PATHWAY

Physics Teaching Web Advisory

Web-based Assistance for Teachers of Physics

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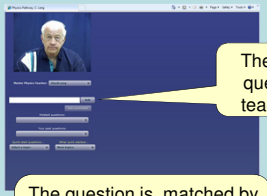
The **Synthetic Interview** provides the teacher with an interface that is very similar to conversing with an expert. The video and other information are stored in a database and are presented when a teacher asks a question.

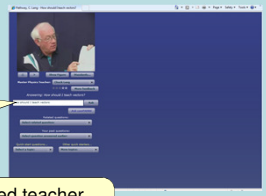
A teacher selects one of four experts to ask a question about the pedagogy of teaching physics.

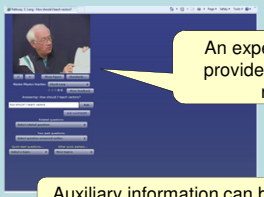
Roberta Lang | Charles Lang | Leroy Salary | Paul G. Hewitt



The teacher asks a question about the teaching of physics

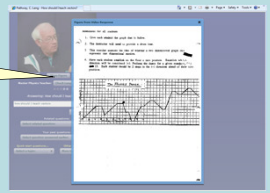
The question is matched by the Pathway search engine to one of 7,600 responses in our multimedia data base.

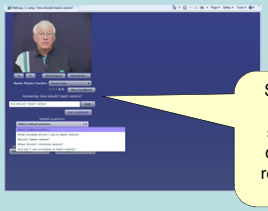




An experienced teacher provides a pre-recorded response.

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.

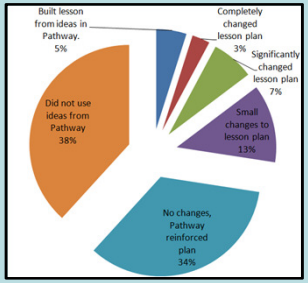
Carnegie Mellon

www.physicspathway.org

Pathway uses over 7,600 recorded responses to answer over 7,600 questions about the teaching of physics. In most cases the question can be answered by two of more of our experienced teachers.

Evaluation

In a case study 19 thigh school teachers used Pathway for 14 weeks. Each week they reported how they used Pathway in creating their lesson plans.



Example of teacher use of Pathway

Useful ideas for lesson on Momentum

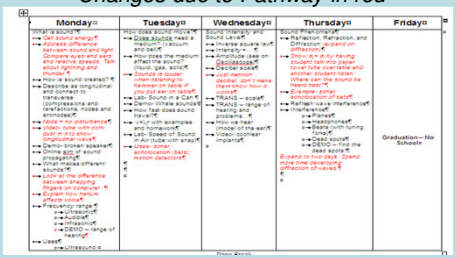
- Importance of teaching momentum, even in a survey class
- Ways to transition from Newton's Laws to

How lesson plan changed

- Included some math but not algebra (Paul Hewitt)
- Added the simple definition of kinetic energy so students could distinguish between momentum and energy , even though we may not have gotten to energy yet (R. Lang).

Lesson Plan on Sound

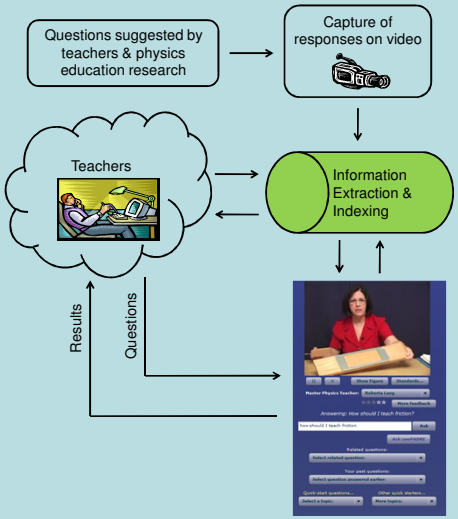
Changes due to Pathway in red



Supported by the National Science Foundation under grant numbers DUE-0226157, DUE-0226219, ESI-0455772 & ESI-0455813

Pathway has created a digital library for physics teaching. More than a collection of materials, Pathway combines

- ❑ state of the art digital video technology,
- ❑ natural language interface and searching,
- ❑ links to contemporary research on physics teaching and learning,
- ❑ modern pedagogy and
- ❑ the knowledge of experienced teachers.



Links to the National Science Education Standards are available to aid the teachers.

KSU PER Kansas State University Physics Education Research