

# Integrating Digital Storytelling into an Engineering Design Course

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# What is digital storytelling?

The art of using *digital multimedia* such as *audio, video, and images* to convey a story to a specific audience.

# Benefits of Using Videos in Education

1. Presents *complex material using images, video, and animations.*
2. Brings *experiments into the classroom* to reinforce theory.
3. Takes students on a virtual field trip, *bridging theory with practical applications.*
4. Uses video to *appeal to different learning styles.*

# Literature Review

- Robin states that digital storytelling can be an *effective way for students to learn by creating their own stories*:
  - Using their *ingenuity*
  - Using their *creative abilities*
- Brown et. al., indicate that *student's literacy skills are improved* as they:
  - *conduct research, organize, design, create, and present their digital stories*

# Traditional End-of-Course Assignment

- Design and Analysis of Water Treatment Systems
  - *Teams* of students prepare the preliminary *design of a water treatment plant*
  - Turn in a series of *technical memoranda*

# Digital Story Assignment

- Choose an *individual topic*.
- Explain how to *design the specific process, illustrate design steps, and include equations solved during design*.
- Include *photos and schematics*.
- Include *appropriate design criteria* and *provide a list of manufacturers*.
- Include one *case history*.
- Turn in the completed project on a DVD (TV) or CD (computer).

# Examples of Appropriate Topics

Continuous Flow Activated  
Carbon Adsorption

Advanced Oxidation Processes

UV Disinfection

Electrodialysis

Reverse Osmosis

Air Stripping

Ion Exchange

# Pre-Survey Highlights

1. *Most students had never made a movie before (6/7).*
2. *Students had a moderate interest in making a movie (3.21 of 5).*
3. *Students believed the project would be an effective way to demonstrate skills learned in the course (4.14 of 5).*
4. *Students had some anxiety about the project (3.5 of 5).*



# Post-Survey Highlights

- 1. Students spent an average of 22 hours on the project (range from 5 to 72 hours).*
- 2. MovieMaker was used by most students (5 of 7); some also used Audacity (3 of 7).*
- 3. Students felt that making a movie was an effective way to demonstrate knowledge learned in the course (3.7 of 5).*

# Post-Survey Highlights (cont.)

- 4. Students expressed an interest in doing another movie, as opposed to traditional “report” format (4.0 of 5)*
- 5. All students believed that their skills in movie-making had increased by doing the project (5 of 7 described their skills level as “intermediate”).*

# Post-Survey Highlights (cont.)

6. *Students experienced a moderately high level of difficulty (3.71)*
7. *4 of 7 students experienced a high level of anxiety during the project.*
8. *6 of 7 would recommend this type of project in the future.*

# Conclusions

1. *This project required most students to learn new skills in digital storytelling/movie-making.*
2. *Although most students found the project difficult, they also enjoyed the variety of doing a different type of project.*
3. *Students believed that the digital format allowed them to adequately express what they learned in the course.*

# Professor's Comments and Suggestions

- 1. Utilize the school's technology department to provide technical information and support to students.*
- 2. First collection of projects lacked some of the required components (Use a rubric as a checklist and guide for students.)*

# Professor's Comments – (cont.)

3. *“Don't ask someone to do something you wouldn't be willing to do yourself.” Make a model movie for students.*
4. *As a rule, the digital projects are more enjoyable to grade!*
5. *Caution students that the project requires time to do completely and well.*

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# **Play Example Project Video**



Thank you!

Are there any questions?

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