Teaching Logic Circuits with Interactive Media

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**Problem:**
Early high school students lack sufficient electronics literacy
- Electronics is not taught in high school
- Electronics is increasingly important

**Solution:**
- Digital game
- The player combines inputs to get the right output
- Start with friendly graphics, move to professional graphics

**Prototype:**
- Uses the same design as the digital game
- A player interacts with another person, the “Administrator”, who follows the same rules as the computer
- The administrator places the pieces out on a table in the same way the computer places things out on the screen

**Assessment Plan:**
- Pre and post test
- 15 questions
- 10 minutes
- 7 levels of the game
- T-test with 95% confidence

**From friendly factories...**

**To formal notation**

The post-test was statistically significantly higher than the pre test (95% confidence t-test)

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**Key References:**
Schäfer, A. (2013). From boring to scoring—a collaborative serious game for learning and practicing mathematical logic in computer science education. Computer Science Education. 23(2).