Case Study Assignment 1-Michael Bishop

Linda L. Vervynckt Smith
Purdue University
10/20/2013
Who are the key stakeholders in the case and what are their primary concerns?

**Key Stakeholders and Primary Concerns**

<table>
<thead>
<tr>
<th>Key Stakeholder</th>
<th>Primary Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Bishop-Game Designer</td>
<td>Finding a school that will pilot his learning game and that he may have to make major changes to his game which will impact the games effect.</td>
</tr>
<tr>
<td>Jim Harrington-Assistant Superintendent</td>
<td>The pilot would have too many tests and surveys and the game had bugs to be worked out.</td>
</tr>
<tr>
<td>Laura Kenner-Science Coordinator of neighboring school district</td>
<td>Moving to a common curriculum and could not let some teachers use the game and others not</td>
</tr>
<tr>
<td>Daniel Brown-Science Coordinator of neighboring school district</td>
<td>Trying to limit time using the computer labs to save time for math and language arts</td>
</tr>
<tr>
<td>Nancy Levin-District-Level Science Curriculum Specialist</td>
<td>Saving her job</td>
</tr>
<tr>
<td>Tara Jones-New District-level science curriculum coordinator</td>
<td>Test scores need to rise and this means back to basics with students foregoing any out-of-the-box approach</td>
</tr>
<tr>
<td>Bailey Richards-Science Curriculum Specialist (old district)</td>
<td>The games take too much time and the need is for students to learn quickly</td>
</tr>
<tr>
<td>Craig Dawson-Director of Science Education for the State Education Agency (20 yrs. Middle school teaching experience)</td>
<td>Making the best use of instructional time and questions if students learn through the games as fast as they do with other approaches. Wants proof that the game applies to real life experience.</td>
</tr>
<tr>
<td>Bob Blanchard-Game Designer</td>
<td>Teachers would influence students answers</td>
</tr>
<tr>
<td>Antonia Fisher-Professor of Science Education</td>
<td>Students are leaving school without critical thinking skills.</td>
</tr>
</tbody>
</table>

Table 1-Stakeholders and Key Concerns

What are the key (1-2) design challenges in the case?

There was no design plan for the study

This is the most important aspect of a study. Setting goals and analyzing needs, user performance and developing instructions in the process would have also provided for a revisit to critical steps if something did not go as intended.

Interdependencies were not evaluated prior to the study

The importance and timing of the state standard test results was not taken into consideration nor was the results of using a program that took up a lot of the students learning time. Resources were also in short supply as computer labs were taxed and other curriculum suffered from the inaccessibility of computers.
The pilot was run without a full analysis of the process

The pilot seemed to have been implemented without full knowledge of contextual constraints of the process in a middle school environment.

All three of these issues are equally important because the failure of the pilot could have been prevented if they had been in place. This is not to say there would not have been issues but a lot of the problems could have been anticipated up front and preventative strategies developed or potential work-around solutions created.

How might other case-specific issues (e.g., communication, project management) impact the ability of the designer to address the design challenges?

The amount of time it takes to play the games

- Time seemed to be the most valuable commodity discussed surrounding use of the game curriculum.
  
  Most of the push-back from faculty and advisors came from the concern that too much time was needed to accomplish the deep learning when traditional learning methods equally delivered this skill. This was the key issue in closing the project. Administrators felt more time was needed for standards preparation due to low test scores and they chose to revert back to traditional instruction to accomplish this.

Bugs in the program

- Adding to the time it takes to play the game are the bugs that students are running into. Students have to work around the bugs increasing the time it takes to complete the game.

No evidence that real-life learning is taking place within the game design

- Although there is research to show that technology and games result in higher standards scores, Michael has not been able to definitively show this result with his game because he cannot find a venue to pilot
the game the way he initially intended. Because of the time constraint of the game conclusive data
was not collected.

**No evidence of deep learning and critical thinking enhancement within the game design**

- While many trusted educational advisors have played the game and agree with the concept of this type of
  learning present, there is no clear classroom evidence that Michael’s game provides deep learning and
  real-life experience.

**Nancy Levin’s quick cut-off of communication with Michael**

- Nancy Levin had worked with Michael for 2 years on the game project and suddenly cut off
  communication. Nancy could have provided valuable insight to Michael on why the district may not adopt
  the science game curriculum other than standard test scores. Nancy took an odd “fight or flight” approach
  when bad news about the state standard scores surfaced and she lost her position as District-Level
  Science Curriculum Specialist. It almost appeared as if she blamed Michael in some way for this change in
  her status. Michael had consulted with Nancy for the past 2 years on the project and its progress. Her
  position in the district and her support, were key to finishing the project. This was the most important
  issue because it kept the project from going forward.

**No evidence that the game approach provided critical thinking skills faster than traditional learning.**

- Michael was not able to finish his pilot with the middle school so he was unable to supply definitive data
  that there was a time advantage in learning critical thinking skills with his game. Because he was unable to
  test it he was not able to report any findings to support this. This was important because had there been
  evidence to support that skills were learned faster using the computer games, there may have been buy-
  in by the district who was so eager to improve their standard test scores. This could not be proved due to
the district stopping the project and Nancy Levin cutting off communication that could have provided
insight into ways to keep the project going.

Students are not used to having to figure out things for themselves

• Teachers were complaining that it would take too much of their time to help students through the games.
  Michael was unable to disprove this due to not being able to finish the project. However, he was able to
  observe students who normally had difficulty staying on task were on task at all times during the games.
  Teachers may have been on board if they knew the games were increasing students skills at a faster rate
  than traditional class room work which would have freed them of the time spent developing curriculum.

There is a common curriculum and it would not be fair to let some teachers work around that concept while others
made to adhere.

• There was concern that teachers would be unhappy that they had to follow a set curriculum when others
did not. If the pilot had been carried through to fruition, the results may have supported the games to be
included in the common curriculum. Proof of the games fostering the deep learning needed to be
established before they could be included and loss of the pilot prevented this proof from surfacing.

There are not enough computers to go around and there is too much competition for computer time using the
game curriculum.

• Teachers were complaining that they were not getting lab time for math and language arts because the
  lab time was taken up for the games. If the pilot had been completed with results showing an increase in
  state standard scores, Michael might have been able to write a grant that would pay for a new computer
  lab. A new lab would help satisfy the need for other academic courses to use computers for their work.
How would you prioritize these design challenges and case-specific issues and why would you choose this order?

All of the components above would need to happen in sequence to each other. The pilot could not continue without Nancy Levin being the district-level science curriculum specialist. Since the pilot could not be continued, Michael could not provide evidence of deep learning at a faster rate than traditional class room settings therefore, curriculum changes could not be made to incorporate the learning games that would free teacher time spent developing curriculum. The grant then could not be written because there is no evidence to produce grant material therefore there could be no funding for an additional computer lab that would help to relieve the competition for computers for other classes.

Describe how the assigned readings and your previous experiences contributed to your understanding of the case problem

Tracey and Morrison discuss the role of the instructional designer and have some very relevant points for this cases study. First, the Instructional Designer should identify the various clients and their responsibilities and expectations to help in solving and preventing problems (p. 180). I don’t feel that Michael did this upfront other than to recruit Nancy Levin. He did not work with other stakeholders to determine that a drop in state standard testing could result in his program being pulled.

Second, Tracey and Morrison (2012) point out the necessity for a Subject Matter Expert (SME). Michael did not indicate any SME’s who were working with him on the game and curriculum design. The case mentions that Nancy Levin was a district-level science curriculum specialist but she appears to have been the only SME, as can be inferred, on the case therefore her early retreat from the project left Michael in a difficult position.

Third, Tracey and Morrison (2012) discuss the contextual constraints that can exist in a case. These constraints “can include the organizational environment, including the time and resources for a design project, the locus of control for decision making, and the tools and techniques available to the instructional designer”(p. 181). Michael should have been more familiar with the organizational environment so that the importance of the standard test
scores could have played a key role in the design. Other unanticipated issues were lack of computer lab time and space and curriculum consistency.

Forth, Tracey and Morrison (2012) transfer the role of project manager to instructional designer and evidence that conflicts of doing both can result in neglect of the design process and even the quality of the design. Michael did not have a project manager that was mentioned in the case study. This was probably very impactful to the process if Michael was trying to juggle this portion by himself.

Comparing Michael to Atherton’s (2013) key components of expertise, it appears he is lacking in the many of the qualities that would define him as an expert and in fact he appeared to fall in the competent category. This is not to say that a non-expert could not carry off a successful project but Michael seemed lost after his pilot was pulled. He organized a committee of advisors to help him troubleshoot the issues of the project but he was focused on his game and not the process of fixing the problem. Equally comparing Michael to the 6 key principles of experts suggested by Bransford (2000), very few of these stood out as characteristics of Michael.

Outline at least two reasonable solutions/recommendations for the designer in the case. How do these solutions/recommendations address the challenges described in #2 above?

Solution 1: Rework the game design

- Work with game designers and developers to decide where the game can be shortened.
- Define the process for changing the game, set goals, develop instruction, and pilot.

Since the study barely got off the ground before it was pulled, there was not enough time for data collection and analysis. If a proper instructional design model is in place, there is a plan for reworking portions of the design if it is not working properly. This is an area that can be revisited in the design process.

Solution 2: Back Track
Revisit the design of the project and process.

- Acquire an SME with knowledge of the school district and who can advise on potential stopping blocks of a new curriculum. This individual should know school and state policy very well and be able to provide information on state standard curriculum requirements.
- Acquire an SME in science curriculum development.
- Acquire and SME in educational gaming development
- Acquire an SME in Information Technology in the school district

Meet with SME’s to brainstorm the project

- Determine potential problems and cover all of the perceived contextual constraints
- Determine the Who, What, When, Where and How of the project by identifying stakeholders and key individuals who can provide information or instruction.

Meet with Stakeholders

- Provide information from the brainstorming session with the SME’s
- Gather information on specific concerns of the stakeholders

Plan the steps of the project

- Provide a step-by-step plan for proceeding with the project
- Include solutions for potential problems that may arise

Taking the project planning back to the beginning will provide more insight to resolving potential problems as they arise or staving off problems that could arise. This will not be the most cost effective resolution but it will touch on
each of the design challenges. Putting band-aids on the problem at this point, especially when Michael is looking for a new piloting center, could cause a revisit to the same issues as the first pilot or worse.

**Discuss the pros and cons to each solution/recommendation.**

**Solution 1**

**Pros to reworking the game to shorten it include,** possible acceptance to school district curriculum. A lot of push back Michael received was due to the game taking too long to finish. By reworking and shortening the game, Michael may receive acceptance from school districts and administration.

**Cons to reworking the game to shorten it include,** time and resources lost to redevelopment. Recalling personnel to rework the program may be difficult because these individuals may have moved on to other projects. Also the loss to the project overall as changing the program may impact the user in ways not anticipated or wanted.

**Solution 2**

**Pros to starting back at the beginning of the design of the program will assure that it is run properly,** there is stakeholder buy-in from the beginning and thorough analysis of possible issues and outcomes can be better researched and anticipated.

**Cons to starting back at the beginning of the design of the program include the cost of resources,** possibility of the project being cancelled all together and loss of interest of stakeholders.

**What is your final recommendation? Justify your choice and discuss how you will eliminate or address the ‘cons’ listed in the previous point.**

A school system is a good place to pilot a new learning plan due to the changing pace of learning and the interests and preferences of students. Design challenges for Michael center around, keeping the games short and engaging
while reinforcing the critical thinking skills needed for deeply learning the concepts introduced in the game, providing evidence that real-life learning is taking place, diminishing the game’s pull on computer resources leaving less time for other classes to use the computer labs and getting rid of the bugs in the program. Michael’s lack of flexibility in re-piloting the game in an advance-placement class or afterschool program, due to the impact he wanted to make on all learners at all levels, it makes the most sense to go back to the drawing board and rework the program steps. By going back to the beginning of the program and laying out a better instructional design process including project management and SME input in program creation, Michael will have more control over possible problems relating to both the software program and to the environment where the study is conducted eliminating the side effects of overburdening computer resources, losing the project altogether and losing the interest of stakeholders.

Resources

