

## **UNIT 6 - WHAT WILL DETERMINE MY INCOME? (7 Days)**

Students will be able to use knowledge from this unit to predict future earnings based on their current plans for education, training, and career options.

Understanding the forces affecting wages and other sources of income will be increasingly important in the future, when workers may change employers and careers more often than in the past. Regardless of the occupations or industries in which today's students eventually work, they are likely to find that they will have to continue their education and training to maintain or increase their earnings.

Gaining knowledge and skills is an investment in one's own human capital.

### **EPF.4 The student will demonstrate knowledge that many factors affect income by**

#### ***a) examining the market value of worker's skills and knowledge***

**(BUS6120.037)**

Day 1 Human capital—just another name for skills and knowledge

Day 2 What determines the market value of my skills and knowledge?

### **EPF.4 The student will demonstrate knowledge that many factors affect income by**

#### ***b) identifying the impact of human capital on production costs***

**(BUS6120.037)**

Day 1 Why do businesses prefer to hire workers with more skills?

### **EPF.4 The student will demonstrate knowledge that many factors affect income by**

#### ***c) explaining the relationship between a person's own human capital and the resulting income potential***

**(BUS6120.037)**

Days 1 and 2 What's the connection between education and income?

### **EPF.4 The student will demonstrate knowledge that many factors affect income by**

#### ***d) explaining how changes in supply and demand for goods and services affect income***

**(BUS6120.037)**

Day 1 How does demand for other things affect my job?

**Evaluation Day**

**EPF.4 The student will demonstrate knowledge that many factors affect income by**

*a) examining the market value of a worker's skills and knowledge*

## **Day 1 - Human capital—just another name for skills and knowledge**

### **Content Knowledge**

Why go to school? Education is an investment in oneself—in one's human capital. Human capital refers to the combination of a person's education, knowledge, experience, health, habits, training and talent. A person who has acquired more human capital will be able to produce more. At the individual level, additions to human capital are closely connected to earning higher wages and income. At the level of the national economy, gains in the average level of human capital for the population are a primary source of productivity growth and economic growth.<sup>3</sup>

People who have earned degrees have shown their ability in an educational setting. This demonstration of ability, and the productivity of what they learned, will make them valuable employees. People improve their human capital by investing in themselves in thousands of ways, but most of the ways involve study, practice and self-discipline.<sup>3</sup>

Human capital is more complex than just getting more education. Here is how Gary Becker, who developed the concept of human capital, describes it in his 1999 Nobel Laureate Lecture:

“Human capital analysis starts with the assumption that individuals decide on their education, training, medical care, and other additions to knowledge and health by weighing the benefits and costs. Benefits include cultural and other nonmonetary gains along with improvement in earnings and occupations, whereas costs usually depend mainly on the forgone value of the time spent on these investments. The concept of human capital also covers accumulated work and other habits, even including harmful addictions such as smoking and drug use. Human capital in the form of good work habits or addictions to heavy drinking has major positive or negative effects on productivity in both market and nonmarket sectors.

The various kinds of behavior included under the rubric of human capital help explain why the concept is so powerful and useful. It also means that the process of investing or disinvesting in human capital often alters the very nature of a person: training may change a life-style from one with perennial unemployment to one with stable and good earnings, or accumulated drinking may destroy a career, health, and even the capacity to think straight.”<sup>3</sup>

### **Vocabulary**

**Human capital** refers to the skills and knowledge a person has acquired through experience and/or education.

## Virginia Board of Education Framework

People's incomes, in part, reflect choices they have made about education, training, skill development, and careers. People with few marketable skills are likely to earn much less than people with more skills. When people improve their knowledge and skills through education and/or experience, it is called an investment in their human capital.

## Teaching Tips

- 1) Another name for skills and knowledge is human capital. The purpose of this session is to introduce the idea of human capital and help students understand that gaining knowledge and skills is an investment in oneself. Each person is his/her most valuable resource. Gaining additional knowledge and skills makes one more valuable in the workplace—and thus, more likely to earn a better income. Investing in one's own human capital is like exercise—no one can do it for you—but people can help.
- 2) If you didn't use a human capital inventory with the students in Unit 1, this would be an appropriate place for it. Conduct an activity that helps students identify human capital they have already acquired (e.g. ability to read, do math, speak in public, knowledge of computers and software, cook, ride a bike, drive a car, fish, organize people or things, etc.)
- 3) Identify someone of interest to students. Have students suggest human capital (skills and knowledge) that person possesses. Then, for each, discuss how he/she might have acquired that skill or knowledge. (school, coach, practice, reading, observation, innate ability)
- 4) Have students look at jobs in the want ads in a newspaper or online. Tell them to assume they are old enough to apply for the jobs--are there any jobs for which they might qualify? Lead them to see that nearly all jobs require specific skills and/or credentials (degrees or certificates). Ask them how they plan to get the qualifications to get a job. Point out that public education is free to them K-12--and they can gather all of the human capital they are willing to work for. After K-12, one must pay for the knowledge and skills one gains.
- 5) Have students name people or careers of interest to them. Let students work in groups. Each group will need a piece of paper with three columns. Instruct them to list in column 1 skills and knowledge people in those careers would need. In column 2 list how those skills and knowledge might be acquired and in column 3 list any courses in school which might be helpful in acquiring the needed knowledge and skills. Websites found on this page from the Federal Reserve Bank of Richmond can be helpful: <https://www.investinwhatsnext.org/Resources>

## Lessons and Resources

Learning, Earning and Investing Lesson 3: Invest in Yourself

Choices and Changes 6-8 Lesson 4: I am Part of the Economy

Choices and Changes 6-8 Lesson 6: Long Term Consequences

Choices and Changes in Life, School and Work Lesson 3: My Skills Inventory

Khan Academy video clip defines capital and human capital  
[www.youtube.com/watch?v=ivy1QmWUtQI](http://www.youtube.com/watch?v=ivy1QmWUtQI)

Gary Becker lecturing on human capital:  
[www.youtube.com/watch?v=QajILZ3S2RE](http://www.youtube.com/watch?v=QajILZ3S2RE)

Invest in What's Next: Life After High School. Job and school interest resources.  
[www.investinwhatsnext.org/Resources](http://www.investinwhatsnext.org/Resources)

## **Day 2 - What determines the market value of my skills and knowledge?**

### **Content Knowledge**

Income for most people is determined by the market value of the productive resources they sell. What workers earn primarily depends on the market value of what they produce and how much they add to the process.

In a market economy, wages and salaries — the prices of labor services — are determined just as other prices are, by the interaction of buyers and sellers.

#### **Vocabulary**

**Resources** - The basic kinds of resources used to produce goods and services: land or natural resources, human resources (including labor and entrepreneurship), and capital.

**Market** - Places, institutions or technological arrangements where or by means of which goods or services are exchanged. Also, the set of all sale and purchase transactions that affect the price of some good or service.

**Price** - The amount of money that people pay when they buy a good or service; the amount they receive when they sell a good or service.

**Human capital** - The health, education, experience, training, skills and values of people.

**Salary** - A regular payment, often at monthly or biweekly intervals, made by an employer to an employee, especially in the case of professional or white-collar employees. Salaries are paid for services rendered and are not based on hours worked.

**Wage** - Payments for labor services that are directly tied to time worked, or to the number of units of output produced.

**Supply** - The amount of a good or service that producers are willing and able to offer for sale at each possible price during a given period of time.

**Demand** - The quantity of a good or service that buyers are willing and able to buy at all possible prices during a period of time.

## **Virginia Board of Education Framework**

To earn income, people sell productive resources. These include their labor, capital, and natural resources and entrepreneurial talents.

In a market economy, the market value of a resource is determined primarily by the supply and demand for that resource. A wage or salary is the price of labor; it usually is determined by the supply of and demand for the skills and knowledge (human capital) a person has.

What workers earn depends primarily on the market value of the goods and/or services they produce (i.e., what the market is willing and able to pay) and how much they add to the process of its production. For example, a surgeon earns more than the people who assist her in surgery because she adds the most value to the production of that service.

Workers with skills and education also earn more when there is a smaller supply of people who can do the job because businesses and consumers who want those skills must pay more.

People with more skills and knowledge tend to earn more. For this reason, many people choose to invest in their human capital.

## **Teaching Tips**

1) Review: another name for skills and knowledge is human capital. Investing in one's human capital generally leads to higher income. Explain: What determines the market value of a resource? (Market value is just another word for price. The market value of something is what someone is willing and able to pay for it. In a market economy, price is determined by supply and demand.)

2) Have students discuss how supply and demand impacts the employment opportunities and wages in the following situations. This could be an opportunity to practice using supply and demand curves to show the point if helpful.

- a. As more correspondence and bill-paying takes place online, people are using the US Mail less. How will this affect the demand for postal workers? (The demand curve will shift to the left and fewer workers will be employed.)
- b. As fewer people use checks for transactions, what will happen to the demand for people who do check clearing for the Federal Reserve Bank? (The demand curve will shift to the left and fewer workers will be employed.)
- c. As the population ages there will be more people aged 65 and above. How will this affect the demand for workers in nursing homes? For physical therapists? (The demand curve will shift to the right and more workers will be hired.)
- d. During the Dust Bowl many families couldn't pay their mortgages and lost their farms. Many moved West hoping to get work picking fruit. How did this affect the supply of workers and their pay? (The supply curve shifted to the right and worker pay fell.)

- e. Few professional basketball players can score 30 points a game. Demand for those players is great. (Show a vertical supply curve and what will happen if demand increases for those players. If demand increases, the curve will shift to the right and the price (the wage) will rise.)
- f. During WWII most working age men went to war. What did this do to the supply of labor? (It decreased.) The government encouraged women to be patriotic and go to work in factories. When they did, how did this affect the supply of labor? (It increased—shifted to right)

3) What workers earn is affected by the market value of what they produce and how much they add to the process. What does that mean? (Suppose someone mows four lawns in a day and earns \$100. Suppose another person is an orthopedic surgeon who does five knee replacements in one day. The surgeon's income will be determined by the payment she gets for doing those surgeries. Because the value of five knee replacements is much greater than the value of four lawns mowed, the surgeon's income will be much higher.)

The author of Harry Potter created value for millions of readers who bought the books while the author of a book that is read by only a few readers creates less value and will earn much less.

## **Lessons and Resources**

Personal Decision Making Lesson 4: A Student's Potential in the Labor Market: It's a Matter of Supply and Demand

Financial Fitness for Life 6-8 Lesson 4: Why Stay in School?

**EPF 4 The student will demonstrate knowledge that many factors affect income by**

*b) identifying the impact of human capital on production costs*

## **Day 1 - Why do businesses prefer to hire workers with more skills?**

### **Content Knowledge**

Productivity is a measure of the quantity of goods and services produced from a given amount of resources. Businesses seek to improve productivity in order to reduce production costs and, as a result, increase profits. Thus, businesses seek to hire the most productive employees.

People who have earned degrees have shown their ability in an educational setting. This demonstration of ability, and the productivity of what they learned, will make them valuable employees. People improve their human capital by investing in themselves in thousands of ways, but most of the ways involve study, practice and self-discipline.<sup>3</sup>

#### **Vocabulary**

**Productivity** - The amount of output (goods and services) produced per unit of input (productive resources) used

**Human capital** - The health, education, experience, training, skills and values of people.

**Fixed cost** - Costs of production that do not change as a firm's output level changes; costs that must be paid whether the firm produces or not.

**Variable cost** - Costs of production that change as a firm's output level changes.

**Total cost** - All costs associated with producing a good or service; the sum of total fixed costs plus total variable costs.

#### **Virginia Board of Education Framework**

Businesses seek to lower production costs in order to increase profits.

As workers invest in their own human capital and become more skilled, they become more productive (i.e., can produce more in the same amount of time) which can lower the cost of production.

When people improve their knowledge and skills through education and/or experience, it is called an investment in their human capital. Higher skilled workers increase productivity by producing more in the same period of time than lower skilled workers. Increases in productivity tend to lower cost of production. If four workers can accomplish the same amount of work in a day as five workers, this is an increase in productivity which saves the business the wages of one worker.

### **Teaching Tips**

1) Set up a demonstration with two computers. Bring in someone who has excellent keyboard skills—perhaps a school secretary-- and find a volunteer who doesn't type well. Give each a

page to type. Time them. Count their mistakes. Presumably the “expert” will be much faster and more accurate. Calculate how many pages each could type in an hour.

Tell students they are running a business typing dissertations for college students and they will charge \$.50 per page.

Have students calculate how much revenue each one could generate for their business per hour.

Would it make any sense to pay a worker more per hour than the revenue that an hour of their work would bring in? (*No.*)

Remind students that what workers earn primarily depends on the market value of the work they produce. (The market value of what they produce would be  $.50 \times \#$  of pages correctly typed.)

Which typist would you hire? Presumably they would hire the more productive worker (An example of this is in the online EconEdLink lesson below.)

2) Review the calculation of profit: Total revenue (money coming in from sales) minus total cost (sum of all costs of production) = profit. If a worker produces more in the same amount of time as another worker, then the revenue from his work will be higher, while the cost remains the same.

3) Optional: show the Paul Solman video listed below. Ask why the employer was eager to hire and promote this man. (*He invested in his human capital by gaining an education in prison and was hired because of the skills and knowledge he had gained and his work ethic.*) Discuss how the man’s life might have been different if he had gained an education while in school and avoided prison.

4) Discuss how the hope of achieving wealth can affect productivity by energizing people to work harder, while the hopelessness of escaping poverty can discourage people from trying.

## Lessons and Resources

Economics in Action Lesson 8: Productivity

*Online*

Paul Solman, PBS NewsHour “Making Sense”, “From Ball and Chain to Cap and Gown: Getting a B.A. Behind Bars—July 26, 2011 <https://www.econedlink.org/resources/making-sene-with-paul-solman-from-ball-and-chain-to-cap-and-gown-getting-a-b-a-behind-bars/>

EconEdLink lesson “If You’re So Smart, Why Aren’t You Rich?”

<https://www.econedlink.org/resources/the-economics-of-income-if-youre-so-smart-why-arent-you-rich/>

Lecture: Get Rich Investing in Your Own Human Capital

<http://www.youtube.com/watch?v=PpvGhCPhMK0>

Gary Becker lecturing on human capital

<http://www.youtube.com/watch?v=QajILZ3S2RE>

**EPF. 4 The student will demonstrate knowledge that many factors affect income by**  
*c) explaining the relationship between a person's own human capital and the resulting income potential*

## **Day 1 - What's the connection between education and income?**

### **Content Knowledge**

The buyers of labor services are employers. In competitive markets, they are willing to pay higher wages and salaries to those employees who can produce more or better goods or services in a given amount of time. Students who understand this will appreciate the value of the skills they can acquire by completing high school, and perhaps college or a vocational training program.

Peoples' incomes, in part, reflect choices they have made about education, training, skill development, and careers. People with few skills are more likely to be poor.

#### **Vocabulary**

**Productivity** - The amount of output (goods and services) produced per unit of input (productive resources) used

**Human capital** refers to the skills and knowledge a person has acquired through experience and/or education.

**Wage or salary** - The price of labor; it usually is determined by the supply of and demand for labor.

#### **Virginia Board of Education Framework**

Unskilled workers earn low pay because many people can qualify for that work; employers do not have to pay more to attract these workers.

As people gain human capital (knowledge and/or skills) and practice in a field, they become more efficient and productive in that field. This can lead to higher income because employers prefer more productive workers.

What workers earn depends primarily on the market value of the goods and/or services they produce (i.e., what the market is willing and able to pay) and how much they add to the process of its production. For example, a surgeon earns more than the people who assist her in surgery because she adds the most value to the production of that service.

Workers with skills and education also earn more when there is a smaller supply of people who can do the job because businesses and consumers who want those higher skills must pay more. People with more skills and knowledge tend to earn more. For this reason, many people choose to invest in their human capital

### **Teaching Tips**

1) The objective is to help students see

- that without human capital--education or marketable skills--they will have difficulty finding a job and will likely only qualify for low paying jobs.
- that education/training is the key to higher income and employment
- that employers are looking for skills and good work habits
- that with persistence and determination obstacles can be overcome.

2). Have students explore job openings in the newspaper or online. Can they find any for which they are qualified? What is the pay scale for those jobs? What kinds of qualifications are needed for the higher paying jobs? What kinds of human capital—skills, education, experience?

3) Have students, working in groups, guess the difference in income between a non-high school graduate and high school graduate. Between a high school grad and a college grad? Show data. Show data on unemployment. (*People with more education are less likely to be unemployed.*) Discuss reasons why high school dropouts frequently end up in poverty.

4) Have students list 2 or 3 careers that interest them. Have them research online to find predicted demand and income for workers in those careers. Point out that many vocational careers such as plumbers and electricians earn higher income than some college graduates. The EconEdlink lesson “Wages and Me” would provide helpful information.

5) Discuss obstacles students may face in getting additional education and/or training. Play the “Road to Success” game from the Grades 7-8 Choices and Changes lesson below to allow students to identify possible obstacles to reaching goals and ways to overcome those obstacles.

Consider showing video clips of people who have overcome obstacles (e.g. Byron Pitts, commentator on 60 Minutes or the Paul Solman video clip which shows how a man invested in his human capital when he got an education in prison and how this education changed his employment opportunities.

6) Discuss the opportunity costs of education (lost income one might have been earning, things which might have been bought with the money spent on tuition, books, room and board). What is the risk of investing in education? (*One might learn skills that will not be in demand.*)

## **Lessons and Resources**

Financial Fitness for Life 9-12 Lesson 6: Why Some Jobs Pay More Than Others

Financial Fitness for Life 6-8 Lesson 4: Why Stay in School?

Financial Fitness for Life 9-12 Lesson 4: Looking for a Job

Capstone Lessons 15: Why Do Some People Earn More Than Others? and Lesson 19: Earning an Income

Focus: High School Economics Lesson 9: Learn More, Earn More

Mathematics and Economics: Connections for Life Lesson 8: Could You Earn a Million Dollars?

Choices and Changes in Life, School and Work Grades 7-8 Lesson 8, activity 5: Ways to Make Choices

Choices and Changes in Life, School and Work Choices and Changes in Life, School and Work Grade 9-10 Lessons 13: My Human Capital: A Job Application; Lesson 14: How Can I Overcome Obstacles to Achieve My Goals?; and Lesson 15: What Results When People Set Goals and Plan to Achieve Their Goals?

Learning Earning and Investing High School Lesson 3: Invest in Yourself

EconEdLink Lesson: Martin Luther King Jr. Day  
<http://www.econedlink.org/lessons/index.php?lid=153&type=educator>

EconEdlink lesson: Human Capital for Money  
<http://www.econedlink.org/lessons/index.php?lid=231&type=educator>

Future-Jobs-o-Matic  
<http://marketplace.publicradio.org/features/future-jobs/>

EconEdlink lesson: Wages and Me  
<https://www.econedlink.org/resources/wages-and-me/>

Byron Pitts, 60 Minutes correspondent tells his story of overcoming obstacles:  
<http://www.youtube.com/watch?v=HMZIOAbZRiE&feature=related>

Paul Solman, PBS NewsHour “Making Sense” “From Ball and Chain to Cap and Gown: Getting a B.A. Behind Bars—July 26, 2011 <https://www.econedlink.org/resources/making-sene-with-paul-solman-from-ball-and-chain-to-cap-and-gown-getting-a-b-a-behind-bars/>

**EPF.4 The student will demonstrate knowledge that many factors affect income by**  
***d) explaining how changes in supply and demand for goods and services affect income***

## **Day 2 - How does demand for other things affect my job?**

### **Content Knowledge**

Changes in demand for specific goods and services often, in the short run, affect the incomes of the workers who make those goods and services.

People are buying apps for their phones. This demand results in a derived demand for people who have the skills (human capital) to create apps.

When people decide to have a house built, there will be a derived demand for carpenters, roofers, plumbers etc. Thus when many houses are being built there are many jobs for people with those skills. However, in 2011, few houses were being built, and thus fewer jobs were available for people with those skills.

When fewer houses and cars are sold, as in 2008-2011, the derived demand falls for workers involved in producing and selling those things. Derived demand also falls for workers who make inputs for cars and homes (tires, carpet, appliances, engines)

### **Vocabulary**

**Derived demand** - Demand resulting from what a good or service can produce, not demand for the good or service itself.

### **Virginia Board of Education Framework**

The demand for resources, including labor, comes from, or is derived from, the demand for the goods and services that are produced from these resources. This condition is known as derived demand.

An increase in the demand for a good or service will lead to an increase in demand for the resources needed to produce that good or service. For example, an increase in demand for new homes will increase the demand for carpenters. The increase in demand for carpenters will likely lead to an increase in the income of carpenters.

A decrease in the demand for a good or service will lead to a decrease in the demand for the resources needed to produce that good or service. This can lead to a decrease in the income of those who supply raw materials and other factors or production. For example, the use of computers may lead to decreased demand for notebook paper, which would lead to a decrease in income for wood pulp producers who sell to paper mills.

Excess supply (surplus) can lead to a decrease in demand for workers to produce additional supply. For example, demand for auto workers decreases when sluggish sales results in excessive inventories of automobiles.

## Teaching Tips

1) Ask students if they know who LeBron James is. Did they think he should move to Miami or stay in Cleveland? Show Paul Solman video clip below and discuss the economic impact of LeBron James on Cleveland. Define derived demand. What jobs, goods and services derived demand from LeBron James? Consider using the lesson on LeBron James below, and using a spider diagram (below) to show the businesses and jobs dependent on James.

2) Consider some Virginia employers. Dupont makes Kevlar which is used in things like bullet proof vests. If there is an increase in demand for bullet proof vests, there will be an increase in demand for Kevlar and an increase in demand for people to make Kevlar. That is called derived demand. Demand for employees at Phillip Morris is derived from the demand for cigarettes.

Use the spider diagram to illustrate those relationships.

3) What do we know about the future? (e.g. The population is aging. The Latino population is increasing.) What do they think will be in demand in the future? What jobs will increase or decrease?

4) How might derived demand affect jobs for students?

5) Have students read this article and explain derived demand:  
<http://www.web-books.com/eLibrary/NC/B0/B64/025MB64.html>

6) Have students watch the Napoleon Dynamite video and list his skills. Do the students think there will be a derived demand for any of his skills?  
[http://highered.mcgraw-hill.com/.../Schiller12e\\_Chapter29\\_DerivedDemand\\_StudentYouTubePDF.pdf](http://highered.mcgraw-hill.com/.../Schiller12e_Chapter29_DerivedDemand_StudentYouTubePDF.pdf)

## Lessons and Resources

EconEdLink Lesson LeBron James, the Cleveland Cavaliers and Derived Demand  
<https://www.econedlink.org/resources/lebron-james-the-cavaliers-and-derived-demand/>

Spider diagram:  
[https://www.econedlink.org/wp-content/uploads/legacy/951\\_Spider%20Diagram1.pdf](https://www.econedlink.org/wp-content/uploads/legacy/951_Spider%20Diagram1.pdf)

**EVALUATION DAY**