Current Issues
OTED 785/885

Curriculum Issues

• Regarding thinking, vocational education, international comparisons, moral and character education, and safe schools point out the serious problems that schools everywhere face... 
  – how to design instruction that will enable underprivileged students to have success with content formerly available only to an elite population.

At this point

• Both the democratic proponents of equality and participatory politics and the capitalistic proponents of individual excellence favor intellectual achievement of everyone 
  – the former because such achievement promises access to power, the latter because they view the intellectual development of workers as a key to international market competition.
• Concern about an underachieving curriculum and the restructuring of vocational education reflects concerns for our future economy and liberty.

– Comparative education studies show the United States lagging behind other competing nations in addressing concerns for student willingness and ability to use school in lifetime learning.

**Trends in Math and Science**

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**The moral curriculum**

• It raises old curriculum questions

– What is the meaning of morality?
– Should morality be taught?
– Can it be taught?
– Is it possible to teach in an amoral manner?
CURRICULUM FOR THINKING

• Since the late 1980s, the goal of teaching thinking, reasoning, and problem solving has been pursued with new vigor.
  – This renewal follows changes in society that make it necessary for people to think for themselves and to solve novel problems.
  – Assessments suggesting that students may be failing to develop effective thinking is another reason.

New theories for the teaching thinking

• Stress that knowledge is not important as a "mental discipline" but as a way to conceptualize situations, to identify patterns, and to organize the information so that new problems in the subject area can be solved.
• Today’s psychology emphasizes teaching students the kinds of problems for which the subject matter is useful and the condition under which the formal knowledge applies.

Psychological finds

• Reasoning can be taught
• Different subject matters teach different kinds of reasoning
• This supports the view that thinking can be improved through the curriculum
Curriculum for Teaching Problem Solving

- Is based on studies of how experts elaborate and reconstruct problems and how they look for solutions by reasoning from analogies.

- Typically, students learn the heuristics of diagramming, breaking a problem into subproblems, finding analogous problems, and working backward.

The emphasis on metacognitive knowledge as an aid to problem solving

- sets the current thinking skills movement apart from earlier similar movements.
  - Metacognition training involves teaching students how to manage their own cognitive resources and to monitor their own intellectual performance.
  - Students are taught to use such strategies to
    - access task-relevant information
    - recognize when something requires clarification
    - make hypotheses and predictions
    - revise them on the basis of new information

Direct teaching of problem solving gives mixed results

- Usually students acquire the strategies taught but fail to use these heuristics in other contexts and courses.
  - There are misgivings about the teaching of generalizable problem-solving skills.
  - Some believe that problems are context bound and if we do not solve a problem it is for lack of knowledge, not lack of skill.
• Experts tend to organize their knowledge on the basis of abstractions that reflect deep understanding of a subject.
• Novices are more likely to organize their conceptions of the problem around literal objects and relationships explicitly mentioned.
• Students acquire knowledge but do not apply it.
• Hence, the focus in curriculum for thinking is not on the acquisition and coverage of subject matter but on how the subject can be taught so that students think about the content in fresh ways and acquire intellectual tools that can be useful in other contexts.

• So, the challenge -- develop curriculum that will deemphasize student reproduction of knowledge, which tends to remain inert, and to treat knowledge as a stimulation to inquiry and reflection.
• There should be opportunities to expose one's beliefs and opinions to criticism and to know how and when to use the formal and informal tools of thought.
Vocational education is being transformed.

- Name Change: “career and technical education”
- High school and two-year college students are introduced to “hot” technologies: robotics, microchip manufacture, nuclear medicine, and nanotechnology while taking related courses in astronomy, mathematics, and chemistry.
- Universities are greatly expanding their career oriented classes, such as vocational courses in business, public health, and journalism.

Three non-exclusive approaches in relating school and employment:

- Education "through" work.
  - academic subjects that are coordinated with work-related experiences -- Cooperative Ed
- Education "about" work.
  - examine the world of work, learn about career ladders, glass ceilings, rights in the workplace, and the social skills of getting and keeping a job.
- Education "for" work.
  - prepared for entry into a "family" of occupations for specific careers -- Tech Prep

Four issues face curriculum planners in vocational education:

- **Purpose.** Should CTE aim at broad intellectual development and guidance, help individuals make decisions about careers, or should it preparing students with marketable skills?
- **Access.** Should CTE be open to the slow as well as to the gifted? Should it prepare one for college or for the world of work? Is the notion of courses limited to either male or female obsolete?
• **Content.** How well does the content of CTE programs match the present and future needs of the economy?

• **Organization.** Should CTE be restructured in order to close the gap between the CTE programs of the school and the requirements of work?

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**Early Rationale for VocEd/CTE**

• Justification does not rest on usefulness alone.

• The leading advocate for the comprehensive high school in the late 1950s, James B. Conant, regarded VocEd as an incentive, ensuring student participation in the general educational program.

• He believed that for certain kinds of people VocEd provided the only motivation to keep them in school where they would benefit from education for citizenship.

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**Current Thinking about Purposes of VocEd/CTE**

• The current rationale for vocational education rests on three arguments:
  
  – National interest
  – Equity
  – Human development.
Access to VocEd/CTE

- CTE has been accused of maintaining class divisions:
  - Working-class children are kept in school but do not receive an academic education.
  - The poor learn the attitudes and skills for work.
  - Middle- and upper-class children have access to the more prestigious academic curriculum.

Study’s show . . .

- In the relation between race and vocational education, restrictions were found in access to such education for certain students, not only to academic programs, but even to higher status vocational programs.
  - Students at the white schools had more extensive business and industrial arts programs than those attending nonwhite or mixed schools; whereas students in the latter schools had greater access to military training and home economics.

Differences also are found in opportunity.

- In business programs, courses in management and finance were offered predominantly at white schools.
- Only in the white schools were students offered courses in banking, taxation, the stock market, data processing, and business law.
- Keyboarding, shorthand, bookkeeping, and office procedures were available in both nonwhite and white schools.
- Students at white schools could attend courses in marine technology, aviation, and power mechanics.
• Students in nonwhite schools were offered cosmetology, building construction, institutional cooking and sewing, printing, and commercial photography.

• Nonwhite students were more likely to be enrolled in courses teaching basic skills, many of which are lengthy and off campus.

Discrimination appears also in VocEd/CTE according to ability.

• The new focus in CTE is on the gifted.

• Some schools are offering courses stressing high technology and carrying academic prerequisites.

• Former courses in auto mechanics have been converted to:
  - engineering principles
  - computer science
  - electronics
  - which are usually given in a technology center or in partnership at a company’s work site.

• Selectivity is illustrated by a Ventura, California, school district that opened a technology center with an emphasis on media as a way to address “needs” of middle-ability students.

• High school faculty and counselors were surprised when their honors and advanced placement courses lost enrollment when the brightest were drawn to the new vocational program.
Schools have discouraged members of both sexes from entering programs that traditionally are the realms of the opposite sex.

- Courses for skills traditionally thought to be male prepare students for jobs that pay more.
- The vocational preparation of girls in rural areas presents a particular challenge.

Girls in rural areas

- As a group, rural women tend to focus their attention on the family, yet they have strong career goals.
- The rural labor market offers few choices to most women.
  - Those girls who depart from "sex appropriate" programs such as consumer and homemaking education may experience conflicts in the community and uncertain employment.
  - One answer is a curriculum composed of courses that are sexually neutral and attract both males and females, such as programs in food service, graphics, commercial horticulture, and data processing.

Currently

- Public schools are becoming more vocational, while private schools are continuing their academic emphasis.
- The Commission on the Skills of the American Workforce held that by age 16, or soon thereafter, all students should meet a national standard of academic excellence and then choose a structure that will enable them to make a transition to work.
The commission suggested work-based learning, alternative paths to college, on-the-job training, and programs that will certify mastery of industry-based standards across a range of occupations.

The proposal would offer mobility both horizontally among occupations and vertically into options for further training or study, avoiding dead ends.

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Content of VocEd/CTE

A central question in vocational education is determining the best response to the needs of students who go directly into the job market.

- For a substantial number, preparation in high school is all they get.
- Many believe the best preparation is training in the basic skills of reading, writing, mathematics, and science.

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High Standards Movement

Advocates want high school exit exams to be strengthened beyond pre-algebra and ninth-grade reading and math to more challenging measures for admission to college and the workplace.

However, there are concerns that higher standards may not accommodate some who do not test well and those who are experiencing poverty, unstable family, and other factors that hinder academic achievement.

Also the idea that all decent jobs require a college education has been refuted.
In general those in the professional fields earn more money, changing markets upset predictions.

• During California's recession and real estate boom in early 2000, the highest paid occupations required no university degree:
  – financial officers
  – real estate agents
  – insurance sales persons
  – elevator repairmen
  – police, fire, and penitentiary guards

The advocacy of increased mathematics and science in CTE rests on the belief that

  – future job opportunities will be in high technology
  – the nation will need analytical or synthetic thinkers who can provide creative solutions to problems and bring forth the innovations necessary for keeping the United States competitive

A suggested a means of designing a curriculum for high tech occupations.

• A common core consisting of basic units in mathematics, the physical sciences, communications, and human relations
• A technical core of units in electricity, electronics, mechanics, thermics, computers, and fluids.
• A sequence on specialization in lasers or electro-optics, instrumentation and control, robotics, and microelectronics.
Industrial Arts/Technology Education

- Responding to the newer demands by introducing curricula that relate industrial arts to science and technology.
- Students design models using principles from these disciplines.
- Here, too, a broad base of knowledge and an understanding of basic processes are required.

Not everyone believes high technology

The major demand for workers will not be for computer scientists and engineers but for:

- Janitors
- nurse's aides
- sales clerks
- cashiers
- nurses.
- fast-food preparers
- secretaries
- truck drivers
- kitchen helpers

The idea that if young people have skills on leaving school, they would also have jobs is refuted when the economy is poor.

- CTE may increase the competitiveness of individuals in the context of job scarcity, not educational reform.
- An unpredictable economy means that CTE might adapt to a diversity of skills rather than focus on training students for a career in a single field.
- Students may require a broad base of technical knowledge and the ability to communicate.
- Specific training likely will follow high school and at regular intervals throughout a person's career.
• While employment nationwide is likely to be in service industries, such as health care, trade, and education rather than in manufacturing, farming, mining, and construction, those old tech jobs will still be there in some communities.

• Curriculum developers must try to balance demands for responses to national needs with the requirements of the local communities that many CTE programs are designed to serve.

Reorganizing Vocational Education

• This is an effort to close the gap between the CTE programs of schools and the requirements of work, as in the “cluster-of-skills” approach whereby students are trained in several occupational areas.
  – A day care program that converts to human service by offering courses in caring for children, the physically disabled, and the elderly is an example.

• A second kind of reorganization is to add programs to meet expanding industries.

  • “Quick start” programs, which offer customized training for a growing industry, are popular in states that desire to strengthen school ties with the private sector and influence local economic development.
    – Curriculum that includes important export courses, international marketing, and distribution is a response to a changing world economy.
Partnerships between industry and the public schools represent a third type of reorganization.

Usually partnerships concentrate on a particular problem or population.

– A group of Texas business executives have launched a program to do something about the disproportionately small number of minority students in engineering.

Internships without pay, which give students on-the-job experience, are a form of partnership popular for talented students.

– In one executive internship, students spend one semester working a four-day week for a sponsoring organization in their field of interest.

– Each student functions as a special assistant to the sponsor, attending meetings and conferences and becoming involved in everything from answering telephones and typing to devising computer programs and preparing reports and studies.

Responsibility of business and industry to provide its own training and development is an issue.

– The U.S. business has been slow to respond to changing workforce needs.

– A 1992 study by Jobs of the Future found that less than 6% of the nation's companies were doing significant training, and most of that training was targeted almost exclusively on management.

– Of the $30 billion spent annually by business on training, $27 billion comes from about 0.5% of U.S. businesses.
Trends in VocEd/CTE

- CTE in schools is responding to **two contradictory impulses**.
  - On the one hand, it is a progressive innovation that introduces broad content -- the development of attitudes toward work, basic communication skills, and knowledge of mathematics and science.
  - On the other hand, it is dictated by economic rationalism aimed at sorting and ranking students as productive workers.

National and local interests influence decisions

- About the particular occupations or fields that vocational education should serve.
  - Congress, through its past Perkins Acts, has influenced curriculum by demanding that recipients of vocational education funds teach job-specific skills and assist students from low-income families to go straight from high school into the job market -- a current influence on academic as well as technical preparation and postsecondary education.

Today’s CTE Programs

- Go beyond teaching simple vocational tasks and include problem solving and team work.
- Specialization in a specific occupation tends to be seen as the responsibility of employers and the more than 8000 private technical and modern venture schools.
- Current players struggle with how best to respond to the young people who enter the workforce directly after high school or who drop out before graduation and do not have the skills for earning a good living in a high tech economy.
• In 2002, only about 30% of high school graduates went directly to college and nearly half of them did not complete the college program.

• Internships, apprenticeships, pre-employment training, adult education programs, specialist schools, and distance education are a few of the structural changes redefining the whole role of CTE.

Some Personal Thoughts

• Organization Trends
  – Career Academies
  – Certifications
  – Enterprise Programs
  – Dual enrollment in community college tech programs
  – College credit for HS CTE completion in selected programs
  – Articulation Programs between HS CTE and higher education (Tech Prep) which should have an integrated curriculum

What is really happening

– Career Clusters going nowhere
– Lack of focus on whether to prepare students narrowly for particular jobs or to educate future workers more broadly for general careers
– Articulation between HS and Community Colleges has not worked (no real articulation of curriculum)
– CTE is more accepted today by School Boards but not as well by administrators.
Final Exam

- We will have it on August 6.
  - You will be able to access it on the web site at 10 AM, August 6th and you must email your answer back by 10 AM on August 7th.
  - Open book, open notes. May not work on it with other persons. I will not answer any questions.

What will the final it cover?

- Be able to explain how to develop a curriculum or training program/course.
- Demonstrate that you know the parts of a curriculum and what should be included in them.
- Demonstrate you understand the importance of linking activities, objectives, goals, and aims.

- Be prepared to explain who has curriculum control in our society.
- Be prepared to explain your philosophy that guides your curriculum development.
- Be prepared to differential among the humanistic, social reconstructionist, systematic, and academic curriculum forces.
Well that is it . . .