

Game Design Final Project

***Topic: Multicultural Awareness***

***Game: World Savvy***

Team members: AnhThu P., Alice S., Risa G., Siying D., Sooyoun W., & Yue L.

Teachers College - Columbia University

Professor Joey Lee

MSTU 4039.001 Video Games and Education

Fall 2014

## COMPONENT I: *WORLD SAVVY* INSTRUCTIONS

### A. Game Players

Number of players 2-4 players; Age of players 12-18 years old

### Game Components

Components	Explanation
game board	The game board should be placed on the center of the table with players seated around the board.
8-sided dice	The dice is comprised of a three types of outcomes: <ol style="list-style-type: none"><li>1. <b>ADVANCE</b>-The player can advance however many steps is indicated on the dice</li><li>2. <b>SNATCH IT</b>- The player can snatch one set of matching cards from any other player</li><li>3. <b>PICK IT</b>-All players can pick 2 Country Cards from the player on the right</li></ol>
Risk Cards	Risk Cards comprise of world trivia questions and greetings in different languages
Knowledge Cards	Knowledge Cards are divided into three categories: clothes, attractions, and food
Country Cards	Each Country Card has an image and name of a particular country. 10 Country Cards will be distributed to each player at the beginning of the game.
tokens	Each player will choose one token, and place it in the START box on the game board

### Game Setup

1. Place the game board at the center of the table
2. Shuffle *knowledge cards* and *Risk cards* separately and place them face down on the indicated spots on the board
3. Have each player choose a token and place it on the start spot on the game board
4. Have each player draw 10 cards each from the country pile and lay them out in front of them
5. If players have duplicates of country cards, they can exchange them from the country card stack

### Game Play

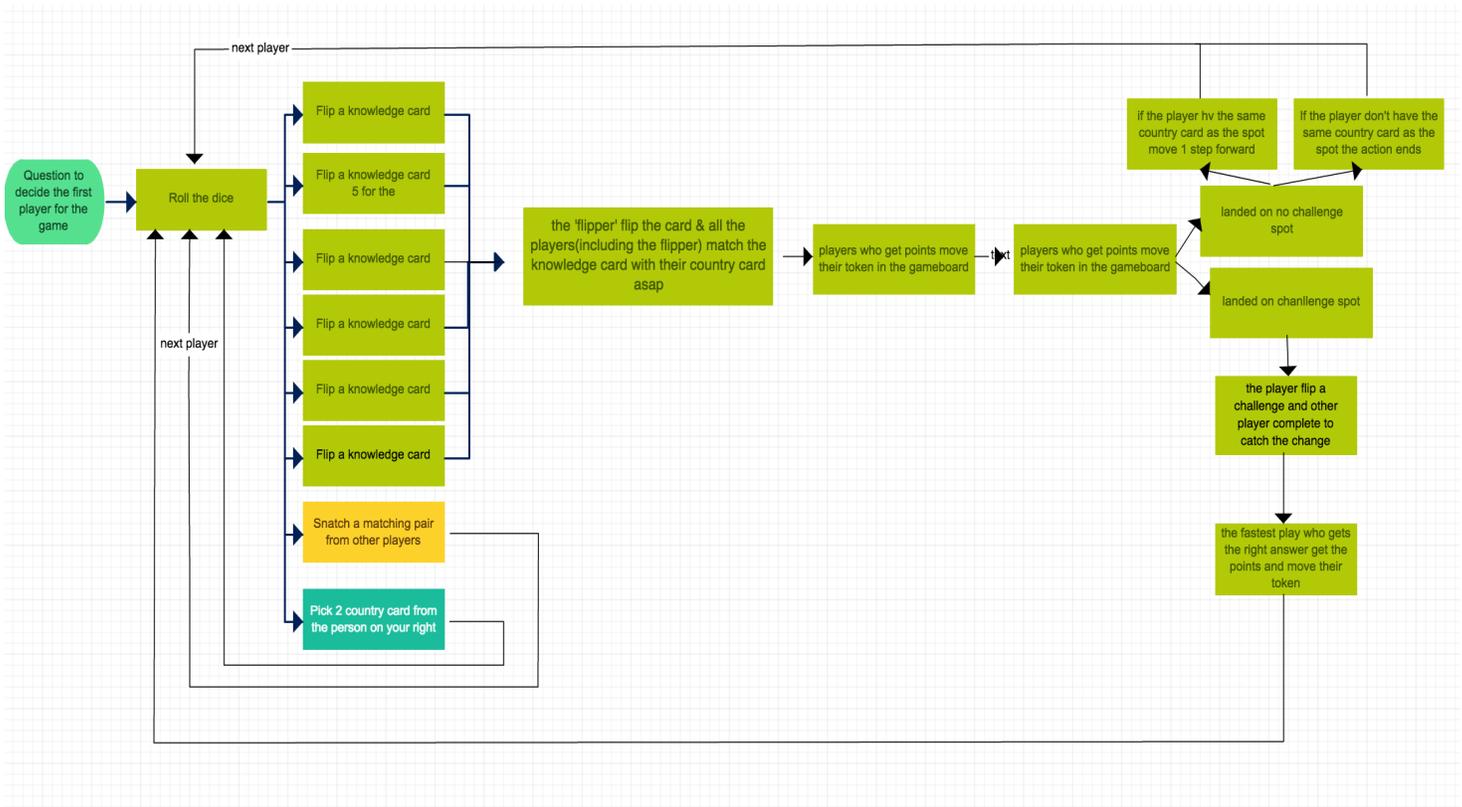
1. At the start of the game, players will choose turns by asking “Who traveled to the least countries in the world?” This person will be the first player in the game and players will take turns clockwise.
2. Player will throw the dice and take one of the following three actions as indicated on the dice:
  - a. Player will draw a knowledge card
    - i. If player draws a knowledge card, he or she will say out “*Knowledge Card*” then flip the *knowledge card* on the designated space
    - ii. Players who recognize the country associated with the image on the *knowledge card* and possess the matching country card will pick up the *country card* and slam it down onto the “hand stack”.
    - iii. So players’ hands will be stacked in the order of the players’ speed
    - iv. When all players have placed their cards in the pile, one by one they will flip their cards over to see if they have chosen the correct country cards.
    - v. Two outcomes:
      1. Correct country cards: the fastest player to have placed their *country cards* on the pile will receive the highest point as indicated on the dice.
        - a. This player will place their matching pair into their card collection, then pick up an extra country card to add to their card collection
        - b. Before this player proceeds, he or she must read out loud the contents of the card.  
e.g., Tom Yam Kung is an iconic dish of Thailand
      2. Incorrect country cards: players will return their *country cards* to their card collection
    - vi. When the winner advances the number of steps as indicated on the dice, two things will happen.
      1. Land on a Risk step
        - a. The Risk steps will indicate the number of points it is worth. For example +8/-7 means if the player wins the challenge he or she can advance eight more steps, but if he or she loses, he or she must retreat five steps
        - b. Because Risk steps have varying point gains and losses, there is a considerable amount of risk. If players are confident to answer the questions, take the risk, and place hands on to the hand stack.
        - c. The player who answers the Risk card correctly may advance as many steps as indicated on the Risk card

- d. If the player lands on another country, he or she will stop, unless he possess the identical country card in his card collection. If this is the case he can advance one extra step.

2. Land on a country step

- a. Player will stop, unless he possess the identical country card in his or her card collection. If this is the case, he or she can advance one extra step.

Here is a flow chat to show the process of the game playing:



## **Game Dynamics**

Red Zone: Balance of Power

When a player arrives at the red zone the player have the option of converting the matching pair from his card collection into **number of steps**. These points can be used in three ways:

1. Player can advance the **number of steps**
2. Player can make the fastest player retreat the **number of steps**
3. Player can make the last player advance the **number of steps**

After converting the matching pairs to number of steps, player must throw their matching pairs into the trash pile.

## **Winning**

The player that reaches the finish line first is the winner of the game.

## COMPONENT II: RELEVANT THEORIES

### I Theories

World-Savvy is designed as a game to introduce different culture elements to teenagers so that to facilitate them to calculate better cross-cultural awareness. In our game design, from the content designs, card interface design and the learning design, we imbedded various theories. Details are as below.



### Culture Theory

Culture elements are one key component in our game design; and the core culture theory is iceberg culture theory -- Culture elements, like an iceberg, is generally divided into 2 different parts and the part above water is visible ones while a big part under the water is invisible. The visible culture element, such as food, arts, greeting rituals and etc., are easy to observe and catch the difference yet the invisible ones, like values, ideas are complex and deeply held in people's conscious mind. From our research, we also found out that teenagers have difficulty in understanding abstract concepts like values, so in our game design, we focus on the visible

elements of cultures. The idea is by helping kids to explore visible culture elements, to raise their interest in exploring deeper understanding of culture. So for the first level of our game, we chose national flags, foods, costume, cultural places of interests as the main visible elements.

### **Game mechanic and the flow of the game**

When transforming all the culture elements into our game design, we did take the flow theory into our consideration. As it is said, the flow theory applies to various game and the factor that make a person stay in the flow are different and depends on the balance of the game flow. In our design, we consider the flow balance between challenges and skills, excitement and boredom, movement and thinking.

Therefore, we created knowledge cards and challenge cards for both easy and difficult culture elements. Some knowledge cards are easy to get while the challenge cards are with some more difficult culture questions. By doing so, we can cover players both from the beginner's level to advanced level.

Besides, giving our target players are teenagers, it is hard for them to be focused and still for long period. So in our game mechanic design, we added movement and spend as one completing element during the play.

### **Educational Theory**

#### **1. Cognitive Learning Theory**

Given the idea to focus on the visible elements, we embedded cognitive learning theory in our game design. So in designing the game board and the cards, in order to deliver message of the game board and cards in a more effective way, there are several principle we follow:

- Multimedia effect -- multimedia presentation are more effect than single medium presentation;
- Contiguity effect-- student learn more deeply when corresponding words and pictures are presented near to rather than far from each other on the page or the screen;
- Personalization effect-- student learn more deeply when words are presented in conversational style rather than formal style.

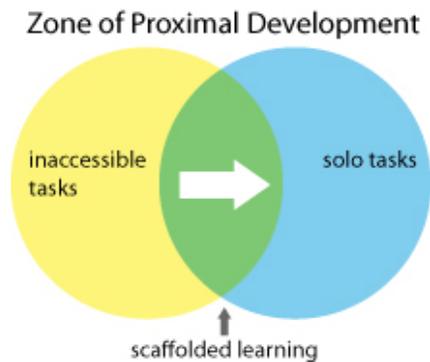
For example, in our cards designs, we added pictures and simple words together to help the players to get to know the knowledge (like pictures shown below). and during the game play, when players get the cards, they need to show and tell to other players the contents of the cards so that the playing process can become a learning process and help them to scaffold their culture knowledge.



## 2) Scaffolding and Zone of Proximal Development

Zone of Proximal Development (ZPD) is a theory put forward by Vygotsky. It has been described as a zone where learning occurs when a learner is helped in learning a concept in the classroom (Vygotsky, 1962). Once learners achieve the goal of initial activity, their zone grows and the learners can do more (Powell, K. C., & Kalina, C. J., 2009). Vygotsky (1962) also used

scaffolding in his theory, which assumes that learners can learn more effectively when experts are around them to help (Powell, K. C., & Kalina, C. J., 2009).



Giving the idea that the players might or might not have the knowledge of the world. The culture elements (the game content) is visual, so when we use cognitive learning theory to facilitate the learning during the game, a scaffolding process should be embedded to better facilitate the learning. When the players gaming, they get exposures to the world culture knowledge and the questions on challenge cards enable the players to think about the culture elements they may explored during the play in the game board (a world map). We also integrated a lot of visual elements into our game board design, aiming to help players to visualize and the connect the culture elements to it.

## **Connectivism**

Connectivism is one of the latest hypothetical learning theories that the theory was introduced by two publications in 2005. Basically the theory emphasizes the role of social and cultural context, and the relationship between work experience, learning, and knowledge is considered a core concept of the theory (Griffiths, Tony; David Guile, 2003). The central aspect of the connectivism is the metaphor of a network with “nodes” and “connections”, and the nodes can

include diverse factors, such as organization, information, data, feelings, and images. Each node can connect with each other, and people can learn through contacting other people according to the connectivism (Siemens, G., 2005, Aug).

Since our game has been designed based on the cross-cultural phenomena of the world, and also, the way to foster players' learning process is to connect between their learning and clear and precise images of different countries from all around the world, so this game mechanism can be regarded to be linked with the connectivism. Furthermore, one of the core theoretical elements of the connectivism is to utilize the connection between each component, in order to facilitate learning between the learners.

## References:

Griffiths, Tony; David Guile (2003). "A Connective Model of Learning: the implications for work process knowledge". *European Educational Research Journal* 2 (1): 56–73.

Siemens, G., (2005, Aug) *Connectivism: Learning as Network Creation*, Retrieved from <http://www.elearnspace.org/Articles/networks.htm>

Downes, S., (2005, Dec) *An Introduction to Connective Knowledge*. Retrieved from <http://www.downes.ca/cgi-bin/page.cgi?post=33034>

Vygotsky, L. S. (1962). *Thought and language* (E. Hanfmann & G. Vakar, Eds. and Trans.). Cambridge, MA: MIT Press. (Original work published 1934)

Powell, K. C., & Kalina, C. J. (2009). Cognitive and Social Constructivism: Developing Tools for an Effective Classroom. *Education*, 130(2), 241-250.

Mayer, Richard E. , The promise of multimedia learning: using the same instructional design methods across different media, *Learning and Instruction*, Volume 13, Issue 2, , April 2003, Pages 125-139.

## **COMPONENT III: PROCESS DOCUMENT**

### **Backstory**

The World Savvy team is comprised of individuals from Japan, China, Malaysia, Korea, the U.S, and Vietnam. We came together with a vision to design a game that raises cultural awareness among middle school to high school students in the United States. In an increasingly interconnected world, the different sectors of society, whether they may be medicine, law, business, technology, academia, or education, require individuals to compete and/ or collaborate with those from other cultural backgrounds-just as the World Savvy team came together to collaborate for the Game Design Project.

Before devising the contents of the game, our team members were all intrigued by the question, “What are some things travelers should know before visiting a foreign country?” We all agreed that of the diversity of cultural elements such as greetings, clothes, attractions and foods were most essential. While greetings and knowledge of clothing were important because they exhibited respect and appreciation for the culture of the host country, recognition of the foods and main attractions were essential as they would provide visitors with a starting point to initiate dialogues and connect with locals.

The World Savvy game is designed to provide students with exposure to the multiplicity of iconically national foods, costumes, greetings and additional world knowledge to not only allow students to build their knowledge base of the world, but also help students develop a curiosity for the world as they are exposed to the complexities of the global world. Some questions might be arised during the course of the game are:

- Why does Australia’s flag have the British flag embedded in their flag?
- Why is there more than one country from different parts of the world that says “Hola” as a greeting?
- Why are there marks above English pronunciation of Chinese words?

After multiple iterations, the World Savvy team finally devised the current version of World Savvy. It is both educational and fun. But most importantly, it allows middle school and high school students to take their first step in their journeys to become global citizens. We hope that students who engage in our World Savvy game would be able to walk away with a confidence to reach out and connect with people of different cultural backgrounds.

### Design Iteration Process

The table below describes how our game has evolved over time. This process is divided into six phases:

**Table 1.** *World Saavy Design Iteration Process (Phase 1~3)*

	<b>Phase 1 (Oct. 27th)</b>	<b>Phase 2 (Nov. 7th)</b>	<b>Phase 3 (Nov. 10th)</b>
<b>Board</b>	Using visual Image of World map for tracking.		Stopped using point-tracking board to simplify the game rules, and focus more on pairing cards.
<b>Token</b>	World coins as tokens.	Started using an 8-sided dice for deciding which category cards should be flipped.	No board, no token. Adding more commands to the dice, such as “losing 3 points,” “rotate country cards,” or “steal a matching pair.” The country names are now written under each picture to encourage players to know about each

			country.
<b>Country card</b>	Decided to make as many country cards as we can.	Limited the number of countries to 20 in order to create more chances for each player to participate in the game	
<b>Knowledge Cards and Risk Cards</b>	“Food”, “Costume”, “Gesture”, and “Greeting” cards. For “Gesture” and “Greeting”, we wanted the players to act/speak them out.	Eliminated Gesture cards because some testers couldn’t perform the gesture correctly. Also, some of the gestures are only pervasive in some parts of the country, therefore, not appropriate to incorporate them to represent a country.	Decided to put four categories into one stack of cards to differentiate from Cranium game. The biggest concern of our game is how to facilitate the learning process among players. In addition, based on each player’s prior knowledge, some players can have advantages. Others would not feel participating in the game. If no one knows the answer, the game’s flow would be interrupted because every player stop playing and looking up the answer.
<b>Rules</b>	Speed counts: the hand stack (slamming one hand as quickly as possible if any player knows the answer) Matching element cards with country cards. Point tracking system.	Stopped using point system. Only Matching pairs. (If any player collects 5 matching cards, the game ends)	

**Table 2.** *World Saavy Design Iteration Process (Phase 4~6)*

	<b>Phase 4 (Nov. 22th)</b>	<b>Phase 5 (Nov. 28th)</b>	<b>Phase 6 (Dec. 5, 2014)</b>
<b>Board</b>	Using board to encourage players to play and use different method for ending the game (matching 5 pairs) and deciding the winner (who has the most points)	Incorporating point-tracking board with the world maps as an answer sheet. Each country’s elements are printed and placed near where the country is located on the map to give clues to someone with less prior knowledge. This idea is inspired by the concept of	Redesigned the basic format of the world map board in order to make players become more engaging with the map itself. Thus, we rearranged the clue spots inside the world map. However, we decided to change it back to the previous board to keep

		discovery learning: the more effort is put in learning, the longer is the memory retention. Not only it makes novice players more comfortable, but also it would facilitate arguments of conflicting answer.	several rules, which makes the game more fun.
<b>Token</b>		Using human-shaped pieces, so this looks like an avatar travelling the world to become a world savvy. Dice has different point systems for knowledge cards.	
<b>Country card</b>	Eliminating country names under each picture in order to make players pay more attention on the pictures of each card.		
<b>Knowledge Cards and Risk Cards</b>	Added Task Cards to encourage players to engage with each other. Some players were bored during the game if they did not have the country cards for several turns. So, by implementing task card, each player would have more chance to participate in, even if they did not have the matched country cards (keeping a balance).	Decided to separate into two stacks of cards; (1) Knowledge Cards including: Foods & Attractions & Costumes, (2) Challenge Cards including Greeting & Trivial questions. Acting/Speaking with country cards were so confusing. So we decided to keep the knowledge cards for stacking hands system decided by dice. And Challenge cards will be drew by the directions written on board. Whoever has 2 consecutive challenges, they should share the second challenge to the slowest player, this can offer more balances among players.	Opened the opportunity for everyone to answer questions for Challenge cards to engage players, in stead of only the player who landed the challenge getting the chance. Therefore, changed the name of the Challenge Cards to the Risk Cards, as whoever answers the question needs to take the risk of going backwards.
<b>Rules</b>	Game ends when one player collects 5 matching cards. But the winner will be decided upon the point system.	Implemented a new system, which allow players to transfer matching cards to be used for points. The points are called as “steps.” Each step has country map and flag. If a player lands	Redesigned the board to make sense of the challenge spots in order to avoid one player continuing playing. Also, every player except one who lands on the Risk Cards will have a chance to

		<p>on the step and has identical country cards, they can advance one more steps and it helps them remember which cards they have. Also, it would familiarize themselves to the geographical features and positions of each country.</p> <p>The game ends when the first person reaches the last steps.</p>	<p>challenge the mission of the Risk Cards.</p>
--	--	--	---

Figure 1. Phase 1

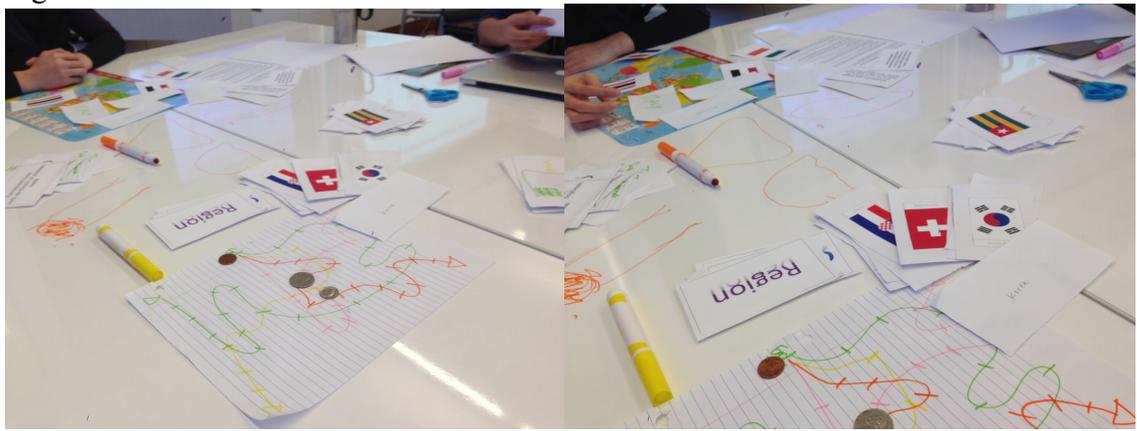


Figure 2. Phase 1



Figure 3. Phase 5



Figure 4. Phase 5



Figure 5. Phase 6



Final

