



Using Simultaneous Prompting to Teach Pythagorean Theorem

Objective: To teach students to use Pythagorean Theorem to teach real-world application problems.

Setting and Materials:

Settings: Self-Contained Classroom

Materials:

- iPad- or another electronic device to record video
- Task Analysis Data Collection Sheet
- Calculator

Content Taught

The content taught is high school level geometry (Pythagorean Theorem) to students with intellectual disabilities using a simultaneous prompting procedure.

Teaching Procedures

1. Record problem on iPad or another device (see sample script).
2. Show student the video.
3. Prompt student through task analysis.
 - a. Say student's name to gain attention
 - b. Say, "It's time to work"
 - c. Present student with calculator, pencil, and sheet of paper
 - d. Give task direction (i.e. "Label side 'a' on triangle")
 - e. Immediately model and verbally prompt student to complete the task
 - f. Repeat for the remainder of the steps on the task analysis
4. After student completes each step of the task analysis using simultaneous prompting, use probes to determine mastery of content
 - a. Give task direction without prompt

Evaluation

Collect data on independent completion of task analysis steps. Mastery is reached when students can complete each step without prompting.

Lesson Plan Based on:

Creech-Galloway, C., Collins, B. C., Knight, V., & Bausch, M. (2013). Using a simultaneous prompting procedure with an iPad to teach the Pythagorean Theorem to adolescents with moderate intellectual disability. *Research and Practice for Persons with Severe Disabilities*, 38, 222-232. doi:10.1177/154079691303800402

Task Analysis for Solving a Problem with the Pythagorean Theorem Steps of task analysis

1. Label side "a" on triangle.
2. Label side "b" on triangle.
3. Label side "c" on triangle.
4. Plug "a" into equation.
5. Put 2 (squared) by "a".
6. Plug "b" into equation.
7. Put 2 (squared) by "b".
8. Write "+".
9. Write "=".
10. Write "c²".
11. Put value "a" into calculator.
12. Square "a" using the calculator.
13. Record answer.
14. Clear calculator.
15. Put value "b" into calculator.
16. Square Put "b" squared in calculator
17. Record answer.
18. Clear calculator.
19. Write "+".
20. Write "=".
21. Write "c²".
22. Put "a" squared in calculator.
23. Press "+".
24. Put "b" squared in calculator.
25. Press "=".
26. Write answer down.
27. Write "=".
28. Write "c".
29. Press square root sign on calculator.
30. Write down answer.
31. Write "=".
32. Write "c".

From (Creech-Galloway, Collins, Knight, & Bausch, 2013)

Sample Script for sewing video

Video narrator: Teacher

Setting: Professional seamstress shop

Materials: Real squares of fabric, note cards with values of sides of “a” and “b” of triangle

Script:

“Today I am making a quilt, and it will be trimmed in triangles with fringe attached when we are done. The finished quilt will look like this. First, I have been given the length of side “a” of the triangle because it must line up with the edge of the fabric. Side “a” of the triangle must be 6 inches in length. Side “b” needs to be 4.5 inches in length in order to align with the fabric. So, we have side “a” equal to 6 and side “b” equal to 4.5. What is the value of side “c”? Use the Pythagorean theorem to find “c”.

From (Creech-Galloway, Collins, Knight, & Bausch, 2013)

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