

Instructional Design Plan:
Legacy for Tomorrow
Educational Game

The University of Idaho College of Arts &
Architecture
**Bioregional Planning & Community Design
Program**



Version 1.1

Prepared by:
Stacy Springer
March 1, 2017

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1. ANALYSIS PHASE

1.1 PROJECT DESCRIPTION & NEEDS ANALYSIS

Client:

University of Idaho College of Arts & Architecture, Bioregional Planning & Community Design.

Mission and Vision:

The Bioregional Planning & Community Design program (BIOP) in support of the University of Idaho Strategic Plan, "...provides community outreach and increase planning capacity throughout Idaho" (University of Idaho, 2017b). BIOP responds to the needs of current communities and prepares future planners by teaching skills to make a positive impact.

History of the Futures Board Game:

Since June of 2008 the University of Idaho has hosted a scenario planning workshop called "Taking the Long View in Northern Idaho". This workshop takes the approach of scenario planning to address regional, community, and organizations futures. It allows participants to manipulate key factors that impact the future by utilizing a scenario based board game as a learning tool. Making current decisions that affect the future by role playing economic, environmental, societal, and governmental decision makers. (University of Idaho, 2017a)

Instructional Context:

The Futures Board Game has been effective in traditional workshop environments but does not translate in remote training or online learning situations. The Futures game was played as a group activity and utilized scenarios and maps that are handed out to the groups. The game is facilitated by the instructor who leads the discussion and guides the learners through the learning process. The overall goal is to create an online educational game that mimics the learning outcomes of the classroom board game. This game will be offered as a part of an online course to participants from all walks of life. The proposed creation of the proposed online game is complicated by the fact that the original Futures board game was developed in conjunction with an outside entity and has since been copy righted by Innovative Leadership Australia (www.ila.net.au). The game may need to be redesigned to avoid any potential legal and copyright issues. The client would like to implement the online game in the summer of 2017.

Needs Analysis Narrative:

The proposed Legacy for Tomorrow Game will need to be accessible online to students enrolled in the corresponding distance learning course. Currently the Futures Game does not integrate budgetary considerations into the choices made by the learners. This means that choices are free and without any visible impact to the current scenario.

BIOP has expressed the desire to build a game that supports multiple simultaneous players and the ability to save and return to the game at a later time/date. These requests would require additional hardware/software as a database would be required to support the enhancements. It would also require technical support to maintain the database.

The proposed Legacy for Tomorrow Game will be a scenario based game that allows the learner to select their role which will correspond to their choices in the scenarios and the outcome of the game. The game will be asynchronous and a single player game without the capability to save the progress of a game session. The game will present scenarios, budget numbers, and choices of action. Based on the choice of action the game will present future outcomes in the form of maps and dialogue.

1.2 LEARNER CHARACTERISTICS & PERFORMANCE GAP ANALYSIS

General Characteristics

The target audience is comprised of adult learners ages 18-65+ years of age. The target audience is gender neutral, with a good grasp of the English language. Life experience is varied throughout the target training group as is education level. Learners come from a variety of local businesses and government entities. Educational level ranges from high school to post-secondary educational degrees and higher.

Specific Entry Characteristics

Basic computer skills including typing, word processing and mouse skills are required to successfully navigate the course. Effective communication skills, basic reading skills equivalent with a high school education is required. Knowledge of their individual organizational mission, goals and operations will facilitate the learning process. Ability to sit for prolonged periods at a computer screen is required.

Learning Styles

Learning strategies should be optimized to support adult education due to the age of the audience. Due to the age gap, learning materials should be designed with visual and auditory aids in mind. Universal Design Principles should be applied whenever possible to create an accessible learning environment and product.

Performance gap analysis:

BIOP currently conducts onsite workshops, “Taking the Long View in Northern Idaho” through the University of Idaho Extension Program. This program although effective reaches a limited audience due to limited travel, budget, and time available for the facilitators of the workshop. Potential learners also have limited resources (time, travel, budget) that impact the ability to attend regional workshops.

Current Problem	Gap	Goal
Currently the Futures Game is only accessible through onsite workshops.	Increase the reach of the Futures Game beyond the confines of the traditional classroom.	Create an online version of the Futures Game that can reach asynchronous online learners in geographically diverse areas.
Learners make decisions without regard to wide ranging future implications.	Need to demonstrate how current decisions can affect future outcomes.	Implement real-world scenarios in an online game that demonstrate the impact that decisions have on economic, environmental, societal, and governmental future outcomes.
The learner’s viewpoint is colored by their current career role without consideration of other roles.	Develop the ability to view a problem from many different roles.	Provide the ability to play the game from the viewpoint of different roles.
Show that decisions are not free and are affected by budgetary and other considerations.	Add the budgetary dimension that the current classroom game is missing.	Attach monetary costs to decisions made by the learner.

1.3 CONTEXTUAL ANALYSIS

Audience

Today's learners are mobile and utilize a variety of electronic devices for learning. Any online game must be created using responsive design technologies that will not limit the learners to using just a standard computer or laptop. Additionally, adult learners vary in their technical skill set. It is therefore important that the game be intuitive and easy to navigate.

Instructional Environment

Each learner will provide their own equipment and physical environment for learning activities. It is recommended that the learner consider the following factors when selecting their learning environment.

Environmental Factors	
Lighting	Adequate light to view screen
Noise	Location that promotes reduced noise to facilitate concentration
Temperature	Comfortable temperature for work
Seating	Ergonomic seating
Equipment	Viewable screen size, device speed, networking capabilities
Network	Fast internet speeds via wireless or wired access

1.4 TASK ANALYSIS

Task Analysis Outline:

- I. Legacy for Tomorrow Online Educational Game
 1. Select avatar
 2. Select role
 - a. Local government
 - b. Societal
 - c. Economic
 - d. Environmental
 - e. Federal Government
 3. View the various information sources that impact decisions
 - a. Budget
 - b. Maps
 - c. Photos
 - d. Other information (

4. Select a course of action based on information received
5. Analyze decisions made and compare with the decision of others
 - a. Decision Matrix
 - b. Survey Results
6. Review how decisions made affected future outcomes
 - a. Planning board updates
7. Learn about other outcomes possible
 - a. Final 2030 decision outcome
 - b. Explore other outcome possibilities
8. Demonstrate accumulated knowledge
 - a. Drag and Drop Activity
9. Reflect on the experience of the game
 - a. Reflection activity (possible link to a discussion board assignment)

1.5 PROCEDURAL ANALYSIS

Learner Objectives:

- The learner will make decisions based on multiple dimensions of bioregional planning.
- The learner will acknowledge other points of view when making decisions.
- The learner will identify the four outcomes of bioregional planning and community design.
- The learner will reflect on decisions and focus on outcomes.

2. DESIGN PHASE

Purpose: To provide a blueprint for the design of the Legacy for Tomorrow educational game.

2.1 SEQUENCING DESCRIPTION

Justification of Sequence Scheme:

The Legacy for Tomorrow educational game is a branching scenario based game. The learner makes decisions which then provides choices for the next decision the learner must make. This branching scenario dictates the flow of the game.

- a) Selection of avatar and role
- b) Introduction of scenario
- c) Planning board with information
- d) Decision time
- e) Survey of factors feeding decision
- f) Survey results
- g) Update of information
- h) Scenario outcome
- i) Discussion of all possible outcomes
- j) Knowledge test
- k) Reflection
- l) Feedback mechanism

2.2 INSTRUCTIONAL MESSAGE

Although games and simulations are generally engaging to learners, not all games and simulations meet the educational needs of learners. “Simulations and games are teaching and learning methods in which participants are directly involved in making decisions and learning from the outcomes of these. Their active, student centered nature means that they are memorable and highly motivating. They enable the exploration of the complex nature of the real world and interdisciplinary, interacting subjects as well as the more basic needs of understanding, doing and skills practice” (Society for the Advancement of Games and Simulations in Education and Training, 2002). Selecting games or simulations that facilitate the learning process involved asking the following questions:

- Is the student directly involved in making decisions and learning from the outcomes?
- Does the activity enable exploration of the complex nature of the real world?
- Does the game include tasks that provide elements of engagement, decision making, and knowledge acquisition from a new perspective?
- Does the simulation activity require students to role-play or to assume a new perspective?
- Does the game or simulation provide a safe environment for exploration?

(Conrad and Donaldson, 2012)

The Legacy for the Future game will allow the learner to explore the ramifications that decisions made today can have in the future and how the economic, ecological, governmental, and societal factors can affect future outcomes.

Game Learning Objectives:

1. To recognize that planning and economic decisions are not local and have regional impact and should be made at a regional level.
2. To recognize that decisions have impact on multiple systems (poverty, environment, transportation, economy, crime, education).
3. To recognize that today’s decisions or failure to decide will impact future outcomes.
4. To recognize the need to align the goals of the community with the resources available for each decision made.
5. To identify the relationship between societal, economic, governmental, and environmental factors and outcomes when making BIOP decisions.
6. To recognize that decisions are not free and have future costs.
7. To recognize that your need to invest in people, places, resources, and connections to ensure good future outcomes and achieve community goals.

2.3 STRATEGIES TABLE

The overall goal of this project is to bring the classroom game to the distance learning environment and make it accessible to a greater audience.

Rule	Strategy	Implementation
Scenario based decisions	Different roles pertaining to economic, government, societal and environmental areas.	<ul style="list-style-type: none"> • Provide opportunities to access all types of data. • Show different viewpoints. • Provide opportunities to change course by multiple opportunities for decisions. • Provide future outcomes.
Multimedia	Providing information in different formats.	<ul style="list-style-type: none"> • Use varied multimedia strategies for maximum impact.
Feedback	Survey feedback and results.	<ul style="list-style-type: none"> • Allow learners to see what impacted other learner’s decisions.

Assessments	Gauge the learner's knowledge application. Promote deeper learning by encouraging reflection.	<ul style="list-style-type: none"> • Provide quizzes for self-knowledge check. • Provide opportunity for reflection.
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2.4 TEXT DESIGN

1. Typography: Fonts used are Verdana, Arial, and Georgia.

- **Verdana** is the easiest font to read for online content as it is a San Serif font that is spaced specifically so the characters do not touch.
- **Georgia** is a Serif font that is easy to read onscreen and spaced so the characters do not touch. It will be utilized in titles and headers and any area that needs emphasis, but not for blocks of text.
- **Arial** is a San Serif font that is easily read and useful for tables or close quarter areas
-

2. Text Structure:

Text Structure	Example	Signaling Words
Lists	A list of items	Next month, next week, participate, volunteer, coming up
Comparison or contrast	In contrast, similarly, however, like	Compare, and contrast statistics
Temporal Sequence	First, Second, Third, etc.	Outline which events happened first, in order, and steps to complete an activity
Cause and effect	As a result of, causality, therefore, reflect	Show how decisions have consequences or made a difference.
Definition and example	Known as, e.g., i.e., for example, defined as	Define terms specific to your field in direct, simple terms.

3. Images and Logos

Images will be used to brand the game such as the University of Idaho logo. Additional logos for the College of Arts & Architecture and BIOP will be provided by the client if applicable.



4. Photos

Photos will be utilized for the background of slides and in the Project Board slides for supporting documentation for decisions. Photos will be accessed through Creative Commons, College of Arts & Architecture photos and other sources that provide stock photos labeled for reuse. Photos will be labeled with proper citations when appropriate.

5. Scenario Creation

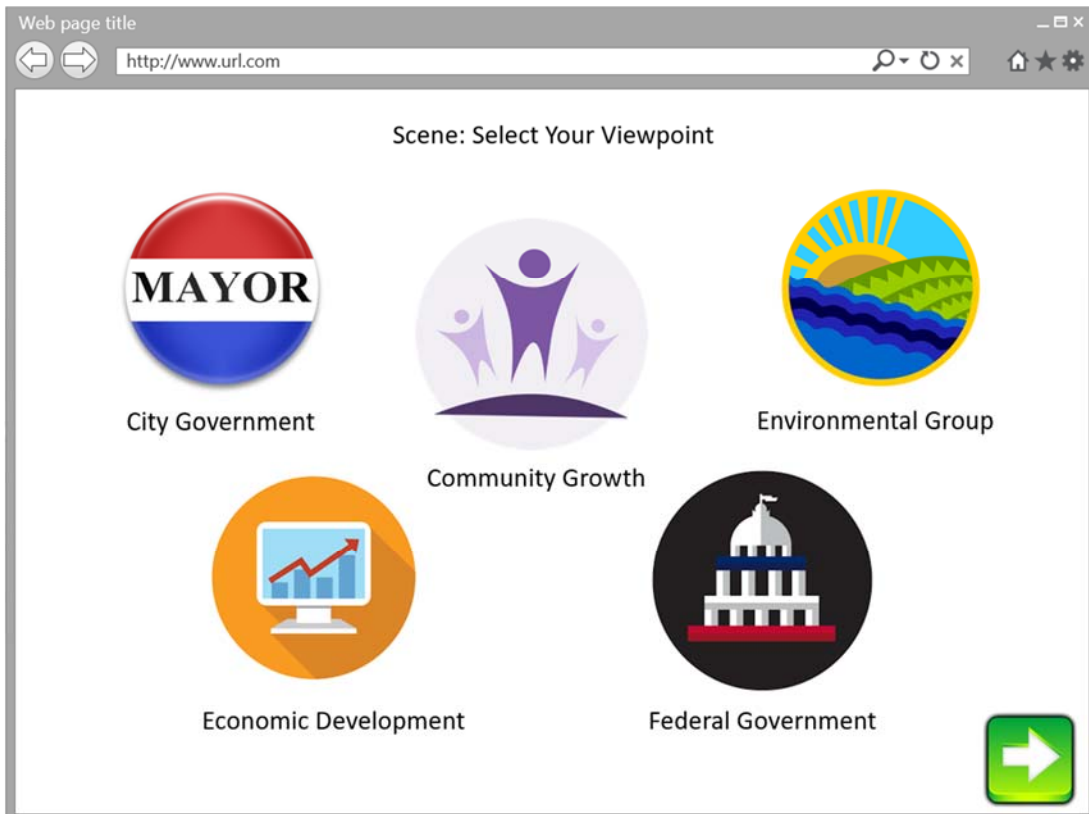
The Futures Game was co-designed by staff from the College of Arts & Architecture in conjunction Innovative Leadership Australia. If the original branching scenario and decision tree cannot be used due to copyright issues the content for the proposed online game will have to be redesigned. The designer will work with BIOP staff to develop alternate storylines, maps, decisions and supporting documentation if needed.

6. Story Board Design Notes

- All images in the story board are representative of what it may look like.
- Single user game created in iTyStudio with additional content from Adobe Captivate and Screencast-o-matic.
- Combination 3D simulation/scenario based game.
- The game is driven by a branching decision matrix that is based on the decisions that the learner selects.
- Learner selects avatar of their choice from a multicultural selection.
- Learner selects their role from five points of view, but the learner can only play one role during a game session.

- Game will have an overview of the game purpose and goals presented to the learner at the start of the game.
- Conference Room allows the learner to see and view the problem from the perspectives of the different roles.
- Game has multiple branching scenarios based on each learner decision made.
- The interactive planning board idea is based on a “crime scene board” and in the online game it will look more like a white board. Interactive planning board contains:
 - Learner cannot go on until they explore each area of the planning board.
 - Interactive map that shows additional information when the learner hovers over parts of the map.
 - Interactive legend is included in the map screen.
 - Board provides text, audio, photos, and screencasts to deliver supporting information for decisions that represents the information given by the workshop instructor in the Futures Game.
 - Integrates Big Event Notecard information.
 - Contains Triple Bottom-Line Possibilities Matrix
 - Budget information pertaining to possible courses of action.
- News report videos give overview on current events affecting the decision-making process.
- After submitting their decision matrix, learners can view what factors past learners based their decisions upon using captured data from past game players.
- The reflection activity will link to a discussion board assignment.
- Learner can replay the game as many times as they wish using different avatars and roles.

7. Story Board Wire-Frame Example



Web page title

http://www.url.com

Scene: Game Goals & Objectives

Congratulations on your new job!



As the Economic Development Director of the city of Wellsville, Idaho your job is to make decisions that promote the economic growth of the area! Learn more about your objectives by watching this video below!



Web page title


http://www.url.com

Scene: Story Introduction (background)



Transcript

"The national economy begins to recover, but the local economy is stagnant. There are some signs that regional growth pressures are renewing, but there is increasing public opposition to rapid and unplanned growth."



Web page title

http://www.url.com

Scene: Conference Room "Sharing Viewpoints"




Conversation between roles showing the viewpoints of other roles




Web page title

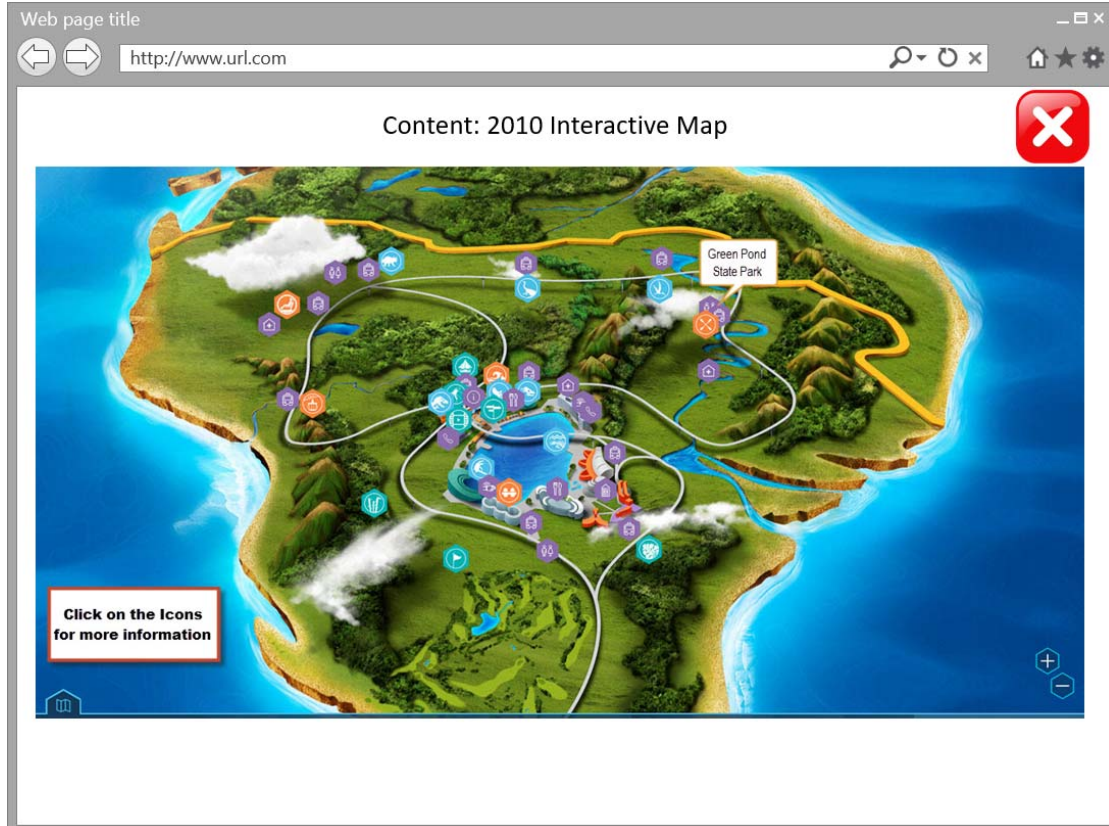
http://www.url.com

Scene: Office "Questions to consider"



What factors should be considered?





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Scene: 2010 Decision Time for City Government Role

Decision Time!

Support new sub-division and property developments in a bid to boost the poorly performing local economy.

Cost: \$1,600,000 annually

-OR-

Impose a moratorium on major new housing developments and initiate a community-based land-use planning process and study.

Cost: \$3,200,000 annually

Web page title _ □ ×

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Assessment: 2010 Decision Matrix

2010 Decision Matrix

Reflect on the decision you have just made. Did the elements of the triple-bottom line factor into your decision? Fill out the matrix below to reflect your decision making process

	Essential	Very Important	Important	Minor	Not Relevant
Economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What other factors did you consider when making your decision?

Web page title


http://www.url.com

Assessment: Survey Result of Prior Learner's Responses

2010 Decision Matrix Results

Review the matrix below to see what motivated the decisions of others

	Essential	Very Important	Important	Minor	Not Relevant
Economy	12%	9%	62%	44%	5%
Environment	9%	48%	51%	2%	0%
Society	2%	24%	10%	46%	5%



Web page title

http://www.url.com

Scene: 2012 Situation Update "Where are we now?"





Transcript

"New housing developments begin to flourish, including a major forest land subdivision – leading to a \$4 million windfall boost to the local tax revenue."



Web page title

http://www.url.com

Scene: 2012 Decision Time for City Government Role

Decision Time!

Use the excess taxes to reduce property and business taxes across the county.

Cost: \$1,600,000 annually

-OR-

Use funds to invest in new business attraction and major industrial park development.

Cost: \$3,200,000 annually

Web page title

http://www.url.com

Assessment: 2012 Decision Matrix

2012 Decision Matrix

Reflect on the decision you have just made. Did the elements of the triple-bottom line factor into your decision? Fill out the matrix below to reflect your decision making process

	Essential	Very Important	Important	Minor	Not Relevant
Economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Web page title


http://www.url.com

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Environment	9%	48%	51%	2%	0%
Society	2%	24%	10%	46%	5%



Web page title


http://www.url.com

Scene: 2015 Situation Update "Where are we now?"



Transcript

"New resort developments are expanding with outside investors, and there is a strong retiree in-migration. However, local people are being 'priced-out' and the lack of a suitable workforce is threatening future projects."



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Scene: 2015 Decision Time for City Government Role

Decision Time!

Allow market forces to play out but establish commuter bus services from outlying communities for unskilled workers and school students.

Cost: \$1,600,000 annually

-OR-

Establish new affordable housing projects for service workers and invest in skills-based technical training.

Cost: \$3,200,000 annually

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Assessment: 2015 Decision Matrix

2015 Decision Matrix

Reflect on the decision you have just made. Did the elements of the triple-bottom line factor into your decision? Fill out the matrix below to reflect your decision making process

	Essential	Very Important	Important	Minor	Not Relevant
Economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What other factors did you consider when making your decision?

Web page title


http://www.url.com

Assessment: Survey Result of Prior Learner's Responses

2015 Decision Matrix Results

Review the matrix below to see what motivated the decisions of others


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Economy	12%	9%	62%	44%	5%
Environment	9%	48%	51%	2%	0%
Society	2%	24%	10%	46%	5%



Web page title

http://www.url.com


Scene: 2020 Conference "Reviewing the Situation"



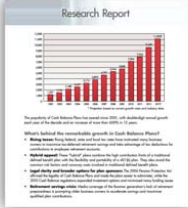
Web page title

http://www.url.com

Scene: 2020 Updates & Reflections




Research Report



Transcript

"The disparity between the 'haves' and 'have-nots' continues to grow, and the population is aging. The economy begins to stagnate. There are deep divisions and tensions emerging between groups and communities."




Web page title

http://www.url.com

Scene: 2020 Planning Board Review

2020 Planning Board



Viewpoints


Meeting Notes

Multimedia Info

Budget

Project Map

Priorities



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Scene: 2020 Decision Time for City Government Role

Decision Time!

Consolidate services to reduce costs. Allow communities to take responsibility for their own future; disband unworkable partnerships.

-OR-

Initiate region-wide community building and education effort to equip locals to take charge of their own future.

Cost: \$1,600,000 annually

Cost: \$3,200,000 annually

Web page title _ □ ×

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Assessment: 2020 Decision Matrix

2020 Decision Matrix

Reflect on the decision you have just made. Did the elements of the triple-bottom line factor into your decision? Fill out the matrix below to reflect your decision making process

	Essential	Very Important	Important	Minor	Not Relevant
Economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What other factors did you consider when making your decision?

Web page title


http://www.url.com

Assessment: Survey Result of Prior Learner's Responses

2020 Decision Matrix Results

Review the matrix below to see what motivated the decisions of others


	Essential	Very Important	Important	Minor	Not Relevant
Economy	12%	9%	62%	44%	5%
Environment	9%	48%	51%	2%	0%
Society	2%	24%	10%	46%	5%



Web page title

http://www.url.com


Scene: 2030 Conference "Reviewing the Situation"




Web page title

http://www.url.com

Scene: 2030 Updates & Reflections




Research Report



Transcript

“Degraded and mismanaged natural resources have led to decline but communities are rebuilding themselves through collaborative efforts and starting to tackle environmental improvement of public services and amenities for collective benefit.”



Web page title

http://www.url.com

Scene: 2030 Planning Board Review

2030 Planning Board



Web page title

http://www.url.com

Scene: Long Term Outcome of Decisions Made

Your decisions have resulted in a "Live and Let Die" Outcome!

Explore each outcome by clicking on the colored squares

Poverty with a view

Gem of the Gem

Live and Let Die

Spawning Sustainable Clusters

Stewarding the Land

Investing In People

Web page title

http://www.url.com

Content: "Live and Let Die Scenario"

Live and Let Die Scenario

- Social & Cultural Characteristics
- Economic Characteristics
- Environmental Characteristics
- Triple Bottom Line Possibilities

- Poverty is increasing and the unemployment rate rises.
- The community experiences the loss of more small farms and businesses closing.
- Unskilled labor is prevalent with a decrease in affordability (income vs. living expenses) and increased individual debt.
- Political corruption spreads alongside an increase of outside economic interests.
- Transportation costs rise escalating the loss of resource-based jobs due to declining profit margins.

Web page title

http://www.url.com

Assessment: Drag & Drop Activity

Match the characteristic by drag and dropping them next to the correct scenario

Poverty with a view		Society: Disengaged community Economy: Stagnant and impoverished Environment: Highly protected
Gem of the Gem		Society: Apathetic and disengaged communities Economy: Outside investment and local poverty Environment: Degraded and declining
Live and Let Die		Society: Engaged and empowered citizens Economy: Diverse with skilled workers Environment: Balance between production and protection
Spawning Sustainable Clusters		Society: Focus on quality of life Economy: Moves from private to public control Environment: Over-development followed by protection

Web page title


http://www.url.com

Scene: Conclusion

Reflection

- How did your decisions affect the future of your region?
- What would you do differently?
- Have your priorities changed based on the outcome of the game?

Share your thoughts on the Reflections Discussion Board by clicking the icon below!





2.5 MULTIMEDIA DESIGN EMERGENT TECHNOLOGIES

Educational games provide a story and visuals to support the context of learning. It provides motivation and can make learning more interesting. This game will be played as a part of an online course in Bioregional Planning and Community Design. The game will include the following multimedia features:

Avatars

Learner will select their avatar to represent themselves in the gaming environment. Selections will include male, female and a variety of representative cultures.

3D simulations

Avatars will be used during conferences to represent different points of view.

Video/Screencast

Video/Screencasts will be used to present news like updates for current events that affect the game decision making process. It will also be used for presenting the initial gaming overview.

Interactive Maps

Interactive maps as a visual aid to show the initial situation and subsequent changes to the economic, environmental and population changes.

Drag & Drop Activities

Mini games will be used for knowledge checks and to reinforce learning.

Online Surveys

Surveys will be used to collect information on the learner's decision making process and to show how others made decisions.

Discussion Board

Reflections can be linked to a discussion board so learners may learn from others experiences during game play.

Learning Management System

Game access will be controlled by the LMS authentication.

3. DEVELOPMENT PHASE

Purpose: This phase will focus on defining the tools, software, and process that will be utilized for development of the Legacy for the Future Game.

3.1 INSTRUCTIONAL MATERIALS

Instructional Software & Tools

- **iTyStudio** (<http://www.itystudio.com/en/>)

Justification: iTyStudio is a software package that allows the user to create 2D and 3D simulations. This software will allow the creation of branching scenarios, avatars, and integration of other media to create a cohesive educational game. Game created in iTyStudio can be exported in HTML 5 SCORM packages that will integrate into an Learning Management System (LMS) such as CourseSites or BlackBoard.

- **Adobe Captivate** (<http://www.adobe.com/products/captivate/education.html>)

Justification: Captivate will allow the creation of interactive activities to enhance the learning process.

- **Screencast-o-Matic Pro** (<https://screencast-o-matic.com/>)

Justification: Screencast-o-Matic allows the user to easily create custom videos and other media to be used to convey information in a new cast format.

- **Audacity** (<http://www.audacityteam.org/>)

Justification: Audacity creates audio podcasts for use in the Planning Board section of the game.

- **Various image editors**

Justification: Images will need to be edited and formatted. This can be accomplished by using Paint.Net, Adobe Photoshop or other image editing software.

Visual Design Justification:

The Legacy for the Future Game will be designed using Universal Design Principles whenever possible. It will include text transcripts and Close Captioning for videos and screencasts. It will present the information in multiple ways to ensure it is accessible to the widest audience possible. The game will be designed with responsive design principles so it may be played on various electronic devices.

iTyStudio software has numerous pre-determined layouts that are tailored to educational and business needs. This software will engage different types of learners because of its visual appeal when it's used in an effective manner. The self-paced educational game design with branching scenarios will allow the learner to play the game multiple times utilizing different avatars and roles. The outcomes will be different based on the decisions that the learner makes during game play.

3.2 DELIVERY METHOD

This game will be delivered in a SCORM compliant format that can be uploaded to any LMS such as CourseSites or BlackBoard. Due to time constraints, the initial version of this game will not support multiple player interaction or the ability to save progress and return to the game. Those features would require a database and additional programming as well as technical support for data management. User access to the game will be controlled via the LMS which will log completion statistics.

4. IMPLEMENTATION PHASE

Purpose: The Legacy for the Future Game is an asynchronous, single-player online educational game. By converting this game to an online format, it can reach a greater audience. When combined with the proposed distance learning course for Bioregional Planning and Community Design curriculum it will enhance the learning outcomes of the extension course participants. This section will provide an overview of the implementation plan for the Legacy for the Future Game.

The game will be implemented as an activity of the BIOP CourseSites curriculum. Once the game has been created it will be tested by volunteer learners, instructors, teaching assistants, staff, and past workshop attendees. BIOP staff will submit a list of testers along with contact information. Access will be granted via email to the selected learners.

Issues and change requests will be submitted using a feedback mechanism within the CourseSites area. Once feedback and change requests are gathered they will be reviewed and approved by the BIOP Staff.

5. EVALUATION PHASE

Purpose: Through evaluation the goal is to adjust the educational game accordingly so that the learning outcomes will be achieved. This section will present the plan for formative, summative and confirmative evaluation for the Legacy for the Future educational game.

5.1 OVERVIEW

Evaluation Synthesis

McNamara (2008) notes that, “Many people believe that evaluation is about proving the success or failure of a program. This myth assumes that success is implementing the perfect program and never having to hear from employees, customers or clients again -- the program will now run itself perfectly. This doesn't happen in real life. Success is remaining open to continuing feedback and adjusting the program accordingly. Evaluation gives you this continuing feedback”. Through evaluation the goal is to adjust the educational game accordingly so that the learning outcomes will be achieved. In order to implement this type of evaluation the process will be outlined in steps that will be taken before, during and after the implementation in order to gather necessary data that can provide feedback. The evaluation process will include formative, summative and confirmation evaluation.

5.2 FORMATIVE EVALUATION

Morrison, Ross, Kalman and Kemp (2013) note that formative evaluations “function is to inform the instruction or planning team how well the instructional program is serving the objectives as it progresses”. Therefore, formative evaluations will be conducted before, during and after the training has been implemented. In order to effectively achieve the desired learning outcomes there will be three “check points” that will aid in the formative evaluation. These “check points” will come in the form of pre-testing, client reviews. and surveys.

-1st Check point: The first “check point” will begin by carrying out pre-testing with learners who are enrolled in the BIOP course and will be playing the game. Pre-testing can serve as an effective medium to assess a learner’s prior knowledge. A pre-test survey will determine if the skills needed to play the game exist, and the learner’s current role in their career. This information will provide baseline data for determining learner growth by comparing the initial knowledge to the knowledge gained at the end of the game. A short introduction video could be used to encourage interest in the game.

-2nd Check Point: Before the game is implemented, BIOP staff will review the analysis phase to ensure that the learning objectives are in line with the instructional design. It is also important for the BIOP Staff to review the course goals so that if any change needs to be applied it will be cost and time efficient. Morrison, Ross, Kalman and Kemp (2013) note that “formative evaluations are most valuable before instruction is fully developed, when it is inexpensive to make changes and used in a continuous manner”.

-3rd Check Point: The final “check point” will occur during the training, where there will be a formative evaluation in the form of an interactive quiz. This type of immediate feedback is crucial for successful implementation. Morrison, Ross, Kalman, and Kemp (2013) note that, “successful learning is enhanced when individuals receive feedback on how well they are learning as instructions takes place”.

5.3 SUMMATIVE EVALUATION

After the learner has completed the game, there are two crucial types of evaluation techniques that will be implemented. These two types of evaluation are summative and confirmative evaluation. Summative evaluations emphasize evaluating outcomes at the end of instruction (Morrison, Ross, Kalman & Kemp, 2013). At the end of the game there will be a performance based evaluation that will be the culmination of the game for the learner. Each learner will provide a post to a discussion board that will allow them to reflect on the lessons learned during the game. Here is what the summative evaluation will measure;

- How did your decisions affect the future of your region?
- What would you do differently?
- Have your priorities changed based on the outcome of the game?

5.4 CONFIRMATIVE EVALUATION

Morrison, Ross, Kalman and Kemp (2013) note that confirmative evaluation is based “on the rationale that evaluation of instruction needs to be continuous and, therefore, extend beyond summative evaluation”. In order to implement this type of evaluation interviews will be conducted with learners using a survey, data-gathering based on participation, and questionnaires sent out to past learners six months after the game becomes part of the curriculum. These types of assessments will ensure that the learning objectives are measured, even after the game is implemented.

Formative evaluation provides an opportunity to gauge how well the educational activity meets the objectives and facilitates the learning process. We have selected an objective based study with formative evaluation tools. This process will inform any changes to the game, scenarios, and activities as soon as possible to save both time and money for BIOP. Formative tools such as pre-tests, post-tests, learner evaluations, ongoing observations, self-assessments will be implemented. These tools will be used in conjunction with a subject matter expert’s review of the module for maximum effectiveness.

<i>Alignment of Unit Goals to the Evaluation Process</i>			
Learning Goals	Formative Assessment	Assessment Tool	Goal Alignment
Analyze how today’s decisions may impact future outcomes.	<ul style="list-style-type: none"> The learner will practice making good decisions based on the scenario 	Self-evaluation, ongoing observation, peer evaluation	Analyze Differentiate Organize Attribute
Identify the relationship between societal, economic, governmental, and environmental factors and their influence on outcomes.	<ul style="list-style-type: none"> Reflection Assignment on Discussion board. Drag & Drop Matching activity. 	Self-evaluation, ongoing observation, post- evaluation	Recall Recognize Identify
Infer that balance is an important factor to ensure good future outcomes.	<ul style="list-style-type: none"> Reflection Assignment on Discussion board. 	Self-evaluation, ongoing observation	Interpret Exemplify Classify Summarize Infer

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			Compare Explain
Recognize that BIOP decisions are not free and have future costs.	<ul style="list-style-type: none">• Decision matrix• The learner will base decisions on factors including budget	Self-evaluation, ongoing observation, post- evaluation	Recall Recognize Identify

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