Hypertextual Teaching in a TiddlySpace Educational Environment

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A Master's Thesis

Presented to

Department of Information Design & Technology

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By

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ABSTRACT

This thesis project uses first-hand observation and academic inquiry to inform the design and implementation of a hypertext-capable alternative online learning system in an open source wiki, called TiddlySpace. This system is then used as the educational environment in which students, with minimal hypertextual experience, are taught to think hypertextually and record their work in a collaborative hypertext environment.

The researcher finds TiddlySpace to be dynamic enough to handle mid-semester changes and also powerful enough to support a wide range of academic assignments. The bulk of these assignments required students to create a large amount of structured microcontent, which appeared to encourage hypertext literacy. Finally, the researcher examines the idea that increased hypertextual literacy may encourage conceptual learning in a greater sense.

ACKNOWLEDGEMENTS

Thanks to Professor Steve Schneider, whose mentorship gave me the words to explain this

hypertextual world I've been unknowingly living in.

PRINT VERSION CAVEAT

This is a linear, printed version of an inherently non-linear, hypertext thesis project. It is much better to view it live at http://thesis.tiddlyspace.com. That having been said, in order to comply with graduation-requirements, I have done my best to create a useful linear representation of my thesis project.

A few notes about formatting:

- Be aware that if this were the live hypertext, then every time you see a + symbol there would be a dynamic, inline transclusion available. As a result, several key concepts, which would have been hypertextually-available, are defined at the end of this document for your convenience.

- When a transclusion is "open" in the text is indented and prefaced with a vertical line in the left-margin, like this:

  > This is the first line of an "open" transclusion.
  >
  > And this is the second line.
  >
  > > There can be an open transclusion inside an open transclusion too.
  >
  > Only a handful of transclusions are left open like this.

- Many hypertext "words" are actually the combination of several words, without any spaces and thus they contain multiple capital letters, for example: HyperTextReading. These words would be hypertextually linked to live microcontent in the web-based version of this thesis.

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INTRODUCTION

My name is Jason Shaw. I'm a graduate student in the IDT+ program at SUNY-IT.+ My thesis

advisor is ProfessorSteveSchneider,+ and this TiddlySpace+ hosts my thesis project.

As a HyperText,+ this document does not need to be read in a linear fashion. Therefore, feel free

to browse through the Contents+ on the left-hand side of the screen. However, if you would

prefer to read a relatively-linear, executive overview of my project then consider following the

Presentation+ version and expanding the sections that interest you.

My thesis is about HyperText+ and since TiddlySpace is particularly good for authoring

HyperText+, I decided to build it there.+ More specifically, I explore an online learning

environment built in TiddlySpace to facilitate hypertextual teaching and learning.+

CHAPTER 1: ACADEMIC IMPETUS

My interest in HyperText began in a class focused on WebArchiving+ which employed MicroContent and a HyperText-capable wiki to compile and display archived content.+ That interest blossomed in ProfessorSteveSchneider's HyperText Workshop,+ where I learned a great deal about the academic history, current work, and theoretical ideas surrounding HyperText.-

> ProfessorSteveSchneider's IDT590HyperTextWorkshop examined HyperTextReading,+ HyperTextWriting,+ and HyperTextTeaching+ through academic HyperText Authors▾ and hands-on IDT590HyperTextAssignments.+

> Much of the literature reviewed in this class referenced TheodorNelson+ and ProjectXanadu,+ but there were many other academic authors as well. For instance: AdrianMiles+ says that "when students come to HyperText they bring with them many years of PrintLiteracy acculturation." This PrintLiteracy+ is the primary reason students find HyperTextualLiteracy+ difficult to achieve (Miles2009HyperTextTeaching).+ JohnTolva+ thinks the difficuly comes from the fact that people feel more comfortable with textual compositions that stress "linearity, closure, and containment." Thus, JohnTolva believes HyperText may bring fear and anxiety+ to its readers, but that human communication has always adapted to tumultuous periods of change, and HyperText will be no different (Tolva1995HeresyOfHypertext).+ Either way, both authors agree that fostering HyperTextLiteracy is difficult.

JimRosenberg+ sees HyperTextStructure+ and stresses that there are strategies for making HyperText more readable and writeable (Rosenberg1996Structure).+ That may be true, but AdrianMiles still sees PrintLiteracy as the primary obstacle to widespread adoption. Toward that end, AdrianMiles suggests demonstrating that HyperText is a legitimate alternative to traditional linear media and then begin HyperTextualTeaching+ with HyperTextualTools.+ AdrianMiles outlines his approach to HyperTextualTeaching.-

To crack student's hardened, print-based shell, AdrianMiles recommends teachers follow this approach (Miles2009HyperTextTeaching)+:

The teacher starts by demonstrating that books are just as strange and arbitrary as HyperText. "From this point it becomes much easier to introduce, situate, and contextualize HyperText," because such an approach "generates a gap between the book, and reading and writing...and this gap is then used to locate other ways of thinking about reading and writing." (Today that same approach may need to do the same kind of comparison between the internet and HyperText.)

Once students see HyperText as a legitimate alternative to books (or the internet), the next big hurdle is HyperTextLiteracy. To build HyperTextLiteracy, he recommends that teacehrs "begin with HyperTextWriting because the struggle of learning how to write within a HyperText environment provides concrete experience," and a frame of reference. Finally, as students begin

HyperTextReading, they can "think about how what they are reading can be applied to the own HyperTextWriting."

Next, since HyperText requires a hypertextual platform, students are introduced to Eastgate's Storyspace, "because it is simple to use, offers complex hypertextual features, and prevents HyperText writing from becoming confused by web design, graphic design, or information architecture." Much like TiddlyWiki, "Storyspace lets the students concentrate on the structures of their HyperText," and allows them to immediate start "doing HyperText in a manner that easily translates to other HyperText systems."

AdrianMiles asks students to create a autobiography using HyperText. Since content should be easy to come by, the student's primary concern is to concentrate on each HyperText node having only one key idea or thing – what JimRosenberg would call an acteme. Furthermore, "students are taught and encouraged to write in such a way as to ensure that there are words or phrases that they can link from and to other nodes." As students write and begin critiquing one another's writing, patterns emerge. The actemes begin to form hub & spoke, or radial structure.

As students advance, "students are required to no longer link from nouns but from verbs and adjectives." This is done because noun-based HyperText tends to produce dry catalogues of information, while the verb- and adjective-based approach "encourages the associative and creative development," which leads to

> more interesting HyperText. And it is in this moment when they start to see the
>
> endless possibilities that Hypertext gives them.

Two academic sources gave me real inspiration:

(1) <u>Professor Schneider:</u> I met ProfessorSteveSchneider in the summer of 2010, when I enrolled in his class, Web Sphere Analysis. This class looked at "the web as an object of study" and introduced us to techniques for the "systematic analysis and study of online action". Central to the pursuit of this goal was ProfessorSteveSchneider's Lightweight Web Archiving+ toolkit and assignments which asked the students to put WebArchiving+ examples into MicroContent+ pieces and tie them together using HyperTextTools.+

Wanting to learn more, I returned to ProfessorSteveSchneider's classroom in the spring of 2012 for Hypertext Workshop (IDT590),+ which according to the syllabus was, "an exploratory class dedicated to understanding Hypertext." Students were asked to read, write and learn hypertextually. The teaching platform for the class was TiddlySpace+ (a variant of TiddlyWiki, used in Web Sphere Analysis). Thus, the Hypertext Workshop brought me back to both the concepts and tools that I found transformative in Web Sphere Analysis.

Encouraged by IDT590HyperTextWorkshop I asked ProfessorSteveSchneider if I could help him develop the next generation of TiddlySpaceEducationalEnvironment. He said "yes," and my thesis project was born.

(2) <u>Professor McDowell:</u> PeterMcDowell's The technological affordances of personal wikis in higher education (McDowell2011PersonalWikisInHigherEducation),+ is one of the first papers I read that reminded me of what ProfessorSteveSchneider was doing with TiddlySpace. In it, PeterMcDowell+ "examines the suitability of personal wikis as an alternative learning management system (LMS)," using TiddlyWiki+ to teach HypertextualWriting+ to undergraduates.

Since my own work examines an alternative educational environment (or alternative learning management system), using TiddlySpace to teach hypertext to undergraduates, the similarities were unmistakable and thus I wanted to look deeper into his work.

Both ProfessorSteveSchneider and PeterMcDowell agree that mainstream LMS are inadequate for HyperText.+ Looking for an alternative, they both turn to Wikis. After a lengthy search,+ McDowell finds TiddlyWiki very compelling.-

> TiddlyWiki's unique architecture provides educational "affordances" which derive from the way in which it implements crucial elements of TheodorNelson's+ concept of HyperMedia.+ In his discussion, he says:
> - TiddlyWiki can help develop students' abilities to conceptualise in a way that permits either concurrent or delayed distribution of intellectual work, this being integral to the construction of contemporary cultures of inquiry.
> - TiddlyWiki allows students to combine Two-Way Linking+, Transclusion+, and Tagging,+ such that they are better able to isolate

elements within a system (MicroContent), establish interconnections (Linking), and consider function and purpose (Transclusion).

- TiddlyWiki's recursive nature is especially empowering for students, as it helps dispel the ideology of linear thinking, and prepares them to better deal with challenging situations having no specific result or precise solution.

In conclusion, PeterMcDowell finds that TiddlyWiki played a significant part in developing students' proficiency in hypertext" and in enhancing their HyperTextLiteracy,+ (McDowell2011PersonalWikisInHigherEducation)+.

PeterMcDowell's findings about the effectiveness of TiddlyWiki were very encouraging, and became a significant impetus in my work with ProfessorSteveSchneider.

CHAPTER 2: THESIS PREPARATION

To prepare me for writing my graduate thesis, ProfessorSteveSchneider suggested I watch a HyperText experiment he was running during the spring 2012 semester. The experiment involved the comparison of two simultaneous classes with very similar structures+ and very different approaches.+ The goal was to determine which group of students ended the semester more comfortable HyperTextReading+ and HyperTextWriting.+ Perhaps surprisingly, the class that did NOT study HyperText theory created consistently better HyperText than the class that did.+

From these First Observations+ it appears to me, that the main difference between the two classes was their emphasis (or lack thereof) on the creation of MicroContent.+ COM380 emphasized strictly structured type of MicroContent, that I call StructuredMicroContent,+ while IDT590 did not emphasize either. Students employing StructuredMicroContent produced consistently better HyperText work than students with no emphasis on MicroContent. Therefore, employing StructuredMicroContent appears to help lay a foundation for HyperTextLiteracy.+

I observed two classes which informed my thesis project's design & implementation:

- <u>IDT590</u>: Information Design & Theory HyperText Workshop (IDT590)

  Taught by ProfessorSteveSchneider

  Attended by me in Spring 2012

  IDT590 is a series of graduate workshops on various topics in applied information design & theory.

The class TiddlySpace for the HyperText Workshop I participated in is here:

http://sunyit-idt590.tiddlyspace.com/

IDT590HyperTextWorkshop,+ was a small, graduate-level, purely-online class, in which I was enrolled. Its focus was on HyperText theory and practice. It took place primarily in TiddlySpace and was supplemented with GoogleGroups and GoogleEmail. The IDT590ClassStructure+ included three kinds of TiddlySpaces and two kinds of content.

IDT590HyperTextWorkshop+ took place entirely online using several kinds of workspaces, groups, and email, to facilitate the essential functions of an online learning environment.

Three kinds of workspaces were built in TiddlySpace:

sunyit-<StudentID> is an individualized space, one per student. It can only be written-to by the student that created it and it is where students do most of their HyperText work.

sunyit-idt590 is a class space with full faculty access. Students read material here, such as syllabus, timelines, discussion ideas, assignments, etc, but students cannot post to this area. This class space coordinates group activities.

sunyit-hypertextjournal is a group space that gives all students and all faculty access. This was set up as a collaborative workspace in which students would periodically write short essay-style papers concerning HyperText, peers would read them and critique them.

Student spaces included the class space allowing students to read class space material from inside their own student space.

Students and faculty communicated in several ways during this class. The class

TiddlySpace (sunyit-idt590) directed student action on a macro level, while the group

space (sunyit-hypertextjournal) and student spaces contained the bulk of the class's

content and critiques. Most person-to-person and person-to-group communication was

done through GoogleEmail and GoogleGroups.

Student-created content came primarily in two forms:

Tweets are short "nuggets of information," created by students to answer assigned

questions in a brief manner. Tweets were used a lot at the beginning of the semester and

then only sparingly after that. They seem to have been created in an effort to teach

students about MicroContent.+

Essays are longer documents that generally incorporate other essays (and/or tweets) into

them using HyperTextualTechniques.+ Most graded work was produced as essays, as

well as Journal Entries, which are specialized essays created in the sunyit-

hypertextjournal.

As a student in IDT590HyperTextWorkshop myself, I have first-hand experience. From

that experience, I made several observations:

By far the hardest part of the TiddlySpace environment is feeling lost. That is, the

inherently non-linear medium makes it hard for linearly-minded people to understand

where they are in a document, in the class space, in the semester, etc. HyperText theorists

call this "being lost in hyperspace," and it reduces people's confidence in the TiddlySpaceEducationalEnvironment.

Students differed widely in the level of HyperText they were comfortable with. As a result, their HyperText documents ranged from nearly linear to extremely non-linear. Worst of all, I found that most of my classmates produced rather forced HyperText documents as they took an inherently linear idea and turned it into HyperText for the sake of getting a grade rather than because their topic necessitated it.

The class emphasized essay-style HyperText over MicroContent-based+ HyperText. That is, students wrote mostly longer, essay-style MacroContent+ pieces rather than producing a large number of smaller works and then tying them together with HyperTextualTechniques.+

Technically speaking, finding a HyperText document within a TiddlySpace without a direct link to it can be difficult. So students were directed to provide a "permalink" to any posted document, however, the standard permalink doesn't react well to being copied & pasted into GoogleGroups, so students need to run permalinks through a service called Bitly to shorten and make these links more easily used. Ultimately, it's one more small technical thing to remember when using this environment. And definitely proved to be annoying.

- COM380: Communications Theory (COM380)

Taught by ProfessorSteveSchneider

Observed by me in Spring 2012

The class TiddlySpace for this class that semester is still visible here: http://sunyit-com380.tiddlyspace.com/

COM380CommunicationsTheory,+ was a larger, undergraduate class which focused on the application of communications theory to online sources. There was no HyperText theory in the curriculum. Like IDT590, it took place primarily in TiddlySpace and was supplemented with GoogleGroups and GoogleEmail. COM380ClassStructure+ used two kinds of TiddlySpaces and two kinds of content.

COM380CommunicationsTheory+ was a hybrid class that met once-a-week in person and then students did most of their work online using several kinds of workspaces, groups, and email, to facilitate the essential functions of an online learning environment.

Two kinds of workspaces were built in TiddlySpace:

sunyit-<StudentID> is an individualized space, one per student. It can only be written-to by the student that created it and it is where students do most of their work.

sunyit-com380 is a class space with full faculty access. Students read material here, such as syllabus, timelines, discussion ideas, assignments, etc, but students cannot post to this area. This class space coordinates group activities. As the class progressed, ProfessorSteveSchneider added an additional class workspace, called sunyit-com380-theorynotes, to supplement the first class space.

There was no group space in COM380CommunicationsTheory.

Student spaces included the class space allowing students to read class space material from inside their own student space.

Students and faculty communicated in several ways during this class. The class TiddlySpace (sunyit-com380) directed student action on a macro level, while the student spaces contained the bulk of the class's content and critiques. Most person-to-person and person-to-group communication was done through GoogleEmail and GoogleGroups.

Content came primarily in two forms:

TheoryNote: Posted by faculty in the class TiddlySpace to teach students and direct their efforts. For instance, a TheoryNote could discuss a Communications Theory and then ask students to find examples of the theory in action on the internet.

ActionNote: Posted by students to answer a TheoryNote. An ActionNote documents an action on the internet.

COM380 required students to understand a communications theory and then go on the web to collect MicroContent+ examples of it.

In the beginning, students were given a standard format in which to post their examples, but that proved hard for them to follow and cumbersome to enforce. So, as the class progressed, GoogleForms emerged as a structured input facility into which students could

plug relevant information and produce standardized output - something I now call StructuredMicroContent+.

Once this StructuredMicroContent was published in a student's TiddlySpace, faculty initiated a process and exposed the individual StructuredMicroContent to all students. This public StructuredMicroContent gave students the ability to view, critique, reuse and even mash other students' examples. Thus, creating a highly-collaborative class structure.

As StructuredMicroContent proliferated, the GoogleForms form evolved to provide tagging+ facilities so that each new example would be easier for students and faculty to find, associate, and integrate.

Ideally, this approach would lead students toward writing essay-length MacroContent papers based on the StructuredMicroContent examples collected by themselves and their peers and using HyperTextualTechniques to put it all together.

COM380 appears to have evolved much further & faster than IDT590 - not because of more or less HyperText training, but because well-designed StructuredMicroContent appears to naturally leads students toward the incorporation of HyperTextualTechniques into their work.

One final note: The process of turning GoogleForms-submitted information into Tiddlers

is labor-intensive. Therefore finding a way of creating StructuredMicroContent directly

inside TiddlySpace could save faculty time & effort.

CHAPTER 3: THESIS EMERGES

My first HyperText observations+ demonstrated that asking students to create a lot of StructuredMicroContent+ appears to foster more consistent HyperText output than spending an equal amount of time explicitly teaching HyperText theory.+ Therefore, any future TiddlySpace-based HyperText class should contain both a reason to create StructuredMicroContent+ and a standardized method for creating it.+

During that first experiment, I began looking for parallels in academic literature, and I found PeterMcDowell+ who asks how suitable are personal wikis as learning management system alternatives?+ His answer is the same as mine: entirely adequate.+ In fact, he finds that TiddlyWiki played a significant part in developing students' proficiency in hypertext+ and in enhancing their HyperTextLiteracy.+

Encouraged by PeterMcDowell's findings+ and curious about the observations I made personally during the Spring 2012 semester,+ I decided to work with ProfessorSteveSchneider to explore the effectiveness of a TiddlySpaceEducationalEnvironment on student HyperTextLiteracy. My plan was to build the class environment in TiddlySpace,+ observe the class in progress,+ and report findings.+

My thesis project hopes to answer (or shed light on) three questions:

    (1) Does TiddlySpace serve as a platform for HyperTextualTeaching+ and
        HyperTextualLearning?+

(2) Does the production of StructuredMicroContent+ encourage HyperTextualLiteracy?+

(3) How well does HyperTextualLiteracy+ encourage learning?

CHAPTER 4: THESIS METHODOLOGY

This is a multi-method thesis project.

It builds a TiddlySpaceEducationalEnvironment+ to host the POS262OnlinePolitics+ class in the fall of 2012 based on previous personal experience and academic inquiry.+

Once constructed, I turned to observation. However, before observation could begin, I needed to ensure that the human subjects I would be observing would be entirely informed and safe from any academic retribution or embarrassment. Therefore, I created a Proposal for Research Involving Human Subjects and submitted it to SUNY-IT's Independent Research Board.-

> The Proposal for Research Involving Human Subjects made me think through several important aspects of this project before involving students in my work. Some highlights are:
>
> IRB Objectives-
>
> > Hypertext techniques provide an opportunity to enrich the teaching and learning experience. There has been little scholarly work to date that has systematically examined these techniques in an educational setting.

Professor Schneider is very interested in hypertext techniques. A Fall 2012 class
— POS262: Online Politics — has been designed to utilize hypertext techniques
throughout the semester.

In an effort to understand how students read, write, & learn hypertextually I
would like to observe this class. The students are engaged in creating a
hypertextual representation of their emerging knowledge, which provides the
opportunity to do most of my observation in an online setting. To supplement my
online observation, I would also like to meet with the class in an in-person focus
group, and engage students during the second half of the semester in online
discussions and emails.

Source: Shaw2012IRB+

IRB Subjects-

The subjects of my study are all SUNY-IT students in POS262, Online Politics,
Fall 2012. Students must be 18 years of age or older.

This population was selected because it was going to be using hypertext
techniques for reading, writing and learning.

In order to protect human rights of subjects, students were informed of my observation and asked for voluntary participation.

I had access to their work through an Observation Space, which was very similar to a ClassTiddlySpace,+ in that it allowed me to view the public work of students but only those who gave me consent to include them in the study.

Source: Shaw2012IRB+

IRB Procedures-

I was introduced to the class as a qualitative researcher interested in observing their class in order to understand how reading, writing & teaching hypertext techniques work in a real-life class setting.

Most of my observation were done passively as I watched online work products being built and analyze the situations arising within the framework of the online class.

I was not able to see all of a student's work because my study would be conducted through an Observation Space, which would only allow me to follow the work of those students who elect to participate in this study.

From time-to-time I visited the physical classroom and asked several questions to the entire class, engaging them in a focus-group setting. And though I anticipated online discussions with one or more students via an email, this did not happened.

It was important that ProfessorSteveSchneider not know which students elected to participate in the study, and which did not, so he was never present during my discussions with students either online or in person.

During my classroom visit, students participated voluntarily in group discussion during normally scheduled classroom time.

Maintaining confidentiality was important so during the semester...

Since all work product is associated with SITNetIDs, the posts are inherently personal. Thus, SITNetIDs will be masked in any and all published research and/or materials made publicly available.

Source: Shaw2012IRB+

IRB Consent-

Consent forms were handed to students in person and gone over as a group. The students were given time to consider their consent and to ask questions. Students

were asked to return forms indicating their consent, or to return blank forms if they declined to participate. The researcher would not review the contents of the consent form in the presence of the students. In this way, students would not have to reveal their participation status in a potentially coercive environment.

Source: Shaw2012IRB+

IRB Risks-

I believe that because of the design of the study, the risks to students were minimal, and the benefits to the researcher were significant. In the end, I saw no adverse effects on any of the students.

Source: Shaw2012IRB+

IRB Anticipated Findings-

The IRB wanted to know my anticipated findings, so here is what I said:

Hypertextual techniques provide significant opportunities for students to enhance their learning of conceptual ideas. Providing students with the ability to read and write hypertexually enabled them to connect broad course concepts with their individual level observations, especially important to a course whose learning

objectives included gaining factual knowledge and being able to understand

fundamental generalizations and theories related to the practice of politics in

online environments.

This maybe a little more grandiose than I delivered but I do believe my research

positively contributed toward this goal.

Source: Shaw2012IRB+

Once the class was complete and direct observation over, I compared the results I saw to those I

anticipated and created this TiddlySpace thesis project.

CHAPTER 5: THESIS PROJECT

Building the POS262 TiddlySpace

POS262OnlinePolitics+ seemed to be perfectly structured for this project.+ The strong emphasis on data collection meant students would be expected to create a large amount of StructuredMicroContent,+ which I believed would encourage HyperTextLiteracy.+

Meanwhile, ProfessorSteveSchneider saw an opportunity to combine my StructuredMicroContent ideas with content tagging,+ to increase student conceptualization and collaboration. He proposed that the ClassTiddlySpace contain a tagging structure which corresponded to important concepts and sections in the online version of his textbook.+ Students would be asked to apply these tags to their own work as it was being created for each assignment.

Together we believed that by creating a large amount of StructuredMicroContent and tagging it to a class-wide tagging structure, students would see their own work relating to sections of the course material. Furthermore, as their classmates added additional tagged StructuredMicroContent, they would get a greater sense of how their work fit into the bigger picture. We hoped that this would help students to both conceptualize how their work fit into the text and how it meshed with other students' work to create a collaborative picture of the subject-matter - therefore leading to increased understanding of the subject-matter.

POS262 Begins

With ThesisQuestions in Hand,+ I needed a class on which to test them, and POS262 seemed like the perfect candidate.+ So, ProfessorSteveSchneider and I set about creating a TiddlySpaceEducationalEnvironment for it.+

Students learned TiddlySpace+ and began creating ActionNotes quickly.+ ActionNotes were created directly inside TiddlySpace.+ Some minor adjustments needed to be made to the ClassTiddlySpace,+ but students operated within the TiddlySpaceEducationalEnvironment very effectively.+

Then an external event made us decide to make a major readjustment in the collection of ActionNotes.+ So, we introduced the WebStory concept+ and a new Google form in which to build these WebStories.+ The results were impressive.-

> In the span of just 3 weeks, students created 138 WebStories,+ comprised of 800 underlying ActionNotes,+ and reported very few difficulties with the new process.

In the process, Students clearly demonstrated that they understood the concept that multiple StructuredMicroContent ActionNotes could be hypertextually combined using, linking,+ tagging,+ and transclusion+ to form WebStories.

POS262 Continues

In accordance with my IRB Proposal+ I watched POS262 students develop content for their

StudentTiddlySpaces+ from an ObservationTiddlySpace.+ This allowed me to see them creating

StructuredMicroContent, MicroContent, MacroContent, Tagging Content, collaborating, etc.

Political Science POS262 Online Politics

Taught by ProfessorSteveSchneider in Fall 2012

This class used the TiddlySpaceEducationalEnvironment+ that ProfessorSteveSchneider+ and I

built in the summer of 2012. I then observed the students using that environment in the fall of

2012 as part of this Masters project.

The class TiddlySpace(s) are visible here+ and the class syllabus is available here.+

Direct Observation of POS262

When the POS262+ class started several students reported familiarity general Wikis,+ but none

had ever used TiddlySpace.

Those familiar with Wikis seemed to pick-up TiddlySpace very quickly, while those without

Wiki experience took a little longer to adjust. Their questions focused on navigation and the

Tiddler+ data storage construct. I observed that in-class discussion seemed to alleviate most wiki-related problems within the first week or two of class.

Meanwhile, Within the first week students were successfully able to begin collecting data on various subject-matter-related topics and to create ActionNotes+ for each. Such a demonstration shows just how easy it is for students to understand the creation of StructuredMicroContent.+

The CreateActionNote form was built directly inside TiddlySpace and looked like this:

The code for this form was created in http://sunyit-pos262-plugins.tiddlyspace.com/ and was contained in two parts:

The HTML-based form

The Javascript macro code

This code was included in the ClassTiddlySpace, which then included it into each StudentTiddlySpace.

As student subject-matter proficiency increased, additional fields were added to the POS262 CreateActionNote+ form to accommodate expanded tagging+ of collected data.

Then, as the number of ActionNotes increased, it became obvious that students needed to be able to make multiple ActionNotes for the data points they were documenting. However, TiddlySpace does not allow duplicate Tiddler titles. So, the CreateActionNote form was modified to produce ActionNotes with a unique timestamp/studentid combination as the title, thus making it possible for students to create multiple ActionNotes about one particular data point.

Both of these minor adjustments were well-received by the students and further reinforced my belief that this TiddlySpaceEducationalEnvironment+ was dynamic enough to use in a real-life classroom.

Within the first six weeks of class, POS262+ students created several hundred ActionNotes+ and clearly began to understand how to create StructuredMicroContent+ and reference it in their StudentTiddlySpace.+

POS262 Data Collection Methodology Changes

POS262OnlinePolitics+ was focused on the 2012 American national election, scheduled for November 6, 2012. So, by the end of October, the election was only about a month away.

We knew that the political landscape would begin changing even more rapidly, so we wanted to see if we could simultaneously increase the speed of data collection and encourage students to create more complex HyperText.

To do so, we introduced the WebStory: A WebStory is a collection of one or more ActionNotes+ that document an online structure or action. Each independent action is tied together to form a larger, coherent WebStory.

The Google WebStory+ form looks like this:

Using this form students were able to collect up to 20 ActionNotes at once, which we hoped

would both increase the speed of collection and provide a set of thematically-related

ActionNotes.

When students used this GoogleForm, their answers were automatically placed into a Google

Spreadsheet (available here), that looks like this:

Using basic spreadsheet operations, the raw Submissions data was turned into TiddlySpace-

importable data by ProfessorSteveSchneider and myself, and then uploaded into the

ClassTiddlySpace. Once uploaded, the WebStories were organized by author and title (available

here) and looked like this:

Figure 4 – Web Stories via Tagging

This figure shows how a sequence properly tagging Action Notes can form a Web Story. A live TiddlySpace version of this tiddler is available at http://sunyit-pos262-webcampaigning2012.tiddlyspace.com/#StoryWriters

The ActionNotes, WebStories, and WebStory author are related to one another through tagging.+ Therefore each ActionNote in the example above is tagged with the WebStory title (WebStory-allCandidates) and each WebStory title is tagged to the WebStory author (StoryWriter-brownm12), thus building the hierarchical tagging structure displayed in the example above.

In the span of just 3 weeks, students created 138 WebStories,+ comprised of 800 underlying ActionNotes,+ and reported very few difficulties with the new process.

Students clearly demonstrated that they understood the concept that multiple StructuredMicroContent ActionNotes could be hypertextually combined using, linking,+ tagging,+ and transclusion+ to form WebStories.

Discussion of POS262

POS262 was a live class and, as a result, our TiddlySpaceEducationalEnvironment required several readjustments through the semester. That having been said, the class fulfilled ProfessorSteveSchneider's stated goals (see POS262 Syllabus)+ and the TiddlySpaceEducationalEnvironment was robust enough to handle real-time changes.

Through the creation of WebStories, students clearly demonstrated an understanding of StructuredMicroContent,+ ContentReuse,+ and HyperTextualTools.+ Therefore, I strongly believe that TiddlySpace served as a reliable and responsive platform for HyperTextTeaching+ and HyperTextualLearning.+

Moreover, having observed the students in class both at the beginning of the semester and at the end, it was obvious to me that these students were far more comfortable discussing non-linear, HyperTextualReading and HyperTextualWriting issues at the end of the semester than they were at the beginning - even without ever formally introducing HyperTextTheory.+ Therefore, I believe that our TiddlySpaceEducationalEnvironment and its emphasis on the creation of StructuredMicroContent encourages HyperTextualLiteracy.

CONCLUSION

Over the course of several semesters I worked with ProfessorSteveSchneider to conceive of an enhanced TiddlySpaceEducationalEnvironment,+ build it,+ observe it,+ analyze it,+ and answer my thesis questions.+

Like PeterMcDowell,+ I find that TiddlySpace is well-suited to be used as a hypertextual learning environment. Both HypertextualTeaching+ and HypertextualLearning+ took place in the TiddlySpaceEducationalEnvironment.

Inside the POS262 TiddlySpaceEducationalEnvironment, students created a large amount of StructuredMicroContent.+ This work product was Tagged+ to subject-matter concepts and automatically consolidated into groups that students later accessed to complete assignments. Students quickly adopted the non-linear paradigm and demonstrated increased HyperTextualLiteracy.

Finally, does HyperTextLiteracy encourage learning (in a larger sense)? From what I can see: Yes. The non-linear nature of StructuredMicroContent creation led to students unknowingly collaborate. Then as their understanding of emerging subject-matter increased, Tagging played a key role in revealing that collaboration. Finally, ContentReuse made it possible for them reuse their own content or that of their classmate (with full authoring credit automatically displayed by TiddlySpace). I believe this project demonstrates that HyperTextualTeaching and HyperTextualLearning increased student understanding of the subject-matter.

FUTURE WORK

Future work falls into two categories:

1. Changes to TiddlySpace in order to improve the hypertextual experience, and

2. Future research in the area of HyperTextLiteracy.

Based on my experience (and daydreaming), I make the following list of suggested changes to TiddlySpace:

- Some MicroContent connects to more than one title. For instance, TiddlySpace and TiddlySpaces are essentially the same except for singular versus plural grammar. Do hypertext authors really need to create independent MicroContent for each of them? Maybe there could be a way to connect multiple MicroContent names to same MicroContent piece. Of course, there are work-arounds but it came to mind several times in the course of building this hypertext.

- When MicroContent is created it is either started with a capital letter or an uncapitalized letter. That decision later effects the grammatically seamless reusability of that MicroContent. In fact, there are several instances in this document when sentences begin with a capital letter and then contain another capital letter a few words in - this is because I am transcluding MicroContent into the sentence and that MicroContent is already capitalized.

- Writing hypertextual requires seeing what the hypertext will look like when it is displayed, thus it would be easier to write hypertextually in TiddlySpace if it employed a

WYSIWYG editor so that HypertextualWriting and HypertextualReading could happen simultaneously.

- Finally, I believe that if TiddlySpace could be more aware of what actions the HyperText reader has already made then it could more fully deliver a unique reading experience for each user. Imagine a backend database-like structure that is generally invisible to the reader and yet programmatically available to the writer at time of creation. Such a facility could allow the writer to anticipate reader needs and customize the hypertext to better serve the reader. This level of intelligent hypertext would bring the document to life as an author's editorial choices play out beyond words and into an evolving presentation.

Now about future research in the area of HyperTextLiteracy:

- I believe that this project shows that StructuredMicroContent really helps improve students HyperTextLiteracy. So now the question becomes: How structured does it need to be? Is it possible to reduce the structure of the MicroContent and still get students producing hypertextual documents in a reasonable amount of time? It might be interesting to experiment with different degrees of structure and see how that effects the hypertextuality of output.
- It would be nice to develop a measure of hypertextuality so that it would be possible to rank and/or rate the degree to which something is hypertextual.
- Understanding and documenting the process by which one learns to write effective HyperText remains a larger goal that this project only scratched the surface of. My

Reflections+ section lists many of the realizations I had while producing this HyperText and it would be interesting to see how they correlate to the experience of others.

- In my Reflections+ section I mention that MicroContent is in a constant state of grooming. I would like to know what other researchers think about that idea and how it fits into HyperTextLiteracy.

- Ultimately we would like to know if HyperTextLiteracy improves overall learning, but that sort of study goes beyond the scope of this project. I can only say that the students I watched seemed to grasp the subject matter reasonably well and that the hypertextual way in which the class was taught seemed to encourage that.

REFLECTIONS

As an Information Design & Theory+ student myself, studying other students who are learning to create HyperText inside the HyperText-friendly TiddlySpace, it only seemed natural to present my findings in a HyperText document myself. As a result of that effort, writing this HyperText has provided insight into the process by which HyperTextualWriting occurs. In this section I talk about those insights & the questions raised while HyperTextualWriting.

There are small questions, such as which words and phrases to make hypertextual and which to not. For instance, why make MicroContent hypertextual and not Independent Research Board. For me, it was a matter of (1) taking editorial control over my HyperText, (2) anticipating what the reader will need to know versus what I believe they already know, and (3) deciding when adding extra content only bogs-down the document's effectiveness.

Another small question is which hypertextual words and phrases to <<pop>> versus when to just let TiddlySpace highlight them. The <<pop>> mechanism is a macro developed by ProfessorSteveSchneider to improve the hypertextual-ness of TiddlySpace and it certainly makes transclusion much more accessible to readers, therefore I try to employ it when I think the reader might need immediate clarification or expansion of a concept or definition. After I have used a phrase or word several times I generally stop <<pop>>-ing it, under the assumption that I, the writer, have already adequately informed the reader and would like them to focus on newer ideas. This can, of course, be flawed thinking since a this HyperText does not have to be followed linearly.

Looking at a larger style issue: At the document level I made a conscious effort to hypertextualize phrases rather than words. Once the reader drills down below this top level, I begin to hypertextualize words more frequently than phrases and as they reach the "edges" of my hypertext, there are fewer hypertextual elements altogether. I know believe this is a natural pattern for HyperText: Content near the root and/or stem of the document "branch out" far more than the content in the leaves.

Then there is the overarching question of how best to write hypertextually?

After months of HypertextualWriting I believe the key to writing good HyperText is MicroContent. This is because once a fair amount of MicroContent exists, it is much easier to link, tag, and transclude it together in various, interesting ways. The tension however, is that creating stand-alone MicroContent that can be pieced back together again is not as easy as it may sound. It often requires a lot of effort to create appropriate connecting content and then with every new usage, the MicroContent itself often must go through several revisions. In fact, I would say that the hardest things about creating HyperText are:

1. Having the forethought to break discussions into MicroContent chunks,

2. Having the discipline to revise past MicroContent so that it continues to play well with both the old and the new MacroContent that reuses it, and

3. Keeping track of the ever-expanding collection of previously-created MicroContent.

Needing to rework previously-created MicroContent is a given. Developing MacroContent that includes previously-written MicroContent requires updating the MicroContent either informationally and/or grammatically. Then that change propagates through to any other MacroContent that previously included that MicroContent. So, developing HyperText requires a lot of grooming of previously-created content - far more than I'm used to with linear writing. Indeed, as time passes, it is very common to discover that concepts you once considered to be MicroContent are themselves packages of MicroContent that need to be broken into smaller MicroContent pieces.

Have any other researchers described this process of grooming?

Krumme says:

> "Most hypertextual writers accept hyper-organizational styles slowly and learn as they go, expanding their compositions from a single node along a variety of initially disjointed, later increasingly interconnected trajectories, eventually reaching a point where the emerging complexity demands a more deliberate approach to organization." (Krumme2003HyperText)+

Unfortunately he does not mention grooming previous content, yet having written this lengthy HyperText, I can't imagine not returning to previous MicroContent and reworking it to fit better with other, newer, content.

Therefore, to emphasize: I believe that when writing HyperText, it is natural for MicroContent to remain in a constant state of revision as it is groomed to be both thematically-relevant, informationally-orthogonal, and grammatically-proper with all the MacroContent including it.

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APPENDIX A: Key Concepts

The terms in this appendix would normally be accessed through hypertextual transclusion. However, since this is a print-based, linear document, I have elected to put them in a glossary of key concepts.

HyperText

The first person to mention a hypertext-like machine appears to be VannevarBush, who in 1945, introduced the Memex,-
A hypothetical proto-hypertext system which would allow individuals to compress and store all of their books, records, and communications, "mechanized so that it may be consulted with exceeding speed and flexibility." The memex would provide an "enlarged intimate supplement to one's memory," (Wikipedia2013Memex).+(Bush1945AsWeMayThink).+

Fifteen years later, in 1960, TheodorNelson+ begins building ProjectXanadu.+ And 5 years later in 1965, TheodorNelson uses the term "hyper-text" for, what appears to be, the first time in history. He calls hyper-text a "more flexible, more generalized, non-linear presentation of material on a particular subject," (Wedeles1965VassarNews).+

Since that time, other authors have added their own definitions, such as JimRosenberg,+ who defines HyperText as "a non-linear, non-sequential informational medium which intermingles

interactive structural operations with content". (Rosenberg1996Structure)+ JimRosenberg also discusses HyperTextStructure.+

Personally, I prefer ArnaudLeene's term MicroWeb,+ which he uses instead of HyperText and, in my opinion, fits better with our modern notion of the WorldWideWeb,+ Leene2005MicroContentEverywhere.+

According to ProfessorSteveSchneider (2012), there are "three essential characteristics of HyperText":

Linking+

Tagging+

Transclusion+

TiddlySpace provides all three techniques. Linking is provided by [[Link Name|URL]] markup and is very similar to web-based hyperlinks. Tagging MicroContent tiddlers can be done at time of creation, through editing or via specialized plugins and these tags are easily to referenced, sorted, etc. Finally, transclusion is provided by <<tiddler TiddlerName>> markup which "opens" the specified tiddler inside the current one. Best of all, TiddlySpace allows each of these HyperTextualTechniques to be customized.

In POS262OnlinePolitics+ students were not explicitly taught HyperTextTheory,+ yet they quickly learned to use HyperTextualTechniques in order to get their work done. I believe this encourages HyperTextLiteracy.

HyperTextual

Whenever we journey to a new place we search for terms to label the things we see. In HyperText, one of those things is user behavior with respect to the HyperText document. Common behaviors include: reading, writing, learning, and teaching.

TiddlyWords+ made it convenient for me to refer to these four terms as ReadingHyperText, WritingHyperText, LearningHyperText, and TeachingHyperText.

As my HyperText experience grew I found that I wanted these four terms to sort together alphabetically, so I reversed their constituent parts to be: HyperTextReading, HyperTextWriting, HyperTextLearning, and HyperTextTeaching.

Then I found DawneneHammerberg, who studies children's literature. In Hammerberg2011ReadingAndWritingHypertextually+ she says that "children's literature embobies cues for reading that extend beyond the letters and words on the page, demanding interpretation and interaction with the text beyond the decoding of print." She calls these "hypertextual" elements and asserts that they take the reader "beyond printed words," into "multiple perspectives," and "complex themes." Some even allow the reader to forge their own path through a document.

Reflecting on DawneneHammerberg's hypertextual term I realized that she was not specifically talking about technical HyperText constructs, such as linking, tagging, and transclusion, yet her characterization of going "beyond printed words," into "multiple perspectives," and "complexe

themes," described the process of reading HyperText better than ReadingHyperText. In fact, I began to realize that users don't read hypertext as much as users engage in hypertextual reading. The distinction is subtle, but reading HyperText is reading a digital document and harkens back to PrintLiteracy,+ while HypertextualReading portrays a process by which people read and interact with a non-linear composition which intermingles structure with content.

Thus, my evolution from ReadingHyperText, to HyperTextReading, and ultimately to HypertextualReading (and the same for HypertextualWriting, HypertextualLearning, and HypertextualTeaching).

See also Who Said Hypertextual First+

MicroContent

In simplest terms, MicroContent is a single unit of information with a single idea, much like a well-written paragraph.+ Yet, MicroContent is an evolving term discussed by many scholars,+ some of whom outline its attributes+ and develop a life-cycle by which it is created and ultimately destroyed.+ Once created, MicroContent has many advantages+ over other forms of information.

Refocusing on my topic: It is important to note that MicroContent is central to both TiddlyWiki and TiddlySpace. In both cases, these interfaces are of no real value without the MicroContent Tiddlers,+ that they aggregate into the MacroContent+ wikis and spaces we know them for, (TiddlyWiki2011MicroContent).+

StructuredMicroContent is a type, kind, or subset of MicroContent.+

While ArnaudLeene+ believes all MicroContent is structured to some extent (Leene2005MicroContentEverywhere)+ - with some being extremely minimally structured (title, permalink, description), and others being far more - I believe the degree makes a big difference. For example, asking students to produce MicroContent with titles, permalinks, and descriptions will yield far different results than asking them to produce MicroContent with titles, ingredient lists, preparation time, cooking time, number served, etc. The first group could create a collection of almost anything, while the second would overwhelmingly create a collection of recipes.

Therefore, I define StructuredMicroContent to be MicroContent that is created in a structured manner, using a standardized format, online form, or some other method with an intuitively obvious goal of keeping the output similar in some way, and thus facilitating ContentReuse.+

Students who create StructuredMicroContent appear to understand the modularity of MicroContent better than those that do not. Therefore, a class meant to introduce students to HyperText should provide a method for students to quickly and easily build StructuredMicroContent.

POS262 required students to create a large amount of StructuredMicroContent in order to fulfill their assignments. I believe that this large-scale production of StructuredMicroContent increased students' comfort with ContentReuse,+ which, in turn, encouraged their comfort with HyperTextualTechniques+ and thus encouraged HyperTextLiteracy.+

StructuredMicroContent

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Therefore, I define StructuredMicroContent to be MicroContent that is created in a structured manner, using a standardized format, online form, or some other method with an intuitively obvious goal of keeping the output similar in some way, and thus facilitating ContentReuse.+
Content Reuse-
ContentReuse is to use informational content again after it has already been used once. This includes Conventional ContentReuse where the item is used again for the same function, and New Life ContentReuse where it is used for a different function (Wikipedia2013Reuse).+

I believe ContentReuse becomes far more interesting and effective as the amount of MicroContent+ in a HyperText document increases.

I have made ContentReuse a stylistic goal in this paper because I believe that it highlights the nonlinear nature of the HyperText document employing it.

This document is full of ContentReuse. For instance, the IDT590 Observations+ Tiddler is actually comprised of four other Tiddlers and contains no unique content itself. Behind the scenes it looks like this:

<<tiddler IDT590HyperTextWorkshop>>

<<tiddler IDT590ClassStructureBrief>>

<<tiddler IDT590ClassStructure>>

<<tiddler IDT590Observations>>

Each <<tiddler>> line is a TiddlySpace macro which Transcludes+ that tiddler into the IDT590 Observations Tiddler.

HyperTextualTeaching

HypertextualTeaching focuses on encouraging students to understand concepts as nodes of knowledge (i.e. MicroContent)+ that can be linked together in various ways and into numerous non-linear and linear sequences. It is the logical counterpart to HyperTextualLearning.+

HypertextualTeaching is different than teaching someone to use a HyperText. Though most students need an introduction to HyperTextualTools,+ such as TiddlySpace,+ learning to operate in these environments does not teach the HypertextualReading+ and HypertextualWriting+ skills necessary to maximize their potential.

This project focuses on the development of a TiddlySpaceEducationalEnvironment+ because I believe such an educational platform is a prerequisite to the development of a fully HyperTextualTeaching paradigm. Furthermore, I believe that HyperTextualTeaching will improve overall educational results.

See also HyperText vs. HyperTextual+

APPENDIX B: PROPOSAL FOR RESEARCH

INVOLVING HUMAN SUBJECTS

This appendix contains the exact proposal that I submitted to the SUNYIT Independent Research

Board (IRB), for research involving human subjects. It is left in the format in which I presented.

PROPOSAL FOR RESEARCH INVOLVING HUMAN SUBJECTS

SUNY Institute of Technology
100 Seymour Road
Utica, New York 13504-3050

Title of Research: Hypertextual Teaching and Learning

Submitted by: Jason Shaw

Date: October 3, 2012

Please complete the following and return this form to the IRB committee via <u>humansubjects@sunyit.edu</u>. You may also direct any questions you have to this same e-mail address. Note that grant proposals for research involving human subjects must be reviewed and approved by the committee before submission to the funding agency.

1. *Title of proposal*

Hypertextual Teaching and Learning

2.   *Objectives of Research Study*

Provide a summary statement of the proposal including the generic problem or question to which the study is addressed (not specific hypothesis or procedures) written in language understandable to a layperson.

Hypertext techniques provide an opportunity to enrich the teaching and learning experience. There has been little scholarly work to date that has systematically examined these techniques in an educational setting.

Professor Schneider is very interested in hypertext techniques. A Fall 2012 class -- POS262: Online Politics -- has been designed to utilize hypertext techniques throughout the semester.

In an effort to understand how students read, write, & learn hypertextually I would like to observe this class. The students are engaged in creating a hypertextual representation of their emerging knowledge, which provides the opportunity to do most of my observation in an online setting. To supplement my online observation, I would also like to meet with the class in an in-person focus group, and engage students during the second half of the semester in online discussions and emails.

For training grant proposals, indicate who (other than the trainees) will be responsible for contacting and informing subjects.

Professor Schneider may be talking to students about the research in a general sense but he will not know which students are involved in the study, so he will not talk to any of them about their specific participation.

3. *Subjects*

Describe the requirements for a subject population, including age range, sex, and number. Explain the rationale for using in this population any special groups such as prisoners, children, the mentally disabled, or groups whose ability to give voluntary informed consent may be in question. It should also be understood that investigators must indicate what measure they will take to protect the right of minors, (persons who are 17 or younger), e.g. parental consent, approval by school administrators, etc.

a. Requirements for subject population

SUNYIT students in POS262, Online Politics, Fall 2012. Students must be 18 years of age or older.

b. Rationale for using this population

Class is using hypertext techniques for reading, writing and learning extensively.

c. **Measures to be taken to protect human rights of subject**

Students will be informed of observation, asked for voluntary participation and any requests they have will be respected. Using an "Observation Space" the researcher will only have access to the work product of participating students.

4. *Procedures*

In this section, please provide a general description of the procedures followed during the course of the investigation, including any experimental tests or manipulations to be used. Also provide a description of the experiences of subjects during participation in the experiment, including instructions given to subjects, the nature of the tasks they are required to perform, informational or interpersonal feedback which subjects receive, the total time required for participation and the locale of the experiment. ***Note: The IRB operates under the assumption that NO research involving ANY risk to the welfare of subjects can be performed by student researchers. Research involving risks to subjects may be performed by faculty, but only in those cases where the IRB is satisfied that the benefits of the research warrant the level of risk involved.***

a. **Procedures followed by researcher**

I will be introduced to the class as a qualitative researcher observing POS262 in order to understand how reading, writing & teaching hypertext techniques work in a real-life class setting.

Most of my observation will be done passively as I watch online work products being built and analyze the situations arising within the framework of the online class. Please note that I will not be able to see all of a student's work. My study will include an "Observation Space," which will only follow the work of those students who elect to participate in this study.

From time-to-time I will visit the physical classroom and ask several questions to the entire class, engaging them in a focus-group setting. Furthermore, I may initiate online discussions via an email list and private emails. Email addresses are readily available from the SITNetIDs the students will be using in the class to identify their work.

b. **Experiences of subject during participation in the experiment**

Student subjects will do online work and I will watch them from my observation space as they publish work product. I don't anticipate much interaction here. Of course, it is possible that I may see something really interesting and want to ask the

student about it. If so, then I would email the student but not inform or include Prof. Schneider in the discussion, since doing so would make him aware of a student's participation status.

When I visit the classroom, students may participate in a voluntary group discussion during normally scheduled classroom time. It is possible that actual examples from class assignments may be referenced. Based on the conversations had, I may follow-up using email.

c. Instructions given to subjects

A graduate student in Information Design & Theory will be observing this class during the second half of the semester. He is more interested in the manner and mode in which your information is posted rather than the actual content of the information posted. In essence, he wants to understand how POS262 students utilize hypertext techniques to enhance their learning experience.

Please note that all of your work online is private and cannot be seen by the researcher unless you grant him consent to observe it. If you are willing to have your work examined in the context of this study, you will be asked to sign a consent form. Please be aware that your participation in this study will in no way influence your grade in the course. In fact, the professor for this class will not be aware of your participation status. Any work produced by students who do not opt-in to this study will not be examined or evaluated in this study.

In addition to online observation, an in-class focus group will be conducted during the semester. Your participation in this focus group is voluntary, and you will not receive a grade based on your participation in the focus group. You may choose to answer whatever questions you feel comfortable answering.

d. The nature of the tasks they are required to perform

Students are not being asked to perform any task beyond normal class participation.

During in-class discussion: voluntarily ask, answer, & discuss questions raised by researcher.

e. Informational or interpersonal feedback which subjects receive

The researcher may, on occasion, contact a student directly by email. Such contact would be purely inquisitive and not a critique in any way. The contact would probably be in regards to either a class activity or a question raised in the group discussion.

f. **Total time required for participation**

Observe online portion of class all semester. Conduct focus group for approximately 90 minutes.

g. **Locale of the experiment**

Most observation will occur through an observational filter in the class' online learning environment. Any tangible observation will occur at the SUNY-IT Campus, Regular POS262 Classroom.

h. **Procedures for maintaining confidentiality**

Since all work product is associated with SITNetIDs, the posts are inherently personal. Thus, SITNetIDs will be masked in any and all published research and/or materials made publicly available.

Consent forms will be housed for 2 years then destroyed. During the Fall 2012 semester, the consent forms will be securely stored by the IRB Coordinator, Holly Jones. Once the semester is over, in Spring 2013, the consent forms will be moved to Professor Schneider's office, for secure storage. Finally, the consent forms will be destroyed in Fall 2014.

i. **Debriefing Procedures**

Will discuss with Professor Schneider. Students will remain anonymous by masking SITNetIDs.

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j. **Procedures which mitigate against risk to research subject**

Describe necessary procedures for protecting against or minimizing potential risks to subjects with an assessment of their likely effectiveness.

Since most of the risk to students involve a possible impact of their lack of participation in the study on their grade in the course (see below), student participatory status will not be shared with the Professor.

5. *Consent*

A copy of the consent form given to each subject must be attached. The consent form must contain the following pieces of information. Please restate this information below.

a. Describe the informed consent procedures to be followed, including how and where informed consent will be obtained.

Consent forms will be handed to students in person and gone over as a group. They will be given time to consider their consent and to ask questions. Students will be asked to return forms indicating their consent, or to return blank forms if they decline to participate. The researcher will not review the contents of the consent form in the presence of the students. In this way, students will not have to reveal their participation status in a potentially coercive environment.

b. Name and number of the experiment

Hypertextual Teaching and Learning

c. Objectives of the experiment

This section may resemble #3 above, but need not reveal any information that would undermine the validity or obviate the effectiveness of the experimental procedures.

The objectives of the study are to understand how students learn to use hypertext techniques and how hypertext techniques help students comprehend course material.

d. Procedures

Provide a general description of the types of tasks and experiences the person can expect during his or her participation in the experiment.

You will be asked to continue your coursework, including making ActionNotes and writing assignments. There will be no change in your class behavior. In addition, during a scheduled focus group, you will have the opportunity to discuss your reactions to the hypertextual environment in which the class has been taught.

e. **Risks and Benefits**

A statement of the level and nature of positive and negative incentives associated with participation in the experiment.

Your participation in this study may enhance your understanding of the course material specifically, and of hypertext more generally. There are no negative outcomes should you decide not to participate in this study.

f. **Withdrawal Option**

Provide a statement to the effect that the subject is free to withdraw his or her consent and to discontinue participation in the experiment at any time.

You may withdraw your consent to participate in this study at any time by notifying Jason Shaw, the graduate student conducting this study. Upon notification, your published work will no longer be considered or reviewed during the online evaluation of the class.

g. **Date and signature of the subject**

Please sign & date consent forms prior to participation.

h. **Potential Benefits**

Assess the potential benefits to be gained by the individual subject, as well as benefits that may accrue to society in general, because of the planned research.
This study has the potential to reveal the value of hypertextual learning techniques. These findings may be published and/or shared with others interested in implementing these techniques.

6. *Risks to Research Subjects*

Describe and assess any potential risks -- physical, psychological, social, legal or other -- and assess the likelihood and seriousness of such risk. If methods of research create potential risks, describe other methods, if any, that were considered and why they will not be used.

a.   **Potential physical risk:**

None

b. **Potential psychological risk:**

None

c. **Potential social risk:**

Speaking in class.

d. **Potential legal risk:**

None

e. **Other potential risks:**

There is minimal risk that students may perceive that a lack of participation in the study will negatively influence the grade they receive. To minimize this risk, the participatory status of students in the study will not be shared with Professor Schneider.

f. **Analyze the risk-benefit ratio**

The risks to students are minimal, and the benefits to the researcher are significant.

7. *Anticipate report to the committee*

Provide an indication of the expected nature of a brief report of the outcome of the experiment (e.g., abstract from a standard research report) to be submitted to the committee upon completion of the research.

Hypertextual techniques provide significant opportunities for students to enhance their learning of conceptual ideas. Providing students with the ability to read and write hypertexually enabled them to connect broad course concepts with their individual level observations, especially important to a course whose learning objectives included gaining factual knowledge and being able to understand fundamental generalizations and theories related to the practice of politics in online environments.

Consent Form for Hypertextual Teaching and Learning

You are being invited to participate in a research study. Please take a few moments to read the explanations that follow to help you decide whether to participate or not.

Description of Study

POS262: Online Politics has been designed to utilize hypertext techniques. These techniques may provide an opportunity to enrich the teaching and learning experience. The objectives of this study are to understand how students learn to use hypertext techniques and how hypertext techniques help students comprehend course material.

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Risks and Discomforts

You must be 18 years or older to participate in this study. As a participant in this study you will be asked to simply continue your coursework. It will not require any change in your class behavior. Your decision to participate in this study will not be shared with Professor Schneider, thus ensuring that your participation cannot effect your grade.

The study is more interested in the manner and mode in which your information is posted rather than the actual content of the information posted. In essence, it aims to understand how POS262 students utilize hypertext techniques to enhance their learning experience.

During a scheduled focus group, you will have the opportunity to discuss your reactions to the class' teaching methods.

Possible Benefits

Your participation in this study may enhance your understanding of the course material and of hypertext. Furthermore, this study has the potential to reveal the value of hypertextual learning techniques.

Confidentiality of Records

All work product in this study is associated with SITNetIDs. SITNetIDs will be masked in any and all research and/or materials made publicly available.

Contact Information

Jason Shaw, IDT Graduate Student, shawj2@sunyit.edu, (607) 343-8939

Statement that Research is Voluntary

Your participation in this research is entirely voluntary and much appreciated. If you do not wish to participate, then please withhold your consent.

By giving your consent you are acknowledging that you are at least 18 yeras of age. Those less than 18 will be omitted from this study.

Statement of Consent

I have read the above information, and have received answers to any questions I have asked. I freely consent to take part in the study.

Your Signature _____ Date _____