Pathway – 24/7 Online Pedagogical Assistance for Teachers of Physics

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Teachers’ Needs
- Immediate relevance
- Need it tomorrow
- Completeness
  - Little time for searching out additional information
  - Background in physics is limited

Our Approach
- Web-based access to thoughts of experienced physics teachers
- ~7,600 Pre-recorded answers to questions about physics teaching
- Conversation mode interface
- Frequent improvements based on input & feedback

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The Physics Teaching Web Advisory
http://www.physicspathway.org

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A teacher selects one of four experts to ask a question about the pedagogy of teaching physics.

The Experts

Paul Hewitt
Author of highly popular physics and physical science textbooks for both high school and college

Charles Lang
High school physics teacher in rural Nebraska & Omaha; Presidential Award recipient

The teacher can choose a particular subject from either quick start list

Or, the teacher can ask a question about the teaching of physics

The Experts

Roberta Lang
High school physics teacher in Orlando; trained as a chemistry teacher

Leroy Salary
Physics & teacher educator at Norfolk State University

The teacher can choose a particular subject from either quick start list
The question is matched by the Pathway search engine to one of the 7,600 responses in our multimedia database.

An experienced teacher provides a pre-recorded response.

Auxiliary information can be popped up as needed.

Similar questions which have been asked by other teachers can be selected, or the user can send the question to comPADRE, the digital resource for physics and astronomy education.

It’s easy to review previous questions and answers.

Feedback on the appropriateness and value of the response can be given.
The Answers – Paul Hewitt

- What general advice would you offer to a first time physics teacher? (2:50)
- My advice … is not to get bogged down with kinematics …. Get it so that your students at least have an exposure to the whole experience that first term. … If a student's first encounter with physics is one of delight, they will welcome the rigor of the second course. …

Feedback & Evaluation

- Primarily formative so far
  - Significant changes in the interface
  - Provide help without calling it help
    - E.g. Related questions
  - Added many questions & topics
  - Connections to comPADRE
    - Access to other PER research materials
    - Provides additional print resources
  - Technical changes
    - Improved searching
    - Flash video

Future Work

- Additional changes based on feedback
  - Summative evaluation
  - Need assistance
  - ALT-Pathway
    - Online tutoring system to assist students

Lesson Enhancement Case Study

- Prerecorded answers were shown at this point.

THANK YOU!

HTTP://WWW.PHYSICSPATHWAY.ORG

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