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# What is All Aspects?

## Introduction

*Is it defined by legislation or is it defined by whatever educators in each school and school district decide it should be?*

### An All Aspects Example

Students in the tenth grade hold a car wash every year to raise money for a class trip. Teachers could incorporate **All Aspects** into this activity by involving students heavily in planning, management, marketing, finance, labor relations, and environmental safety.

Students might be asked to break the overall process into tasks and schedule shifts and assignments. They could help choose a location for their venture and negotiate with the owners.

Students could identify production needs (hoses, buckets, soap, wash mitt, towels), research the costs of different products available in the market and make recommendations, cognizant of environmental and worker safety impacts.

Students might estimate a price for their services, based on a reasonable projection of business levels, costs of production, and a comparison of prices in the market. Students might create a marketing campaign advertising the car wash.

Lessons in social studies, science, English, and math could be linked to provide students with the knowledge and abilities to make decisions about the car wash.

**All Aspects** is an integral part of the 1998 Carl D. Perkins Vocational and Applied Technology Act (Perkins III). A provision in this act calls for students to have *"strong experience in and an understanding of those aspects of industry the students are preparing to enter."*

**All Aspects** was first mentioned in federal legislation as part of Carl D. Perkins Vocational and Applied Technology Act of 1990 (Perkins II). In this legislation, educational activities associated with **All Aspects** were also described. These include *"planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues."*

The School-to-Work Opportunities Act of 1994 amplified the need for an **All Aspects** curriculum in the schools. Gaining a better understanding of the industry as a whole and the many roles an individual can play in it are the two main goals of an **All Aspects** curriculum.

### Where does All Aspects fit in?

Current education reform is focusing on a wide range of changes in schools. Issues include combining learning with actual experiences; integrating vocational and academic education; developing more interdisciplinary instruction; forging

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links between schools, businesses, and community institutions; and avoiding narrow training. All of this is being done with the goal of preparing students with a variety of skills in a fast-changing workplace. Education for **All Aspects** is a strategy that seeks to achieve these objectives.

Programs that emphasize **All Aspects** explore the context in which vocational skills are taught and used. For example, auto mechanics is taught as part of a transportation program. In addition to the specific skills needed for a particular occupation, students are

shown the "Big Picture" of the industry and general technological principles important to the transportation industry.

Students also learn about planning, project development, teamwork, communications, and other work-related skills.

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## NCRVE\* On All Aspects

(\*National Center for Research in Vocational Education)

At the very least, it can be said that **All Aspects** will evolve just as education and workplace needs and practices evolve. As with other strategies, **All Aspects** will not be driven solely by legislation nor will it ever be defined in precise terms.

**All Aspects** may vary as a function of the context or contexts in which it is used. And finally, it should be recognized that **All Aspects** is a curriculum development strategy.

Studies conducted over the past several years by NCRVE that focus on **All Aspects** offer some meaningful insight.

- **All Aspects** can be implemented in a variety of ways (e.g., course by course, cluster, entire schools).

- **All Aspects** is easily combined with Tech Prep and school-to-work.

- **All Aspects** is best suited for secondary schools. However, postsecondary, middle school, and elementary school examples exist.

**All Aspects serves as an organizer for curriculum rather than an end in itself.**

- **All Aspects** can serve as a bridge to unite school-based

and work-based learning experiences.

Problems do exist:

- Some employers and educators have difficulty understanding and accepting the **All Aspects** concept.
  - Workplace barriers such as labor supply concerns, short-term production demands, and tradition have limited the implementation of an **All Aspects** curricula.
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# The All Aspects Approach Has At Least Four Justifications...

- **Integrating Academic and Vocational Education.** If vocational skills are limited to a narrowly defined job task, it is almost impossible to integrate advanced academic skills. Successful integration depends on having a rich context for applying academic skills and knowledge. Covering **All Aspects** of the industry provides that context. Analyzing and solving the problems facing an industry and the enterprises within it involves utilizing skills in reading, writing, mathematics, science, and social studies.
- **Empowering Students to Make Career and Life Choices.** Some programs provide only the skills for one job. This leaves students unprepared to change career goals or to cope with labor market changes. Teaching **All Aspects** gives students transferrable skills, such as planning and management, which expand their opportunities.
- **Enabling Students to Adapt to Technological Change.** Asking schools to predict how technology will change and to constantly revamp equipment is no longer reasonable--if it ever was. Providing students with broad skills in **All Aspects** of industry, together with academic skills, enables them to understand and adapt to changes when they leave school and throughout their careers.
- **Involving Students in Economic Development.** If programs prepare students only to fill the current job openings in low-income communities, students are left dependent upon too few jobs, which demand too few skills and provide too little income for a decent life. In contrast, students who understand and have experience with planning, management, community issues, etc., can survive, thrive, and help others in low-income communities.

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The next section of this document contains a discussion of each of the nine aspects:

- Planning
- Management
- Finance
- Technical skills
- Principles of technology
- Labor issues
- Community issues
- Health and safety
- Personal work habits
- The information includes a brief definition, sample instructional topics, and questions to complete a worksite analysis survey.
- Also included is a cross-reference to either career development skills or workplace basic skills (SCANS).
- Scenarios, classroom projects, and worksite activities are provided for each of the nine aspects.

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# Planning

How an organization plans including goals and objectives; types of ownership (public, private); relationship of the organization to economic, political, and social contexts; assessment of needs.

**Major Instructional Units:** Strategic planning; establishing goals and objectives; performance assessment.



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## Sample Instructional Topics

- Why businesses and industries need to plan how to respond to customers' needs and expectations
- The difference between delivering products versus delivering services
- How regulatory laws can have an impact on a business' operations
- Ways an employee can influence company decision-making
- How a political organization can have an impact on how a company operates
- Benefits in anticipating technology and market trend changes
- The relationship of customer satisfaction and the "bottom line"
- Ways to assess a company's competition

## Worksite Analysis Questions

1. What evidence is there of strategic planning? (department-wide and company-wide)
2. What are the roles of the owner(s), management, and labor in the strategic planning process?
3. What economic, political, and social elements does the company consider in planning, developing, marketing, and selling its service or product?
4. How is customer satisfaction measured?

### *Documentation:*

- Organizational chart
- Business plan
- Market assessment
- Advertising plan/strategy
- Year-end reports

## Career Development Skills

- Describe the factors that impact on decision making:
  - a. Needs and wants
  - b. Values
  - c. Goals
  - d. Standards
- Distinguish between types of decisions:
  - a. Economic
  - b. Technical
  - c. Social
- Apply the steps in the decision making process.
- Utilize problem solving skills:
  - a. Identify the problem for resolution
  - b. Define critical issues
  - c. Analyze causes of a problem
  - d. Utilize research and assessment skills
  - e. Examine results of a problem
  - f. Offer solutions to a problem
  - g. Select a solution to a problem
  - h. Implement an action plan

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# Applying the Aspect of Planning

## Integrating Academic and Vocational Education

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### **Entrepreneurship, Marketing, Problem-Solving, Decision-Making, Computer Technology**

You are planning to open a small business (an auto repair shop, for example). Although you have saved some of your own money for this enterprise, you need additional funds to buy up-to-date equipment (such as diagnostic machines). Prepare a business plan that will convince the bank that you are a good business risk and that it should lend you the money. (Students could use this activity for any business or career path.) Contact the Small Business Administration (or appropriate agency) in your area to find out more about funding sources. Include a timeline in the business plan to achieve your goal.

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### **Electronics Technology, Computer Technology, Ergonomics, Mathematics, Interior Design, Problem-Solving**

As the manager of your department, you are aware of the various differences that your department faces when 25 more computers and 10 laser printers are added to the existing laboratory of 55 computers. You are in charge of locating a new area that has the proper amount of space, utilities, electrical outlets, ventilation, and comfort. Develop a plan that sets up an ideal location for this laboratory. Design a floor plan for the department using electronic simulations or other sources to suggest a layout. (This assignment could also include an *Assessment of Needs*.)

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### **Worksite Experience**

Select a local business/organization and arrange to meet with the director or manager to learn the goals and objectives for hiring staff. How many employees are required to run the organization? If the business/organization has more than one shift, how many supervisors are required? Arrange to attend a staff meeting and observe interactions between staff and managers. Note what issues are discussed and how conflicts are resolved.

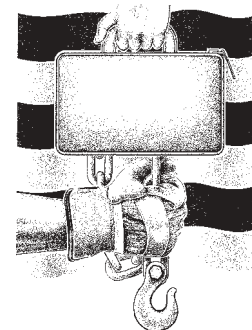
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# Management

Structure and process for effectively accomplishing the goals and operation of the organization using facilities, staff, resources, equipment, and materials.

**Major Instructional Units:** Organizational structures; workplace cultures; production methods



## Sample Instructional Topics

- How business and industry are dependent on the national and international economies
- How a "chain of command" works
- The significance of a company's workplace culture
- Differences in how private companies and public agencies operate
- How roles and responsibilities in a family business are different than in larger companies
- Differences in how a family farm operates versus how another small business operates
- How a company organizes its departments
- Ways a company's departments communicate
- How a company's marketing affects all its employees
- Why written policies are used in industry
- How cultural diversity can have a positive effect on an industry
- How to adjust to different management styles
- Resources available from professional organizations

## Worksite Analysis Questions

1. What is the management structure of the organization?
2. What is the rationale for various departments within the company?
3. How would you describe the work atmosphere? (e.g., intense; laid back; one-for-all-and-all-for-one; dog-eat-dog)

### *Documentation:*

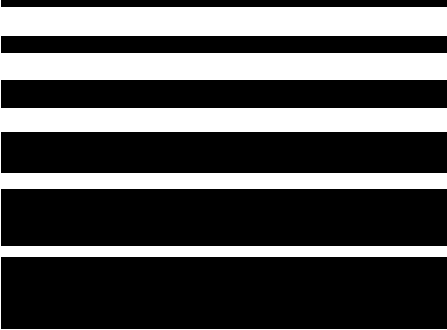
- Mission statement
- Organizational chart/plan
- Examples of written communication between departments or guidelines

## Workplace Skills

- Outline the procedures involved in ordering, distributing, and controlling supplies
- Requisition supplies/equipment
- Explain an ordering decision
- Conduct feasibility study on vendors
- Develop an inventory management plan
- Define and explain the features of the following:
  - a. Perpetual inventory
  - b. Periodic inventory
  - c. Physical inventory

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# Applying the Aspect of Management

## Integrating Academic and Vocational Education

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### **Creative Thinking, Computer Technology, Language Arts, Marketing**

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You have been hired by a large federal reserve bank that is merging with a savings and loan bank. You have been asked to prepare a brochure about how the merger will affect customers' accounts. Design a pamphlet. Try to anticipate all the questions that nervous customers will pose.

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### **Problem-Solving, Decision-Making**

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You are the manager of a toy store. Your best selling toy is sold out. It is near Christmas and many customers are demanding this popular item. Develop a strategy to both appease the customer and to obtain this toy.

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### **Communication Skills, Teamwork, Time Management, Strategic Planning**

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You work for a chemical plant that has developed a reputation of being unresponsive to the community. You have been appointed to a team that is responsible for improving the company's public image. Develop a plan that will alleviate the community's concerns while costing the company no money. Include specific timelines and guidelines.

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### **Worksite Experience**

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Select a local business/organization and gather information including (1) the number of people working there, (2) the number of hours the facility operates, (3) the job classifications of employees, (4) the qualifications for each job classification, and (5) the range of employee wages. (Students may revise or add to the data collected depending on the specific enterprise chosen.)

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# Finance

Accounting and financial decision-making process; methods of acquiring capital to operate; management of financial operations including payroll.

**Major Instructional Units:** Capital acquisitions; financial operations.



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## Sample Instructional Topics

- Key factors effecting profit and loss
- Typical ways a business obtains capital
- The importance and depth of accounting in a business
- The implications for a company extending credit
- How a company estimates and bids for a contract
- The importance of cost containment in a company
- Why personnel and labor offer the most flexibility for financial adjustment

## Worksite Analysis Questions

1. How did (or does) the company acquire capital (money) to operate?
2. What are some of the fixed and variable expenses of the company?
3. How has technology increased and/or decreased the costs of operations?

### *Documentation:*

- Financial report of the company
- Strategy for cost containment
- Credit policies
- Estimating and bidding procedures

## Workplace Skills

- Explain the concept of supply and demand
- Accept and approve checks according to company policy
- Process a payment from credit card
- Operate a cash register
- Handle cash disbursement
- Maintain petty cash fund
- Reconcile daily cash transactions
- Analyze existing budget
- Audit monthly records
- Prepare monthly financial reports
- Locate and eliminate common errors in accounting records
- List the steps of an accounting cycle
- Compare and contrast pricing policies at competing businesses/ industries
- Determine cost, time, or resources needed to complete a task within an industry or occupation



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# Applying the Aspect of Finance

## Integrating Academic and Vocational Education

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### **Economics, International Trade, Political Science, Language Arts, Teamwork**

Many products sold in the United States are made in other parts of the world. Select ten different items found in your home or community that were manufactured abroad. After identifying the country where each item was made, prepare a report indicating the type of government, the state of the economy, and the quality of the educational system in that country. Indicate why these goods need to be imported rather than made in the United States. Tell how the global economy influences world trade. (This idea could be developed as a team assignment or class project.)

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### **Decision-Making, Mathematics, Personal Finance, Automotive Technology**

You have just graduated from high school and have found a great job. You must have a car, however, to get to work. Your friend has just purchased a foreign car and wants you to do the same. Your parents want you to buy an American car. You want to make a logical decision. Chose an American-made car and an import car to compare. Investigate the advantages and disadvantages of the two cars including the costs of ownership (i.e., insurance, gas, and registration, as well as the price of the car), safety, repair, maintenance, and depreciation records, as well as gas mileage. Create a table in which you compare the two so that your friend and parents will know that you arrived at your decision logically.

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### **Worksite Experience**

Interview an officer in the local investment company to determine how the company gets data, the number of people in a market segment, and their investment preferences. Determine the institution's overall marketing strategy. Develop a pre-interview questionnaire of at least 5 to 10 questions on how the company gathers data and how this data affects its advertising and products.

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# Technical and Production Skills

Specific skills and techniques for production; basic skills\*; ways of organizing production work, including methods which diversify and rotate jobs.

**Major Instructional Units:** Specific production skills; basic academic skills.

*\*Math, communications, computer technology, time management, and creative thinking.*



## Sample Instructional Topics

- Certification requirements for a specific job
- Obtaining technical information and training
- Jobs that are inter-related with other jobs
- Typical modern production techniques
- Using production standards and quality control techniques
- The importance of using troubleshooting techniques
- The ability to use supervisory and delegation skills
- The importance of deadlines and schedules
- The importance of cross-training employees

## Worksite Analysis Questions

1. What are some instances when the following basic skills are needed: reading, writing, math, speaking, listening, and science?
2. Is teamwork or individual initiative the predominate work structure? Include examples to support your opinion.
3. What work elements are time driven?
4. What are some causes of major work stoppages?
5. What are the levels of training and skills represented throughout the company?
6. How does the company invest in training, retaining, and advancing employees?

### *Documentation:*

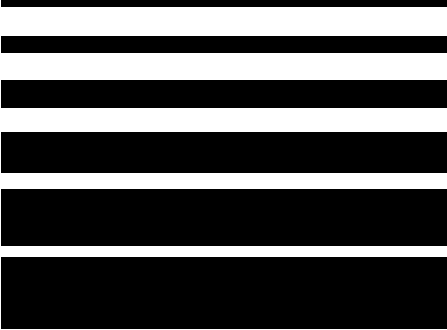
- Skills tests required of entry-level employees
- In-service training activities schedule of classes
- Work or job analyses
- Employee evaluation forms

## Workplace Skills

- Locate information and select the materials, tools, equipment, or other resources to perform the activities needed to accomplish a specific task
- Set priorities or the order in which several tasks will be accomplished
- Identify and explain the use of common supplies for a given occupational area
- Perform routine tasks related to equipment operation and/or maintenance
- Check incoming stock and complete stock control records
- Analyze an inventory report
- Analyze various modes of physical distribution and storage facilities
- Read and interpret technical manuals
- Ask questions to clarify oral instructions
- Initiate and maintain task focused conversations

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## Applying the Aspect of Technical and Production Skills Integrating Academic and Vocational Education

### **Mathematics, Problem-Solving, Time Management, Human Resource Management**

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You employ eleven bakers in the bakery that you own and manage. You have just signed a contract with a major food chain to supply them with 5,000 holiday cakes over and above their regular order. These cakes will be delivered during the four weeks between Thanksgiving and Christmas. To fill this order, you will need extra labor. The salary of each baker is \$8.00 an hour. When they work overtime, the bakers earn time-and-a-half. One person can bake 10 cakes per hour. Each cake retails at \$9.50 and uses \$4.50 worth of ingredients. Gas for the oven costs another \$8.25 per batch of 10 cakes. You need to decide whether you should hire additional employees or run overtime shifts. Make a plan for getting the labor that you need while maximizing your profits.

### **Entrepreneurship, Mathematics, Language Arts, Computer Technology**

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Your class decides to prepare a unique cookbook—one which can be used to prepare a meal for a few people (such a small group) or for as many as 90 people. Have each student bring a favorite recipe and create a cookbook with quarter, half, regular, and double recipes. The class could select a format and collect all recipes to share with others.

### **Communication Skills, Teamwork, Time Management, Problem-Solving, Decision-Making**

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Your team leader wants to expedite communication among all the sales personnel in your firm. He/she has given you the task of setting up a conference for the 30 national and 10 international sales representatives. Your team leader wishes to introduce all of them to new product lines. Design two conferences that are both time and cost effective. Make a budget for each one.

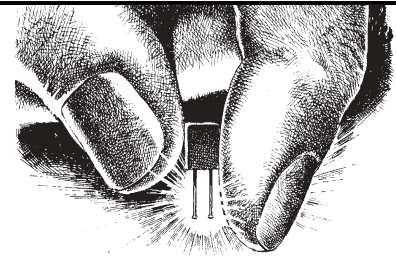
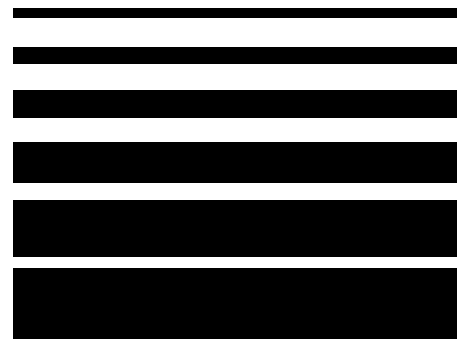
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# Underlying Principles of Technology

Technological systems used in the workplace and their contributions to the product or service; the mathematical, scientific, social, and economic principles that underlie the technology

**Major Instructional Units:** Technology in the workplace; continued professional training.



## Sample Instructional Topics

- Basic resources necessary for technology
- How technological systems evolve to meet human wants and needs
- Technology's relationship to fossil fuels and other environmental concerns (e.g., waste and pollution)
- Ergonomics in the workplace
- How ingenuity and creativity are used to identify new uses for existing technology, devices, or processes

## Worksite Analysis Questions

1. How has technology transformed the company's operation?
2. How does the company use the following technologies: communication technology, production technology, transportation technology, and bio-related technology?
3. How is computer technology utilized throughout the company?
4. How is technology used in making decisions regarding production or other matters?

### *Documentation:*

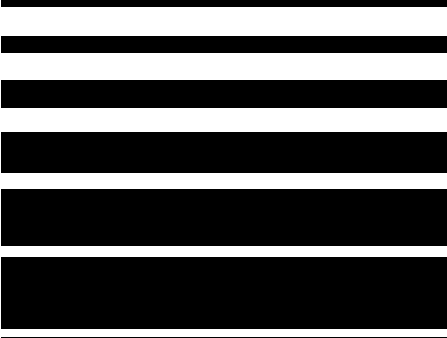
- Organizational chart
- Training manuals
- Production flow charts
- Inventory analyses
- Productivity data and statistics
- EPA, OSHA requirements

## Career Development Skills

- Describe the historical evolution of technological innovations as a means through which human needs and wants are satisfied
- Identify potential health hazards created by technology in the work place
- Process information using computer hardware and software to reach an informed decision on a problem with several variables
- Use computer technology to control a technological system when given access to the necessary hardware and software
- Utilize computer technology as a recordkeeping device to document progress toward reaching an optimal solution to a technological problem
- Draw and label a systems diagram depicting the systems approach solution to a problem
- Utilize futuring techniques to anticipate the consequences of a new technology

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# Applying the Aspect of Underlying Principles of Technology Integrating Academic and Vocational Education

## **Communication Skills, Negotiation Skills, Language Arts, Political Science**

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The plant in which you are working is undergoing a radical change in procedure. Plant-wide, management is introducing progressive automation and new technology. You are one of the union representatives. The workers are nervous for a number of reasons. They do not know how to use the new technology and they are afraid that they will be replaced by machines. Create a plan to receive questions from the employees and to communicate management's answers to these questions.

## **Teamwork, Time Management, Social Studies, Creative Thinking**

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You are the team leader for designing a communication system that will meet the needs of your growing company for the next 10 years. To do this, you must investigate the applicable state and federal laws. You must also research the current and emerging technologies. Then you must develop a recommendation along with timelines and a cost analysis to present to the board of directors.

## **Computer Technology, Marketing, Language Arts, Communication Skills, Creative Arts**

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You work in the public relations department of your company. A recent study indicated that your company's advertisement in the yellow pages is inadequate. Customers seldom use it because it does not clearly specify what products or services your company provides. You are in charge of designing a new advertisement that will be used in the phone book and in several trade publications. Design one that is both attractive and clear. It should specify what products or services your company offers and be readable at a glance. Your reports should include a written statement and a visual exhibition so that you can present it to the board of directors. (This activity could include the development of a home page for the Internet.)

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# Labor Issues

Rights of employees and related issues; wages, benefits, and working conditions.

**Major Instructional Units:** Employees' rights and responsibilities; role of labor organizations.



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## Sample Instructional Topics

- Why businesses and industries need to plan how to respond to customers' needs and expectations
- Differences between being a self-employed worker and a worker employed by a company
- The role labor organizations play in industry
- Advantages/disadvantages of hourly and salaried pay
- The importance of a written job description
- The importance of knowing your rights as a worker
- The importance of cultural sensitivity
- The importance of participating in quality enhancement programs

## Worksite Analysis Questions

1. How is division of labor accomplished?
2. Who participates in defining the worker's roles, responsibilities, and rights?
3. Why is cultural sensitivity important in this particular workplace?

### *Documentation:*

- Employee orientation/handbook
- Written job descriptions
- Statement of workers' rights
- Organized labor agreements

## Career Development Skills

- List criteria for selecting, evaluating, promoting, and terminating employees
- Define legal issues for hiring and/or termination
- Identify skills needed to maintain effective work relations with colleagues
- Demonstrate negotiating skills
- Provide constructive criticism

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# Applying the Aspect of Labor Issues

## Integrating Academic and Vocational Education

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### **Entrepreneurship, Business/Marketing, Decision-Making, Computer Technology**

You are the manager of a local small business. You are pleased with your salary and benefits. You have a flexible schedule, health insurance, and investment opportunities. You would like to advance in the company; however, you see no room for growth. You begin to consider investing in your own franchise. Research the pros and cons of opening your own franchise comparing at least three different types. Develop a plan that will allow you to select the best franchise for your needs.

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### **Mass Media and Broadcasting, Language Arts, Career Exploration**

A television production team from a major news station has been filming in your school. They are doing a series called "Learning and the 21st Century." You find their work particularly interesting. Your teacher asks you to identify the job titles and duties of all of the people involved in the production company and to create a plan to pursue a career in one of these areas.

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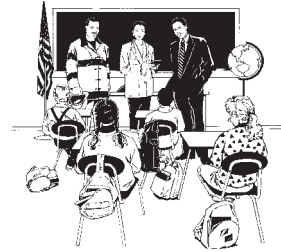
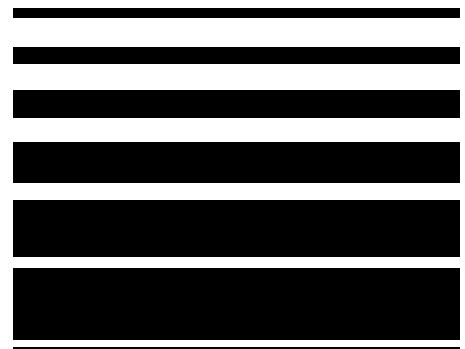
### **Worksite Experience**

Research and visit an industry in your area and determine which unions are active. Note if there are any employees not covered by a union. Investigate the benefits and drawbacks of a union. Prepare for a class discussion or presentation to include such information as (1) whether you get what you pay for as a union member, and (2) how unions have changed working conditions and wages through the years. Cite examples of these in your report.

# Community Issues

The impact of the company on the community, and the community's impact on the company.

**Major Instructional Units:** Community activities and issues; company's involvement in the community.



## Sample Instructional Topics

- Why a company's public perception is important
- Key ways a company helps its community
- Key ways a community helps a company
- The impact of buying outside the community
- The importance of providing for the access needs of the physically challenged
- Contributing special skills through volunteer work

## Worksite Analysis Questions

1. How does the company maintain a good public image?
2. What community projects or initiatives does the company participate in?
3. What are some tangible results of the company's and its employees' involvement in community issues and/or projects?
4. How is the facility modified to be accessible to the physically challenged?

### *Documentation:*

- Evidence of company participation in community programs
- List of community activities in which the employees participate
- Compliance with the Americans with Disabilities Act

## Career Development Skills

- Analyze the positive and negative impacts of adapting technology to the environment and the human user
- Locate and use expert sources and peer support
- Analyze the impact of family influence upon one's personal development
- Describe the relationship between human development and changing roles/responsibilities



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# Applying the Aspect of Community Issues

## Integrating Academic and Vocational Education

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### **Language Arts, Communication Skills, Environmental Science, Social Studies**

You are a member of a community committee that is responding to the mayor's suggestion that a sports complex be constructed in your neighborhood. People in this neighborhood are very concerned that this sports complex will cause a lot of additional problems including increased traffic, crime, and noise. On the other hand, many neighbors see that this facility would have a positive economic effect. You have been elected to prepare a report listing alternative suggestions to help alleviate the fears of the community. You are to present this report at a community meeting next month.

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### **Science, Decision-Making, Language Arts, Social Studies**

Residents in your community have been greatly upset by the presence of an obnoxious odor that emanates from a small stream that runs through an empty lot. As a community service project, your class has offered to assist the community in finding the source of this problem and in alleviating it if possible. You are in charge of developing two plans: a short-range one with which you and other classmates can help and a long-range plan that can be implemented by the community. Present your plans to the principal, superintendent, and school council.

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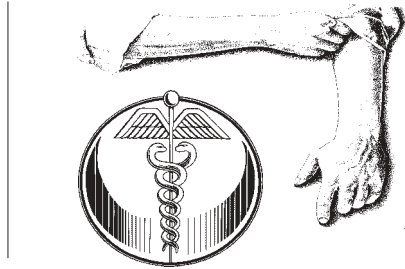
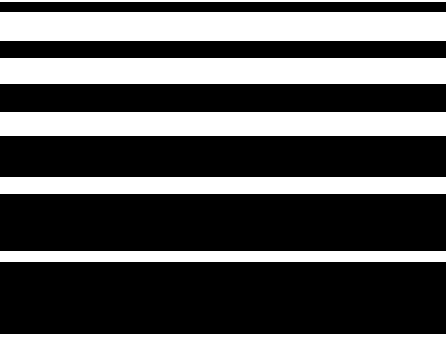
### **Worksite Experience**

Make arrangements to meet with the public relations or marketing manager of a local enterprise. Find out why the business/organization has a public relations department and what community activities it supports. Investigate how the enterprise impacts the local area and how the neighborhood impacts the business/organization. Ask the public relations or marketing manager to cite an example of a public relations issue.

# Health, Safety and Environment

Practices and laws affecting the employee, the surrounding community, and the environment.

**Major Instructional Units:** Regulatory issues; workplace safety.



## Sample Instructional Topics

- Management's responsibility for a safe workplace
- How to avoid job-specific health threats
- Major components of a Material Safety Data Sheet
- Basic safety training (tornado, fire, first aid) techniques
- The benefits of participating in preventive medicine programs
- The benefits of handling stress effectively
- The benefits of good workplace ergonomics
- Effects weather has on an industry
- The importance of complying with federal agency regulations

## Worksite Analysis Questions

1. What federal regulations apply to this company?
2. What are the job-specific health threats of this industry?
3. How is basic safety training delivered? What are the major topics or areas of importance?

### *Documentation:*


- Federal agency regulations
- Safety training techniques (tornado, fire, first aid)
- Preventive medicine/stress management programs
- Accident/medical reporting forms

## Workplace Skills

- Exhibit the safe use of tools and equipment
- Organize work space
- Establish work flow
- Adjust to changes in work flow
- Identify standard workplace policies related to:
  - a. Personal discipline (personal leave and absence)
  - b. Substance abuse
  - c. Employee theft
  - d. Causes for termination
- Comply with safety and health rules in a given work environment, including:
  - a. Exhibit safe use of tools and equipment
  - b. Maintain clean and orderly work area(s)
  - c. Practice personal hygiene and cleanliness
  - d. Wear attire suitable to the workplace
  - e. Follow established emergency procedure

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# Applying the Aspect of Health, Safety and Environment Integrating Academic and Vocational Education

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## Healthcare, Language Arts, Teamwork

You work the night shift at a local business. One evening when the nurse has left for the day, a member of your staff sustains a hand injury. Neither a first aid kit nor emergency health instructions could be found. Upon hearing of this incident, your supervisor was very upset. You and your coworkers are asked to develop a set of instructions for medical emergencies. You will present this report to you department and to the company owners for final approval.

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## Language Arts, Environmental Science, Strategic Planning, Teamwork

As an employee of your city, you are appointed to serve on the recycling promotion committee. The committee has decided to have an Earth Day Fair to promote conservation, particularly the recycling of paper, aluminum products, and glass. Develop a plan for the fair that will incorporate education, fun, and the importance of recycling. Include the local schools and community in your plan.

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## Worksite Experience

Question the manager of a local business/organization to find out how the company handles and disposes of waste. Find out what precautions are taken to make the building and surrounding parking lots safe at night. Investigate what can happen when waste is disposed improperly—where does it go, who handles the removal, how much does it cost? What environmental regulations exist to ensure a safe workplace?

# Personal Work Habits

Non-technical skills and characteristics expected in the workplace.

**Major Instructional Units:** Positive attitude; personal fitness and appearance; readiness to work.



## Sample Instructional Topics

- How to recognize the dignity of all work
- The importance of being fit for work (no drugs, no alcohol)
- The importance of exhibiting a good attitude, enthusiasm, integrity
- The importance of exhibiting good grooming and appearance
- The importance of responsible personal finance skills

## Worksite Analysis Questions

1. What are some of the company's quality control techniques?
2. How would you characterize the company's expectations regarding attitude, appearance, and fitness?
3. Explain your agreement or disagreement with the following statement: "At this company, all work is valued." Cite examples to support your opinion.

### Documentation:

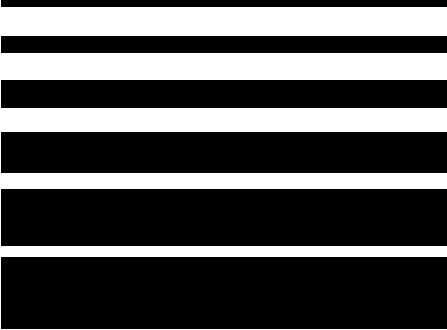
- Written policies indicating what the company expects in personal conduct
- Professional memberships (sponsored by the company) for employees
- Employee retention policies

## Workplace Skills

- Comply with company policies regarding information dissemination and related security matters
- Define and explain the importance of transferable skills and flexible work attitudes
- Describe desirable worker characteristics in terms of:
  - a. Cooperation
  - b. Compromise
  - c. Competition
  - d. Assertiveness
  - e. Integrity
  - f. Honesty
  - g. Friendliness
  - h. Positive Attitude
- Apply employee rules, regulations, and policies in a given occupational area
- Develop a sensitivity to cultural differences
- Use strategies for managing stress
- Communicate positive feelings
- Describe how attitudes are established and changed

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# Applying the Aspect of Personal Work Habits

## Integrating Academic and Vocational Education

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### **Problem-Solving, Language Arts, Mathematics, Social Science**

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Many employees report late for work each day. This is true at all levels of the organization including salaried, managerial, and hourly workers. As an employee in the human resources section of the company, your manager has asked you to prepare a report which addresses this problem. Additionally you are to think of several ways to reduce employee tardiness. Prepare a report including three or four ideas that might encourage employees to come to work on time.

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### **Social Studies, Communication Skills, Problem-Solving**

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You work in the office of a nationwide chain store. Your supervisor spends about half of the time in the office and half on the floor directly supervising operations. You enjoy your job, but when the manager is in the office you feel uncomfortable and have difficulty getting much work done. The supervisor constantly makes comments about your age, gender, and/or ethnic background. What are your options? Research and discuss (1) the laws which prohibit such behavior, (2) the policy and grievance procedures which many organizations have to protect workers, (3) solutions which could include constructive feedback, a technique which enables workers to deal with sensitive situations. Develop a strategy to deal with this and similar situations.

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### **Cultural Diversity, International Trade, Problem-Solving, Language Arts**

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Simulate an American business person doing business in a foreign country. Develop solutions for solving a problem at work. Demonstrate acceptable and unacceptable behaviors, gift giving situations, and discrepancies in acceptable punctuality standards.

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# Strategies for Incorporating All Aspects



The **All Aspects** approach improves students' chances for success in the workplace. As employees, these students, trained to perform a variety of functions across an industry, can adapt when advances in technology make job-specific skills obsolete. These students are more open to the idea of continual development throughout their working lives.

Equipped with a variety of skills and an understanding of how these skills can be applied throughout an industry or transferred to other industries, young workers with basic experiences in **All Aspects** are better informed to make initial career choices and may have more options throughout their careers.

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## School-Based Strategies

### Take Inventory of Existing Projects and Classes

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Teachers can incorporate an **All Aspects** approach into existing projects and classes, benefiting students by making the best use of available resources and reducing some of the more immediate classroom disruptions that might be caused by a change in teaching and learning methods. A complete inventory and evaluation of current activities may result in the discovery of previously unrealized opportunities for linking different classes or projects within an industry or career cluster.

Agriculture programs have always taught **All Aspects** of running a farm. Students have learned not just how to grow crops or use farm tools, but how to manage and finance a farm. Soil chemistry, animal husbandry, and plant botany are also studied. Cooperative education placements can be restructured so that the student's work experience includes a critical understanding of **All Aspects** of the industry. This approach can be expanded to programs in all areas.

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## Redesign School Curricula

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School-based activities, particularly multi-disciplinary projects and other experiential learning methods, can be excellent opportunities for incorporating **All Aspects**. Many curricula that incorporate **All Aspects** approaches are structured in a multi-year progression of courses within career-related pathways. Students encounter **All Aspects** in a variety of inter-related classes, projects, and work-based learning experiences across the curriculum. The school-based curriculum should link to work-based learning experiences that become more complex and intensive as the student progresses through a pathway.

Work-based learning may be more easily integrated with various academic disciplines when defined in relation to **All Aspects** of an industry. For example, if English teachers find it difficult to provide a context for instruction to students studying auto mechanics, they might relate reading and writing exercises to activities focused on broader, but associated, themes, such as transportation or entrepreneurship. Students could write advertisements or training manuals, linking an applied exercise in an English course to other aspects of the industry.

## Encourage School-Based Enterprises

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School-based enterprises, actual businesses run by students, can illustrate the connections among different aspects of an industry. When students are involved in **All Aspects** of a school-based enterprise, they often have an opportunity to take on a variety of workplace responsibilities, giving immediate relevance to classroom lessons.

For example, students can assess the effects of marketing on their own business and witness first-hand the impacts of laws, technology, and labor issues on the balance sheet. In addition, learning how to establish and run a business may foster a sense of entrepreneurship in some students, opening the door to new career options, including possibilities for self-employment.

Research conducted by NCRVE revealed that students who participate in a school-based enterprise are more likely to gain exposure to **All Aspects** of that enterprise. This opportunity may not be available or be viable for the student at an actual worksite. Additionally, the instructor or sponsor of the school-based enterprise has greater control over addressing and meeting work-based competencies.

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## Community Speakers

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Men and women representing local industries, businesses, organizations, and professions are an important resource to bring relevant information to the classroom. Speakers have many stories and experiences to share about themselves, their work, and their organizations.

Guest speakers can help students understand the world of work and offer an opportunity to demonstrate the connection between what goes on in the classroom and what goes on in the workplace. The **All Aspects** framework can be shared with guest speakers to help them as they prepare for the classroom presentation.

The model may be used as speaking points for information about their organizations. This model can help ensure a successful experience for the speaker and students in terms of content and expectations.

## Field Trips

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A field trip provides students with the opportunity to leave the classroom and visit various places of business. Such excursions extend the learning environment beyond the classroom and show the relationship between the classroom and the workplace. Students engaged in a field trip activity will observe and investigate activities related to a specific field and a career development objective.

To set expectations for the field trip experience, the students may participate in a brainstorming session. It would be helpful to prepare a field trip observation form or checklist to provide the basis for students' comparisons of organizational structures. The **All Aspects** framework could be used in preparing the checklist.

Additional points that might be included are: What are the workers doing? Are they working independently or in teams? Make a list of how information is shared at this site. List the uses of mathematics that you spot. List the technology present and the skills required to operate these systems. Take notes of other points you observe as the employees work.



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## Develop Teacher Internships

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Teachers do not need to be **experts** on **All Aspects**, but they may find it easier to connect classroom concepts to workplace applications if they can tie them back to their own practical experiences. Teachers may also find it easier to communicate with employers, other educators, and students if everyone shares a degree of common knowledge. Some teachers may be better able to support their students involved in **All Aspects** if they are able to speak about their own accomplishments and frustrations in the workplace.

## Additional Classroom Activities

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Ideas for activities and problem-solving situations are presented throughout this document. Some of the sample learning opportunities include:

- Structure a *career interview* in which students ask a parent, someone in their community, a career mentor, or any working adult, how each of the aspects affects him/her on the job.
- Explore entrepreneurship by using the **All Aspects** context to analyze a small business and compare it to a large business in the same field.
- As a project, students could start a business and perform the necessary steps such as market research, building customer profiles, identifying start-up capital investment needed, using federal and state small business resources, researching state and local zoning and licensing requirements, applying for small business loans, and planning for staff needs.
- Students can create portfolio work samples that demonstrate their knowledge, understanding, and application of the different aspects and how they relate to a particular industry. Teachers can incorporate **All Aspects** into guidelines for portfolios to help the students reflect on the different activities they have undertaken.
- Use the **All Aspects** framework to research how jobs have changed over time and how these same jobs may look in the future. Ask students to go back in time (perhaps 50 years) and profile a job or occupation that existed at that time (based on research/historical reading by the student). The job profile should include a forecast of how the job might look in the future based on current technological advances.

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# Work-Based Strategies

## Expand work-based learning opportunities

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Employers can greatly augment a student's work-based learning by providing experiences in each aspect of the industry. School-to-work administrators and teachers can work with employers to help them understand the components of and reasoning behind an **All Aspects** approach. Educators can also encourage and assist employers in organizing students' workplace experiences so that they include **All Aspects** of the industry.

Learning beyond the classroom cannot occur without creating new lines of communication. These must include teachers talking to employers about what students can learn, students talking to employers about the rewards and challenges of their jobs, and employers talking to teachers about the application of academics in the workplace.

The benefits of expanding the learning to the community include students talking to parents about what they are learning, teachers talking to other teachers about community resources, and employers sharing with teachers why they are happy to help students make the connection between school and life.

### Learning Site Analysis

Learning site analysis is an integral step for successful experiences in the workplace. The teacher and the worksite contact person can identify examples of how subjects such as math, science, history, or sociology are present in the work environment. They can identify specific employability skills linked directly to school subjects.

Spending time on these details before a student begins the worksite experience ensures a quality learning experience that is linked directly to school subjects. Educators may want to develop ideas into a form to facilitate the analysis process. The **All Aspects** framework can serve as a guide.

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## Job Shadowing

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Job shadowing offers a glimpse into a particular profession or occupation. Prepared with a set of questions, a student interviews an adult at a worksite and spends three to five hours observing a typical day in that person's job. As a preparatory activity, students might develop a list of questions to find out how their school subjects apply to the job. Students could plan the details of the actual visit and follow up with thank-you letters. They could also deliver in-depth reports (oral and written) to the class. In the process, students learn more about their specific career choice and are exposed to other careers options. Another activity could direct students to ask or observe how each of the nine aspects has an impact on that particular professor or occupation.

## Service Learning

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Service learning links students with service activities which help the community and provide students with opportunities to practice broad work skills while making contacts for future employment. It is beneficial for these experiences to be integrated into the classroom. Since it involves planning skills, reading, communication skills, and mathematics skills, research into the project will not only result in a service to the community, but a meaningful learning opportunity for the students as well.

## Mentoring

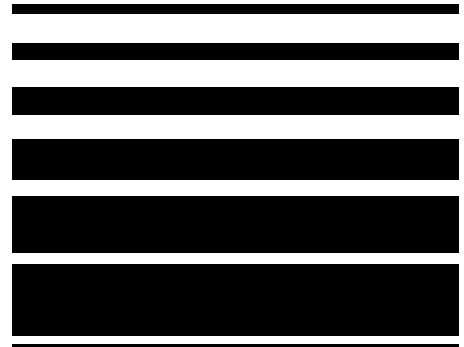
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A mentor is an adult worker or supervisor who introduces the student to a job, a profession, or a skill area and shows how school-based learning applies to everyday work life. That introduction may be for only a few days, or it may last for several months. The mentor may serve as a guide through several areas of work or as an adult job coach helping the student develop particular skills. Mentoring is a one-to-one relationship in which the mentor models workplace behavior, skills, and training, and provides the student with at least an introduction to work. The mentor is someone to whom the student can turn for feedback, support, and career guidance.

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# Worksite Learning Activities



*The following suggestions are workplace learning activities. They can be used as topics for discussion or writing assignments. Additionally, some of these suggestions may be used as culminating exercises when the student is at a worksite. These ideas are presented so that instructors can adapt and implement them for specific assignments.*

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## Discussion and Writing Activities

### Problem Solving

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Describe a problem at your worksite. How did you solve it, how do you plan to solve it, or how would you solve it (if you had the ability to do so)? Students should be challenged to solve real problems that companies actually face. *(Can apply to all of the aspects.)*

### Three Best Things About My Work-Based Experience

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What three things do you like best about your job? What does your list say about you, your values, and your interests? *(General reflective activity.)*

### The Changing Workplace

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Talk with your co-workers. Find someone who has worked there a long time. What changes have taken place? What changes do you, your co-workers, or your supervisor foresee in the future? What do you think your worksite will be like in 10 years from now? *(General reflective activity.)*

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## Effective Team Characteristics

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What is an effective team? Is there a sense among your coworkers that they are a team? Why or why not? What is needed to any worksite to build a good team? What are the essential ingredients or key elements for a team to work well together? How can you become a participating team member? *(Can apply to management, labor, technical, and production skills.)*

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## Conflict Resolution

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Have you noticed any conflicts at your worksite? How are conflicts resolved? How does your supervisor handle conflicts? How do coworkers handle conflicts? What differences do you notice between the ways in which conflicts are handled at the worksite and the ways in which you have seen conflicts handled in school or elsewhere? *(Can apply to management and labor.)*

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## Personal Growth

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How are you changing because of your exposure to the workplace or worksite learning experience? What are you learning about the career path you have chosen and about yourself? *(Personal work habits.)*

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## Culminating Activities

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### Photo Essay of Your Worksite

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Using a camera or a video camera and obtaining permission from your supervisor and/or department head, take pictures or video of your worksite and write captions or narrate the video as though you are leading a tour of your worksite. *(May include all of the aspects.)*

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## Recruitment Brochure

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Imagine you were hired to recruit people to work in your department. Design an advertising campaign that highlights the best things about the jobs available in your department. Obtain quotes from individuals who work in the department about what they like best about working in their particular department. Brainstorm all the advantages of working in your department and design a creative advertisement, brochure, or your own creative project to advertise/recruit potential workers to your department. *(Can apply to planning, management, or community issues.)*

## Workplace Health and Safety

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Assess your worksite for possible health hazards. Find out how the workplace design includes special health and safety procedures and/or design solutions. *(Health, safety, and environment.)*

## Workplace Math

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Keep a log of all possible uses of mathematics you notice at your worksite. Ask employees how math is used in their jobs. How do these uses of mathematics relate to what you learned or are learning in school? *(Can apply to technical and production skills and finance.)*

## Communication in the Workplace

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Observe and identify the communication skills in the workplace such as memos, manuals, letters, e-mail, ads, contracts, presentations, or simple phone messages. Note that management training guides, reference books, codes, and regulations can require a high degree of skill to read and comprehend. Identify the types of books employees are reading on their breaks or during their leisure hours. Do some employees write poetry, advertising, or other creative writing for the company newsletter, informative brochures, or for a personal or creative outlet? Can you cite specific examples of how communication skills are needed to share ideas, feelings, instructions, and goals? *(Can apply to technical and production skills.)*

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## Education/Training Plan

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If you were in charge of designing an education and training plan for someone who would eventually work in your department, what would it include? What courses should be taken to best prepare for work in this department? What other specialized training should be pursued? What specifically must the individual know and be able to do to work in this department? Are there any special experiences that would help prepare for the jobs? (*Can apply to principles of technology, labor, or management.*)

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## Additional Activities

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- Practice listening and writing skills by taking phone messages in the school office or taking notes/minutes at a meeting or lecture
- Explore physics applications by studying the school's heating/cooling system
- Design the line markings for a sports playing field using math skills
- Invite experts to speak. Consider a pharmacist in a chemistry class, an architect in an algebra class, or an artist in an art class.
- Bring documents from the workplace to use as source materials, analyze an annual report in an English class, examine city ordinances in a social studies class, or use trade journals in an economics class.
- Bring in tools of the trade from local industry, such as transparencies from a printer to show how color is separated or a bar-code scanner to illustrate how inventory is tracked.
- Create the *classroom* at a worksite: a high school health occupations program meets in a training room at the local hospital or a marketing program uses vacant space in a mall.
- Conduct independent or group research. Students from a middle school could develop an oral history of their school neighborhood or economics students could research local businesses.
- Study how art is used in public places. Plan an extended field trip or design an "art walk" guide.

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# NCRVE\* Research Summary

\*National Center for Research  
in Vocational Education

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## How Strong is Employer Demand for "All Aspects"?

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Despite support and enthusiasm for innovative organizational reform, adoption of new approaches to production has been slow. While many employers express an interest in workers with broad skills and knowledge, most workplaces continue to be organized in such a way that broader skills and knowledge are not essential. **All Aspects** is not a central feature of the training offered by employers in most industries. For many employers, the advantages of work re-organization and broader training are outweighed by the short-term costs associated with this strategy.

Three broad barriers to the introduction of innovative work organization and the broader training that would accompany it are:

- concerns about the labor supply
- the short-term demands of day-to-day production
- the strength of traditional divisions that would be threatened by innovative and associated **All Aspects** training

Short-term programs designed to prepare production workers for particular technologies or occupations are the least likely to have incorporated broader material in their curricula. Programs that need to teach a demanding set of technical skills, also have trouble including broader instruction.

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## Barriers to Wider Development and Diffusion of "All Aspects" in Schools?

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**All Aspects** may in fact be an effective strategy for teaching basic skills to students who have had problems with other pedagogic approaches. But educators complain that many students simply do not come in with sufficient basic skills to handle a broader, more sophisticated, and more conceptual curriculum.



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## Barriers (continued)

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Like employers, educators face a trade-off between short-term demands and the long-term benefits of **All Aspects**. This is particularly true of such programs as diesel mechanics, which have demanding technical skills to teach. The longer-term benefits of **All Aspects** education seem less significant to educators when they believe that they would have to eliminate the teaching of necessary skills in order to broaden the curriculum.

Employer demands clearly contribute to the tension between an **All Aspects** strategy and short-term needs. Some educators believe that a thorough **All Aspects** approach would prepare their graduates for jobs in the next decade, but not for many jobs available now. For example, many graphic arts employers still look for graduates with stripping and photographic skills that will be obsolete in a few years. The slow development of **All Aspects**-based work organizations sends educators signals that are at best conflicting; at worst, they suggest that industry does not really want broad-based skills or re-organized workplaces.

## All Aspects For All Students

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Both educators and employers are convinced about the need for broader education for managers not directly involved with production than they are for production workers. But graduates who have no more than a high school diploma are not unlikely to find employment other than in unskilled low-paying jobs. Since finding good jobs will require postsecondary training, high schools will be increasingly insulated from the trade-offs between broad training and the immediate needs of local employers. Therefore, **All Aspects** may be particularly suited for secondary schools.

This suggests that the strongest justifications for **All Aspects** are career preparation and pedagogy. The effect of employer demand on the spread of **All Aspects** is mixed. Although models of more effective work organizations appear to work best with more broadly educated workers, many employers continue to adhere to a more traditional approach to production and seem to prefer employees with traditional skills, even, in some cases, with skills that will soon be obsolete.

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## Overcoming the Barriers To All Aspects

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The weakness of entering students is a broad educational problem. Sophisticated and demanding educational approaches at the upper-secondary or postsecondary level must be built on a solid foundation of basic skills. But if **All Aspects** can be shown to be an effective pedagogy for junior high or early secondary school students, then a strategy that emphasizes **All Aspects** as a basic approach to teaching may itself help prepare high school students for more employer-oriented **All Aspects** programs in later years.

Both in workplaces and in schools, the benefits of **All Aspects** often appear to be luxuries in the context of the day-to-day demands of production and of the need to have students graduate with immediately useful skills. There are three main approaches to solving this dilemma.

By strengthening the understanding of the benefits of **All Aspects**, planners have a more concrete measure of the benefits. Trade-offs necessary to broaden the curriculum might appear more favorable. What is needed is an evaluation that examines the effects of **All Aspects** on skills, future earnings, and career paths compared to other educational reform proposals. Researchers need also to provide concrete measures of how broader knowledge and skills benefit businesses.

Instructors could develop pedagogic techniques that simultaneously teach the needed specific skills as well as broader knowledge. This is a fundamental goal of the integration of vocational and academic education. **All Aspects** is one vehicle for achieving that integration. Continuing progress on integration will also help overcome barriers to **All Aspects**.

**All Aspects** is closest to the integration approach when it is used in high schools to teach academic skills. Practical material is designed to promote the learning of academic skills. But once programs are designed to teach immediately useful skills, it becomes more difficult to avoid the conflict and the resulting compromises. A great deal more thought is needed in designing pedagogic strategies that minimize the conflicts and trade-offs.

Ultimately, some trade-offs will be necessary. Educators are trying to accomplish more with **All Aspects** than they were with more traditional approaches; it is reasonable to expect that this will take more time. If the benefits of **All Aspects** are clearly understood, or if employers begin to strongly favor graduates of **All Aspects**-oriented programs, schools will have stronger reason to change. Some additional categorical subsidies or other financial assistance may help break through traditional barriers.

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## Conclusions and Recommendations

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The perception that broader knowledge and skills are advantageous for the emerging workplace is one of the key justifications for **All Aspects**. Yet demand for workers with the skills in **All Aspects** is mixed.

Active interest by employers is the key to a sustainable development of the **All Aspects** strategy. But this development may be caught in a vicious circle in which employers are not interested because their labor force is not appropriately trained, and schools have no incentive to implement **All Aspects** because they perceive no demand from employers.

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## How All Aspects Can Fit With...

### Tech Prep

The planned sequence of study should address **All Aspects** of the business/organization for the technical field. Evidence of this could be included in the student's portfolio.

### Cooperative Education

The experience provides students with information on the operation of the business world and helps them clarify career goals and build confidence and maturity. The experience could be designed to address **All Aspects** or segments of the industry.

### On-the-Job Training

On-the-job training occurs in the workplace and requires active involvement of a worksite mentor. It is important that students understand the connection between their on-the-job training and course work. The **All Aspects** framework could facilitate this understanding.

### Customer Service Labs (Service Learning Labs)

The labs are operated like a real business so the students experience the range of activity appropriate for the career field. The labs can be set up to include experience in all of the aspects.

### Job Simulation Labs

An alternative is to use role-playing to simulate workplace experiences so students can experience all the aspects.

### Internship

Discussion relating to the **All Aspects** framework could help facilitate the internship experience. While the intern may not be working in every area, questions and research relating to the remaining components will provide a larger view of the business/organization.

### Youth Apprenticeship

Students are usually paid for worksite learning and receive work-based learning curriculum which is hands-on and competency-based. The **All Aspects** framework could be utilized in planning the curriculum.

### Career Academies

Academies are generally guided by an industry-based board with members representing the career fields for which the students are being prepared. The academic and technical content can be built around the **All Aspects** framework.

## Acknowledgement

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