

Team KTWO's Response to an Instructional Design Problem and Corresponding Solution

Kristen Clark, Maggie Larke, Andrea Porter, and Courtney Stassinis

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The University of Akron's Instructional Design course is becoming a fully online course this fall. This change is eliminating students' ability to meet face to face. A fully online program may provide a convenience factor that will potentially allow more graduate students to apply for this program, however, with this change comes many challenges and obstacles. It is with these challenges and obstacles in mind that our instructional design team, KTWO, has chosen to closely examine this existing instructional design problem. It is our intent to follow the steps of ADDIE to create a solution for this ID problem that will help the transition from a blended course to a fully online course occur as smoothly as possible. To report our team's use of the instructional design process and our developed solution, the members of KTWO have worked together to write this paper. Kristen Clark wrote the introduction and analysis section, Maggie Larke wrote the design section, Andrea Porter wrote the development section, and Courtney Stassinis wrote the implementation and evaluation sections of our paper.

### **Analysis**

To begin the instructional design process, our team first needed to determine the audience for whom we are targeting our solution. Our audience includes future graduate students of the Instructional Design course as well as the instructor of this course. To help guide our design, our team needed to analyze the potential problems the instructor and future students might face and determine the corresponding causes. The first challenge we have identified is that students may not have the required equipment for the ID course ready for use by the first week of class. The success of the graduate students' learning and collaboration will depend much more heavily on the quality of the equipment they decide to purchase. We also decided that students may not what specific brands of equipment to buy, especially if they are new to online learning. The cause of this challenge is that the students will no longer be able to meet face to face and will

need to rely on the use of microphones, headsets, and web-cams for all communication, even during the first week of class. Another problem that we have identified is that the creation of teams for group work will become more challenging. The cause of this problem is that students will not be able to speak to one another in person to decide if they would work well with one another. Another obstacle we are aware of is that collaboration on group work solely online may be intimidating and difficult for many students. This is due to their lack of familiarity and experience with web 2.0 collaboration tools. Presenting the final ID project will also become more challenging because graduate students must collaborate extensively without meeting face to face and will need to find an effective way to present their work completely online. One final problem that exists due to this instructional change is that the students risk losing some rapport and personal connection with one another as well as with their instructor and subject matter expert. It will be imperative that the best tools will be in place for effective communication, collaboration, and instruction.

So what do the members of our targeted audience need to learn? First they need to learn what equipment is required of them for the ID course and which types or brands are recommended for purchasing. These graduate students also need to learn how to select team members in order to begin collaborating on group projects and assignments. They will also need to learn about the available web 2.0 tools that will allow them to effectively collaborate with their team members and subject matter expert. Finally, graduate students of the ID course will need to learn what digital media options they have for presenting their final project.

Before actually designing solutions to help address the needs of future ID graduate students, our team took some time to consider the different delivery options. In order to inform the students of the equipment required for this course, as well as recommended brands or types

of equipment to purchase, we decided an e-mail could be sent out prior to class beginning. This same information would also be presented in the form of a flyer which could be passed out during student orientation or sent to students through the mail. To help students create teams for group work we decided that a wikispace could become a place for students to get to know one another through the use of video and/or voice recording. In order to help students feel more comfortable and prepared for online collaboration, they could be provided with a list of web 2.0 tools and time to explore and familiarize themselves with these tools. Finally, students should be encouraged to experiment as they complete trial team assignments before having to actually present their teams' final ID project.

It was also important for our team to consider what constraints exist. The students will be unable to meet face to face and they may not be used to this type of instruction. Students must also be willing to explore possible unfamiliar forms of online collaboration tools which may not always be within their comfort zones. Students can determine their competency by solving and presenting an instructional design project following the phases of ADDIE. They will also use peer evaluation forms to determine ability to successfully collaborate with colleagues using digital media. The graduate students of the ID course will be working in groups during weeks 7-15 of the semester and will be presenting their final ID projects during finals week.

Another part of our team's analysis involved thinking of the classroom and web learning differences as well as online pedagogical considerations. Difficulty can arise when technology does not perform properly when learning online. There is also a risk of losing personal connection when learning solely online between students as well as between students and their instructor or SME. Document sharing and basic communication can be difficult for beginning online collaborators. Online pedagogical considerations include that information needs to be

presented in a way that is appropriate for students who may or may not have experience using web 2.0 and other online learning tools. In addition to this, a variety of learning styles should be taken into consideration when designing instruction.

To conclude the analysis phase, our team created an electronic survey using Google Docs. This survey was sent out to Instructional Technology graduate students currently enrolled in the ID course. This survey helped us collect data to better guide our design and development. We were able to receive feedback regarding what information these students felt was helpful when creating their instructional design teams and what digital media their ID teams have used for collaboration and how they would rate their experience with this media. We were also able to learn what digital media these students felt was most effective for instructors to use during lecture, as well as what specific brands or types of equipment they would recommend for future students to purchase.

Based on our team's analysis, we were able to write clear objectives to help guide the remaining phases of the instructional design process. The first of these objectives is that students of the ID course will have access to a list of required equipment (web-cam and a headset with built in microphone) and will be able to explore recommended options for the required types of equipment. The second of our objectives is that these same students will be able to select their team members by viewing a video of their classmates. The videos will explain when a specific student can meet, his/her strengths and weaknesses, as well as background information about him or herself such as work experience. The graduate students in the ID course will also be able to collaborate and communicate with their colleagues using a variety of Internet media and will be able to collaborate with colleagues to solve an instructional design problem. Also with collaboration and communication in mind, graduate students will find ways to effectively

collaborate with their subject matter expert in order to build a strong rapport and accurate understanding of the ID problem. Another of our objectives explains that students in the ID course will present their final design solution using appropriate digital media and presentation method of their choice. Finally, we have decided that the instructor of the ID course will provide support and coaching with the use of effective tools for instruction, helping to maintain a high level of personal connection and rapport with her students.

### **Design**

The next phase in the ADDIE model is the design phase. The design phase encompasses many sections. The sections are as follows: task analysis, learning theories, a hierarchy of learning objectives, instructional strategies, and the sequence of the course.

To begin the design phase of our project, it is important to look at the task analysis. It is key that prior to taking this fully online course, students should have some knowledge of technology. This would include experience or knowledge of online browsing and web tutorials. Students should also be willing to try new technologies such as web-cams, Elluminate, and Google docs, as these will be important collaboration tools used throughout the course.

The Constructivist and Progressive learning theories inform the design for this project. Students taking this course will have an opportunity to interact with other graduate students and build upon what they already know through the experiences and assignments in this course. Richardson (2003) states that “The Constructivist Theory of learning allows students to create their own understandings through interactions with which they already know and believe and ideas and knowledge that they come into contact with in their learning” (p. 1624). Students in this course will be required to work on a group project and search for information from different sources and a variety of media. Byrom (2010) stated, “Progressivism is a relatively new

teaching philosophy. Many educators are turning from teacher-centered, to student-centered instruction. This means that, instead of the usual lecturing and note taking, the students learn through other means than the teacher transmitting information.”

When placing the objectives in a hierarchy, KTWO looked at what needs to happen first in the course. The first two objectives occur prior to the start of class. An e-mail will go out to students, a flyer will be passed out at orientation, and messages on Springboard will inform students of the required equipment for the Instructional Design course. The second objective gives students the opportunity to explore the different technology that is required. They will be provided with a list of recommendations of the required technology and will get to pick from that list or one of their personal choosing.

The next four objectives pertain to the learning experiences throughout the course. The first objective being that the students will be able to form their teams by logging onto the class wikispace and uploading a video that explains important information about themselves as well as when available to work on the group project. The next objective involves the students working in their groups. The graduate students will be able to work and collaborate with their teams using online communication and collaboration tools in order to complete tasks and solve their design problem. Finally, the students will present their design project with their team, using a digital media presentation tool of their choice.

The last objective is designed for the course instructor. This objective will encompass the entire semester. The instructor will provide support and coaching throughout the semester and will use online tools for instruction to help maintain a connection and positive rapport with the students.

After looking at the objectives for this design project, the KTWO team identified two

learning strategies that will help graduate students in the Instructional Technology cohort achieve the goals and objectives. The first identified learning strategy is the compilation of media and online tools accessible to the students for use in the course. The list includes digital media and tools that the students can use to assist in communication and collaboration with their team and SME. The second learning strategy is the web tutorials posted on the course wikispace. The tutorials show students how to create and upload their personal descriptive video, which will then help with the creation teams as well as how to embed images into a wiki page, and how to create a team movie for presenting group work, etc.

The final part of the design phase consists of the sequence of instruction. The instructional sequence for the Instructional Design course begins before the official start of class and ends during finals week. Before the course begins, students will receive a handout during orientation or through the mail and an e-mail explaining the required equipment for the course. The handout and e-mail will consist of a list of recommended equipment. During the first week of class, the graduate students will have to upload and embed a video into the course wikispace. Graduate students in the class will then view the videos to get to know their classmates. In the second week of class students will visit the wikispace to select their team members. Students will learn about instructional design during weeks 2-7. During weeks 8-15, students will work with their teams on their group instructional design project. Graduate students will present their final design project during finals week. They will present using a creative online tool of their choice.

### **Development**

Our main goal during the development phase is to continue to think about the big idea while developing a solution that covers all the smaller parts. Though the instructional design

problem may seem basic, making assumptions about the audience using the developed plan could jeopardize the success rate. With the audience in mind, the selection of media was the most important part of the development process. The creation of a wikispace provides the Instructional Design graduate students a one stop shop for forming collaborative groups, learning about available web 2.0 tools, viewing tutorials for technical assistance and ideas for collaborating with team members and with their SME, and an area for groups to show progress and communicate with the ID instructor.

After many hours of research with different web 2.0 media, KTWO decided to create a wikispace for a few different reasons. Wikispaces are free and easily accessible, allowing students to create and edit pages in order to upload and embed videos, update group status, and add additional recommendations for equipment. The use of videos within the wikispace will allow students to build a better connection and rapport with their peers, instructor, and SME. We also believe an e-mail should be sent out prior to the first week of class to inform students of the required equipment, with a list of recommendations for specific brands that they can purchase. All students have a university e-mail account, so we believe this will be an optimal way to begin communication with the students. A flyer will also be passed out during orientation or sent through the mail for the aforementioned purpose. The flyer may help inform some students who may not check their e-mail prior to class starting. Our initial survey informed our group that it is important to cover all possible preferred forms of communication.

During the development phase it is imperative to pay close attention to the organization and presentation of new information to support understanding. Our group has accomplished support in our message design by providing an organized space for students to easily navigate through important information. Our use of a flyer also provides a hands-on method of

communication. An added bonus is the students are given conveniently accessible information through the use of an e-mail and Springboard.

Examples of instructional resources are extremely valuable when communicating and teaching online. Within our wikispace, students will find many resources created to assist students with initial introductions and group forming. We have also created a video with an example of collaborations with a SME. There are embedded tutorials to help with possible technical questions. We developed pages within our wikispace for students to leave information about their team's current progress on the ID project and possible questions for the course instructor. These pages will help save time for both the student and instructor, allowing both parties to organize all information in one place.

The formative evaluation strategies our team developed to determine effectiveness of design and materials involved a Google Doc survey for current ID students who were willing to implement our instructional design plan. We developed a Google Doc survey because the submissions and data are stored in your Gmail account and can be accessed quickly. Another advantage of using Google docs for survey forms is that the entire data can be exported in an Excel format. The valuable information received from the Google Doc survey can easily be evaluated and shared with all individuals within a group.

### **Implementation**

As we reached the implementation step of the ADDIE process, we asked for a group of volunteers from our current ID class to take a trial run through our design. The test group was provided with the link to the KTWO facilitators' wikispace page, where they found all the needed information to successfully upload and embed their own personal videos and form a collaboration group. The trial group had the opportunity to explore the wikispace, where they

found information such as what's expected during the first week of the course, the tutorial page, collaboration tools, recommended equipment, and a sample team page. After the group felt comfortable uploading and embedding a video and went through any tutorials that were needed, the members clicked on the "First Week" page to complete the tasks required to create a team.

The target audience was given a timeline to have their videos uploaded and embedded and to have formed a collaboration group. We allowed our trial group to begin working on these tasks on April 2, acting as if that were the first day of the actual semester. We asked that these tasks be completed by the end of the week, with group members and a chosen team name submitted by the following Sunday. Teams were to submit this information by beginning to personalize a team wiki page within our wikispace. Each team is provided a template which they can use to guide their creation of their own team page throughout the semester. Our trial group followed the First Week instructions to begin a team page of their own.

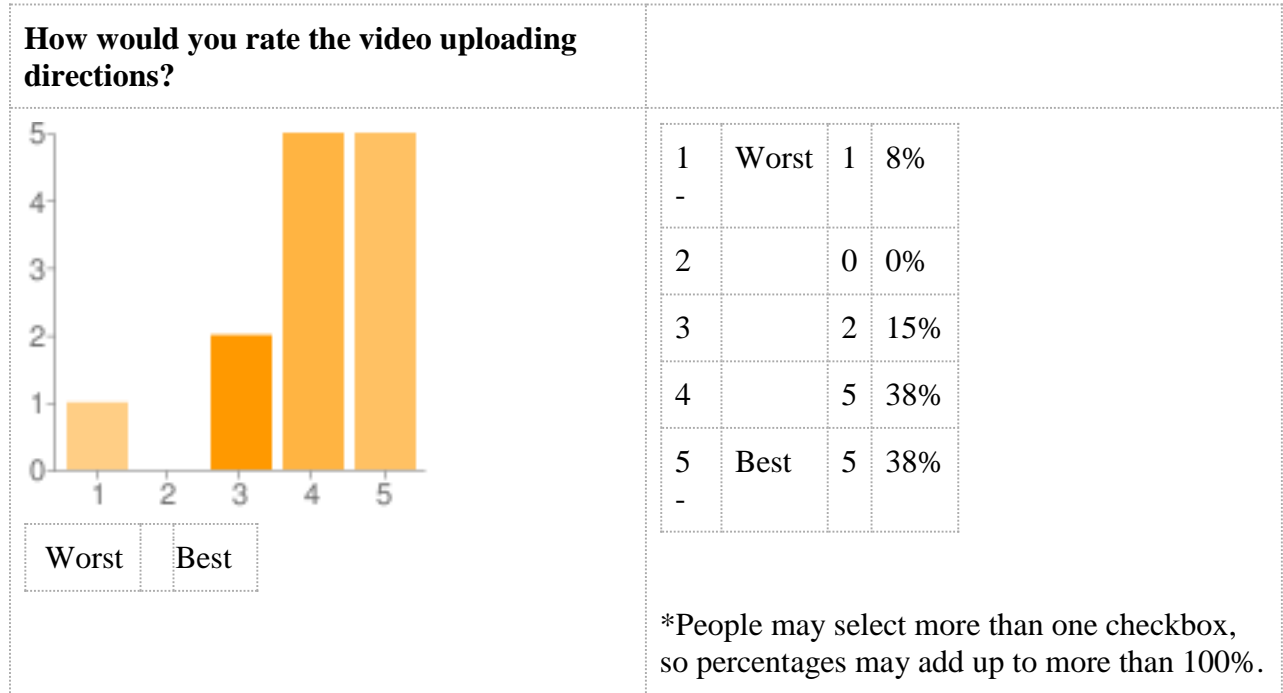
The trial group of the implementation phase was able to follow the steps and guidance from the wiki page and successfully upload and embed videos as well as form a collaboration group. However, as the facilitators, we felt that there were challenges that we faced picking a target audience to test our design. Our group wanted to find a test group that was experienced with using technology and in this field, yet on the other hand, has not actually completed a similar task before and is not already in a collaboration group. Due to the fact that we chose volunteers from our current cohort, we feel that there may still be some difficulties for future students since they have not yet done this before.

With this being a concern, we collaborated with our SME and made a few changes and additions to our wikispace before implementation took place. Some of the additions to the wikispace were the team page templates, as well as a completed team page serving as an

example. Having the pages already made for the future groups, allowed the audience to see what was expected of them as a group and what tasks were to come throughout the course. Another change that was made before implementation was the “clean-up” of the home page. Since not all students will need tutorials to complete the tasks at hand, a tutorial page was added where students will find extra videos and guidance if needed. After these changes and additions, we felt that our trial group and target audience would have an easier time uploading and embedding videos and forming a collaboration group.

### **Evaluation**

Next, we reached the evaluation phase of the ADDIE process. As mentioned in the development section above, our team developed a Google Doc survey for the target audience to complete after they tested the instructional design solution in depth. Our team had also extended an invitation to all fellow classmates in our current Instructional Design class to explore our wikispace as if they were just beginning the ID course, but without any specific tasks and complete the same survey. A total of fourteen current graduate students responded to our administered survey. Below you will find the collection of formative evaluation data received from the survey. In addition to the responses below, our team also received much positive feedback, including statements praising the effectiveness of our solution. With these critiques and suggestions, our team was able to evaluate the implemented design and make any corresponding changes and updates we felt were necessary to improve our final solution.



<b>Survey Response (Critique/Suggestion):</b>	<b>Corresponding Change/Update Made:</b>
“It seems like it could be a bit overwhelming for a first time student. The links provided are nice, but are they all needed?”	We removed three of the available links from our collaboration tools list, leaving only free resources. We also noted on the collaboration wiki page that survey responses showed that Elluminate and Google Docs met most of previous students’ collaboration needs, but that students should explore other options to find what works best for their team.
“Many of the pages need more white space.”	We added more space between text and changed some of our font colors to make our text easier to follow and read.
“The design is good, but I'd like to see a U of A logo in the upper right in place of the wikispaces tree. The logo gives a little legitimacy to the site.”	We added a U of A logo to our homepage as well as our wikispace header.
“I think the directions are fine, but the language sets a tone for the class (“link address type looking thing”. . .use the proper word "embed code" -- it's a learning experience!”	This language reference referred to a video tutorial. We replaced this tutorial with a different video which used more professional language/terminology.
“Could not find directions.”	We embedded internal wikispace links onto the homepage to make navigation even easier.
One student commented “that other options should be made available in case a student does not have a webcam or their webcam were not working.”	Students will be notified in advance that a webcam is a course equipment requirement. We feel, along with many of our colleagues, that in a fully online course, the use of video is irreplaceable and very valuable at creating a strong rapport and relationship between classmates.

<p>“Couldn't students simply complete a wiki page themselves where they list the characteristics?”</p>	<p>While this is possible, our wikispace creates a one stop shop for online learners' needs and students are able to view all of their classmates' videos as well as their availability in one place to make team creation faster and easier. We did receive more positive comments than negative.</p>
<p>“Making the video was fun though, but as a busy grad student/teacher, I think for my own personal preference, a discussion board would be my preference simply because it is less time consuming and more efficient. =)”</p>	<p>It is a little time consuming, but we are also having the students meet in a discussion. This task is also only required once and at the beginning of the semester when course work is typically at its lightest.</p>
<p>“Uploading videos to a wiki is fairly simple. Maybe I am confused. Are the instructions supposed to be actually uploading a video, or how to create a video, and what tools are needed to do so?”</p>	<p>We simplified the written directions on our First Week wiki page and directed those students who may need more help with the actual process of uploading and embedding a video to our Tutorials wiki page.</p>

We had also received other suggestions that were appreciated, however, we did not always feel it was necessary to make a corresponding change. For example, one student asked, “Why aren’t the links for tutorials and collaboration tools provided right on the home page?” As facilitators and creators of the wikispace, we felt that not every student will need all this information, however, if a student does need a tutorial, they can take a look at the tutorial page that was created and is accessible from the main menu. This helped keep the home page simple and not overwhelming to look at.

After implementing our instructional design solution with a trial group and allowing our target audience to examine our Instructional Design wikispace, our team felt that conducting a Google Doc survey was the most efficient and effective way to collect formative data and suggestions. At first it was challenging, as we did not know if enough students would respond to our survey, however, in the end we were very pleased with the specific feedback we received. This feedback was very helpful in guiding our actions to improve our ID solution. Our team is confident in our final product and through the instructional design process, specifically the phases of ADDIE, we can say that we have created an appropriate and effective solution to our instructional design problem.

References

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