Learning Assessment of Core Outcomes
Suggested Focus 2009-2010: Critical Thinking and Problem Solving

SAC Name: Fitness Technology

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PLAN OF ACTION - What we want to know:

1) **Critical Thinking** – Are Fitness Technology (FT) students able to assess what they don't know about fitness and exercise science and programming? Can FT students gather information from appropriate sources to fill in gaps in their knowledge? Are FT students able to synthesize, analyze, and critically evaluate the gathered information? Are FT students able to apply data and information learned in coursework, workshops, and from other sources to a diverse group of potential fitness clients?
2) **Problem Solving** – Are FT students able to analyze problems and issues that may come up in coursework, work with other program students, and internship settings and formulate appropriate solutions on their own? Can FT students identify sources of support when problems arise and utilize those support mechanisms appropriately? Do FT students utilize problem solving techniques and carry out solutions in a timely manner?

PLAN OF ACTION – How we can show FT students are meeting this outcome:

- **DIRECT Evidence**
  - Rating of student critical thinking and problem solving by field experience supervisors (FT 280 – Internship course)
  - Tracking of students who pass certification exams that require critical thinking and problem solving (ACSM, ACE, NASM, NSCA)
  - Direct evaluation of critical thinking and problem solving in capstone experiences, presentations, projects, and individual classes (FT 105, FT 201, others?)
  - Evaluating individual student work in all FT classes that have a critical thinking and problem solving component (develop rubric to be used in all FT classes)
  - Portfolios of student work (FT 105, FT 280)
  - Observations of student behavior (lesson plan/skill evaluation in Pro-Act classes, FT 101)
  - Discussions or message boards in classes that are evaluated by instructor for critical thinking and problem solving
- **INDIRECT Evidence**
  - Course grades in courses with a large critical thinking and problem solving component
  - Assignment grades in courses with a large critical thinking and problem solving component
  - Placement rates of graduates into job positions and/or continuing 4yr education where critical thinking and problem solving are necessary
  - Current FT student ratings of how the FT program overall improves their critical thinking and problem solving abilities
  - Current FT student ratings of how individual FT classes improve their critical thinking and problem solving
  - Exit interview or survey of FT graduates and alumni of how the FT program overall improved their critical thinking and problem solving abilities and job successes in this area

IMPLEMENTATION – How we have recently analyzed the direct and indirect evidence:

- The Fitness Technology Program recently completed a year-long program review process. Through this process we analyzed many of the above pieces of direct and indirect evidence of critical thinking and problem solving by our students.

- We developed and sent out surveys to current FT students and FT graduates which included some questions addressing critical thinking and problem solving in the program.
- We gathered and compiled data on graduation rates, transfer student rates, and employment rates from previous FT students.
- The FT SAC completed the mapping matrix for all FT courses and indicated which address critical thinking and problem solving.
- The FT SAC recently updated FT course CCOG's and started the process of looking at PCC Core Outcomes in each.

IMPLEMENTATION – Results of the currently analyzed evidence:

- **FT Course Mapping Matrix for PCC Core Outcomes:** The following is a rating of how well each course addresses the college core outcomes. The numbers in the table indicate student proficiency level for each outcome after taking each course as rated by faculty impression at the time of this Program Review. Outcome 5 (professional competence) is not rated here because every course in the CTE program addresses professional competence. The table below shows that FT curriculum helps students to achieve communication, problem solving and professional competence very well by enhancing their skills in these areas to at least level 3 by the time they graduate.

  C01 - Communication
  C02 - Community and Environmental Responsibility
  C03 - Critical Thinking and Problem Solving
  C04 - Cultural Awareness
  C05 - Professional Competence
  C06 - Self-Reflection

COURSE	CO1	CO2	C03	C04	C05	C06
FT 101 - Seminar	3	2	4	3		4
FT 102 - Injury Prevention	4	3	3	4		3
FT 103 - Nutrition Fitness Inst.	3	3	3	2		4
FT 104 - Assessment & Prog I	4	1	4	2		4
FT 105 - Assessment & Prog II	4	2	4	3		4
FT 106 - Analysis of Movement	3	1	4	1		3
FT 107 - Exercise Science I	3	1	4	2		3
FT 131 - Structure & Function	4	2	4	2		4
FT 201 - Assessment & Prog III	3	2	3	2		3
FT 202 - Fitness & Aging	4	3	4	3		4
FT203 - Fitness Promotion	4	2	3	3		3
FT 204 - Exercise Science II	4	3	4	3		4
FT 280 - Internship	4	3	4	3		4

1 = Limited demonstration or application of knowledge and skills
2 = Basic demonstration and application of knowledge and skills
3 = Demonstrated comprehension and is able to apply essential knowledge and skills
4 = Demonstrates thorough, effective and/or sophisticated application of knowledge and skills

- **Current FT Student Spring 2009 Survey:** During Spring Term 2009, a successful survey (85% response rate) of over 60 current FT students was conducted with the assistance of PCC's Institutional Effectiveness office. The purpose of the survey was to assess whether or not coursework in the FT program enables students to meet both core PCC and FT program outcomes. Students reported their

level of agreement that the FT program is assisting them to meet the **PCC Core Outcomes**. Eighty-eight percent agreed that the FT program helped them improve their **critical thinking skills**. All students were asked the level to which they felt they actually met the **FT Program One-Year Certificate Outcomes** (answered by all students surveyed – Cert and AAS students). Here are the results which all demonstrate critical thinking and problem solving attributes:

- Meet qualifications for employment as an entry-level instructor in the fitness and wellness industry. **(100%)**
- Develop, demonstrate & implement appropriate fitness assessments and programs for healthy populations. **(100%)**
- Apply the knowledge and skill base gained in the FT One-Year Certificate, when critically evaluating and interpreting fitness and wellness information. **(98%)**
- Use valid fitness and wellness information to effectively educate clients. **(96%)**
- Identify, evaluate, and take advantage of learning opportunities in the fitness and wellness industry that contribute to personal and professional growth and adaptability. **(96%)**
- Demonstrate sufficient knowledge and skills to qualify for nationally recognized fitness certifications. **(96%)**

In addition, AAS Degree students were asked whether they felt they met the **FT AAS Degree Outcomes** (answered by AAS Degree students only):

- Meet qualifications for employment as an entry level professional in the fitness and wellness industry. Gain additional program-related work experience for higher-level positions in the fitness and wellness industry. **(100%)**
- Develop, demonstrate, and implement appropriate fitness assessments and programs for healthy populations and individuals with special exercise program requirements (i.e. seniors, youth, and at-risk populations). **(88%)**
- Meet transfer requirements for entry into four-year college programs in Pre-Physical Education, Exercise and Sport Science, Pre-Physical Therapy, Pre-Athletic Training, Pre-Occupational Therapy, Health Promotion, Fitness Promotion, and other related educational, technical, and professional fields. **(100%)**

- **FT Graduates Winter 2010 Survey:** A survey sent to Fitness Technology graduates in January 2010 yielded the following interesting information about successful Fitness Technology students (N=20).
  - 10 responding graduates earned an FT Certificate and an FT AAS Degree
  - 6 graduates earned an FT Certificate only
  - 4 students transferred to a 4 year college before getting an FT Certificate or Degree
  - 70% are employed in a fitness-related position
  - 50% have worked as a group fitness instructor making $15-50 per hour
  - 80% felt that their PCC Fitness Technology Certificate and/or Degree enabled them to meet the qualifications for employment in the fitness industry
  - The 4 students who transferred felt that the Fitness Technology program and PCC in general helped them meet transfer requirements for entry into 4-year programs
  - 60% felt that the FT Certificate or Degree enabled them to become fitness certified

FUTURE RECOMMENDATIONS – for assessing FT student Critical Thinking and Problem Solving:

- Continue to update course-level outcomes to include critical thinking and problem solving (INDIRECT)
- Revise course-level evaluations to include questions on critical thinking and problem solving (INDIRECT)
- Formalize the exit interview process to include critical thinking and problem solving questions (INDIRECT)

- Include critical thinking and problem solving questions on employer/FT business partner surveys and evaluations of student internships (DIRECT)
- Include critical thinking and problem solving questions on self-reflective assignments for students (INDIRECT)
- Evaluate student critical thinking and problem solving when grading message board/discussion posts (DIRECT)
- Improve the program-wide gathering of information about student certifications, employment, and transfer schools (DIRECT & INDIRECT)
- Develop a critical thinking and problem solving rubric for FT classes and evaluate select student work using the developed rubric (DIRECT)
- Include critical thinking and problem solving rubric items when developing grading rubrics for course-level projects and portfolios (DIRECT)