

Instructional Approaches; Preparing to Teach

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Objectives

- List the instructional approaches commonly used in health sciences education
- Describe the strengths and weaknesses of various instructional approaches
- Choose instructional approaches which are appropriate for given sample situations

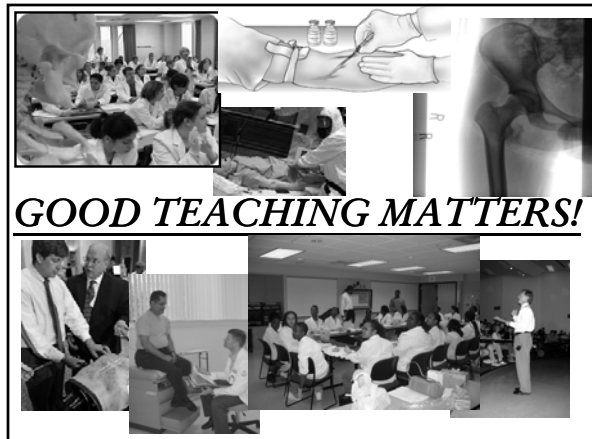
Can do! attitude

You have to talk about what?

“Don’t you just have to get out of bed, brush your teeth, take a shower and dress, get a cup of coffee and a bathroom break and then you are set to go”



Don Batisky, MD
Professor of Pediatrics



Why?

- There is a positive association between good teaching and student learning as assessed using standardized exam scores

Video One

Framework

- Teaching Task
- Learner(s)
- Time
- Content
- Instructional Methodology
 - Teacher/Learner Roles
 - Content Acquisition Method
 - Technology
- Assessment of Learner
- Feedback to Learner
- Feedback to Faculty
 - Peer Review
 - Learner Feedback
 - Outcome Measures

Framework

- Teaching Task
- Learner(s)
- Time
- Content
- Instructional Methodology
 - Teacher/Learner Roles
 - Content Acquisition Method
 - Technology
- Structure

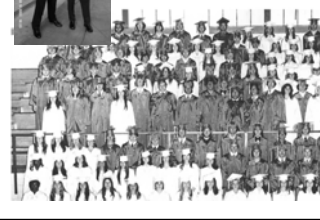
Framework

- Teaching Task



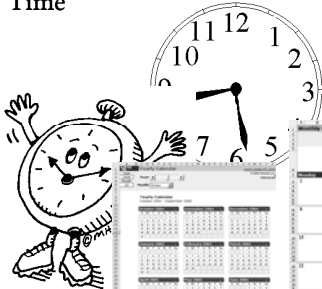
Framework

- Learner(s)



Framework

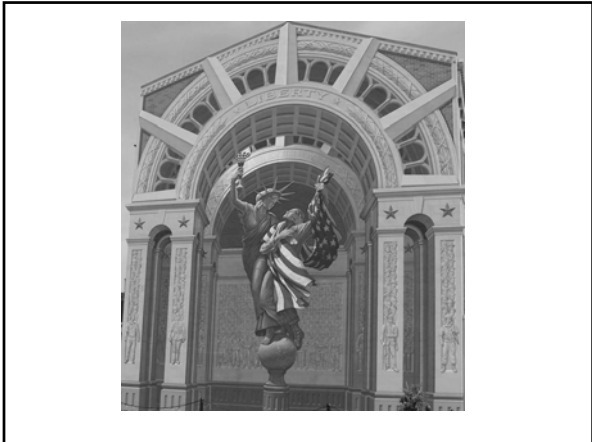
Time



Framework

Content--Knowledge Skills Attitude





Problem Based Learning

- student-centered instructional strategy in which students collaboratively solve problems and reflect on their experiences

Problem Based Learning

- Learning is driven by challenging, open-ended problems.
- Students work in small collaborative groups.
- Teachers take on the role as "facilitators" of learning.

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Wood, D. F. BMJ 2003;326:328-330

BMJ

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Problem Based Learning

- Generic skills and attitudes
 - Teamwork
 - Critical evaluation of literature
 - Chairing a group
 - Self directed learning and use of resources
 - Listening & presentation skills
 - Cooperation
 - Respect for colleagues' views

■ When Twins Marry Twins

- Sally Thompson meets Harry Branaugh and it is love at first sight. They plan to get married in the June following graduation.
- At their wedding rehearsal dinner, Sally's twin sister Emma meets Harry's twin brother Ken for the first time. It's a case of love at first sight. Three months later, they also decide to get married.
- The couples keep in touch, and 3 years later Sally and Emma are delighted to discover that they are both expecting (twins?). Emma's due date is in October, and Sally's in December. On December 12th, seventeen hours into labor, Sally begins to worry about the child she's about to deliver.
- "Why didn't you think of it sooner?" she says "Identical twins should never marry identical twins. Our child's going to look just like Emma and Ken's little boy." Her first impression of Kenneth, Jr. she recalls, was that he had the sort of face that only a mother and father could love.

■ When Twins Marry Twins

■ Questions to ponder:

- Will their child look just like his or her "double cousin," Ken, Jr.? Why or why not?
- Assuming that Sally is right and the children will look identical, will they also have similar personalities, behavior, and attitudes?
- What is the maximum percent of the two childrens' genetic composition that could consist of identical genes (allelic versions)? The minimum percentage?

Description of the Project

Cases:

- Load from CD-ROM
- Progressively unfold over time
- Include shared learning issues
- Are discussed on the web



Initial Session

Case Begins:

- Student assessment of patient problem
 - Signs
 - Symptoms
- Initial Hx on Digital Video

Normal vs Abnormal



Between Sessions

Students:

- research learning issues
- share learning issues
- respond to specific probes
- share problem-solving

Subsequent Sessions



- Students receive lab results
- View resolution of case
- View additional video clips
- Complete evaluation

Evaluation Method

- 32 Students took required course
- Randomly assigned to 1 of 6 groups

- Traditional didactic 2-hour lecture
- 1-week online PBL experience

Results No Difference in Performance

- | | |
|---|--|
| ■ Students reported computer-mediated learning took more: | ■ Students reported greater comfort with online: |
| ■ Time | ■ Collaboration |
| ■ Thought | ■ Communication |
| ■ Effort | ■ Support |
| | ■ Assessment |



Team Based Learning

1. Readiness Assurance Reading
 1. Background preparatory work that a student must do before coming to the session. This may involve reading, online interfaces, clinical experiences or conversations with faculty
2. Individual Readiness Assurance Test (IRAT)
 1. At the start of the session students take an exam that is used by the instructor to assess the learners readiness. Exam is turned in for grading

Team Based Learning

3. Team Readiness Assurance Test (TRAT)
 1. The students within a team work together to complete an identical exam that is either turned in or graded by the learners using scratch off answer sheets.

IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT)

Name: Team # 3 Test # 1

Subject: _____ Total 23

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
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Team Based Learning

4. Contingent Teaching
 1. Faculty/Expert driven delivery of content
 1. Mini-lectures
 2. Demonstration
 3. Web-based tutorials
 4. Guided readings
 5. Utilization of "group experts"

Team Based Learning

5. Team Problem Case
 1. A case is provided to the students that is considered difficult for the learners. Learners must work together to solve the problem. A group analysis of the problem is presented to the larger group for discussion of content.
 2. Peer evaluations
6. Class Discussion

Video



Studio Learning

- What are the characteristics of a studio classroom? There are few lectures.
- Students work in groups to learn.
- Activities generally emphasize collaborative and cooperative learning
- The instructors get students going on projects and are on hand as resources.
- Responsibility for learning is placed on the students.
- Class activities build on each other, providing a dynamic and integrated learning environment that emphasizes personal intellectual development as well as content learning.

Studio Learning

- Why is this good pedagogy?
- Many studies have shown that interactive engagement is a key to meaningful learning and intellectual development.
- Active learning, including cooperative learning and group activities, is the most efficient way to promote student learning, and especially to develop higher order thinking skills.
- While actively engaged, students develop good habits of the mind and the skills needed to be successful lifelong learners.
- Many studies support the notion that "less is more," meaning that exposing students to less information – but covering it in more depth – can lead to better learning.
- Studio classrooms are ideal for helping students think about their learning and develop better lifelong learning skills.

Studio Learning

- What sort of activities are involved?
- Emphasis is on cooperative and collaborative activities.
- Projects can include discussions, debates, presentations, paper and pencil exercises, computer projects, work with samples, or any of a number of other things.
- Projects may be multifaceted and can take more than one class session.
- Instructors provide information, by way of short lectures, when needed or on demand, but full-length lectures are rare.

Studio Learning

- How is a studio class scheduled and managed?
- Classes work best if scheduled in 2-3 hour blocks, but traditional class schedules are workable.
- Students work on complex and demanding projects.
- To avoid boredom and keep students focused, a typical class may include one or several group projects, some discussion and reporting time, and occasionally brief lectures by an instructor.
- Group activities work best when there are 3 or 4 students in each group.
- Students may work on their own time, not just during scheduled class hours.
- Students, also, can be assigned homework that supports the class activities.

Studio Learning

- What are the keys to success?
- Allow students to control their time and take responsibility for learning.
- Students must be prepared when they come to class (they must do appropriate reading, master appropriate skills, gather needed information, etc.)
- Instructors must help students start on projects, provide resources, and be on hand as resources for students to use.
- Instructors must be mentors, acting as learning guides, not authorities.
- Students must have all the resources they need.
- Students must become comfortable working with other students and using other students as learning resources.

Studio Learning

- What do students think about studio classrooms?
- Some are surprised when they find out they must attend class and everyone must participate to have a successful class.
- All students report they put in more time than in a standard class.
- This requires some adjustment by students who have not experienced such a classroom environment before.
- Most students, however, do catch on and in the end say that they learn more and have more fun in a studio classroom.

Studio Learning

- What sort of assessment has been done?
- Anecdotal reports and qualitative evaluations of studio teaching and learning by both instructors and students are overwhelmingly positive.
- Few have conducted quantitative assessments comparing the effectiveness of studio teaching to more traditional approaches.
- Some studies show equal or better content mastery by students in studio classrooms compared with traditional classrooms, but content mastery is only one of many potential teaching goals.
- Perkins (2005) reported on a successful studio Petrology class. A multidimensional assessment showed that students, and the instructor, believed the class did a much better job of promoting learning than a traditional class.



Blended Learning

1. using the best delivery methodologies available for a specific objective, including online, classroom-based instruction, electronic performance support, paper-based, and formalized or informal on-the-job solution among numerous others. In most cases, what is labeled "blended learning" is typically one topic, offered in numerous ways
2. a hodge-podge of different training offerings under the same topical umbrella.

Blended Learning

- A typical example of the delivery method of blended learning would be a combination of technology-based materials and face-to-face sessions used together to present content.
- An instructor can begin a course with a well-structured introductory lesson in the classroom, and then to proceed follow-up materials online.

Blended Learning

- It should also be noted that some authors talk about "hybrid learning" or "mixed learning". However, all of these concepts broadly refer to the integration (the "blending") of e-learning tools and techniques.

Blended Learning

- Group work around cases and scenarios
- Peer review of group work
- Post and review of best/worst of group projects
- Portfolio of work submitted through the curriculum management system (CARMEN)
- Modeling and practice (best done in person or via video)



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