Utilizing Moodle Forums & Blogs in the CSP Classroom

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Traditional CS Evaluation

- Traditional CS Evaluation tends to be performance based:
  - Concept tests on topics read about or lectured on in class
  - Programs assessed on functionality, effectiveness, and algorithm design
  - Creation and submission of artifacts that demonstrate knowledge of a topic
  - “Show Me” approaches
- There is nothing wrong with this approach and it should be utilized accordingly
Discussion & Reflection in CSP
Essential Components of the Course...

- Discussion is an essential element of the CSP classroom
  - Computational Thinking P5: Communicating
    - Students in this course describe computation and the impact of technology and computation, explain and justify the design and appropriateness of their computational choices, and analyze and describe both computational artifacts and the results or behaviors of such artifacts. Communication includes written and oral descriptions supported by graphs, visualizations, and computational analysis. Students are expected to:
      - Explain the meaning of a result in context;
      - Describe computation with accurate and precise language, notations, or visualizations; and
      - Summarize the purpose of a computational artifact.
  - In addition, the performance tasks contain reflection components in which students must describe elements of their projects and/or the impacts their projects will have on society.
How Do We Evaluate Discussion?

- **High School Accountability**
  - Parents, schools, and regulators all want accountability in the justification of student performance
  - Simply saying “Johnny participated and Frank didn’t” is not enough
  - You need records to verify a grade assigned for discussion & reflection

- **Traditional “English” Approach**
  - Essays
  - Research Papers
An “Online” Approach to Discussion & Reflection

- Blogs
  - Students reflect on the development of their projects on a daily basis
  - They note progress, hurdles they encounter, and document the process of large scale projects over time
  - Teachers can use them for multiple purposes, including...
    - Track and monitor student progress on long-term projects
    - Ensure students are completing assigned readings
    - Provide every student (even the quite and reserved ones) with a voice
    - Modify instruction based on individual student needs
    - Assess student progress and growth
An “Online” Approach to Discussion & Reflection

- **Forums**
  - Students and instructors collaboratively discuss topics
  - Provides for the opportunity to feed off of each other
  - Opens up the channels of communication amongst students who would normally not talk to one another
  - Can be utilized for partners working on a collaborative assignments
Additional Benefits of the use of Blogs & Forums

- **Non-Traditional CS Students**
  - Non-"techies" tend to be reserved in classroom discussions
  - Blogs and Forums force them to contribute to the discussion even when they are hesitant to speak up during class

- **Absenteeism**
  - Students are always missing from class for one reason or another
  - Blogs and Forums provide a means for students to “catch up” on what was discussed while they were missing

- **Accountability**
  - Provide instructors with documentation of student involvement for grading and assessment purposes
Why Moodle?

- Moodle is a course management software utility designed to provide an online, interactive workspace for students and instructors to collaborate
  - Similar to Blackboard, WebCT, Edmodo, etc.
- Open-Source
- Used in many colleges and universities around the world
- Massive wealth of resources and tutorials from the Moodle community
- Can be tied directly to login databases for school networks so setup of accounts is easy to manage
- Overhead is minimal depending on the modules (enhancements) you want to install
- 24/7 Access via the Internet
Moodle Blogs

- Every account in Moodle is provided with a Blog.
- Blog postings are organized by date.
- They allow for titles, descriptions, file attachments, and even tagging for search purposes.
- Instructors can review blog postings by selecting a student from their course and clicking on their user name.
Moodle Forums

- Single Simple Discussion
  - A single discussion topic which everyone can reply to

- Each Person Posts One Discussion
  - Each student can post exactly one new discussion topic, which everyone can then reply to

- Q and A Forum
  - Students must first post their perspectives before viewing other students’ posts

- Standard Forum Displayed in a Blog-Like Format
  - An open forum where anyone can start a new discussion at any time, and in which discussion topics are displayed on one page with “Discuss this topic” links

- Standard Forum for General Use
  - An open forum where anyone can start a new discussion at any time
Practical Applications in the CSP Classroom

- Assigned Videos & Readings
  - Blown to Bits Reading Reflections
    - Q and A Forums are particularly useful here
  - Articles assigned throughout the year
    - ACM TechNews E-mail Listserv
    - Very useful resource for the Explore task
  - TED Talks
    - Lots of videos on the state of the economy, social implications of technology, creativity in the classroom, etc.
    - WATCH FIRST!!

- Current Events
  - Bi-Weekly assignment in which students post a discussion on an article they read in the news
  - Students than read each others postings and comment on the topics
Practical Applications in the CSP Classroom

- **Warm-Ups**
  - To get students thinking about the topic we are about to explore, pose a little warm-up statement that students are to reflect on
  - Quotes work really well...
    “There are 10 types of people in this world those who understand binary and those who don’t.”

- **“Exit Interviews” - Monitoring Progress**
  - Especially useful during project work sessions
  - Students can create blog postings that discuss
    - What did you accomplish today?
    - What problems did you encounter and how did you overcome them?
    - How did you and your partner collaborate and/or split up today’s work?
    - What is your goal for the end of the next session?
Practical Applications in the CSP Classroom

- The Performance Tasks - Referring back to blog postings and forum discussions
  - Create
    - Collaborative Reflection
      - Describe the purpose of your collaborative program (100 words)
      - Explain how the selected code illustrates the use of abstraction (100 words)
      - Generally describe what the algorithm does (100 words)
      - Discuss how you incrementally developed your program. What did you create first? What came next? What problems did you encounter and solve? (100 words)
    - Individual Reflection
      - Describe the purpose of your individually developed program (100 words)
      - On the collaborative program, how did you and your partner share the work? (100 words)
      - What was the most significant feedback you provided that helped your partner review and revise the collaborative program (50 words)
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Practical Applications in the CSP Classroom

- Explore
  - The written requirement consists of components related to:
    - The Innovation (400 Words)
    - Impacted Population (100 Words)
    - Social, Economic, or Cultural Impact (200 Words)
  - The forum discussions throughout the course will prepare students well for this aspect of the project.
  - Students said how easy this section was when it came time to prepare it with the comment, “we have been doing this all year...”
Practical Applications in the CSP Classroom

- Providing Feedback to All Students
  - Difficult to meet one on one with every student during a single-class session
  - Provides opportunity to comment to every student daily

- Peer Collaboration and Critique
  - Rating system for forum posts

- Providing Motivation
  - Pointing out individual student accomplishments and sharing them with the larger group
  - Mini-Experts emerge through their contributions to discussions
  - The “Badge” system can be utilized with blogs and forums
Noticeable Achievements

- Students begin to open up to one another much more easily
- Collaboration and discussion tend to become a natural part of the classroom environment
- Students begin to feel like they are a member of a learning community rather than an individual in the classroom
- Assessment is much easier with documentation
- Overall writing ability and reflective nature of writing has improved
- Performance task requirements are met easier