Kimberly Barss Module 4 ETAP524 Spring 2011

**Lesson Plan #4**

**Lesson Plan Title**

Learning the heart using group questioning and case studies to build critical thinking skills.

**Goals**

Students will learn the anatomy and physiology of the heart including valve functioning, electrical conductivity, cardio dynamics, effects of aging and disease on heart functioning and clinical signs and symptoms of patients with heart disease.

**Objectives**

After attending lecture students will be able to:

1. Identify the internal and external anatomy of the heart.
2. Interpret a normal EKG readout.
3. Recall the heart valves associated with the characteristic heart sounds.
4. Identify the effects of aging on the heart.
5. Identify the effects of disease on the heart.

After working in pairs in class, students will be able to:

1. Identify ventricular systole and diastole on a cardiodynamics diagram.
2. Interpret an EKG readout as it relates to heart beats.

After working independently at home using the course wiki, students will be able to:

1. Identify the clinical signs and symptoms related to heart disease.
2. Identify the anatomy affected by the disease.
3. Interpret lab values associated with

**Discipline and Topic**

This unit is the first half of the cardiovascular system for Anatomy and Physiology students.

**Target Population**

This lesson will be presented to approximately 20 undergraduate students enrolled in pre-health profession majors, mostly practical nursing students.

**Curriculum Alignment**

This lesson is the first half of the cardiovascular system (the system is divided into two units: the heart and the blood vessels) and prepares pre-health students for the NCLEX-PN nursing licensure exam as well as other licensing exams as required for the respective profession. According to the National Council of State Boards for Nursing, this lesson plan incorporates the Client Need of Physiological Integrity: Physiological Adaptation for the NCLEX-PN standards.

This lesson also includes the use of technology in the classroom that is intended to enhance learning according to the ISTE National Educational Technology Standards and Performance Indicators for Students:

2- Communication and Collaboration:

1. Interact, collaborate, and publish with peers, experts or others employing a variety of digital environments and media.
2. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.

4- Critical Thinking, Problem-Solving & Decision-Making:

1. Identify and define authentic problems and significant questions for investigation.
2. Plan and manage activities to develop a solution or complete a project.
3. Collect and analyze data to identify solutions and/or make informed decisions.

5- Digital Citizenship:

1. Advocate and practice safe, legal, and responsible use of information and technology.
2. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
3. Demonstrate personal responsibility for lifelong learning.
4. Exhibit leadership for digital citizenship.

6- Technology Operations and Concepts:

1. Transfer current knowledge to learning of new technologies.

This lesson also includes the use of technology in teaching according to the ISTE NETS for Teachers:

1. Technology Operations and concepts
2. Planning and Designing learning environments and experiences
3. Teaching, learning, and the curriculum
4. Assessment and evaluation
5. Productivity and professional practice
6. Social, ethical, legal, and human issues

**Underlying Educational Theory**

This lesson draws upon Jerome Bruner’s constructivist theory of Discovery Learning. Discovery learning involves the student and their current set of knowledge and skills and is an active process in which the learner works through problems “to discover facts and relationships for themselves.” (<http://www.learning-theories.com/category/constructivist-theories>)

**Materials Description and Timing**

The intended time frame for this lesson will be a 4hour and 15minute lecture period, followed by students collaborating remotely through the course wiki outside of class. The materials required in class are as follows:

1. One computer and projector at the front of the classroom to project the power point slides for the lesson and display the multimedia animations.
2. Students will all have paper copies of the lecture to follow along with and take notes on (attached).
3. A TV with VHS player to show associated videos.
4. Human Anatomy and Physiology (textbook), by Marieb and Hoehn, 8th ed.
5. Time Life Medical: Coronary Artery Disease, VHS video.
6. Pathophysiology for Nurses: Atrial Fibrillation, VHS video.
7. EKG interpretation, VHS video.
8. Pathophysiology of cardiodynamics concept map (attached document).

Out-of-class materials required are:

1. A computer with internet access (available to students on campus if they do not have personal computers).

**Supplemental Materials and Links**

* Students will need to access the course wiki. The wiki is available at <http://barssap2.wetpaint.com>
* Course lecture notes and handouts can also be accessed through the school’s student portal, SONIS. ([www.mildred-elley.edu/student-portal](http://www.mildred-elley.edu/student-portal) ) The instructor posts the course materials to the course section and they are available throughout the module for students to access.
* Student discussions will take place on the class wiki site where there are detailed instructions and a link to the case study being reviewed.

**Lesson**

1. Lecture:
   1. Chapter 18 lecture part A. Instructor will give lecture notes to students and lecture on part A, adding additional clarification as necessary. This will take approximately 55 out of the 255 minute class, including a 10 minute break.
2. At the conclusion of lecture part A, students will watch the Time Life Medical VHS about coronary artery disease, this will take 40 out of the 255 minute class, including a 10 minute break afterward.
3. Lecture:
   1. Chapter 18 lecture part B. Instructor will complete lecture notes given to students and lecture on part B, adding additional clarification as necessary. This will take approximately 70 minutes including a 10 minute break.
4. At the conclusion of part B, students will watch the interpreting EKG video, which will take approximately 15 minutes.
5. Following the EKG video, students will watch the Pathophysiology for nurses VHS on atrial fibrillation.
6. Students will then work in pairs to complete the concept map to explain the Who, What, When, Where, Why and How of cardiodynamics and how they interrelate to create clinical signs and symptoms for patients. They will be given 20 out of 255 minutes.
7. Student pairs will then discuss their ideas with the class as a whole and, with instructor feedback, fine tune the details of cardiodynamics and electrical conductivity. This will occupy the remaining 25 minutes of class time.
8. Students will be assigned to access the course wiki under the “Chapter 18: The Heart” section, read the directions, and respond to the case study in the discussion area. Students are required to write one initial response and two responses to classmates.

**Evaluation of Students**

* Students are quizzed informally and verbally during the lecture to ensure understanding.
* A formal assessment in the form of a written exam for the unit will include this material with the second half of the lecture on the cardiovascular system.
* Student discussions will be graded using the following rubric:

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| **Lab Report : Case Study Discussion** | | | | |
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| Teacher Name: **Mrs. Barss** | |  |  |  |
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| Student Name:     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |  |
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| CATEGORY | 4 | 3 | 2 | 1 |
| Summary | Summary describes the skills learned, the information learned and some future applications to real life situations. | Summary describes the information learned and a possible application to a real life situation. | Summary describes the information learned. | No summary is written. |
| Analysis | The relationship between the chemical principles and physiology are logically analyzed. Predictions are made about what might happen if part of the lab were changed or how the experimental design could be changed. | The relationship between the chemical principles and physiology is discussed and trends/patterns logically analyzed. | The relationship between the chemical principles and physiology is discussed but no patterns, trends or predictions are made based on the data. | The relationship between the chemical principles and physiology is not discussed. |
| Participation | Posts were timely and well written and contributed to the discussion. | Posts were timely and well written but only minimally contributed to the discussion. | Posts were timely but lacked careful thought in writing and minimally contributed to the discussion. | Participation was minimal OR student was hostile about participating. |
| Spelling, Punctuation and Grammar | One or fewer errors in spelling, punctuation and grammar in the report. | Two or three errors in spelling, punctuation and grammar in the report. | Four errors in spelling, punctuation and grammar in the report. | More than 4 errors in spelling, punctuation and grammar in the report. |
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| Date Created: **Feb 22, 2011 05:59 pm (UTC)** | | |  |  |

**Evaluation of the Lesson**

* This lesson will be considered successful if, during informal in-class quizzing, students are successfully answering questions.
* Formal evaluation will be considered successful if at least 70% of the students score 75% or higher on the exam.
* Students will receive at least a 12/15 on their rubric scores for discussion.
* Students will also have the option to submit their feedback of the case study exercise online on the course wiki site through the polling widget.

**Rationale for Using the Medium**

Given the time constraints on the course, students are given the bulk of the instructional content in a lecture format using power point projections.

The task of interacting with the material and one another asynchronously through our course web page extends the classroom into the students’ homes and provides useful applications that force the students to analyze EKGs and cardiac blood work, interpret physiological signs and symptoms, and deepens student understanding by allowing for reflective writing with peers. He or she is required to collaborate with group members by posting individual summaries of the reading, discussing and analyzing the case study as it relates to the course material as they pertain to the case study findings.