

Chemistry

Teaching Professor Conference, May 21, 2010, 10:45 AM
Workshop- Instructional Strategy to Improve Problem Solving Skills
Madhu Mahalingam-Facilitator
Discipline specific strategies

Discuss the responses you put down for each question in your group and answer the following questions – 20 mins

1. As a group identify a set of basic knowledge/skills that students must acquire in order to solve problems.

- reading comp.
- connect ideas
- basic algebraic skills
- translate relationships into conversion

2. Identify various activities/assignments both in the classroom and outside the classroom that can build these basic skills.

- = handout on order of solving problems
- model solving the problem then have students work problems on the board
- assign homework ^{previous}
- do live demos in class + collect data then use data for quiz in upcoming class

3. Can you design activities that involve interaction with peers in a supervised environment? This could be upperclassmen or graduate students to guide students through the activity.

- Have students work with partners to do demos + collect data
- Have student take test individually and then take same test working in groups
- Supplemental Instructors are assigned to courses
25 tutors

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Janet Hart Workshop- Instructional Strategy to Improve Problem Solving Skills
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Discipline specific strategiesSusanne Lewis
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Discuss the responses you put down for each question in your group and answer the following questions – 20 mins

1. As a group identify a set of basic knowledge/skills that students must acquire in order to solve problems.

- interpret figures/tables/data
- basic math skills/algebra
- reading comprehension
- attention to detail

2. Identify various activities/assignments both in the classroom and outside the classroom that can build these basic skills.

- practice
- read more (outside of text book)
- online (Blackboard) assessment of reading
- clicker questions

3. Can you design activities that involve interaction with peers in a supervised environment? This could be upperclassmen or graduate students to guide students through the activity.

- Wiki (optional) (dependent upon level)

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Chem/Bio

Discuss the responses you put down for each question in your group and answer the following questions – 20 mins

1. As a group identify a set of basic knowledge/skills that students must acquire in order to solve problems.

- read/interpret question - verbiage
- put into contextual framework
- connections with real-life
- math skills - equation, data, calculation
- reality check / units

2. Identify various activities/assignments both in the classroom and outside the classroom that can build these basic skills.

- model problem-solving strategy
- post-lecture quiz, online homework
- tutoring sessions

3. Can you design activities that involve interaction with peers in a supervised environment? This could be upperclassmen or graduate students to guide students through the activity.

- group activities centered around real-world classes
- clickers during class

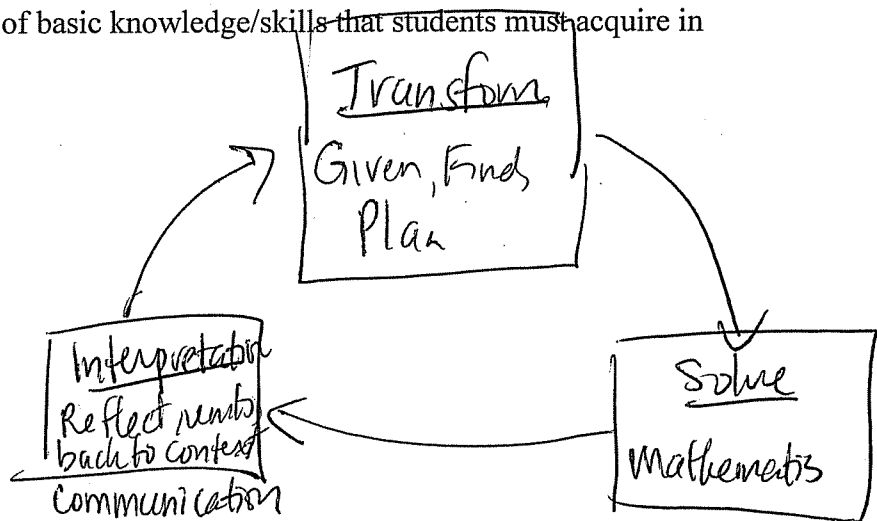
Mathematics

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Discuss the responses you put down for each question in your group and answer the following questions – 20 mins

1. As a group identify a set of basic knowledge/skills that students must acquire in order to solve problems.

Transform
Solve
Interpret



2. Identify various activities/assignments both in the classroom and outside the classroom that can build these basic skills.

Group projects

Reading Questions / Quiz based on HW

pre-teach! Level 1 \leftrightarrow pull Level 2 from reading

3. Can you design activities that involve interaction with peers in a supervised environment? This could be upperclassmen or graduate students to guide students through the activity.

Small groups / modeling problems

Think-Pair-Square-Share

Round Robin - Every student has a role

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Biology, Communication & Mathematics

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Workshop- Instructional Strategy to Improve Problem Solving Skills

Madhu Mahalingam-Facilitator

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Discipline specific strategies

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Discuss the responses you put down for each question in your group and answer the following questions - 20 mins

j.phillips@stephens.edu

1. As a group identify a set of basic knowledge/skills that students must acquire in order to solve problems.

- ability to move beyond memorization
- terminology - words & what they mean
- identify type of problem to be solved & match it with the appropriate problem-solving method, effectively use the problem-solving method & articulate what the solution means
- discriminating between ideas, similarities & differences

2. Identify various activities/assignments both in the classroom and outside the classroom that can build these basic skills.

- small group problems in midst of lecture
- homework with practice problems
- quizzes on homework
- peer instruction / tutoring / guides
- projects built on real-world problems or data

3. Can you design activities that involve interaction with peers in a supervised environment? This could be upperclassmen or graduate students to guide students through the activity.

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Discuss the responses you put down for each question in your group and answer the following questions – 20 mins

1. As a group identify a set of basic knowledge/skills that students must acquire in order to solve problems.

critical reading
(literature review)
critical writing

2. Identify various activities/assignments both in the classroom and outside the classroom that can build these basic skills.

problem-based learning with the steps.

3. Can you design activities that involve interaction with peers in a supervised environment? This could be upperclassmen or graduate students to guide students through the activity.

small group work
online peer reviews

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Discuss the responses you put down for each question in your group and answer the following questions – 20 mins

1. As a group identify a set of basic knowledge/skills that students must acquire in order to solve problems.

Vocabulary, reading Comprehension
How to start a problem
~~and~~ Organize a solution

2. Identify various activities/assignments both in the classroom and outside the classroom that can build these basic skills.

Problems in class + homework
~~POCIL~~ Working through a solution
to a problem.

3. Can you design activities that involve interaction with peers in a supervised environment? This could be upperclassmen or graduate students to guide students through the activity.

Tutors, TAs for ~~the~~ lab times

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4. Did your discussion result in discipline specific strategies that lead students through the various stages of problem solving?

a. If yes, outline the strategy developed by the group.

I
Basic Skills
↳ Reading ability
↳ Understanding the problem
↳ Terminology

II
Integrate their knowledge by more complex problems
Create a table of info needed to solve a problem

b. If no, what were the constraints? How can they be overcome?

Make peer help available