
Shotgun	160dB

Volume levels of common sounds

The active learning assignment will be to research some area of ergonomics in the home or workplace. A case study will be required that will include symptoms, treatments, prevention and statistics of the chosen area of ergonomics.

Course Materials
The challenge of teaching this course is to keep up with the technology of all of the topics. The instructor must research each topic each semester and present the latest data on each unit. Some of the resources used in teaching this course are:

- http://www.computerworld.com
- http://www.zdnet.com
- http://www.nytimes.com
- http://www.huffingtonpost.com
- http://www.spine-health.com
- http://www.pcworld.com

Supplemental Reading
As a liberal studies elective at IUP, an outside supplemental reading is required. At the writing of this paper, the supplemental book used is entitled "Boundaries in an Overconnected World, Setting Limits to Preserve Your Focus, Privacy, Relationships, and Sanity", by Anne Katherine. This is an excellent book that causes the student to think about how his/her connectivity affects

the boundaries of others. This is a great venue for classroom discussion groups. Of course this was just a personal preference to the current instructor.

Methods of Evaluation

Objective exams will be given covering the information in the lectures. Active learning assignments are given for each topic covered. Student's individually research one specific area of interest from the lecture presented, or choose a topic of choice with instructor approval. Each student will deliver a five-minute oral presentation to the class on his/her research while handing in a written copy to the instructor. Class discussions are generated from each student presentation. Students are also evaluated on class participation.

A rubric is used for all active learning assignments. Pop quizzes may occur covering student presentations. Discussions of the supplemental book are evaluated according to a rubric given. This is all in-class in their respective discussion groups.

The culminating activity is a research paper drawing together the topics covered throughout the semester.

4. ONLINE VERSION

This is an excellent course to be taught at a distance. It is not recommended, however, that this course be online for first semester freshmen. Waiting until the second semester allows the students to become familiar with the computer system of the university as well as the learning management software. The beginning of the semester lectures can be pushed out into the learning management system for their review. Reaction to lectures will be in a discussion forum. The active learning assignments can still take place but in place of the in front of the class presentation, students will be report his/her research in a discussion forum as well as upload papers into Moodle. Replies will be required to insure student-to-student as well as student-to-instructor interaction. There will be no groups in this forum to allow students to view each other's' research. The supplemental book discussions will also take place in groups in a discussion forum.

5. CONCLUSION

The newly developed Cyber Wellness course was taught in a face-to-face setting in the fall of 2015 as a special topics course, which means it had not yet been approved by the Senate Committee as a university course and is offered as a temporary course, but with full Dimension and Wellness credit. The class size was forty interdisciplinary students, all freshmen. Only one student withdrew, and two students failed out because of poor attendance. The grade distribution: Forty-six percent earned an A, twenty-seven percent a B, eleven percent a C, there were no Ds and fourteen percent failed the course. Students were very receptive to the topics chosen. In November, 2015, Senate approved the course as a liberal studies course in the Dimension and Wellness category. In the spring of 2016 one online class was taught. The class size was also forty freshmen. Of those forty, three withdrew. The grade distribution: Forty-nine percent earned an A, twenty-four percent a B, fourteen percent a C, three percent a D and eight percent failed the course. The student interest was high and the discussions were insightful. The course is now a part of the university catalog and two face-to-face courses are scheduled for fall, 2016. With one month away from the first day of class, one of those classes is already at capacity and the other has only eight seats left. The inclusion of a Cyber Wellness course into the Dimensions and Wellness category of the Liberal Studies program will allow the students to relate his/her use of technology to health and fitness. Students in Generation Y have grown up with technology. They do not use it just as a communication tool; but technology is involved in every aspect of his/her daily lives. Advances in the medical field have catapult into robotic surgeries, remote doctor office visits, 3D printed organs and bionic exoskeletons. Social Media has taken the place of physical gatherings around the street corner or at the mall. This can generate a dangerous environment leading to cyberstalking and cyberbullying. Social engineering is the new 'con man', with technology. Identity theft is rampant. Scams have gone viral. Mobile devices have gone beyond communication devices. Ergonomics must be considered to combat the negative health risks of using technology at home and in the workplace. At IUP, there is no one course that will cover all of these aspects of technology and how it affects health and fitness—until now.

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