**Teacher Quality Partnership Grant (TQP)**

**Instructional Practices**

**Overview**

Research has recently shown that student achievement is directly tied to teacher effectiveness. As a result, there is now a nationwide reform movement to raise teacher effectiveness. As part of the reform movement the Office of Innovation and Improvement in the Department of Education awarded “Teacher Quality Partnership Grants” to teacher education programs around the country. In the fall of 2009, the College of Education at East Carolina University won one of the 28 Grants. With the grant funds, ECU’s College of Education is reforming several areas of its program: Recruitment, Curriculum, and Clinical Practice. ECU partners, Pitt County Schools and Greene County Schools, are reforming their induction programs.

The Instructional Framework below is part of the Curriculum component of the reform. It is designed to teach you five categories of instructional practices with two specific strategies in each. The specific practices identified in the framework are not the only practices that are effective or that a prospective teacher should learn to incorporate in instruction. The ten instructional strategies discussed below constitute a starting place; over time you are expected to learn additional effective instructional practices. You will receive instruction on those additional practices from your professors. Also note that instructional practices are not the only means of raising student achievement. An effective teacher must have good classroom management, an effective curriculum, and appropriate professional dispositions. For now, however, the curriculum reform is focusing primarily on effective instructional practices.

**ORGANIZERS**

**Definition:**

Organizers are visual or oral representations that help students deepen their thinking skills and improve their understanding of content.

1. **Graphic Organizers**

Definition:

Visual representations that help students deepen their thinking skills and improve their understanding of subject matter across content areas. Graphic organizers are usually a one-page form of a chart, a map, or a diagram. They may be called graphic organizers, graphic representations, visual representations, visual patterns, pictographs, or Thinking Maps®.

Benefits:

* Significantly improves critical thinking skills
* Increases memory of content knowledge when reading
* Well organized final products, particularly written work
* Deeper conceptual understanding
* Greater capacity to communicate abstract concepts

Examples:

* Brace chart – shows physical structures and part-whole relationships
* Bridge map – helps to transfer or form analogies and metaphors
* Bubble map/Star Diagram - describes emotional, sensory and logical qualities
* Circles (pie chart, circle graph, cloud, start chart, Venn diagram) map – helps define words or things in context and presents points of view
* Double bubble map – compares and contrasts qualities
* Flow chart – shows causes and effects and helps predict outcomes
* T chart – shows the relationship between main ideas and supporting details

1. **Advance Organizers**

Definition:

A framework for helping students understand what they will be learning. It is presented to students before they listen to a presentation or read textual materials and provides a structure for the new information to be linked to students’ prior knowledge. This information may be delivered orally, in narrative form or as a chart. Students have an existing organization of knowledge in the mind (cognitive structure) that influences their ability to acquire new knowledge.

Benefits:

* Students who are able to connect new knowledge to, or situate new knowledge into, their existing cognitive structures are better able to understand and retain the new knowledge.
* Students are able to recall more information and score higher on exams.

Examples:

A history teacher is about to present information about the Vietnam War. After reviewing yesterday’s lesson, telling the students the goals of the lesson, and asking them to recall in their minds what they already know about Vietnam, the teacher presents the following advance organizer:

*I want to give you an idea that will help you understand why the United States became involved in the Vietnam War. The idea is that most wars reflect conflict between people over one of the following: ideology, territory, or access to trade. As I describe for you the United States’ involvement in Southeast Asia between 1945 and 1965, I want you to look for examples of how conflict over ideology, territory, or access to trade may have influenced later decisions to fight in Vietnam***.**

**CONCEPT LEARNING**

**Definition:**

The search for and listing of attributes that can be used to distinguish exemplars from non-exemplars of various categories. Concepts are the mental categories that help us classify objects, events, or ideas and each object, event, or idea has a set of common relevant features. Thus, concept learning is a strategy which requires a learner to compare and contrast groups or categories that contain concept-relevant features with groups or categories that do not contain concept-relevant features.

1. **Examples and Non-Examples**

Definition:

A model which consists of a definition, an expository presentation of “matched” examples and non-examples that are arranged from easy to difficult and are divergent, and an interrogatory practice presentation of new encountered and randomly ordered examples and non-examples. During the expository presentation, the teacher explains whether each instance is an example or a non-example of the concept. During the interrogatory practice presentation, students are asked to distinguish examples from non-examples and explain their answers.

Benefits:

Research shows that when the model of examples and non-examples is used, elementary students learn more and answer more test questions correctly then when the model is not used.

Example:

Sequence

1. Write a vocabulary word (gigantic).
2. Say the word, and have students repeat it.
3. Ask what the word means and provide feedback. If students respond correctly, say, “Yes, gigantic means huge”. If they respond incorrectly, immediately model the correct response.
4. Discuss pictures that represent examples and non-examples of the word. For example, point to a picture of a dinosaur and say, “The dinosaur is gigantic.” Then point to a picture of a dog and say, “The dog is not gigantic.”
5. Present the pictures one at a time. Have students determine if they are examples or non-examples. For example, “The tall building is gigantic; the toy house is not gigantic.”
6. Provide opportunities for students to practice discriminating whether a picture represents an example or a non-example of a word. For example:
   1. Have students sit in a circle
   2. Within reach of everyone, place a stack of pictures face down in the middle of the circle.
   3. Have students take turns identifying whether the picture represents an example or a non-example of a word.
7. **Compare and Contrast**

Definition:

Compare and contrast activities require students to identify important characteristics and then use these characteristics as the basis for identifying similarities and differences. Venn diagrams, matrices, and T-charts are all powerful tools to help students compare.

Benefits:

Research on the use of comparing and contrasting shows that students display an increase in student achievement. Students who spend time looking at similarities and differences between two topics and perhaps plot these on a graphic organizer deepen their understanding and ability to use the knowledge

Example:

1. Hold up or display two different objects for students to focus on as they explore the meaning of the terms compare and contrast. You might choose two different beverage options (juice versus milk), two candy bars (Milky Way versus Reese's Cups), or two different television programs (SpongeBob SquarePants versus The Rugrats). Be sure to choose items which students are familiar with so that the process of comparing the objects will be clearer to them.
2. Make two columns on the board or chart paper and invite students to brainstorm characteristics of first one of the objects (e.g., juice) and then the other object (e.g., milk). Invite students to add and revise information as they work, moving between the two columns.
3. If students need help building the lists of characteristics, ask leading questions such as "How do you decide which beverage you want to drink?" or "How do you decide which candy bar to buy?"
4. Ask students to identify characteristics that are included in both of the columns. Either mark these similarities using a different colored pen, or create a new chart with the column headings of "Comparison" and "Contrast."
5. Based on the information in the lists, lead a class discussion on the definitions of the words compare and contrast. Refer to examples on the charts to clarify the difference between the two terms.
6. As a class, brainstorm other ways students compare and contrast in their daily lives (sports teams, restaurants, toys, books, etc.). You can do this by pairing students in groups or 2-4 having them compose a list as a group and then as a coming together as a class to share ideas.
7. From there, you will brainstorm and generate a class definition of compare and contrast making sure they understand why comparing and contrasting is important by using examples as needed.

From <http://www.readwritethink.org/classroom-resources/lesson-plans/teaching-compare-contrast-essay-275.html?tab=4#tabs>

**QUESTION AND REVIEW**

**Definition:**

Higher cognitive questions are defined as those which ask the student to mentally manipulate bits of information previously learned to create an answer or to support an answer with logically reasoned evidence. Educational games are often used to help students reason and review.

1. **Higher Level Questions That Ask for Explanations**

Definition:

Higher level questions are usually defined as being above the memory level of Bloom’s Taxonomy. It is more than simple recall of facts or information. It is a function of the interaction between cognitive strategies, meta-cognition, and nonstrategic knowledge when solving problems. They are often defined as those which ask the student to mentally manipulate bits of information previously learned to create an answer or to support an answer with logically reasoned evidence. Higher cognitive questions are also called open-ended, interpretive, evaluative, inquiry, inferential, and synthesis questions.

Benefits:

Students become better able to reflect on their learning, identify gaps in their knowledge, understand relationships, and comprehend complex ideas. They demonstrate better memory, problem solving, and more sophisticated reasoning.

1. **Games**

Definition:

Games can be designed for review and mastery of learning of material. Students can play academic games independently, in small group, or whole group. Games are delivered through the use of technology, manipulatives, and orally.

Benefits:

* Motivates students to help each other master skills presented by the teacher.

Example:

Students learn material in class; this can be taught traditionally, in small groups, individually, using activities, etc. The next day, small groups of students play a Smartboard review game during learning centers. In the morning language arts block, students rotate through the game learning center.

**Grouping**

**Definition:**

Grouping is founded on cooperative learning which refers to students working together for a common goal or purpose.

1. **Think-Pair-Share**

Definition:

Think-Pair-Share is a cooperative learning technique designed to give students time to think about a given topic and share their insights with another student. This provides students with necessary think time.

Benefits:

* Increases the length of student responses
* Increases the number of appropriate responses
* Decreases failure to respond
* Increases the number of student questions
* Improves student achievement
* Has a positive impact on teacher questioning techniques

Example:

In Think-Pair-Share, the instructor asks an open ended or thought provoking question and asks students to think about it, giving them anywhere from 10 seconds to five minutes, depending on the nature of the question. At the end of the thinking period, students pair up to discuss their insights. Then, the teacher calls randomly on a few students to summarize their discussion or to give an answer. Think-Pair-Share can be used in any curriculum area.

1. **Jigsaw**

Definition:

Jigsaw is a cooperative learning technique intended to reduce racial conflict, promote academic achievement and improve student motivation. Students learn that competitive behavior is not effective, and they learn to listen to each other and appreciate each other as a resource for learning.

Benefits:

Jigsaw results in increased classroom participation, increases in role taking and changes in attribution of success and failure, and has a positive effect on liking for school.

Example:

Students are divided into 5-6 person heterogeneous groups. The material to be learned is divided into 5-6 segments. Each student is assigned one segment, and has access to his segment only. Students read over their material to become familiar with it. Then, temporary expert groups are formed, made up of students assigned to each segment of material; all students assigned to segment one become part of an expert group, etc. Students discuss the material in these expert groups and rehearse their presentations of the material. They then return to their original groups, where they teach their material to other students in their group. Other group members ask questions as the materials are presented. The instructor moves among groups to observe the process and offer any necessary interventions.

**Assessment**

**Definition:**

Assessment is the process of documenting knowledge, skills, and dispositions. It may occur during the course of instruction with feedback or at the end of the instruction to measure against standards or benchmarks.

1. **Formative Assessment**

Definition:

Formative assessment is diagnostic assessment to provide feedback over the course of instruction. It leads to instructional adjustments intended to improve student success. Formative assessment can provide the information needed to use as feedback to modify teaching and learning activities.

Benefits:

Research shows that students learn from formative assessment for four primary reasons.

* The frequent, on-going nature of the feedback is provided in formative assessment.
* The immediacy of the assessment ensures that feedback will be meaningful.
* Specific assessment allows students to see concrete changes they can make to improve,
* Formative assessment is consistent with constructivist learning theory.

Examples:

* Collaborating with other teachers to share information about students
* Homework, quizzes and tests
* Exit Tickets: Give students small pieces of paper and give them five minutes at the end of the lesson to answer two questions. One should require a factual answer related to the concepts taught in the day’s lesson and the other should require an explanation of a concept. Students should not sign their ticket. Collect them and analyze to determine how many students understand the main concept presented in the lesson and how many don’t. Adjust accordingly.
* One minute papers: Give students an open-ended question and one minute to write a response. Examples: What was the most important thing we discussed today? What was the most confusing thing we discussed today? Collect the papers and use for promoting discussion, and identifying misconceptions or confusion.
* Concept mapping
* Survey students

1. **Summative Assessment**

Definition:

Summative assessments are given periodically to determine what students do or do not know at a particular point in time.

Benefits:

For summative purposes, the information gathered must be compared to the broad criteria that define levels or grades; common criteria are applied and achievement is summarized in terms that have the same meaning for all students.

Examples:

* State assessments
* District benchmark assessments
* End of unit or chapter tests
* End of term or semester exams
* Scores used for grading

**ReSEARCH REferences**

Anderson, L. W. & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom’s Taxonomy.*  New York, Longman Publishing.

Aronson, E. & Bridgeman, D. (1979). Jigsaw groups and the desegregated classroom: In pursuit of common goals*.* *Personality and Social Psychology Bulletin. 5*(4), 438-446.

Ausubel, D. P. (1963). *The psychology of meaningful verbal learning.* New York: Grune & Stratton.

Ausubel, D. P. (1968). *Educational psychology: A cognitive view.* New York: Holt, Rinehart & Winston.

Black, P., & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan, 80*(2), 139–148.

Bruner, J. (1960). *The process of education.* Cambridge, MA: Harvard University Press.

Chappus, S., & Chappuis, J. (2008). The best value in formative assessment. *Educational Leadership, 65*(4), 14-19.

Daley, B. J., Shaw, C. R., Balistrieri, T., Glasenapp, K., & Piacentine, L. (1999) Concept maps: A strategy to teach and evaluate critical thinking. *Journal of Nursing Education, 38*(1),42-47.

Education Partnerships, Inc. (2010). *Research Brief: High Level Thinking and Questioning Strategies*. Retrieved from <http://www.educationpartnerships.org/Resources/ResearchBriefHighLevelThinking&Questioning.pdf>

Gordon, A. K. (1970). Games for growth; Educational games in the classroom. Palo alto, CA: Science Research Associates.

Hyerle, D. (1996). Thinking maps: Seeing is understanding. *Educational Leadership, 53*(4),85-89.

Johnson, D. W., & Johnson, R. T. (1999). *Learning together and alone: Cooperative, competitive, and individualistic learning.* Boston: Allyn & Bacon.

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement.* Alexandria, VA: Association for Supervision and Curriculum Development.

Marzano, R. J., Pickering, D., & Pollock, J. E. (2001). *Classroom instruction that works: research-based strategies for increasing student achievement.* Washington, DC: ASCD.

Randel, J. M., Morris, B. A., Wetzel, C. D., & Whitehill, B. V. (1992). The effectiveness of games for educational purposes: A review of recent research. *Simulation & Gaming, 23*(3), 261-276.

Stiggins, R, Arter.,J., Chappuis, J., & Chappuis, S. (2004). *Classroom assessment* for *student learning: Doing it right--Using it well*. Portland, OR: Educational Testing Service.

Taba, H. (1971). *Teaching strategies and cognitive function in elementary school children.* San Francisco: San Francisco State College.

Vogler, K. E. (2008) Asking Good Questions. *Thinking Skills Now, 65.* Retrieved from <http://www.ascd.org/publications/educational-leadership/summer08/vol65/num09/Asking-Good-Questions.aspx>