Ch. 2: "Selecting Instructional Models

Williams, Carl B. (2009). *No limits: A practical guide for teaching deaf and hard of hearing students.* Butte Publications, Hillsboro OR

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- How you teach is determined by what you want students to learn and how you will access their learning
- Review where and how to find state standards
  - Michigan Learnport
    - Resources
      - Nettrekker
        - State standards: Science
        - …Michigan = “Grade Level and High School Content Expectations” (GLCS)
        - …Hawaii = “Content Standards”
        - ……”Grade 4: Standard 1: Scientific Investigation Discover, invent and investigate using the skills necessary to engage in the scientific process”
        - *……”Benchmark 4.1.1 Describe a testable hypothesis and an experimental procedure* “

- Review the Understanding by Design (UbD)
  - Wiggins, G., & McTighe, J. (2005). *Understanding by Design 2nd Edition. Association for Supervision and Curriculum Development: Alexandria, VA.*
  - Key Steps
    - 1. Identify desired results…for which students
      - a. Everyone Learns ‘x’ = “enduring understanding”
      - b. Most learn ‘x + y’ = “important to know”
      - c. Some learn ‘x + y + z’ = “worth being familiar with”
      - d. A few learn ‘x + y + z + b’ = “everything that can be learned
  - Note: the difference from “a” to “b”, to “c”, to “d” is NOT one of quantity, but rather depth of understanding, e.g.,
    - Topic: “scientific method” of hypothesis generation and testing” (Hawaii, grade 4, standard 1, benchmark 4.1.1)

- Note: the difference from “a” to “b”, to “c”, to “d” is NOT one of quantity, but rather depth of learning, e.g.,
  - Topic: “scientific method” of hypothesis generation and testing
    - “a” level: Hypothesis: confirms personal knowledge, e.g.,
      - **“Birds will come if you put bread crumbs on the class window ledge”**
    - “b” level: Hypothesis: refines personal knowledge, e.g.,
      - **“Different types of birds will come if you put different types of food on the window ledge.”**
    - “c” level: Hypothesis: extends personal knowledge by , e.g.,
      - “**Different types of birds can be seen from the window when different types of food are available in the area around the school.”**
    - “d” level: Hypothesis: significantly extends personal knowledge via grounding in the scientific literature, e.g.,
      - **“Different different types of food, provide different types of birds, with different levels of calories.”**
- Goal is to plan for different levels of learning to reflect the different levels of knowledge students bring to the lesson.

- UbD (cont.)
  - 2. Determine acceptable evidence
    - Six facets of understanding, i.e., ways to demonstrating what a student knows, or has learned:
      - Explain
        - …describe, express, justify, predict, synthesize
      - Interpret
        - …critique, illustrate, judge, translate, provide metaphors
      - Apply
        - …build, create, design, perform, solve
      - Perspective
        - …analyse, argue, compare, contrast, infer
      - Empathize
        - …assume role of, consider, imagine, relate, role-play
      - Self knowledge
        - …be aware of, realize, recognize, self-assess
  - Given the previous example of hypothesis at the different levels of understanding, consider how you would use one or more of these six ways of "understanding" …next two slides

- "a" level: Hypothesis: confirms personal knowledge, e.g.,
  - **"Birds will come if you put bread crumbs on the class window ledge"**
    - Explain
      - …describe, express, justify, predict, synthesize
    - Interpret
      - …critique, illustrate, judge, translate, provide metaphors
    - Apply
      - …build, create, design, perform, solve
    - Perspective
      - …analyse, argue, compare, contrast, infer
    - Empathize
      - …assume role of, consider, imagine, relate, role-play
    - Self knowledge
      - …be aware of, realize, recognize, self-assess

- "b" level: Hypothesis: refines personal knowledge, e.g.,
  - **"Different types of birds will come if you put different types of food on the window ledge."**
    - Explain
      - …describe, express, justify, predict, synthesize
    - Interpret
      - …critique, illustrate, judge, translate, provide metaphors
    - Apply
      - …build, create, design, perform, solve
    - Perspective
      - …analyse, argue, compare, contrast, infer
    - Empathize
      - …assume role of, consider, imagine, relate, role-play
    - Self knowledge
      - …be aware of, realize, recognize, self-assess

- UbD (cont.)
  - 3. Plan learning experience & instruction
    - i.e., you have to match “how” you teach to “what” you want the students to learn and the “assessment” design you will use
- Now we will go back to the Williams text
  - Information Processing
    - Review the information presented concerning multimedia learning
      - **Mayer, R. (2009). Multimedia Learning**
        - Student learning can be improved via effective multimedia design, design that is based on not what can be done, or what seems interesting, or innovative, but rather on how we learn.

- Mayer, R. (2009). Multimedia Learning (cont.)
- "...the learner is an active sense-maker who experiences a multimedia presentation and tries to organize and integrate the presented material into a coherent mental representation.
  - ...the teacher's job is to assist the learner in this sense-making process.
  - ...the goal of multimedia presentations is not only to present information, but also to provide guidance for how to process the presented information.
  - ....multimedia is a sense-making guide, that is, an aide to knowledge construction."

- Now we will go back to the Williams text
  - Presentation Teaching…factual knowledge
    - 1. Establish set (topic)…steps:
      - Focusing students
        - Establishing what the students will be learning
        - How and why the students will be using the information both in and out of school, i.e., linking learning with living
      - Relating new information to student's prior knowledge
        - ALL learning goes from "known to new"
        - Use your student's topical interests to accomplish your academic tasks
      - Use "topic shading" to link student's topical interests to the academic standards/GLCS you must cover.

Note: Discuss how this can be done + how you can use the resulting information to establish "topical groups"

- Presentation Teaching (cont.)
  - 2. Present learning material, i.e., extending student knowledge on the topic of the lesson/unit
    - a. activity…to engage students
      - H. Lang: "minds-on" vs. simply "hands-on"
      - Use of questions
        - Discussed further on p. 83-84 of Williams text
    - b. organization…visual representation of key information
      - e.g., use of Inspiration or Kidspiration
        - "Resource Materials & Technology Center for the Deaf and Hard of Hearing" = excellent resource concerning the use of technologies to enhance teaching and learning with students who are d/hh
        - …in depth info and examples re. the use of Inspiration & Kidspiration
    - c. elaboration…refining and extending student knowledge
      - Linking what students are learning with they do/enjoy outside of school

- Presentation Teaching (cont.)
  - 3. Check for understanding
    - Use of questions
      - Discussed further on p. 83-84 of Williams text
    - Use of the UbD “facets of understanding”
  - 4. Provide closure…summary/review
    - Assessment of student learning…this was not in the Williams text
    - Types
      - Summarizing what was just learned
      - Linking what was just learned, to what was/will be learned in the last/next class of the day
      - Linking what was done today, to what will be done tomorrow in class
  - What are some of the factual knowledge you would teach via this approach?
    - (go to your state standards to find these skills)

- Concept Teaching….conceptual knowledge
  - Review of Bransford, J.D., Brown, A.L., & Cocking, R.R. (Eds.) (1999a). *How people learn: Brain, mind, experience and school – Executive Summary*.
    - p. 5 – key conclusions…children as learners: children…are
      - actively engaged in making sense of their world
      - lack knowledge and experience, but not reasoning ability
      - children‘s knowledge contains misconceptions
      - need to develop learning strategies, i.e., planning, monitoring, revising and reflecting upon what they learn
      - both solve and create problems…and they seek solutions to their problem

- Concept Teaching (cont.)
  - Review of Partnership for 21st Century Skills (2003). Learning for the 21st Century. U.S. Department of Education.
    - 21st Century teachers
      - 1. making content relevant to student lives
      - 2. bring the world into the classroom
      - 3. take students out into the world
      - 4. create opt. for students to interact with others in authentic learning experiences
      - 5. focus upon teaching concepts, vs. simply facts

- Concept Teaching (cont.)
  - Concepts = "…general categories used to group ideas, objects, people, or experiences based on common attributes." (p. 31)
    - Examples?
      - Idea: "heroic"
      - Objects: "art"
      - People: "southerners"
      - Experiences: "positive"
    - Other examples?

- Concept Teaching (cont.)
  - Steps in Concept Teaching
    - 1. Establish set (topic).
      - Use “topic shading” to link student’s topical interests to the academic standards/GLCS you must cover.
    - 2. Define the concept.
      - “heroic”
        - Student definitions
        - Dictionary definitions
        - Key attributes
    - 3. Present examples of the concept.
      - e.g., individuals who were “heroic” + why = characteristics
        - Student’s lives
        - Teacher’s life
        - Additional: Nettrekker – “Person”
    - 4. Present non-examples of the concept.
      - e.g., Individuals who were not “heroic” + + why = characteristics
        - Student’s lives
        - Teacher’s life

- Concept Teaching (cont.)
  - 5. Check for understanding.
    - UbD six facest (ways) of demonstrating understanding
  - 6. Provide closure
    - Assessment of student learning…this was not in the Williams text
  - What are some of the concepts you would teach via this approach?
    - (go to your state standards to find these skills)

- Direct Instruction…skill knowledge, i.e., how to do ‘x’
  - Steps in Direct Instruction
    - 1. Establish set (topic)
      - Use “topic shading” to link student’s topical interests to the academic standards/GLCS you must cover.
    - 2. Demonstrate skill
      - Teacher’s use of “think aloud” as learn with their students
      - Need to consider d/hh student learning “load,” i.e., how much can they attend to at the same time
        - BAD = talking as you are demonstrating
        - GOOD = demonstrate, then explain what you did, then demonstrate again
    - 3. Provide guided practice
      - Teachers use of scaffolding, i.e., deceasing levels of assistance/guidence
      - Individual and small group
        - Note: the individuals in the group will need to learn how to learn together, e.g., how your “Frequently Encountered Groups” are/are not working

- Direct Instruction (cont.)
  - 4. Provide independent practice
  - 5. Provide closure
    - Assessment of student learning…this was not in the Williams text
  - What are some of the skills you would teach via this approach?
    - (go to your state standards to find these skills)

Inquiry Teaching…problem-solving skills

- Steps in Inquiry Teaching
  - 1. Establish set (topic)
    - Use “topic shading” to link student’s topical interests to the academic standards/GLCS you must cover.
  - 2. Identify question or problem
    - Student questions concerning the topic
    - Using student’s changing patterns of topical questions as an assessment strategy
  - 3. Formulate hypothesis
    - See slides 4-7 of this PP
  - 4. Collect data
  - 5. Analyze data and draw conclusions
  - 6. Provide closure
    - Assessment of student learning…this was not in the Williams text