First . . . Those Questions

- Ch 3, p. 58
- 3. The measured curriculum tends to use test scores in making critical decisions about students, teachers, programs, and schools. What other information is important?
- 5. Should the systemic curriculum deal with the question of values, ethics, and morality, going beyond basic skills and less contested aspects of subject matter?

The Systemic Curriculum

- Control:
  - Over goals
  - standards to be attained.
  - Instructional objectives
  - Evaluation using benchmarks and standardized test results
    - Used for curriculum modification – and rewards and sanctions
  - Provides for Accountability
In HRD, we have some form of a Systemic Process

**ISD Model Flowchart**

- Analysis
- Design
- Develop
- Implement
- Evaluate

Figure 3

In a Systemic Curriculum

- The parts should align with the whole.
  - Objectives, align with the goals
  - Tests align with the objectives
  - Instructional activities align to objectives and prepare students for the tests.

- Policies, curricular frameworks that describe what should take place in the classroom, staff development, and measures of student achievement are consistent or coherent.

Weakness

- Standards and objectives that call for high-level reasoning are often left out in favor of simpler cognitive processes for recalling information and procedures.
  - Because tests are so important to assessing learning and identifying problem areas, this can be a real problem.

- Tests do not measure attitude and metacognition well.
Accountability

• Aims at assisting educators and policy makers to meet educational expectations and to identify deficiencies.

• Is a way to:
  – exercise political power and the promotion of a particular view of knowledge or teaching methodology
  – shift responsibility to others.

Accountability characterizes educational accountability systems as having the following features:

• Developing challenging content and performance standards that focus on student learning.
• Emphasizing the measurement of student achievement as a basis for school accountability.
• Developing a measure for evaluating schools.
• Introducing rewards, penalties, and interventions for improving achievement.

Policies for Standards-Based Curriculum

• National subject matter associations (accreditation)
• Economic and other interested group standards
• Federal standards (NCLB)
• State standards mandated by NCLB (VA SOL)
• Local standards to meet state, national and other goals (International Baccalaureate degrees)
• College and University standards for public education (Entrance acceptance)
• National Council of Teachers of Mathematics
• National Council of Teachers of English
• National Geographic Society
• National Council on Economic Education
• National Council for the Social Studies
• Consortium of National Arts Education
• National Center for History in the Schools
• International Society for Technology in Education (ISTE)
• National Academies of Science
• Business and Marketing Education Standards
• CTE Certification Standards

Guidelines on Standards

• In their recommendations for setting high standards for everyone, the National Center on Education and the Economy argue for standards that are
  – competitive with standards in other countries
  – realistic with what can be taught and learned in a given period time.

Robert Marzano cited a study where 350 teachers who, when asked to adequately address each benchmark for a variety of standards in different subject matters, reported that the elementary school years would have to be extended by 9 years.

Standards-Based Curriculum in the Classroom

• Teachers typically develop their standard-based curriculum planning backwards from the standards and benchmarks deciding what will be addressed at each grade level.
  – Starting with these standards, teachers prioritize the standards and try to find a way to measure progress toward as many standards as possible as they examine state content standards and state performance standards.
  – Teachers decide what key topics must be addressed and what student work might show that the standards are met.
Instructional Alignment

- This is another example of the measured curriculum and involves “teaching to the test.”
  - S. Alan Cohen research shows that when instructional stimuli match assessment, effects occur that are about four times what is ordinarily seen in typical classrooms.
- Alignment is done by matching the criterion performance and the instructional sequence.
  - Tests are generally created before designing the curriculum.

Mastery Learning

- Is a systemic curriculum.
  - Instructional objectives, arranged in an assumed hierarchy of tasks, are the keystone of the system.
  - Lesson materials are built around that arrangement.
  - The objectives are the intended outcomes of instruction.
  - Each student must master them before going on to the next step in the learning hierarchy.
  - Mastery is indicated by successful responses to criterion-referenced tests matched to the content and behavior specified in the objective.
- Lesson materials are matched with the objectives and allow the pupil to proceed independently with a minimum of teacher direction.
- The pattern for involving the student with the system has three parts:
  - Find out what the student already knows about the subject. Usually a pre-test is administered to reveal the student’s level of achievement and to reveal specific deficiencies.
  - Give the student self-instructional materials or other learning activities that focus on one of the student’s specific deficiencies previously identified.
  - Give the student evaluative measurements to determine his or her progress. This helps the teacher decide whether to move the student ahead to a new task or to provide additional materials or tutoring.
Personalized Systematic Instruction

- Technology is now being used to transmit some portion of the curriculum to students.
  - Media is an ancillary means to extend conventional pedagogy.
  - Lectures are videotaped and CDs/web are made available for viewing at the convenience of the student.
  - The teacher tends to change from the role of imparter of knowledge to that of facilitator.
  - The content of instruction and its applications are set in advance.
  - In contrast to traditional education, the boundaries of knowledge are not fluid, and the results obtained are more important than the process.
  - It allows students to work at their own pace.

With PSI

- A course or subject is broken into small units of learning, and at the end of each unit learners take tests to determine whether they are ready to proceed.
- They go to a "proctoring room" staffed by advanced students who administer the test, score it, and give feedback to the students.
- If less than "unit perfection" performance is shown, the proctor becomes a tutor, explaining the missing points and guiding the student in restudy.
- There is no penalty for failing a unit, but one must study further and try again.
- Frequent interaction with proctors often develops affect and contributes to understanding.

Psychological Foundations of the Systemic Curriculum

- Behavioral psychology is one foundation for the traditional transmission of teaching and learning where students acquire prespecified skills and content related to specific outcomes or objectives and assessments determine if desired changes in behavior (learning) have occurred.

- A prime precept of behaviorism is that the association of stimuli, responses, and reinforcement result in a changed behavior.
Features of Curriculum Based on Behaviorism

- Differentiating the types of learning outcomes sought
  - simple, complex, low or high order thinking.
- Task analysis
  - Breaking complex tasks into more manageable units.
- Parts to whole instructional sequences.
- Direct instruction
  - Clear directions, examples, opportunities to practice and apply what has been taught.

Cognitive Psychology and Information Processing Theories

- Also have influenced the systemic curriculum by drawing attention to how students' beliefs influence their learning and how conceptual thought can best take place.
- Social cognitivism is a learning theory based on the ideas that people learn by watching what others do and that human thought processes are central to understanding personality.

Cognitive Psychology Has Influenced The Systemic Curriculum

- Accommodating new information into existing schemes or beliefs.
- Knowing where and when to apply knowledge and strategies.
- Chunking information into meaningful units.
- Modeling through flowcharts, simulations, and other representations to pinpoint errors and to target a need.
Social Constructionism

- In contrast with behaviorism, alternative psychologies such as social constructionism act on the participation metaphor for learning that is responsive to:
  - the tentativeness of knowledge
  - conflicts in beliefs and understandings that students bring to schools
  - recognition that young children have capabilities to engage in sophisticated levels of thinking.

Behaviorism and Cognitivism vs. Constructionism

- Most state standards rely on behaviorism and cognitivism
- But constructivist psychology fits the national standards for science and mathematics that focus on key ideas and the relations among them rather than on a mélange of isolate facts and skills unlikely to be taught as tools for dealing with real-world situations.

- A serious issue is the press by professional teacher educators for social constructivist pedagogies whereby students and teachers construct meanings from classroom activity.
- Such teaching methods conflict with scripted lessons that put acquisition of official knowledge in place of student views.
State and District Policies Have Failed

- To implement the fundamental changes in content and pedagogy advocated by national standards.
- Instead accountability and an emphasis on students’ test scores has precluded many teachers from particular practices, such as sharing different interpretations and engaging in multiple solutions derived from constructivist theory.
- In the systemic curriculum teachers are expected to use methods that are strategically aligned with cognitive and behavioral principles.

Comments on the Systemic Curriculum

- The systemic curriculum is viable because it matches so many conventional beliefs.
  - There is general acceptance in American life of the importance of having a goal and then planning backwards to determine what would it take to reach the goal, together with continually assessing to ensure that the parts are contributing to the desired outcome or to make modifications if necessary.
- The systemic curriculum calls for the school, its curriculum, and teaching should present prespecified knowledge and skills and see that learners acquire them.
- There is a notion that the curriculum should order content and activities so there is a cumulative effect on learning and development.
- This behaviorist belief is in contrast to the belief that instead of effort to predict and control, it is better for students and teachers to be free to adapt and have diverse experiences provided there is opportunity to collaborate and reflect with others on the meaning of these experiences as espoused by constructivism.
The Systemic Curriculum -- the Challenges

- Problem of measuring achievement of standards and progress toward goals. Misalignment and invalid measures are part of the problem.
- There is little measurement of critical and higher order thinking.
- The standards movement in states may contribute to fragmentation, leading to little coordination among subjects and distraction from key concepts.

Break

THE ACADEMIC CURRICULUM
Chapter 4
2. The capacity to discriminate and judge is a central goal of all education. For centuries, languages, literature, history, philosophy, and the arts have been viewed as the sources of knowledge for best attaining this goal. Is this true today? Why? Why not?

4. The daily lives of most people are going to be complicated and constantly changing.
   - They will be assailed by new laws, new traffic schemes, and new sex roles; these will loom larger in their lives than the works of Shakespeare or the Third Law of Thermodynamics.
   - They will not be able to find textbook answers to their daily problems.
   - Neither will they be able to categorize the problems into subjects like history or physics.
   - And so, more value should be placed on education for ordinary life than on academic education.

How would you respond to both the premises of this argument and the conclusion which shows a belief in educating students for life rather than for academic achievement?

What is the Academic Curriculum?

• In an academic curriculum, knowledge is organized in ways that are best for learning a particular subject matter and for introducing students to the big questions that drive inquiry within the academic disciplines.

• Familiarity with subject matter concepts matched to a particular pedagogy is a central focus.
• Academic specialists have at different times attempted to develop a curriculum that would equip learners to enter the world of knowledge with the basic concepts and methods for observing, noting relationships, analyzing data, and drawing conclusions.

• They wanted learners to act like physicists, biologists, or historians so that as citizens they would follow developments in disciplines with understanding and support and, if they continued their studies, become specialists themselves.

Contrast these two ideas . . .

• Quasi-academic programs that transmit canned conclusions, isolated facts, and information that can be acquired by using behavioral psychology with its emphasis on reward and memorization.

• A rigorous academic curriculum aiming at higher thinking whereby students engage in the discipline’s ways of knowing and using academic concepts as frameworks in thinking and organizing their experiential world. This more challenging curriculum draws from cognitive, developmental, and sociocultural psychologies.

Would you consider the following?

• Problem-solving learning is consistent with the view:
  – it is more important for students to learn how to retrieve information and when, where, and why to use knowledge than to acquire a breadth of facts and formulas.

• Students would learn the strategies of experts:
  – what they notice
  – how they represent and interpret information

• In addition, students would represent their experiences as abstract principles and concepts so they can go beyond or transfer their learning to other situations and events.
• A weakness in the traditional academic approach was the failure to give sufficient attention to integrative goals.
  – Learners were unable to relate one discipline to another and to see how the content of a discipline could be brought to bear on the complex problems of modern life not answerable by a single discipline.
  – Two current movements to overcome this weakness are
    • “Integrated” studies, in which content from several fields is applied to important social problems and historical topics
    • The teaching of the forms of knowledge so that learners acquire a range of perspectives for understanding experience.

• A second weakness in the academic conception of curriculum is a tendency to impose adult views of the subject matter on students.
  – Academic specialists and cultural literacy advocates have given insufficient attention to the present interests and backgrounds of individual learners.
  – They might use those interests as sources for problems and activities by which learners might acquire the intellectual organization and powerful ideas that constitute academic subject matter.

• If the academician’s goal is to teach people to think better, there must be more consciousness of the kind of thinking that needs to be done and more engagement of students in genuine problem solving, inventing, and critical appraisals.
  – For example, to encourage science programs that involve scientific ideas and allow students to use these ideas in their daily life.
Trends

• The commodification of education which puts economic gains at the fore with knowledge as a commodity to be exchanged by:
  – students that seek chances at high paying jobs
  – schools as institutions that offer the kind of knowledge that will bring enrollments (tuitions), institutional rankings, grants, inventions, and mergers with for-profit corporations
  – government that will pay for research that produces results for money expended on behalf of security, health, and economic competitiveness.

• Academicians are developing more encompassing "interdisciplines" as they select a research theme.
  – The theme conceptualizes the problem in new ways and generates novel research strategies, fusing the disciplines.
  – Preliminary to their undertakings, team members may engage in short intensive programs where they learn to understand the fundamental aspects of their partners' disciplines.

• Instrumentalism in academic learning is occurring in universities and some secondary and elementary schools.
• There is a major reorganization in universities in order to address real-world problems that require collaboration across disciplines.
  – More funding agencies now require students to have mentors from two or more fields.
  – Faculty are asked to improve their data collecting and create new research strategies for real-world problems. Increasingly, problems are seen as not answerable by a single discipline.
  – National priorities require new knowledge that comes from connecting the disciplines and harnessing their potential.
  – Departments of engineering are combining with biology.
• Academicians are developing more encompassing "interdisciplines" as they select a research theme.
  – The theme conceptualizes the problem in new ways and generates novel research strategies, fusing the disciplines.
  – Preliminary to their undertakings, team members may engage in short intensive programs where they learn to understand the fundamental aspects of their partners' disciplines.

• Many secondary and elementary schools are introducing a new academic curriculum that revitalizes the "structures of the disciplines" approach of an earlier decade that promoted student inquiry.
  – Like the older approach, the revitalized curriculum calls for students either to think about unanswered questions in a discipline or to address problems in their local community.
  – The new academic structuring of the disciplines takes advantage of technology, putting learners in touch with resources that make their investigations more fruitful. Access to both archives of data and collaboration with scientists in data collection is introducing students at earlier ages to what science is really like, starting their trajectories as experts.

Next Week

• Read your text, Chapter 14
• Annotation no. 3 Due (Green)
• OTED 785 -- Sample Unit One Due
  – This is a practice . . . Not for grade
  – I went over it last week
The Foundations

• Curriculum foundations are the components that influence and control the content and organization of the curriculum (Zais, 1976, p. 101).

• They are based upon values one has developed pertaining to knowledge, society, learning, and the individual.

• Foundations tend to influence the curriculum developers' philosophies and these philosophies are, in turn, reflected in the curriculum. They influence the:
  - definition of the program area
  - rationale for the study of the program area
  - content source
  - content structure
  - program aim
  - program goals

Definition of the Program Area

• By establishing a definition of the program area, one lays out the boundaries for the curriculum development process.

• In the case of production technology (an area where the author has developed curriculum), a broad definition that has been offered for describing this subject is:
  - The application of knowledge and technical systems that convert resources into structures or industrial or consumer goods (Hadley & Ritz, 1991, p. 23).
Others

- Internet Marketing is a course intended to provide high school students exposure to the principles of marketing as they apply to the Internet.

- Environmentally Safe Gardening may be defined as the preparation, beautification, and maintenance of land by means that perpetuates and protects native surroundings, biotic, and abiotic factors.

Rationale for the Study of the Program Area

- Should answer the questions:
  - Why?
  - What is the need for it?

- Information from the areas of knowledge, society, learning, and the individual can be used in this element to emphasize the need to study the program in schools or the work environment.

Content Source

- The content source is the knowledge base where the curriculum content is derived for use in program development.

- In simpler terms, a content base is the reservoir of knowledge where information (knowledge) is obtained for structuring a program.

- Depending upon whom is developing the program, and for what purpose it is being designed, i.e., work, leisure, general information, various content sources can be used.
Content Source

- Content is derived from various discipline knowledge basis and subject fields.
- It answers this question:
  - From where did the content derive?
- It is NOT:

Example

- For a financial planning curriculum aimed at women the content source:
  - The content for this curriculum is derived from the subject area of personal finance. Personal finance is the body of knowledge that includes money management and the use of financial tools to achieve goals and objectives.

Content Structure

- The content structure is a graphical display of how the information derived from the content source might be arranged for program and curricular unit development purposes.
Program Aim

• Describes the expected outcome of having students/learners study the content prescribed in the curriculum.

• For a production technology education program:
  – “To acquaint learners with the processes and systems used to produce our industrial and consumer products” (Hadley & Ritz, 1991, p. 5).

Examples

• The aim of computer applications is to produce efficient and organized business professionals through exposure to various software applications.

• It is the aim of this course to provide Radiation Safety Officers (RSOs) with practical information that they did not receive during their initial training, allowing them to become more effective RSOs.

• It is the aim of this curriculum to provide women age 45-60 with the information and knowledge necessary to create a healthy lifestyle and to make informed choices concerning physical and mental health, diet and nutrition, and physical activity.

Program Goals

• Goals are long range program expectations for learners who have completed the whole scope of study. Examples for production technology include:
  • Learn how production systems originate.
  • Describe how production systems influence people and societies.
  • Discover how industry processes resources into products using processing, construction, and manufacturing systems.
  • Use management systems to support the operation of production systems.
  • Investigate technical developments in production technology systems which will probably change our products in the future.
  • Analyze career options in the technologies of production systems.
Example

- Women age 45-60 enrolled in this program will:
  - Be able to compare food choices and integrate a variety of foods into a nutritious diet;
  - Discover the benefits of regular physical activity and develop a plan to incorporate physical activity into individual lifestyles;
  - Evaluate body weight to determine body mass index and recognize the health risk factors associated with weight gain;
  - Use information and knowledge gleaned from scientific studies and reports to make informed choices about individual mental and physical health issues.

Example Two

- Upon completion of the Financial Planning for Women program, students will be able to:
  - Take control of their own personal finances can increase financial security.
  - Describe the concepts of debt, budgets, and savings.
  - Compare and contrast a variety of investment options available and the risks involved.
  - Explain the value of property and life insurance in minimizing loss.
  - Explain the intricacies of taxes in order to decrease tax liability.

So your Foundations should include:

- definition of the program area
- Rationale for the study of the program area
- Content source
- Content structure
- Program aim
- Program goals

- Check examples at:
  - http://www.odu.edu/~jritz/jited885/example.shtml
Foundations are due:

- July 2nd.
- Any time before then . . .

Questions?

Hasta la vista, Baby!