



Lynn Dixon

Designing an Interactive Kiosk to Celebrate Wetlands Day Case Analysis

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Key Stakeholder Roles & Primary Concerns

Stakeholder's Role	Stakeholder's Name	Stakeholder's Primary Concern(s)
ID'er Project Manager <i>Design Side</i>	Lynn Dixon	<ul style="list-style-type: none"> ▪ There seems (often) “to be a disconnect between what is sold to the client and what the company is capable of achieving” with the time and budget allowed. (p. 196) ▪ “She’s already quite busy and wonders how she’ll fit another project into her schedule.” (p. 196/199) ▪ She is concerned that “Ben has some pretty high expectations about the ‘bells and whistles’ that might appear in the kiosk”, and this impact on the budget. (p. 199) ▪ “She’s never designed for touch-screen devices before. (p. 199) ▪ “It sounds like they just want more-of-everything” and “she knows she’ll also have to ask for a budget increase to make it all happen.” (p. 200) ▪ The design team is “only able to use the graphics” that the client has provided to Telopea Learning. (p. 202) <p>(Ertmer et al., 2014, p. 196-202)</p>
Project Partner <i>Sales</i>	Janette Parks	<ul style="list-style-type: none"> ▪ She wants to keep the project within the agreed up contract, reminding clients of “agreed total content time of 20 minutes at an average interactivity level of “Medium” across the entire Kiosk.” (p. 198) ▪ She is mindful of the budget, reminding clients that “although narration will be included in the kiosk, the budget did not allow for the hiring of professional voice talent to do the recordings.” (p. 198) ▪ She wants the project to move along quickly, asking questions such as, “Can you also do the detailed project plan by the end of the week? We’ll need to book the development resources.” (p.199) <p>(Ertmer et al., 2014, p. 198-199)</p>
Client <i>Project Sponsor</i>	Laura Barton	<ul style="list-style-type: none"> ▪ She is busy with several other projects and only “wants to be involved in major reviews and signoffs, not in the day-to-day running of the project.” (p. 197) ▪ She wants the software to “acknowledge each of the regional areas by name and description, because each has provided significant funding” for the project. (p. 198) ▪ She mentions that “several more regional wetlands” need to be added to the section “Types of Wetlands.” (p. 200)

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		(Ertmer et al., 2014, p. 197-200)
Project Manager <i>Client Side</i> SME <i>Wetlands</i>	Ben Williams	<ul style="list-style-type: none"> ▪ He is hoping that “the kiosk can really emphasize” the relationships “between the Great Barrier Reef, the wetlands, and the catchment areas.” (p. 198) ▪ Ben mentions that a requirement of the kiosk is “to be able to measure how much time any learner spends in a particular kiosk section and have a report that indicates the most popular and longest viewed sections.” (p. 198) ▪ He wants to “include some of their [Aboriginal] storytelling” in the learning experience, potentially a reading of an Aboriginal Dreamtime story, by someone with of Aboriginal descent. (p. 200) ▪ He wants “some type of game or fancy animation”, such as “fancy sky-level animation.” (p. 202) ▪ He wants “users to really understand the impacts that urban development is having on wetlands.” (p. 202) (Ertmer et al., 2014, p. 198-202)
Developer <i>Graphic Designer & Technical Developers</i>	Not identified by name	<ul style="list-style-type: none"> ▪ Information was not specified
Narrator	Not identified by name	<ul style="list-style-type: none"> ▪ Information was not specified
Audience	Not identified by name	<ul style="list-style-type: none"> ▪ Information was not specified

ID Challenges & Case-specific Constraints

1	2	3	4
ID Challenge / Case-specific Constraint	Classification	Priority	Rationale for Priority Indicator
	ID Challenge	Case-specific Constraint	
ID Challenge - Analysis: Unclear Instructional Goals When referring to the <i>Analysis</i> phase of the ADDIE model of instructional design, potential outputs include instructional goals. Due to unclear instructional goals, the role and inclusion of Aboriginal culture	X	1	Since the entirety of the project rests on the foundation of the instructional goals, Laura must prioritize this challenge before anything else. If Laura does not take the time to identify and establish the instructional goals of the project, she

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<p>and heritage in the kiosk software is unknown.</p> <p>Many project requirements and suggestions arose during the initial meeting at The Aquarium in Cairns and in the follow-up design document review phone conference. While many ideas and specifications were discussed, no overall goals or objectives were stated.</p> <p>In their initial meeting, Ben and Laura identified the following as general requirements for the kiosk software:</p> <ul style="list-style-type: none"> • demonstrate the relationships and interconnectedness among the Great Barrier Reef, wetlands, and the catchment areas, • inform the audience of the different types of wetlands • acknowledge of each regional information center area by name and description, and • portray the role of wetlands in Aboriginal culture and heritage (p. 198). <p>Vague words and tones were used in conjunction with the theme of wetlands role in Aboriginal culture should be included in the kiosk. Laura did say that an “important theme in the kiosk <i>should</i> be the role” of the wetlands; however, she also made it clear that she was not sure how this could be accomplished (p. 198). While Lynn agreed to “<i>keep this in mind</i>” as she looked through/used the materials that Ben had provided for her, nothing in the language that Laura and Ben used signified that the inclusion of this theme was a specific <i>requirement</i>. Then, two weeks later, Laura relays that “there are now several more regional wetlands they need to include here [Regional Showcase portion of the design]” (p. 200). Ben says that he is not sure where in the software design there is going to be “anything about the Aboriginal relationship with the wetlands” (p. 200). Ben wants to know “some of their [Aboriginal culture’s] storytelling” can be included in the instruction (p. 200).</p>				<p>runs risk of planning instruction that does not support desired outcomes.</p> <p>Before proceeding further Lynn needs to spend time identifying and establishing the project’s instructional goals. The initial considerations provided by Ben and Laura offer vague goals at best. In order to proceed towards design of the kiosk software instructional goals must be clearly defined. It will be difficult, if not impossible, for Lynn to dive into the <i>Design</i> phase of the ADDIE model of instructional design without clearly defined instructional goals.</p>
<p>Cost Constraint:</p> <p>Additional cost to hire narrator of Aboriginal Descent</p>		X	3	<p>Addressing this case-specific constraint cannot be done prior to the instructional goals being identified and established (Priority 1). The determination of the</p>

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<p>Laura mentioned that an important theme to include in the kiosk software is the “role wetlands play in Aboriginal culture and heritage” (Ertmer et al., 2014, p. 198). Lynn agrees to remember this while she begins the design process. Janette reminds Laura and Ben that the agreed upon budget does not include the cost of hiring voice talent, but instead employees at Telopea Learning will be used for the software’s narration.</p> <p>Two weeks later, during the design document review phone conference, Ben mentions his concern that there is not anything in the proposed design that references the relationship between wetlands and the Aboriginal culture and heritage. The topic of budget restrictions with hiring voice talent is raised yet again. Lynn confirms the point that Ben raises regarding the fact that Telopea Learning does not have “anyone of Aboriginal descent” working for them. Two possible solutions are raised to remedy the issue of narration being subject appropriate, including revisiting/increasing the budget or involvement of the local university.</p>				<p>constraint of voice talent funding will follow from the establishment of the project’s instructional goals.</p> <p>If it is determined that the inclusion of Aboriginal culture and heritage in the kiosk software is not desired, then this case-specific challenge becomes null and void. However, if it is determined that the inclusion of Aboriginal culture and heritage is desired, it will be necessary for Laura to determine a way to absorb the additional cost, increase the previously agreed upon budget, or identify a person Aboriginal descent that would volunteer his/her narration services.</p>
<p>ID Challenge - Design:</p> <p>Inclusion of graphics and animation within the kiosk’s instruction</p> <p>In the initial meeting Ben is very excited about including animation in the instruction. He discusses the idea to have a bird zoom in and out of a catchment. Janette supports Ben’s ideas by encouraging him to ‘think big’. Later, during the follow-up conference call, Ben points out that he was “hoping to see some type of game or fancy animation”, but couldn’t tell where the “sky-level” fancy animation was (Ertmer et al., 2014, p. 202). Lynn responds that she has to chat with Janette about the animation to identify limitations to what Telopea Learning can do/create. She also notes that Telopea Learning is only able to use the graphics provided by the client. Lynn does attempt to satiate this question by acknowledging that they can “manipulate [the graphics] to some extent” (Ertmer et al., 2014, p. 202).</p>	X		2	<p>Lynn needs to determine how graphics and animation will stimulate the audience and when they are necessary components of the instruction. This must be determined before the instruction is designed; however, it cannot occur unless Lynn has already identified the project’s instructional goals (Priority 1) and audience. As soon as the project’s instructional goals have been clarified, Lynn can begin addressing this challenge.</p>

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	ID Challenge	Case- specific Constraint	
<p>When referring to the <i>Design</i> phase of the ADDIE model of instructional design, one must note that the instructional goals will be used to create strategies for developing instruction. The determination of the design of the instruction and related materials must occur in order to prepare for development of all needed instructional material. Lynn needs to spend more time developing the instructional needs and strategies for the project. This will include determining how attention will be focused, how motivation will be stimulated, and what examples and demonstrations might be used. Lynn needs to decide what type of graphics will be used, according to Sung and Mayer (2012): instructive, seductive, or decorative (p. 1618). Each graphic, depending on how it is to be used may have an impact on activating prior knowledge, drawing attention toward or away from the content, of supporting a positive interest in the content. Additionally, Lynn needs to determine to what extent animation can be included. Hoffer and Leutner (2007) state that they found “a rather substantial overall advantage of animations over static pictures” (p. 735).</p>			

Assigned Readings, Your Previous Experiences and Your Understanding of the Case Problem

While I teach one 8th grade math course, my main professional role is to be Tecumseh Junior High School’s *Digital Instructional Coach*. Part of my role is to professional development and training for the teaching staff at Tecumseh. One way that I have done this in the past was to design and develop professional development courses. For example, one of the courses I created was titled “Tips and Tricks: Office 2016”. While following the ADDIE model, I first worked through an analysis process in which I identified why the training needed to be offered and possible ways in which the training could be conveyed. I also outlined the needs that precipitated the instruction and the goals associated. It was not until I determined the instructional goals that I was able to plan my strategies and objectives of the instruction. Without defining the instructional goals, I would not have been able to move forward to designing and developing the training course. While the Lynn Dixon case does not address the development of online courses/ training, the issue of needing to clearly define instructional goals could potentially make or break the instructional design of the museum exhibit’s

kiosk. If the desired learning cannot be defined, then no instruction can be created to satisfy the situation.

While developing a course similar to the one noted above, I had the opportunity to create basic animations from a small set of graphics. Unfortunately, at the time, I had no prior experience with instructional design and therefore did not use my instructional goals to help me navigate through the design process. I was attempting to create basic animations with simple graphics, but failing miserably. I began throwing graphics into the design haphazardly instead of thinking about why and how the graphics and basic animation would be used to support the learning process and the instructional goals. Some of the graphics and animations were able to be used (although moved within the instruction), but many of the graphics and animations ended up being removed because they did not support the training need. It is not bad that Ben is pushing to include animation; however, if Lynn includes whatever Ben wants without determining if it supports the instructional goals of the kiosk the animations may very well fail to support the desired instructional outcomes. This truth is rooted in Sung and Mayer's research on graphics. Sung and Mayer (2012) note that there are three different types of multimedia graphics, and that "all kinds of graphics may not be equally effective in promoting learning" (p. 1618). The reason for choosing one type of graphic rather than another is dependent upon the result one wishes to achieve. Graphics may be "directly related to the instructional goal", "highly interesting but not directly relevant to the instructional goal", or "neutral but not directly relevant to the instructional goal" (Sung and Mayer, 2012, p. 1619). It is imperative that Lynn identify how a graphic is related to the instructional goal and if it promotes the desired outcome. If Lynn determines that the main goal of the instruction is enjoyment of the museum's exhibit, then "adding nearly any kind of graphics may be appropriate", but more than likely the instructional goals move beyond audience enjoyment (Sung and Mayer, 2012, p. 1623).

In the Lynn Dixon case, the decision of whether to utilize static graphics or animation is inescapable. While Ben is excited about the use of "fancy sky-level animation", Lynn is more reserved in her ideas about animation inclusion (Ertmer et al., 2014, p. 202). She reminds Ben and Laura that Teloopa Learning is "only able to use the graphics" that have been provided, but notes that they can "manipulate them to some extent" (Ertmer et al., 2014, p. 202). Lynn must determine if the potential animations would be representational or decorative. Hoffler and Leutner (2007) note that "representational animations are far more superior to static pictures than are decorative animations" (p. 733). Lynn needs to identify if the animations that can be created from the supplied pictures will be representational. From personal experience I can identify with the difference in learning impact of decorative versus representational animations. While decorative animations may draw my attention, they do not necessarily heighten my engagement and completion of the instructional goal. For example, the animation on the *Blood-Borne Pathogens* video (that I have to watch yearly in conjunction with my employment) depicting a moving blood cell is intriguing, but does not help me know the steps to cleaning up a student's nose bleed. On the other hand, if the animation included graphically images representing the steps (representational animation), I would be more likely to learn the content.

Solutions, How They Address Challenges and Case-specific Constraints, Pros & Cons

1 Solution #	2 Possible Solution	3 ID Challenges and Case-specific Constraints	4 How Does It Address the Design Challenge(s) and Case-specific Constraint(s)	5 Pros	6 Cons
<p>1</p>	<p>During the design document review conference call, three main areas of concern were identified: lack of inclusion of Aboriginal and wetlands relationship, lack of a game or fancy animation, and lack of detail in regards to accommodating different learners. Moving forward, in order to address these concerns, the design document must be altered and amended.</p> <p>Using the original design document, Lynn will make the following changes:</p> <ul style="list-style-type: none"> An additional step will be added in between steps 1 and 2, that addresses the relationship between wetlands and Aboriginal culture and heritage. This will be done by including an Aboriginal Dreamtime story, or similar historical reading. Lynn will utilize Ben’s enthusiasm to task him with finding a volunteer partner at the local university to serves an Aboriginal culture and heritage SME and reading narrator. A simple game will be added, as opposed to animation. The simple game (as referenced in the design document review meeting) will be added to step 5, Threats to the Wetlands. The game will be a “type of discovery module where learners investigate the impact of different types of development” on the wetlands (Ertmer et al., 2014, p. 202). While there is not room in the budget for ‘fancy’ animation, graphics will be utilized to support learner comprehension. With a variety of visitors, it is important to support all learners. Instructive graphics, or graphics that are “directly relevant to the instructional goal” will be added to each step’s instruction (Sung and Mayer, 2012, p. 1619). 	<p>ID Challenge # 1:</p> <p>Due to unclear instructional goals, the role and inclusion of Aboriginal culture and heritage in the kiosk software is unknown.</p> <p>ID Challenge # 2:</p> <p>Inclusion of graphics and animation within the kiosk’s instruction is not yet determined.</p> <p>Case-specific Constraint # 1:</p> <p>Additional cost will be incurred to hire a narrator of Aboriginal Descent</p>	<p>The additional step added determines that the inclusion of Aboriginal culture and heritage will occur. However, it is still unclear as to what type of relationship, between the wetlands and the Aboriginal culture and heritage, will be portrayed. In this possible solution, until an Aboriginal culture and heritage SME is found and interviewed, the goal of this inclusion is vague at best.</p> <p>Instead of ‘fancy’ animation, a simple game has been added to the design of the kiosk. Additionally, graphics will be used, when appropriate, in support of the instructional goals. If a graphic is not directly supportive of an instructional goal it will not be used.</p> <p>Instead of hiring a narrator of Aboriginal descent, Ben will find someone associated with the local university to narrate any portions of the instruction directly related to the relationship between the wetlands and the Aboriginal culture. Since the narrator will be a volunteer, no additional costs will be incurred.</p>	<ul style="list-style-type: none"> By amending the original design document instead of rewriting/developing a new design document, the design team will save time and energy towards the development of the software. Since Ben and Laura “really like the design”, the utilization of the design will be seen as a positive step towards the development of the software (Ertmer et al., 2014, p. 200). The utilization of the original design allows for the seamless addition of more wetlands that need to be added in the “Types of Wetlands” section. By Ben reaching out to the local university to identify an Aboriginal culture and heritage SME to partner with the project, additional costs for narration will not be incurred. The addition of a simple game will help the software to be engaging for multiple audiences. 	<ul style="list-style-type: none"> Even though a simple game is being added, Ben’s desire for “fancy” animation will not be met. Adding several additional wetlands to the “Types of Wetlands” section could weigh down the beginning portion of the instruction with information that is not attention-grabbing. The solution assumes that the inclusion of the role of the Aboriginal culture and heritage is important to the wetlands, which might not be true. The instruction might appear visually bland if the use of graphics is limited to instructive graphics only.

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2	<p>Lynn’s suspicions and fears were confirmed during the design document review conference, everyone had a different opinion as to what was important to the wetlands kiosk instruction. Lynn knew Janette would be concerned about keeping cost down, Ben was concerned about ‘fancy’ animation and the Aboriginal/wetlands connection, and Laura was concerned about accommodation every type of visitor (learner). With this knowledge she realizes that the differences of opinions stem from the lack of clearly defined instructional goals.</p> <p>In order for the project to continue, Lynn must scrap the design document that she presented during the phone conference. Then, before beginning the process of structuring a new design document, Lynn must determine the instructional goals of the wetlands kiosk. Lynn can accurately identify the instructional goals once she has analyzed the communicated needs, constraints, and audience profile. Once Lynn has identified the instructional goals, she will run the instructional goals by Janette to make sure that they are ‘doable’ within the agreed upon budget. Then, Ben and Laura will be contacted for final approval of instructional goals. Since every step of the design process hinges on the goals, Lynn needs to make sure that everyone is on board before continuing further.</p> <p>Lynn will then move on to designing the steps of the design. Anything that is in support of the identified instructional goals will be included, but anything not included in the instructional goals will not appear in the document. During this phase of the solution, the role of animation and graphics must be determined.</p>	<p>ID Challenge # 1: Due to unclear instructional goals, the role and inclusion of Aboriginal culture and heritage in the kiosk software is unknown.</p> <p>ID Challenge # 2: Inclusion of graphics and animation within the kiosk’s instruction is not yet determined.</p> <p>Case-specific Constraint # 1: Additional cost will be incurred to hire narrator of Aboriginal Descent</p>	<p>The solution will provide an opportunity for Lynn to clarify and redefine the instructional goals of the wetlands project. From these defined instructional goals, the role and inclusion of Aboriginal culture and heritage in the kiosk software will be defined.</p> <p>While the solution communicates a time (phase) in which the inclusion of graphics and animation will be determined, it does not communicate how the determination will be decided.</p> <p>In the proposed solution, it is noted that Janette will sign-off that the instructional goals are doable within the budget. If one of the instructional goals includes the learner listening to a story about Aboriginal culture and heritage, then the cost will be absorbed into Telopea Learning’s development costs.</p>	<ul style="list-style-type: none"> ▪ By scrapping the original design document, Lynn ensures that extraneous instructional material is removed. This will afford the design and development team clearer understanding and focus towards developing desired content. ▪ Redefining the project’s instructional goals will ensure that Telopea Learning delivers a product that satisfies the client. ▪ By redefining the instructional goals, there will clear direction afforded to the design team regarding the role and inclusion in the software of the Aboriginal culture and heritage. 	<ul style="list-style-type: none"> ▪ Lynn’s time is already limited due to multiple projects running simultaneously. If she scraps the design document, she in essence puts herself two weeks behind schedule. ▪ Lynn is “already quite busy” and does not any additional time in her schedule for a complete overhaul of the project’s instructional goals (Ertmer et al., 2014, p. 196). ▪ The client may lose trust in the Lynn, and potentially Telopea Learning, if the work that has already been completed and communicated is completely scrapped.

Final Recommendation

While both potential solutions address the role and inclusion of Aboriginal culture and heritage, they are not equal in impact. Choosing the solution that has less overall negative impact is desirable. It is recommended that Lynn utilize the original design document, in conjunction with the following three recommended alterations to provide solutions to the lack of inclusion of Aboriginal and wetlands relationship, lack of a game or fancy animation, and lack of detail in regards to accommodating different learners. The three recommended alterations are as follows:

- Utilizing Ben's enthusiasm, Lynn should task him with finding a volunteer partner at the local university to serve an Aboriginal culture and heritage SME and reading narrator. The information Ben receives will be used to add additional content in between steps 1 and 2. This content will address the relationship between wetlands and Aboriginal culture and heritage.
- The simple game referenced in the design document review meeting, will be added to step 5, Threats to the Wetlands. The game will be a "type of discovery module where learners investigate the impact of different types of development" on the wetlands (Ertmer et al., 2014, p. 202).
- Graphics will be utilized to support learner comprehension. With a variety of visitors, it is important to support all learners.

Justification

It is rare that a perfect solution is offered to remedy a problem. Due to the nature of problems, especially when involving human interests, there will be negative (or seemingly negative) aspects to solutions. While the solution recommended to Lynn is desired, it is understood that there will be some potential negative impacts. For example, even though a simple game will be added, it is understood that Ben might not be completely satisfied; however, Lynn must remember that Ben is not the client, Laura is the client. As long as Laura is satisfied with the game and level of animation the designed instruction will be labeled successful. By the addition of several wetlands and the limitation of used graphics, the instruction might be weighed down in non-relevant information being presented in a visually bland manner. To counteract this possible pit-fall, Lynn should rely upon the use of color and narration to maintain engagement. Maintaining learner engagement is crucial to ensuring the learner completes the instruction. Even though the inclusion of the role of the Aboriginal culture and heritage might not be necessary to instruction celebrating "Wetlands Day", it might be an additional way to maintain learner engagement; therefore, the positive impact on learner engagement negates the need to identify the inclusion as a solution pit-fall. While there will be issues to address, the positive impact of the recommended solution far outweighs any potential pit-falls.

References

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