**Analysis Phase**

My client Mr. McClean's learning problem involves not believing he is supplying his students with adequate, modern preparation for their entire curriculum in the course Technology for Teachers at his institution, Claflin University. I collect as much background information about the students and the curriculum to phrase the design process and determine whether a redesign of part or his entire course is necessary, or if part of or an entirely new course should be designed.

1. Learner Background
	1. Students range between traditional college second semester sophomores and second semester juniors on average; a few may be adult learners
	2. Students are preparing for the teaching profession
	3. Most students intend to enter the teaching field immediately after graduation, some after attending graduate school, a few are uncertain when exactly they would begin teaching
	4. Students vary in matriculation sets since the program requires formal acceptance into teacher education, which would then enable them to do restricted courses
	5. Students recognize and are in agreement that educators need technology proficiency to teach in PreK-12 classrooms
	6. Student enrollment in the class over the last 3 semesters have at least an estimated 80% of students already familiar with or in possession of at least one mobile computing and communications device (e.g. smart phone, tablet), and social networking account (e.g. Facebook, Twitter); all have at least once used a computer (workstation, pc, or laptop) to complete an assignment, and seen an interactive electronic whiteboard in use at college or even before.
2. Course Background
	1. The course exists due to the need for more technologically competent classroom teachers; expectations by accreditation and reporting national, regional and state associations; and preparation demands to complete a professional electronic portfolio before graduation
	2. The course is a recommended elective in a 'required electives block'
	3. The course does not require formal admission to take and has no specified other prerequisite, so it has students of several different stages of teacher preparation
	4. The course has been designed and adopted by professional teacher educators with only cursory input from an information technology specialist (ITS), and also taught by professors that did not have a strong technological background
	5. The course was team taught since its adoption in Fall of 2010-11 with some guest presenters for technology specifics at times, but Spring of 2011-12 was the first time an ITS actually was part of the teaching team
	6. The course alternates between settings and is approximately 25% hands-on in class when averaged across the semesters
	7. Instruction and modeling is often delivered in class, then students are given time to complete assignments
	8. Findings on that approach led to the ITS’s function to be on hand during the hands-on times to guide project completion or be asked specific questions when students encounter problems
	9. Approximately 50% of course time is supposed to concentrate on theory, awareness, scenario exploration and dialogue to help students understand the implications of technology integration in instruction
	10. Course grades and feedback give indication of proficiency during and at the end of the course; the comparison of electronic portfolios or the creation process is a strong indicator of retention of information and an informal post assessment

**Design Phase Rationale**

From these findings and on review of the syllabus which indicates these particular projects:

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| Student Learning Outcomes | Course Assessment | Relevant Standard(s)\* |
| Produce a recorded teaching scenario | Teaching Scenario Video Assignment | SOE CF 3, INTASC 6, CUESO 2 |
| Present and analyze data in Excel | Mock TWS component | SOE CF 3, APS 3, INTASC 6, INTASC 8, CUESO 2 |
| Create a website  | Website assignment | SOE CF 3, INTASC 6, CUESO 2 |
| Develop a Power Point presentation | Power Point assignment | SOE CF 3, INTASC 6, CUESO 2 |
| Present an interactive presentation | Final Exam/Presentation | SOE CF 3, INTASC 6, CUESO 2 |
| Review current research on educational technology | Reaction papers | SOE CF 1, INTASC 9, CUESO 2 |

***\*see next page for Standards details highlighted in dark yellow***

it is my finding that with space in the course for projects, a strict redesign of the entire course is not necessary. The redesign will focus on the ‘Create a website’ student learning outcome to provide a learning opportunity with several other projects. The design of the new website assignment will include embedding the Excel data, the recorded teaching scenario and the PowerPoint slides as files in the project page. It is considered important that teachers and other professionals become proficient with industry standard office productivity software such as Excel, PowerPoint and Movie Maker; however, it is just as important to note there are many new robust innovations in software that allow educators more flexibility and range and are becoming quite common. Reviewing current research in technology (another student learning outcome), Online Collaborative Learning (OCL) is considered to have major opportunities and implications for educators since it has spawned a recognized theory and encompasses online discourse, group learning online environments, instructor-led or asynchronous online learning, place-independent learning, text-based communication methods, and Internet-mediated discourse. I consider this current research to be relevant enough that a reflection of this should be in the student practice, demonstrated by coursework.

*Continued after following Standards page*

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| --- | --- | --- | --- | --- |
| **School of Education’s Conceptual Framework****(SOE CF)** | **South Carolina’s ADEPT** **Performance System (APS)** | **South Carolina’s Education and Economic Development Act (EEDA)** | **Interstate New Teacher Assessment and Support Consortium (INTASC)** | **Claflin University’s****Expected Student Outcomes** **(CUESO)** |
| Domain I: Teacher as LeaderDomain II: Teacher as Reflective PractitionerDomain III: Teacher as Moral Service Provider | APS 1: Long-range planningAPS 2: Short-range planning of InstructionAPS 3: Planning assessments and using dataAPS 4: Establishing and maintaining high expectations for learnersAPS 5: Using instructional strategies to facilitate learningAPS 6: Providing content for learnersAPS 7: Monitoring, assessing, and enhancing learningAPS 8: Maintaining an environment that promotes learningAPS 9: Managing the classroomAPS 10: Fulfilling professional responsibilities  | Standard 1: Career Guidance ProcessStandard 2: Curriculum framework for career clusters of study and IGPStandard 3: Career Guidance ModelStandard 4: Character educationStandard 5: Contextual teachingStandard 6: Cooperative learningStandard 7: Learning style | Standard 1: Subject matterStandard 2: Student learningStandard 3: Diverse learnersStandard 4: Instructional strategiesStandard 5: Learning environmentStandard 6: CommunicationStandard 7: Planning instructionStandard 8: AssessmentStandard 9: Reflection and professional developmentStandard 10: Collaboration, ethics, & relationships | Think critically and communicate effectivelyDemonstrate knowledge of science and technology Knowledge of history, civilization, and cultureApply valid reasoning processes to solve problemsPrepared to practice social, moral, environmental, and ethical responsibilityUnderstanding of concepts of specific disciplineDemonstrate vision, courage, character, humility, and confidence |

Note the two Standards highlighted in yellow. Online Collaborative Learning principles allows the opportunity to cover more standards to within the scope of this course. Cooperative learning will be addressed in the design of this new take on the website assignment in the following ways:

1. Through the use of Weebly.com, the choice of the department to allow students (henceforth referred to as teacher candidates) to explore web design, its ability to have a second or more editors on a person’s account enables the class to collaborate on building part (pages) or all of a site.
2. Through the use of other online resources that can be used in conjunction with Weebly, one or more students can communicate instruction or information to peers, students (the teacher candidate’s potential students), parents, administrators, and others.

INTASC Standard 5, learning environments, is also addressed by the ability of the teacher candidate:

1. Teacher candidates have the opportunity to effect learning moments from a non-traditional learning environment, i.e. online.
2. Teacher candidates are also experiencing learning moments in an online learning environment
3. Learning environments are varied as parts of the project can be peer collaborated or teacher driven

The rest of the design of the web assignment introduces the use of Prezzi.com, Youtube.com and Scribd.com to empower teacher candidates to improve the graphic and interface experiences of visitors to their site. They each correspond to the projects with PowerPoint, Movie Maker and Excel (or Word submitted reflections) respectively in some way. The overarching idea is to remove the reliance on users having to download the files the students created locally to view the content of the work.

**Design and Development Components**

To have the impact on the learners, the appropriate guidelines and principles were considered:
ARCS Model

1. First and foremost, motivation is one of the key challenges for Mr. McClean with his learners so the ARCS model was considered to grab their **Attention** by applying to the **Variability (A3)** of their work. They have proven themselves interested in the suggestion to upload their movie to Youtube and embed it to play directly on their Weebly page, similarly they may express little hesitation to do the same to a document and a presentation tool.
2. **Relevance** is built in by the need to also perfect these skills for the eventual purpose of producing an electronic professional portfolio (**motive matching (R2)**), but further referenced, through **Familiarity (R3)**. Most, if not all, of the students taking this course have seen or accessed a Youtube video. All may not have uploaded one, so…
3. **Confidence** can beinstilledby the **opportunity for success (C2)** coming from a **personally controlled (C3)** product that has further uses with something they enjoy although it was a **learning** **requirement (C1)**. Likewise, less the average young adult and more the educator, similar confidence is built by being able to reach students online with documents and videos, as well as prospective employers.



Although Youtube has the module, the custom HTML enables linking of Prezzi and Scribd.

1. **Satisfaction** is stimulated through **Intrinsic Reinforcement (S1)** such as the ability to display their Philosophy of Education or Resume (two other documents required on their webpage) with the exact design features they formatted the document with. Pasting text directly to Weebly webpages does not give as much control over format as embedding the actual document does, so there is a sense of accomplishment to be gained by using Scribd to achieve exact representation. Likewise, there is some pride expressed from the online society of today that they have video media somewhere that is accessible to interested parties and ‘followers’.

Since the teacher candidates taking this course are considered young adults (averaging 19-20 years old) with the few 25+ more mature student enrolled, aspects of Adult Learning Theory were also considered.

1. This was mostly incorporated by giving the entire project list near the beginning of the semester, but referencing them and requiring them much later. Combining this with a few class sessions operated remotely where they can get a feel for distance learning the teacher candidate gets a sense of **self-directed** pacing.
2. There is also the sense that the real world application of this project makes it more worthwhile in the eyes of an adult. They are theorized in Adult Learning Theory to be more motivated by **practical** applications of their learning; therefore, the idea that the site is a showcase or a virtual chalkboard, that the documents are readily viewable, and that video can be put to use educationally in their actual field is an approach to the literature or verbal presentations the professor might make.
3. An experiential technique is also promoted to motivate adult learning by not spelling out all of how to do the entire site, or other components of the site

Online Collaborative Learning

1. Although Scribd, Youtube and Prezzi will definitely be mentioned and modeled, this will not be entirely hands-on at that time for the teacher candidate, therein peer group completing of part of the website will be introduced and some of the work time (with a deliverable) will be scheduled during an out of physical class online meeting
2. The candidates will each be required to add the professors (quasi-permanently) as editors on the site, and at least 2 other classmates (temporarily). Learning will have occurred describing Weebly, Scribd, Youtube and Prezzi as Web 2.0 tools, and at least one page on each of their site will be dedicated to them adding a collaborative product onto it of another Web 2.0 tool e.g. SumoPaint

Cognitive Load Theory and Cognitive Overload

1. To avoid cognitive load issues, some of the work is considered done at varying stages so as not to overwhelm the thinking processes that all these components constitute the completed site.
2. **Goal Free Problems** are given in that, while some general guidelines may exist, the expectations of the products are largely unique and at the candidates’ fancy

Cognitive Design Principles

1. **Problem Principles**, having the learners engaged in something that creates solutions they will benefit from in the actual teaching field, and being sure to state it for their benefit, is another solution encouraged with the web project (and many other aspects of the course)
2. The approach to teaching will access the **Activation Principle** by relating most of the other embedding processes to embedding examples of Youtube that they are already familiar with
3. Just as the decision to include the ITS in instruction, Mr. McClean will model all the new material to the class before they attempt it, in order to follow the **Demonstration Principle**
4. Since the material is specific to creating an electronic portfolio later in their matriculation, which serves another purpose as a self-promotion tool, the **Integration Principle** will be referenced since it will more immediately serve as a submission vehicle for the work for the final presentation

Principles of Multimedia Learning

1. The project briefs will then be accompanied by learning instruments that subscribe to the **Multimedia Principle** that graphics near words can improve learning. This will be achieved by having a tutorial of sorts on how to convert the ‘present work’, the PowerPoint, Excel/other and movie to web based versions. The tutorial structure can be seen at <http://mccleanedtech.weebly.com/722-home.html> where the designed project is housed.
2. As the site demonstrates, the **Contiguity Principle** is used by keeping the referenced images near the explanation or instructional text
3. Although the embedded example Youtube movie has audio, and contains instruction, it is for another purpose than explaining how to navigate the site; however, the specific instruction embedded will have the instructor explaining as it is shown since this will be delivered in class. An online embedding of audio instructions is encouraged for future purposes that can benefit distance learning. This applies to the **Modality Principle**, but…
4. The **Redundancy Principle** is observed since text is with the graphics, including audio has the possibility of hurting learning.

25 Learning Principles

1. To make all the work coherent, and a well-connected representation of the main ideas, each of the embedding processes is separated to reduce distracting material (**Coherence Effect**). Graphically it helped that work is no longer necessary to be downloaded to have, but it can sometimes be confusing to have multiple elements on a page, especially close together and with no rhythm to size matching.

Redesigned Project Outline

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| Present and analyze data in Excel | Mock TWS component | SOE CF 3, APS 3, INTASC 6, INTASC 8, CUESO 2 |
| Create a website; share design of one or more pages with class team | Website assignment | SOE CF 3, INTASC 5 & 6, CUESO 2, EEDA 6 |
| Develop a Power Point presentation | Power Point assignment | SOE CF 3, INTASC 6, CUESO 2 |
| Review current research on educational technology | Reaction papers | SOE CF 1, INTASC 9, CUESO 2 |
| Present an interactive presentation using your website to present projects completed. Work must be viewable on the site not requiring download | Final Exam/Presentation | SOE CF 3, INTASC 5 & 6, CUESO 2 |