Social Homework

Cooperative Online Learning Platform – Better Learning Solutions for the Connected World

Zvonko Hlousek and Thomas Gredig
Department of Physics & Astronomy, CSU Long Beach

Abstract:
The Social Homework is designed to allow students to effectively communicate and work in small teams to solve problems, discuss lecture material, and review material. Most importantly, students are allowed to actively contribute, mentor peers, synthesize, create, and evaluate course material. The Social Homework website has the feeling of a social network.

Instructor Tools:
- Automatic grading options
- Progress reports and graphs

Key Features:
- Automatic group assignments: students are grouped into micro-communities
- Automatic role assignments to groups
- Inbox messaging center
- Personalization of account with image and notifications
- Ability to upload images from a local device
- Advanced editor for equations (LaTeX) and images
- Like and thank you support
- Subscription and Email notification management
- Assignment due dates
- Showcase with group results
- Sortable statistics and grading tables for instructors
- Custom Digital Publishing platform for Class material
- iPhone, iPad, etc. compatible styling sheets

Motivation:
1) Introductory classes that promote conceptual understanding rather than memorization require special tools. Students find little lasting value as they mostly prepare a few days before the exam and focus on memorization not understanding of the concepts.

2) Increasingly, students have become more sophisticated using Internet resources to circumvent the intended goals to work on homework assignments. Detailed solutions to most textbook questions can be found online.

3) Traditional paper textbooks in sciences are difficult to use for students and have become unnecessarily bulky and lengthy. A more personalized approach is needed that answers specific student questions in a shorter and more manageable fashion. The publishing component of the SHW allows each instructor to selectively use customized materials that best fit a particular student population.

Student Survey:
- Overall, I have found active participation on forums, homework, etc. to be good for deepening knowledge about problems.
- I have found the platform to be useful for group assignments, homework, etc.
- The platform has helped to improve my understanding of concepts.
- I have found the graphical interface to be helpful for visualizing problems.
- The platform has improved my ability to communicate effectively with peers.

Student Examples:
- Skeptic comment: "The area was given in cm². To convert to m² you have to multiply by .001 instead of .01."
- I agree with this approach to use Faraday's. I think that the problem is actually stating that the magnetic field is 60 degrees from the axis of the coil. It seems to me that the coils lie across the chest on the x-axis and stretch to increase their area as the lungs expand along the y-axis."
- "Your question is similar to my group's in the way that we both had the concept of using a camera faced to the water and finding the angle of the refractive ray. … we decided to use something involving the thin lens equation."
- "Guys I found another mistake in my calculations. … the error lies in the fact that the incident and refractive rays are at different angles (the picture threw me off) so it's not a perfect triangle like it looks."

Traditional Homework (Physics)  Social Homework (Physics)
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Individual work, for 3 units about 9 hours of work  Group homework, automatic groups of 5-6 students with assigned roles
Result is important, documentation of how the result is absent  Path is important, the path emphasizes the concept
Specific problem, details provided, number crunching  Open-ended personalized problem
Textbook problems relevant to general textbook content  Internet resources are important; connection to real world is made

Main Site with Discussion Threads:

EDU ONLINE
Learning Solutions for the Connected World

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