Action Research Group

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HR1:

1. Appropriate variables to measure
2. Quantifying STEM knowledge

HR2:

1. Develop an action plan and seek funding regarding research reform of undergraduate entry-level science courses

Contexts to describe or variables to measure:

1. Advising of undergraduates coming into teacher education; turf wars can influence their pathway; could be all S&M majors too
2. Professional development for faculty to learn about action based research; at Purdue involved all the science areas; long-term, not just one shot deal;

How do we get other faculty to buy into professional development?

* 1. Money
  2. Helps them change their attitudes
  3. We are interested in what we can do (not what we can’t do)
  4. Students on all reform teams (graduate student, undergraduate student, and a graduate of the program)
  5. Grants: to high school teams
  6. Incentive grants $5,000; to change teaching
  7. Release time; assigned time; could have teachers be role models for faculty

1. Challenges of time and space; using technology; on-line teachers; 24/7 instructors; ongoing
2. How get high school or college students to go into teacher education in STEM disciplines of education
3. Involving students who are failing and who are not thriving; what are their reasons why they fail? How do we foster x (traits of successful students)?

Quantifying STEM Knowledge:

1. Standardized conceptual knowledge in physics;
2. Performance assessments; peer review by students
3. Examinations
4. Nature of science
5. Concept maps

Measures:

* Interviews with individual faculty
* Semantic network analysis
* Journals
* Focus groups
* Surveys
* Critical discourse analysis
* Narratives

Programs to do concept maps:

* NOVA mind
* MindJet

Action Research Toward STEM Education Enhancement (ARTSEE)

Using action teams research to enhance STEM education

Evaluation person