A Trajectory of Transitions across Disciplines: From High School to College to Professional and Citizen in the 21st Century

In order of the presentations

Julie Trachman, Ph.D., Natural Sciences Dept. – Biology Unit
Kate Wolfe, Ph.D., Behavioral & Social Sciences Dept. – Psychology Unit
Karen Steinmayer, Ph.D., Behavioral & Social Sciences Dept. – Psychology Unit
Amy Ramson, Esq., Behavioral & Social Sciences Dept. – Public Administration Unit

Hostos Community College,
500 Grand Concourse, Bronx, NY 10451
A Trajectory of Transitions across Disciplines: From High School to College to Professional and Citizen in the 21st Century

An interdisciplinary Roundtable Discussion of strategies used to help students move through the complete trajectory of transitions, from high school to college student and, finally, to functioning as a professional.
Julie Trachman will describe using targeted assignments in an Introductory Biology course to help students transition from high school student to college level functioning by developing advanced note-taking and reading skills, as well as critical thinking abilities. She will address how her strategy increases students’ science literacy, enabling them to perform successfully as citizens of the 21st century.
The strategy discussed:

- fulfills several Hostos General Education competencies:

  **SCIENTIFIC AND QUANTITATIVE REASONING**

  **GLOBAL CITIZENSHIP AND LIFE COMPETENCIES IN A MULTICULTURAL PLANETARY CIVILIZATION**

  **COMMUNICATION SKILLS**

  **ACADEMIC LITERACY AND INQUIRY SKILLS**

  * is considered helpful to ESL and Generation 1.5 students

  * is employed in several biology classes including a writing intensive microbiology class taken by allied health students and science majors.
ADDITIONAL CONSIDERATIONS:

Teaching strategies to help students learn

Taking notes during class lectures and discussions as the act of writing aids concentration

Drawing, underlining, and highlighting in class notes as well as in assigned readings

Study strategies to enhance student learning

Take good notes during lengthy class lectures and discussions, even if you think you understand the material, as the act of writing and highlighting important points aids a great deal in learning

Highlight ideas in your assigned chapters and other reading selections after you have already done an initial reading, then copy the most important information in your own words in a notebook in whatever form seems helpful to you: e.g., a chart, graph, diagram

Break up your homework into manageable time blocks; vary the activities you work on to concentrate better rather than spend a large amount of time on one activity

* Information taken from San Francisco State University website “Orientation to College Teaching”. URL is: http://oct.sfsu.edu/introduction/learningstyles/htmls/ikin.html
From section: “Six Learning Strategies”
The first learning strategy is to **take notes by hand**, even if the class notes are provided. Preferably no later than the evening of the class day, rewrite your notes, by hand, amplifying their content. During the **rewriting stage**, it is important that you not just recopy your notes, but rather **both condense and extend them where appropriate**, paraphrasing them so that you make the meaning your own…. It is now well established that active engagement in the process is imperative for learning to occur. When **students take their own notes, they are engaged**, in real time, and their minds focus on the task. The **process of paraphrasing and rewriting the notes** shortly after a lecture helps to transfer information from short-term to long-term memory.

From section: “Six Teaching Strategies”
A second teaching strategy is to **bring “real life” into the classroom**. News, crises and everyday life open the mind…. from a stream of such short stories from the real world comes **appreciation of the relevance of what is taught**…. But the discussion of newsworthy topics may not be the most important part of this strategy. Ultimately, bringing real life into the classroom day in, day out **builds a bond between teacher and student**. Students begin to feel that **the instructor** has gone to the trouble of searching the media that very day and **cares that students learn**.

Information taken from:
That Tap Water Is Legal but May Be Unhealthy

By CHARLES DUHIGG Published: December 16, 2009

The 35-year-old federal law regulating tap water is so out of date that the water Americans drink can pose what scientists say are serious health risks — and still be legal. …

Only 91 contaminants are regulated by the Safe Drinking Water Act, yet more than 60,000 chemicals are used within the United States, according to Environmental Protection Agency estimates. Government and independent scientists have scrutinized thousands of those chemicals in recent decades, and identified hundreds associated with a risk of cancer and other diseases at small concentrations in drinking water, according to an analysis of government records by The New York Times.…..

Earlier this decade, scientists at the E.P.A. began telling top agency officials that more needed to be done. Dr. Peter W. Preuss, who in 2004 became head of the E.P.A.’s division analyzing environmental risks, was particularly concerned. So his department started assessing a variety of contaminants often found in drinking water, including perchlorate, an unregulated rocket fuel additive, as well as two regulated compounds, trichloroethylene, a degreaser used in manufacturing, and perchloroethylene or perc, a dry-cleaning solvent. Research indicated that those chemicals posed risks at smaller concentrations than previously known…..

….Today, the Safe Drinking Water Act still does not regulate perchlorate or more than two dozen other substances that Dr. Preuss’s department has analyzed over the last eight years. And standards for acceptable levels of trichloroethylene and perc have not changed in 18 years.
Those two chemicals have been detected in drinking water in more than a dozen states, including California, Massachusetts, New York and Oregon. A study published last week by the Centers for Disease Control and Prevention found traces of perchlorate in every person examined by researchers…..

….And the E.P.A. recently said it would analyze a host of chemicals — known as endocrine disruptors — that some scientists have associated with cancer and other diseases. Congress called for such tests in 1996, but the agency failed to meet deadlines for 13 years.
Do the best you can in answering these questions using the information presented in your textbook. You can get help from each other in answering the questions below but make sure your final answers are different. I do not want to see identical essays!!!!

(N.B. The article on tap water impurities and the questions here are excerpted from a larger assignment.)

II) With respect to genetics and cancer (related to Ch. 5, 6):
Certain chemicals can cause mutations and some of them unfortunately may be found in our drinking water. (chemicals are 1 of 3 causes of mutations described in the textbook in Ch. 5)

a) The textbook mentions two types of mutations – point mutation and chromosomal aberrations – and how they lead to permanent changes in DNA. Speculate how a mutation in a cell can lead to cancer in a somatic (non-sex) cell. What kind of impact would this have on the entire organism? What kind of impact would a mutation have on a gamete cell? Would it always lead to cancer or could it lead to something else?

b) In class you learned about the cell cycle. Some of the chemicals mentioned in the article can cause disruption of the cell cycle. Some of the following questions relate to what happens when cell cycle control is disrupted.

What does it mean if a cell becomes immortal? How are cancer cells different from normal cells? From the textbook, list and explain two important differences?

Using information from the textbook, explain the difference between a benign tumor and a malignant tumor. What is metastasis? Cancerous cells are often described as invasive. How does their invasiveness affect surrounding tissues and/or organs?
III) Another problem with some of the chemicals we are finding in our water supply or elsewhere is that they are endocrine disruptors, that is, they resemble hormones including the sex hormones. In addition to Ch. 25 (which we are covering), there is some detail in Ch. 24-5 and some other sections that discuss some of the effects of these hormones. In section 24-11 (p.911-912), there is a section on endocrine disruptors that correlate with the contents of some of the articles (especially the Kristof articles).

http://web.bryant.edu/~dlm1/sc372/readings/toxicology/toxicology.htm

a) Meiosis produces haploid cells. At the end of meiosis division 1, what happens to the chromosomal material: are the chromosomes in the form of sister chromatids or as individual chromatids? How about after division two of meiosis?

b) Are the end results of meiosis the same in males and females? How many functional gametes are produced in each of the sexes at the end of the two divisions of meiosis that can end up possibly functioning in fertilization?

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Kate Wolfe, Ph.D., Behavioral & Social Sciences Dept. – Psychology Unit

Kate Wolfe will discuss helping students move from high school to college level performance. She will consider the use of assignments in Introductory Psychology to promote information literacy while teaching students about research comprehension and skills in the Social Sciences. She will address how her strategy increases students’ science literacy, enabling them to perform successfully as citizens of the 21st century.
Student Learning Outcomes

• After completion of this assignment, students will be able to identify, locate and correctly cite scholarly articles reflecting different research methodologies in psychology.

• After completion of this assignment, students will be able to summarize in their own words the hypothesis or purpose, the participants, and the conclusions of each article.
Students need to know

- Different research methodologies in psychology
- How to find relevant journal articles
- How to cite sources using the APA style
- How to distinguish scholarly journal articles from other types of periodical literature
Student Activities

- Read textbook and attend class lectures
- Attend two library workshops: finding articles, distinguishing scholarly journal articles and APA style
- May follow up with a class visit to the library for searching practice, seeking help from a librarian or may seek help from professor
The Assignment

• Locate, read and print four journal articles using various research methodologies
• Cite each article correctly using APA style
• Create an annotated bibliography for all four articles which paraphrases the:
  – 1. purpose or hypothesis of the study in each article
  – 2. the type of each study
  – 3. participants in each study
  – 4. conclusions made by the authors in each study
Assessment

- A rubric using the following criteria is used:
  - Correctness of their APA citations
  - Identifying the correct methodology
  - Selection of a relevant article for a general psychology class
  - Completeness of annotations
  - Quality of college-level writing and paraphrasing
Data Analysis

• Information collected about library workshop attendance and seeking assistance from a librarian or the professor outside of class.

• Grade comparison made contrasting students who engaged in these activities and those who do not.
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Karen Steinmayer, Ph.D., Behavioral & Social Sciences Dept. - Psychology Unit

Karen Steinmayer will talk about strategies used in structuring a Hybrid Lifespan Developmental Psychology course for nursing students. Her comments will deal with both the design of the Hybrid class and specific assignments targeted to help students transition from college level work to the more advanced learning and technological capabilities necessary for health care professionals.
Major Goal
* Deal with a major concern of Less Face Time in a Hybrid course

Major Objective to Achieve This Goal
* Find a way to help students take more responsibility and initiative for their own learning

Major Strategy/Tool
* Decided to begin with Summaries
* Decided to take a more open-ended, exploratory approach, in a “new environment”
  - Asked students to keep in mind the PURPOSE of the summaries: to help in comprehending the material and in preparing for two exams and a paper
  - Asked students to be responsible for thinking about and exploring what would work best for their own Learning Styles
  - Asked students to consider a variety of structures and formats
Process

* Asked students to keep thinking about strategies and formats

* Asked students to consider whether different strategies and formats might work better for different types of material

* To encourage exploration, as the semester progressed, the professor assigned different formats for summaries dealing with different types of material
Chapter One - second section - asked that students include at least one chart or diagram

This section of the chapter deals with Research Designs and Methods

Chapter Two - asked that students use charts and diagrams only

This chapter deals with the biological beginnings of human development, such as the genetic foundations of development, the course of prenatal development and the stages of the birth process
Chapter Three - asked that students use bulleted points to explain how the material in the textbook addresses the learning goals stated for three sections of this chapter: body growth and change, sleep, and longevity.

To provide scaffolding for the final written project for this course this semester, students were also asked to write about two short paragraphs explaining how the material in this chapter relates to the experience of aging “backwards” described by F. Scott Fitzgerald in The Curious Case of Benjamin Button.
Chapter Four - asked that students write a letter to a woman or man from a culture of their choice, specifying the culture, and that, in this letter, they explain health issues the person might encounter at different ages and stages of the lifespan.

This chapter deals with prominent health issues at different ages, nutrition and eating behavior, exercise, and substance abuse.
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Amy Ramson, Esq.,
Behavioral & Social Sciences Dept. – Public Administration Unit

Amy Ramson, J.D., an attorney who teaches in the Public Administration, Criminal Justice and Paralegal Studies Programs, will present material on how service learning aids paralegals in developing several vital employment competencies.
Amy J. Ramson, J.D.
Public Administration, Criminal Justice and Paralegal Studies Programs

- Hostos Community College
Values of a global citizen

- Appreciating other cultures/languages/communities/ethnicities/races; (older version)
- Becoming a supporter of social justice
- Being cognizant that your actions affect others and the actions of others affect you;
- Appreciating the common humanity of peoples of the world;
- Being aware that your culture is part of the world and that many cultures exist; and
- Taking responsibility to assist those in need

References:
Service-Learning

- Combines classroom instruction with community service with equal emphasis on education and service

- Involves reflection

- Develops critical thinking skills by preparing for, learning from, and reflecting on service experience

- Involves students in activities that meet local needs while developing academic skills and commitment to community. Reciprocal: benefits student and service recipient—personal and civic responsibility

- By offering their knowledge, skills, and time, students serve a community and, in turn, learn new context-relevant knowledge and skills (Sinclair & Zinger, 2008)
Three service-learning projects

**Immigration Law**
Fundamentals of current immigration and nationality law in the United States, its history, and proposals for change. Students participate in AILA and CUNY Citizenship Now! call-in and application assistance events.

**Family Law**
Students will survey the theory and practice of family law, with an emphasis on New York State practice. The student will become acquainted with primary source materials and with the courts and agencies that enforce and administer the law. The student will review the laws of marriage, divorce and annulment, child custody and guardianship, paternity and child support, and adoption. The student will study the role of the civil and criminal courts in assisting the victims of domestic violence. Students provide service in the Family Court: the Help Centers; the Self-Represented Litigants Division; the Support Petitions Room; Petition Room, and Post-Court Supervision Areas in various counties of New York City.
OUTCOMES

• Students
  • Global citizenship increased
  • Personal Growth and leadership skills increased
  • Feel linked to the community/understand others and their own groups better
  • Engagement in course
  • Enables more contact with professor
  • Critical thinking skills increased
  • Career exposure/Marketable skills
  • Increased self confidence and work self efficacy
  • Increased retention in class

• Professors
  • Reinvigorates teaching
  • Enables more student contact
  • Enables curriculum to include theory and practice- more holistic
  • Offers additional assessment tool
  • Class is more student-centered
  • Provides opportunities for scholarship
  • Provides opportunities for collaboration with other divisions of college and outside agencies/organizations