HUMAN FACTORS & ERGONOMICS

STUDENT LESSON PLANS

University of Rhode Island

LEARNING CURVES

University of Rhode Island

LESSON PLAN
LEARNING CURVES

PURPOSE

To understand a person's progress when learning a new task or skill. How long does it take to master something?

BACKGROUND INFORMATION

The learning curve is a graphical representation which shows an individual's proficiency at a certain task compared to that individual's total amount of experience at that task.

Some of you may have heard the saying that it takes 10,000 hours to master any skill or task. Is this true? If so, can everyone master a skill or task in 10,000 hours? This lesson puts this theory to the test and will hopefully leave you with a better understanding of your individual learning curve as it pertains to a certain task.

In the real-world, understanding employee's learning curves or rate of proficiency or mastery of a task or skill is vitally important. It informs managers how much training is needed before an employee is proficient at a certain task. This is useful in order to make sure the company is keeping up with production needs and is as efficient as possible.

APPLICATION TO HF&E

A new employee at McDonald's assembling a hamburger may take two minutes to add all of the ingredients on the bun. However, a veteran employee may only need 30 seconds to complete the same task. A useful piece of information to McDonald's management is how much training and experience is required to get the new employee to assemble his hamburger in 30 seconds. This is as much about efficiency as it is about each individual's learning curve!
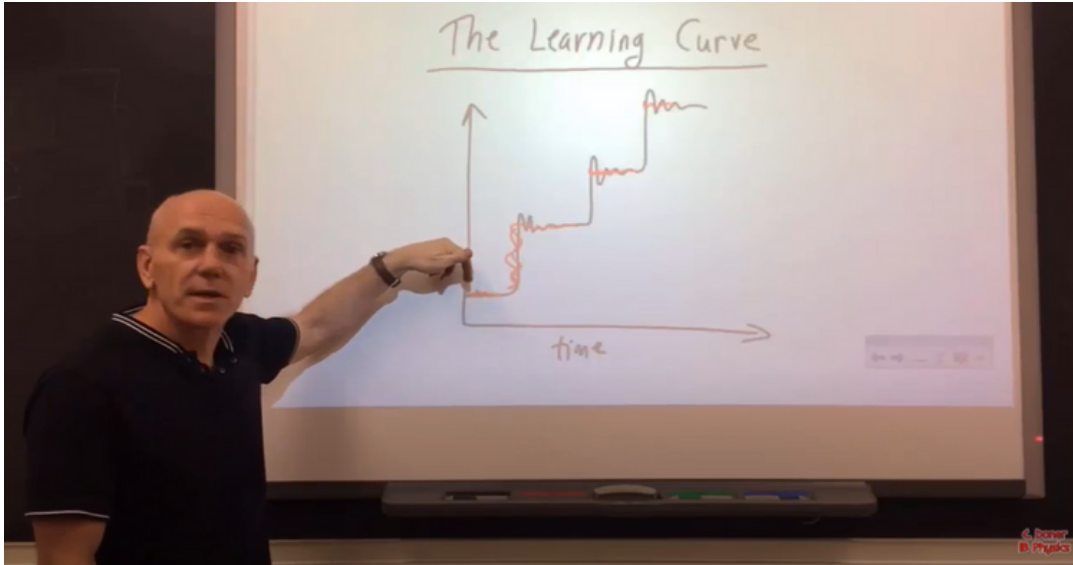
LESSON PLAN GRADES 7 - 9

University of Rhode Island

LEARNING CURVES TEACHER MATERIALS

YOUTUBE LINK

Chris Doner - "The Learning Curve"
https://www.youtube.com/watch?v=k_fWD2cN51I

KEY TAKEAWAYS

- Learning language as a child can be visually represented on a graph by each major milestone accomplished (from babbling to forming sentences)
- Each tier or milestone accomplished can be graphically represented which is indicative of the learning curve of that particular individual
- When learning a specific task you are "the driver" and not "the car," meaning you are in control of your learning and can always work harder to master a specific task

REFLECTION

1. What is a skill or task that you feel like you have mastered? Discuss.
2. How long did it take you to become a master at that skill?
3. Why do you think it would be important to understand the average learning rate of employees to become an expert at a particular task?
4. Did the amount of time it took to put together the LEGO assemblies improve the more times your performed the task? If so, why do you think that happened?

LEARNING CURVES TEACHER MATERIALS

LENGTH OF COMPLETION

60 minutes

BILL OF MATERIALS

LEGO Classic Creativity Box (Red) - $21.95 on Amazon
Stopwatch (smartphone) or $6.99 on Amazon

Red - https://www.amazon.com/LEGO-Classic-Creativity-10707-Building/dp/B01N3Y4T4D

PROCEDURE

1. Show students the video from the previous page about learning curves
2. Have students pair up and receive one red LEGO Classic Creativity Box
3. Student A will decide which one of the three LEGO shapes (crab, racecar or windmill) to assemble first
4. Student B will be timing how long it takes from start to finish for each trial using the stopwatch **(do not show the results to Student A)**
5. Student A will assemble and disassemble the selected LEGO shape 16 times total
   a. Student B should have recorded 16 different times representing Student A's start to finish time
6. Next, Student A will choose the second LEGO shape (crab, racecar or windmill)
7. Repeat Steps 4 -5
8. Next, Student A will choose the last LEGO shape (crab, racecar or windmill)
9. Repeat Steps 4-5
10. Student A and Student B will change roles once Student A has assembled all three LEGO shapes 16 times each and 16 recorded times have been measured for each LEGO shape
11. Repeat steps 3 - 9 with Student B assembling the LEGO shapes and Student A recording the times
    a. Remember to measure Student B's start to finish time for each LEGO shape 16 times. There should be a total of 48 total measured times for all three LEGO shapes (crab, racecar and windmill)
12. Lastly, plug these numbers into the University of Rhode Island's website to view your learning curve for each LEGO shape!

https://shiny.celsrs.uri.edu/ShinyLearningCurves/
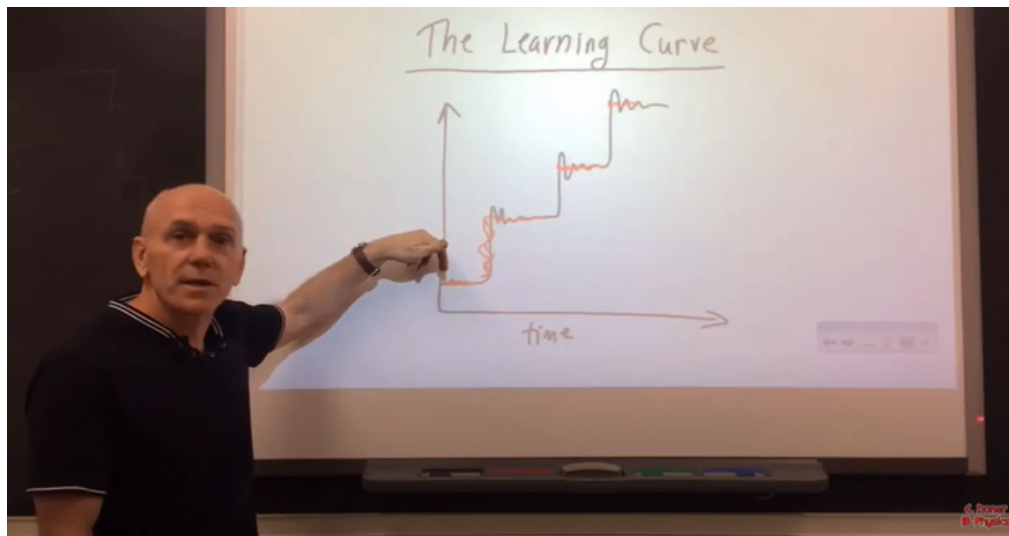
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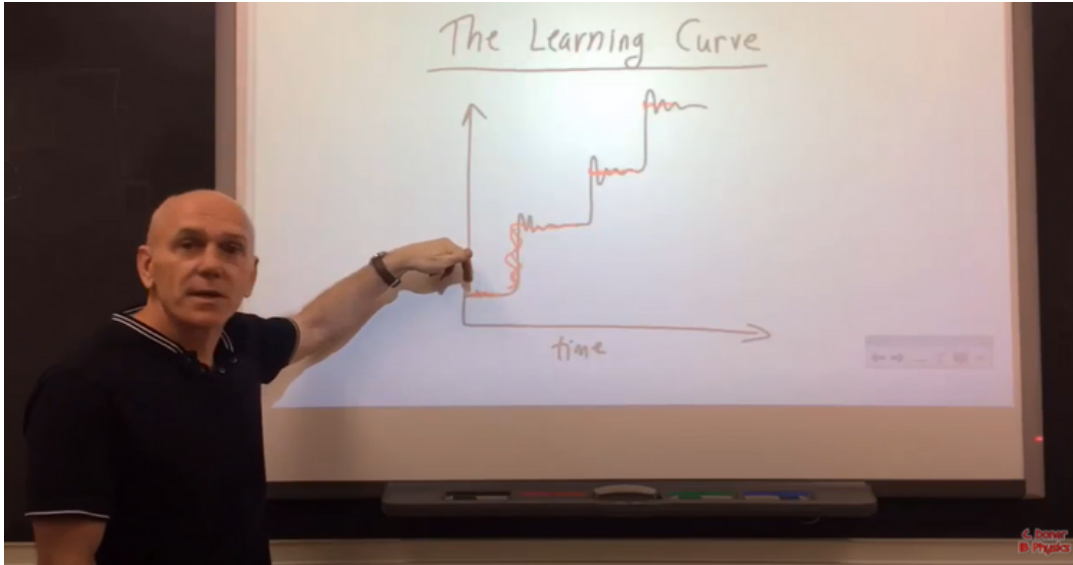
LESSON PLAN GRADES 10 - 12

University of Rhode Island

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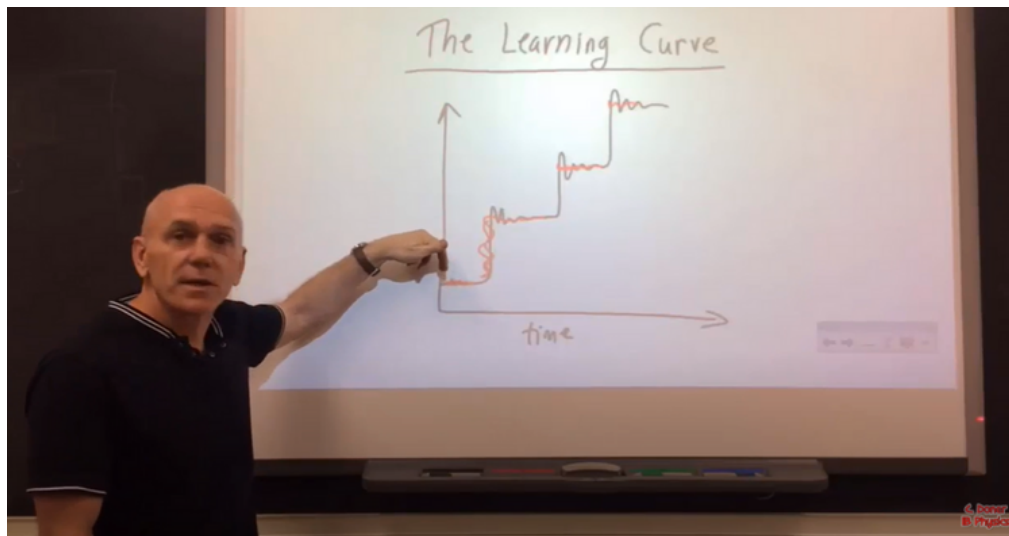
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