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Information Literacy as Structured Authoring

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Structured Writing as Information Literacy



Robert Terry –Georgia Southern University
Armstrong Campus (Savannah)

Talk Overview

Overall Thesis:

- Teaching students both the theory and concepts of structured writing may be a productive way to help extend and develop advanced information literacy

How I Hope to Make My Case:

- Define and discuss structured writing
- Connect it to definitions of information literacy, highlighting specific aspects that structured writing might develop or enhance
- Discuss the course I designed and used as a study (IRB approved as H20030) as a site to understand how students would approach using new writing software
- Analyze some of the early findings of this study in the context of information literacy

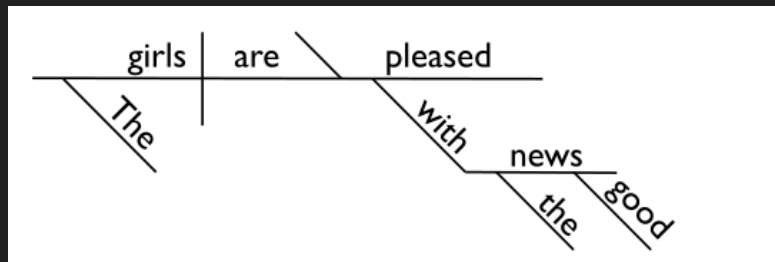
What is structured writing (aka structured authoring)?

All Mark Baker (2018) notes, all writing is inherently structured because “[writing] without grammatical structure would be incomprehensible” (6). **All** writing is about organizing and assigning structure for information, even at the basic Subject-Verb-Object level of most basic English sentences.

However, Baker explains that for the community that uses this term to describe the work it does (usually as technical writers), the community means “**approaches to writing that add a little more structure, over and above the basic requirements of grammar, to exercise some control over the rhetoric or process of the content. And it also means the use of software that uses more specific data structures . . . such as publishing, single sourcing, or content reuse.**”

That was a lot of words... can you show us?

- Sure! First, the generic structure of any writing: fundamental grammar.



Marinara Sauce

2 tbsp. olive oil
2 cloves garlic, minced
1/2 tsp. hot red pepper
28 oz. canned tomatoes
2 tbsp. parsley, chopped

Heat olive oil in a large saucepan on medium. Add garlic and hot red pepper and sweat until fragrant. Add tomatoes, breaking up into smaller pieces. Simmer on medium-low heat for at least 20 minutes. Add parsley, simmer for another five minutes. Serve over long pasta.

- But what about structured writing in the expanded sense?

```
<Recipe Cuisine = "Italian" Author = "Unknown">
  <Name>Marinara Sauce</Name>
  <IngredientList>
    <Ingredient>
      <Quantity>2 tbsp.</Quantity>
      <Item>olive oil</Item>
    </Ingredient>
    <Ingredient>
      <Quantity>2 cloves</Quantity>
      <Item>garlic</Item>
      <Preparation>minced</Preparation>
    </Ingredient>
    <Ingredient>
      <Quantity>1/2 tsp.</Quantity>
      <Item>hot red pepper</Item>
    </Ingredient>
    <Ingredient>
      <Quantity>28 oz.</Quantity>
      <Item>canned tomatoes, preferably San Marzano</Item>
    </Ingredient>
    <Ingredient>
      <Quantity>2 tbsp.</Quantity>
      <Item>parsley</Item>
      <Preparation>chopped</Preparation>
    </Ingredient>
  </IngredientList>
  <Instructions>
    <Para>Heat olive oil in a large saucepan on medium. Add garlic and hot red pepper and sweat until fragrant. Add tomatoes, breaking up into smaller pieces. Simmer on medium-low heat for at least 20 minutes. Add parsley, simmer for another five minutes. Serve over long pasta.
    </Para>
  </Instructions>
</Recipe>
```

Images (above) from "Structured Authoring and XML" white paper by Scriptorium, 2017

What structured writing asks... (1/2)

A student writing this recipe will think of the information as a procedure grouped by activity. The thinking is likely, let's start with gathering the ingredients, creating a mise en place situation, and then executing the order of the ingredients.

The form of the content is structured by thinking in terms of concrete doing. The information is perceived as holistic instead of discrete.

Marinara Sauce

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Heat olive oil in a large saucepan on medium. Add garlic and hot red pepper and sweat until fragrant. Add tomatoes, breaking up into smaller pieces. Simmer on medium-low heat for at least 20 minutes. Add parsley, simmer for another five minutes. Serve over long pasta.

What structured writing asks... (2/2)

Figure 3: Structured authoring from the author's point of view

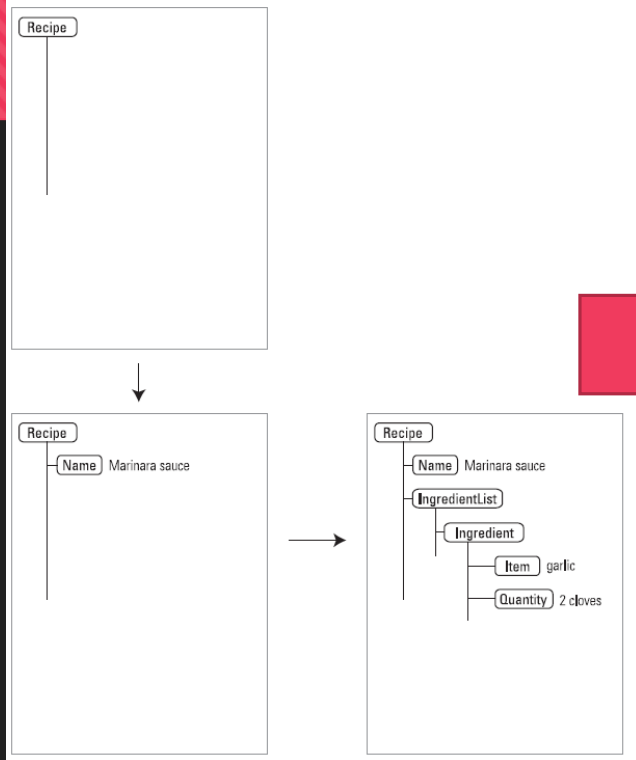
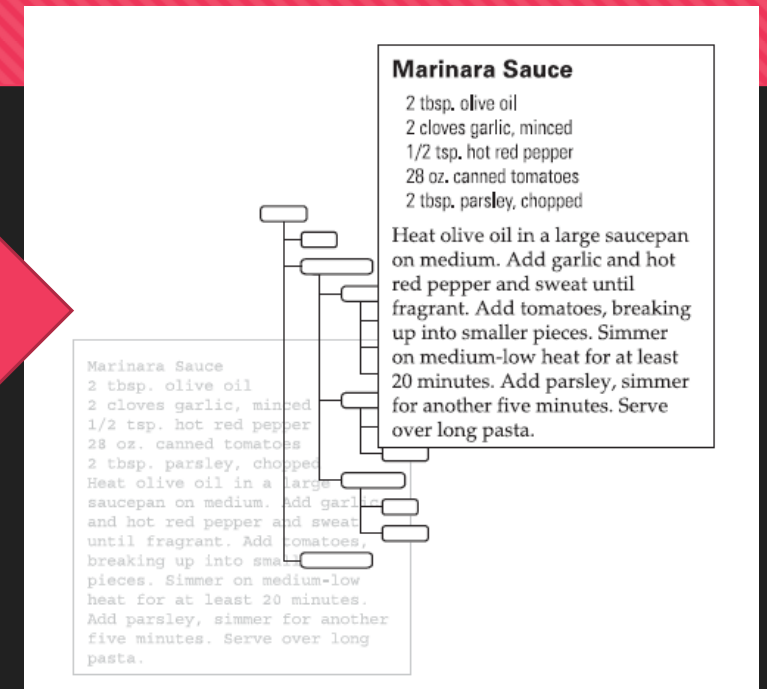


Figure 2: Recipe XML

```
<Recipe Cuisine = "Italian" Author = "Unknown">
  <Name>Marinara Sauce</Name>
  <IngredientList>
    <Ingredient>
      <Quantity>2 tbsp.</Quantity>
      <Item>olive oil</Item>
    </Ingredient>
    <Ingredient>
      <Quantity>2 cloves</Quantity>
      <Item>garlic</Item>
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    </Para>
  </Instructions>
</Recipe>
```



The student thinking in terms of structured writing, however, has to think in terms of an **abstraction** – a way of thinking about the **topics** that make up the writing. This part of structured writing is also often called “topic based authoring” because it requires that the writer stop thinking in terms of content – in terms of a book or an article – but in terms of a discreet piece of **information** to be assembled in order to become a larger whole.

REMEMBER – THINK TOPICS



REMEMBER – THINK TOPICS



Thinking in topics
isn't easy....

- The above shots are from Madcap Flare's training videos. While technically it is training the user in the software, note the emphasis on thinking in terms of **the type of information** that they are constructing.

- Information literacy is defined in many ways, but I'll lean here on the Association of College and Research Libraries' 2016 "Framework for Information Literacy," which identified six frames that help shape much of the present discussion of information literacy. These are (in alphabetical order):



- Authority is constructed and contextual



- Information Creation as a Process



- Information has Value

- Research as Inquiry

- Scholarship as Conversation

- Searching as Strategic Exploration

So how is that information literacy?



DEPARTMENT OF WRITING AND LINGUISTICS

The MadCap Scholar Program

The MadCap Scholar Program Gives Students Access to Cutting-Edge Tools and Resources

MadCap Software is committed to education. The MadCap Scholar Program provides licenses and free resources to students and academic institutions all over the world teaching technical communication and professional writing courses. By supporting these programs, students gain valuable experience with the tools and develop skills that will help them stand out in an increasingly competitive marketplace.



Next, setting the scene...

Georgia Southern joins the MadCap Scholar Program

Should we be teaching technology?

Training new hires in technical communication

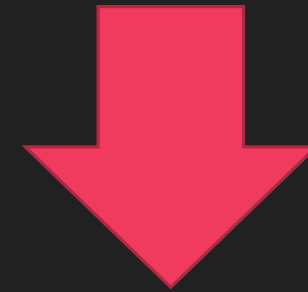


(<https://www.scriptorium.com/author/kaitlyn/>) Kaitlyn Heath

After an arduous job search process that took place during my senior year in the Professional and Technical Writing program at Virginia Tech, I was recently hired here at Scriptorium. One thing I have learned is that matching candidates, especially new college graduates, and jobs in the world of technical communication can be difficult.

Technical communication is centered around the tools that you use to achieve more efficient writing and content management, like structured authoring and DITA. But many companies often have a hard time building up technical writing teams that have experience using these tools.

I am lucky, though, since I was introduced to DITA at Virginia Tech. Therefore, I am prepared and excited to join a content strategy consulting company that so heavily relies on DITA .



Technological Literacy: A Framework for Teaching Technical Communication Software Tools

Marjorie Rush Hovde and Corinne C. Renguette

Indiana University-Purdue University

TECHNICAL COMMUNICATION QUARTERLY

2017, VOL. 26, NO. 4, 395–411

<https://doi.org/10.1080/10572252.2017.1385998>

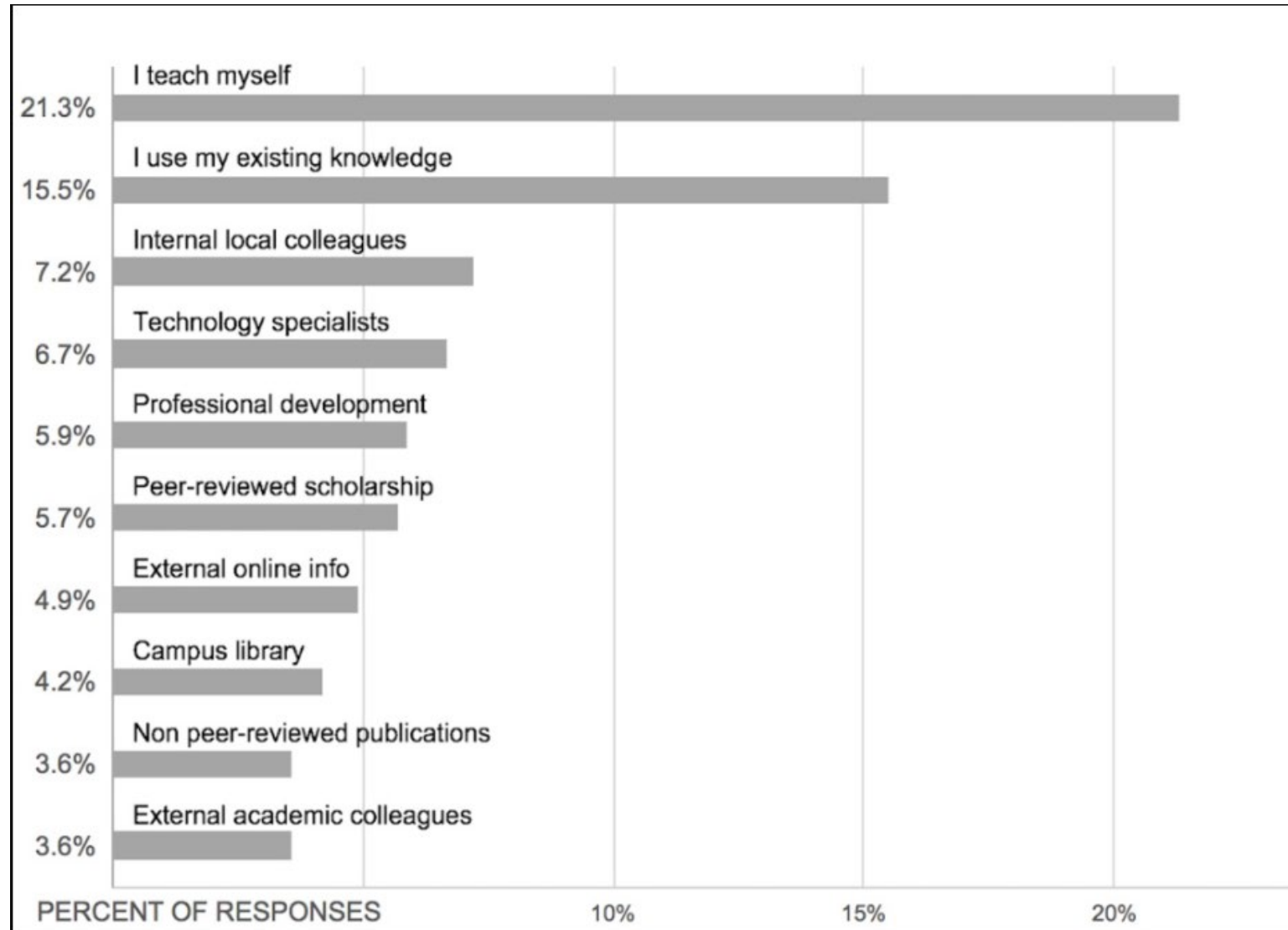
Thinking in levels of use...

Table 1. A framework of four levels of technological literacy for technical communicators.

<i>Level</i>	<i>Description</i>	<i>Strengths</i>	<i>Limitations</i>
Functional	Using technology efficiently and effectively to complete technical communication work	<ul style="list-style-type: none">• Helps with understanding the other three levels• Leads to effective workplace practice	<ul style="list-style-type: none">• May give the impression that tools are neutral• Functions change with new versions of software and between applications with similar functions.• Not every function is necessary for every project, so it can be challenging to determine which functions or features to teach.
Conceptual	Understanding concepts that underlie the technology	<ul style="list-style-type: none">• Leads to faster learning of similar applications• Gives users power• Transfers from one application to another similar one• Adds to understanding how technology shapes technical communication products	<ul style="list-style-type: none">• May be complex and difficult to learn• May take a long time to learn thoroughly• Possible to understand the concepts without knowing how to use the functions of the software and vice versa
Evaluative	Choosing tools to fit the requirements of situations or contexts.	<ul style="list-style-type: none">• Crucial for workplace practice• Students and practitioners can explain reasons for choices	<ul style="list-style-type: none">• Is not addressed a great deal in existing literature• Requires some knowledge of many software applications and concepts
Critical	Understanding how technology shapes communication practices as well as how communication practices affect technology.	<ul style="list-style-type: none">• Focuses on using technology ethically and responsibly	<ul style="list-style-type: none">• May not integrate well with the other three levels

Part of the challenge

- Robinson, Dusenberry, et al (2019) found that one of the challenges to implementing structured writing (or the technology used to do it, like Flare) is the fact that most of us are learning new platforms and approaches on our own, without material support (though Madcap helps in this regard).



Approaching this challenge with Games-Based Learning in mind.

Far from a Trivial Pursuit: Assessing the Effectiveness of Games in Information Literacy Instruction

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Conclusion – Students who played the online games improved significantly more from pre-test to post-test than students who received a lecture in lieu of playing online games, suggesting that participating in games related to the instruction they received resulted in an improved ability to select appropriate keywords and ascertain citation formats. These findings contribute to the evidence that online games concerning two frequently challenging research practices can be successfully applied to library instruction sessions to improve student comprehension of such skills.

So I created....



What I asked them to do...



PHASE 1:

In this phase, we'll play games, test them using Think Aloud Protocols, and produce usability reports to help them improve their existing documentation.



PHASE 2:

In this phase, we'll pitch game ideas, learn about a technological platform, and develop the core ruleset and structure of our board games.



PHASE 3:

In this phase, we'll use structured authoring to create documentation. Then we'll test our games, revise them, and develop a pitch to 'sell' our games via crowdfunding.

Explaining linear vs topic-based authoring (in the context of game manuals and activities)

LINEAR

BEGINNING



END

TOPIC-BASED

TOPIC: Objective of game

TOPIC: Playing the Game

TOPIC: Glossary

TOPIC: Additional Rules

TOPIC: Kingdom Card Description

TOPIC: Recommended Sets of 10

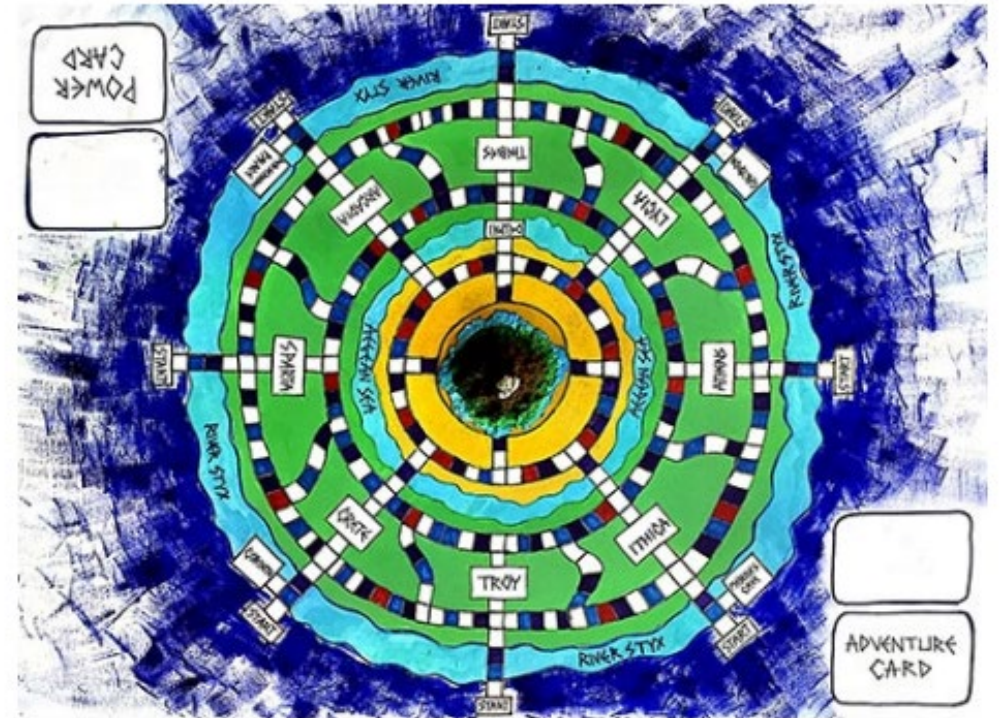
Dominion
Rule Book
Print
Version

Journey to Olympus



End Product

UNDERSTANDING THE BOARD



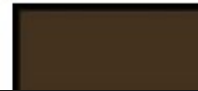
UNDERSTANDING THE SPACES



City Space Battle another player for a star or take no action



Power Space Draw a Power card



Bridge Space Use to cross Aegean Sea



Adventure Space Draw an Adventure card

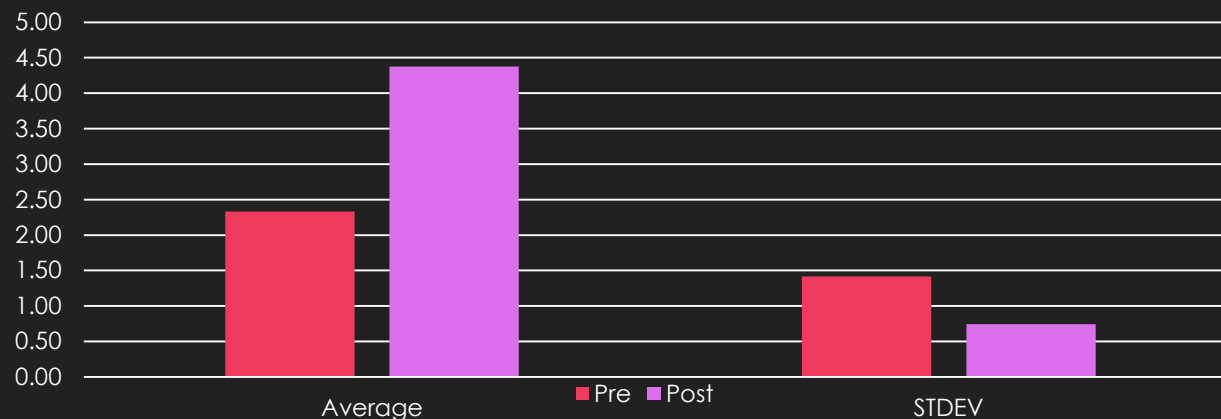


Monster Space Move a monster token into play

What I learned (so far)... 1/5

- First, students reported that approaching learning structured writing this way did help them improve their understanding at least at the conceptual level.

Responses to "I understand what Structured Writing is"

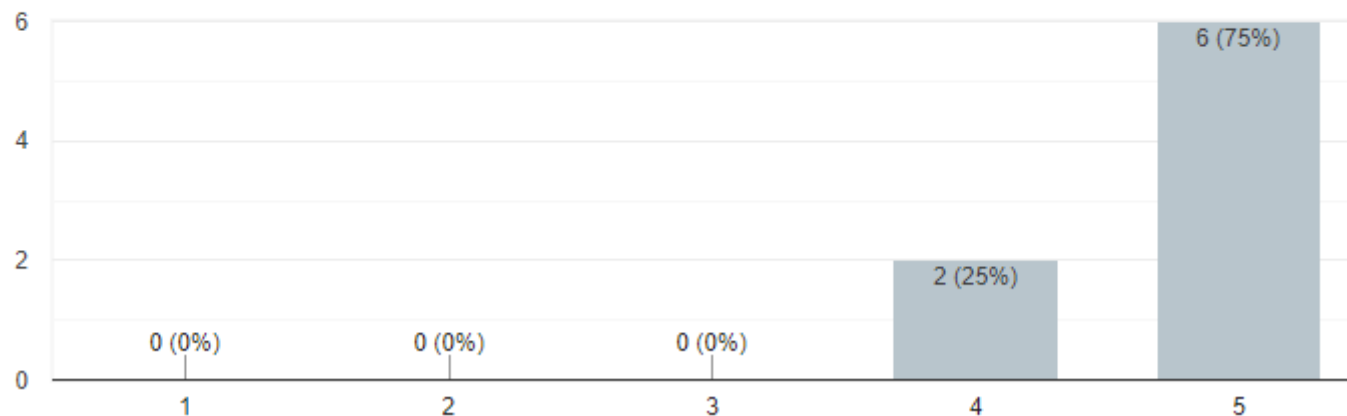


What I learned (so far) 2/5

- The approach of using a simulation of a game development studio was well-received by most of the study participants:

I feel that the design/approach of this course (the simulation of a game development company) helped me better understand what technical writing is and can do.

8 responses






What I learned (so far) 3/5

In general, the students appreciated the approach of using the game manuals as the test document to learn structured writing. As one of them put it, “It was a bite-sized way to learn it” and felt like a meaningful activity doable within the scope of the class.

What I learned (so far) 4/5

- However, not everything was so positive. First, although students came to better understand the concepts, the cautionary note in Hovde and Rengette (2017) was confirmed.

- 
- May be complex and difficult to learn
 - May take a long time to learn thoroughly
 - Possible to understand the concepts without knowing how to use the functions of the software and vice versa

- For various reasons, although each team wrote **mindful** of structured authoring (using style-based formatting rather than inline, for instance), each team ended up with one student dominating the use of Flare. Thus, the overall understanding of the software was limited and many were still overwhelmed by the interface and the challenge of thinking on topics as a way to structure the information they wanted to convey to their readers.

What I learned (so far) 5/5

Chapter 2. The Car

I stuffed a shirt or two into my old carpet-bag, tucked it under my arm, and started for

New Bedford

With halting steps I paced the streets, and passed the sign of "The Crossed Harpoons"—but...

- One final note was that knowledge transfer – itself arguably a type of information literacy – was limited in this case. I had hoped that students who had taken a previous course in our sequence (Digital Storytelling, which teaches how to write interactive fiction in Twine – see background) would transfer over an understanding of thinking about writing in topics since Twine uses passages to structure the player and writer experience.
- Unfortunately, if such transfer occurred, none of the students were aware of it. The only mindful transfer that occurred was recognizing how an IDE (in this case, Eclipse) had a similar interface to MadCap Flare.

But what thinks Lazarus? Can he warm his blue hands by holding them up to the

But no more of this blubbering now, we are going a-whaling, and there is plenty of that yet to



THANK YOU!

That's all Folks!