

# Project Report

## Green Hornets

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### Executive Summary

The purpose of this project was to train college students how to successfully complete a game of Big Two in order to help relieve stress and increase cross-cultural interaction. A needs analysis consisting of a general needs analysis, content analysis, and learner analysis was performed in order to define a felt need of stressed students lacking in cultural interaction and identify a possible solution. Due to the procedural nature of the game, the Reigeluth model was used to design the instruction. The rationale is explained more in depth in the Instructional Approach section of this document. Next, a design and development report took place as the analysis was aligned with design principles in order to produce effective, well-thought out instructional materials. A learner's booklet and instructor's manual were designed and developed according to the results of the needs analysis. Finally, formative evaluation was conducted on the implementation of the training consisting of a Chinese instructor and four learners. This evaluation was accomplished in part by observations, a pre-test, and a post-test. By no means does this report claim to be comprehensive, however, it contains specific insights into an instructional process performed by novice instructional designers.

# Analysis

## Objectives for the instruction

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The primary objective for the instruction was to teach learners to successfully complete a game of Big Two with minimal guidance from the instructor. Within this objective are three essential elements:

1. Introduced the rules and regulations of the game of Big Two to the target audience.
2. Introduced the rankings of 1-card play, 2-card play and 5-card play to the target audience.
3. Introduced the basic steps to start and complete a round in the game.

Secondary objectives of the game Big Two include stress reduction and increasing cross-cultural interaction. These two objectives were measured through observation and also pre- and post-test results.

You may choose to reuse some of your material from your analysis plan, but this final report should also benefit from your additional knowledge and reflection on the process now that your analysis is complete. Be sure that any previous material you use is written in the past tense for this report.

## Process used for this analysis

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The analysis plan included a needs analysis, content analysis and learner analysis. According to Dick and Carey (1996), in a needs analysis “a goal [is] identified that, in turn, [is] analyzed to determine the specific steps included in the goal” (p. 72). This needs analysis confirmed the desire of students for a way to relieve stress that comes through schooling. The goal of this analysis is to help students relieve stress through teaching them Big Two. This needs analysis has helped in understanding the steps needed to be taken in order to reach that goal.

The second part of the analysis, content analysis, was chosen to help identify accurate and essential information to learn and correctly play the game. This assures that the information provided to the students is authentic from a Chinese Big Two gaming Subject Matter Expert (SME).

Finally, learner analysis was chosen as part of the analysis plan. Psychologists have found that individual difference and variables change one’s ability to learn (Dick and Carey, 1996). The learner analysis identified learners’ skill level and instruction was designed to reflect the target audience’s skill level.

Big Two dictated this Reigeluth model because it involved a definite need, authentic content and a somewhat specific group of learners that are described in the Learner Analysis section.

For the needs analysis, a survey was conducted to assess the need for stress relief among college students. In addition to the survey, some research on studies that address the impact of conceptual games on stressed students was conducted as

referenced in the needs analysis section. In all, 16 students were surveyed of different genders, nationality and educational background. All of the surveys were administered to graduate students in the Instructional Technology department at Utah State University. Surveys were administered because they are quick, inexpensive and efficient ways to receive a broad overview of the learners' needs. A sample of the survey is found in Appendix A.

## Needs analysis

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### **Premise**

Hoyward and Scott (1998) found that college students often encounter a significant amount of stress due to academic-related issues, family problems, and concerns about the future. Epstein (2000) found that games help alleviate stress through two methods. The first method is reactive stress control, which reduces stress levels. The second method is called proactive, which protects against future stress to produce enormous benefits for health, mood, performance, relationships, and organizations. The game Big Two was chosen to help relieve student stress levels.

In addition to reducing stress levels, it was also anticipated that Big Two would foster unity between cultures. We assumed becoming well-versed in the rules and procedures of the game Big Two would enable students to learn about one another as strategy and problem-solving skills unfold. When game-play became automatic, the game moved forward in a fashion that was speedy and facilitated play. Big Two was infectious, and once a group of students was observed playing the game there was a natural desire to join. Our instruction enabled students to play the game with minimal instruction.

### **Tools**

A survey was used to assess the stress level of students, their attitudes toward interacting with others and their background with the rules of similar games. The results of the survey found that 50% of students have a higher than average stress level.

## Content analysis

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Because Big Two is not well-known in the United States, SMEs Yat-Soon Lee and Perry Tan were heavily relied upon to ensure accurate and valid content. Both Yat-Soon and Perry are from Singapore and have played Big Two for more than 10 years. Yat-Soon and Perry were observers during the instruction for learners. Yat-Soon was primarily responsible for the content of the instructor and learner manuals. Perry reviewed both manuals and made suggestions. The following website was also consulted to verify the accuracy of Big Two rules and regulations: <http://www.pagat.com/climbing/bigtwo.html>.

Finally, the designers of the instruction also validated the content and objectives through first-hand experience. The designers, who were also part of the target audience, acquired the knowledge to play Big Two with minimal assistance from SME Yat-Soon and reported a decrease in stress levels and an increased ability to interact with Chinese students.

Having both Yat-Soon and Perry proved to be a strength in the content analysis. With Yat-Soon as the primary SME, Perry provided a second opinion. Because of the different variations of Big Two, there were times of disagreement between

Yat-Soon and Perry. However, these were resolved through discussion and by consulting the website mentioned above.

## Learner analysis

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Dick and Carey (1996) emphasize that “Not only must the designer determine what is to be taught, but also the characteristics of the learners, the contexts in which the instruction will be delivered, and the context in which the skills will eventually be used” (p. 72). To discover the characteristics, skills and knowledge unique to Big Two learners, SME Yat-Soon taught the instructional designers the game. The instructional designers are also Instructional Technology graduate students, or the targeted audience. Based upon the results of this activity, several assumptions were made. The first assumption was that learners have no previous knowledge of Big Two. Another assumption was that learners with a prior knowledge of Poker would learn Big Two rules faster than individuals without prior knowledge. Finally it was assumed that because of the inherent motivational nature of Big Two, the learners would be interested in playing the game and find satisfaction from interacting with peers. Motivational strategies would not be needed in the instruction because of this inherent nature.

The next step was to see if these assumptions were consistent with a larger group from the target audience. A survey was designed and distributed to 16 students. The survey results found that students are interested in learning Big Two to help relieve stress. To begin, students rated their average stress level on a scale with 1 being the lowest stress level and 5 being the highest. The average stress level was 3.56, which is above the mean. Therefore, the designers concluded their target learners feel they are experiencing higher levels of stress than normal. In addition, 77% indicated they enjoy card games, over 60% were interested in learning a Chinese card game, and 75% desired interaction with other people through a card game. The majority of sample participants (13 out of 16) reported that they recognized the terms flush, royal flush, full-house, straight, and four-of-a-kind. However, in ranking the hands in ascending order, only 2 answered correctly.

It was difficult for the designers to ensure the secondary objectives of stress reduction and cross-cultural interaction would be met. Part of this difficulty came in developing a method to measure these objectives in our learners.

## Context analysis

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Since the designers believed that Big Two would be primarily played in casual and relaxed settings after class or during a work break, the designers decided to teach the learners in a similar environment. A student office located in the Education Building, which building houses the classrooms of the target learners, became the learning room. The location was not only convenient for the target learners, but helped facilitate learning recall because the instruction was taught in a similar environment as the target learners classrooms (Cheney, 1996).

As the context analysis began, the designers did not consciously consider the context would need to accommodate 5 observers in addition to the learners and instructor. This became obvious as the time approach for the instruction to take place.

## Instructional approach and justification for the approach

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Reigeluth's approach was used to design instruction for the game of Big Two. This approach naturally lent itself to designing instruction for the following reasons:

- Learning the rules of Big Two was a structured procedure.
- The rules can be explained step-by-step, allowing enrichment to be incorporated as needed. This was necessary because our target audience had no prior knowledge of Big Two.
- Examples and practice helped facilitate Big Two mastery and enabled the learners to play the game with minimal prompting from an instructor, which was one of the final goals.
- Feedback was immediate as learners played correct hands.

Big Two naturally has a divergence from one game round of the game to the next, depending on the decisions of the individual players. These variable characteristics can be divided into equivalence classes. Examples and practice came from the instance pool. In this way, Reigeluth's approach was an effective model to follow in designing the instruction.

## Design and Development

### Description of the instruction

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#### Setting

The lesson was conducted in student office 225 located in the Education Building. The room easily accommodated 4 learners, one teacher and five observers. The learners were seated at a square table with four chairs. The instructor was provided with two decks of face cards. Upon completing the instruction, every learner received a Big Two instructional booklet.

#### Activities and sequence

The instructor conducted the lesson in accordance with the sequence of activities listed below. The instructor referred to the notes in the instructor's manual during the lesson. These notes provided the following:

- The objectives and activities.
- Specific suggestions for successful teaching in certain areas of the section.
- Present competency suggestions.

Below is a sequential outline for the instructions employed during the lesson:

1. Introduction:
  - Introduce the background of Big Two.
  - Explain the reason for its popularity in Chinese-populated regions such as Hong-Kong and Singapore.
  - Highlight the potential entertainment that one can derive from the game in a group setting.

**Comment:** Should this section be past tense? If so, let me know.

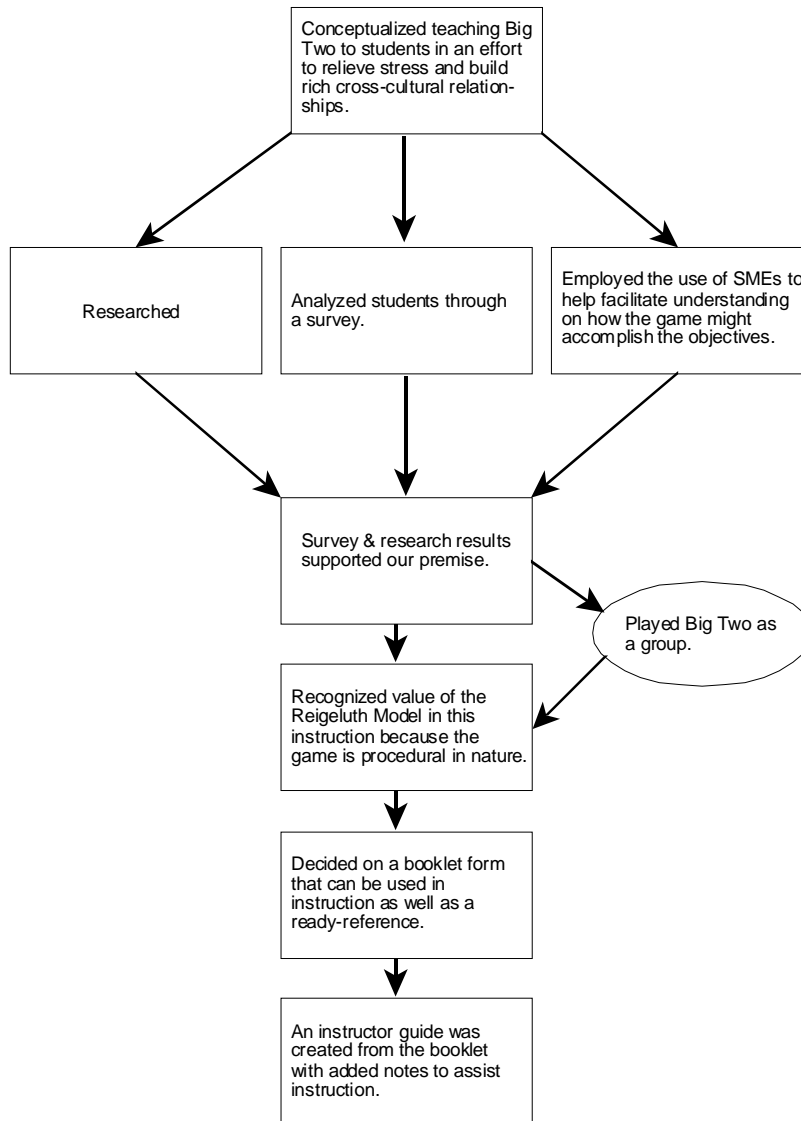
2. Introduce the underlying principles of Big Two that are common in the game of Poker.
3. Instruct on the fundamental concepts of Big Two:
  - Introduce the concept of one-card, two-card, and five-card hands with reference to illustrated examples in the learner's instructional booklet.
  - Introduce the ranking order of suits (i.e. diamond, club, heart and spade) with reference to illustrated examples in the learner's instructional booklet.
4. Instruct on one-card hands:
  - Introduce the ranking orders of one-card hands (e.g. two of spades is the largest; three of diamonds is the smallest) with reference to illustrated examples in the learner's instructional booklet.
  - Use the competency suggestions in the instructor's manual to test for adequate understanding of the concepts.
5. Instruct on two-card hands:
  - Introduce the ranking orders of two-card hands (i.e. a pair of aces) with reference to illustrated examples in the learner's instructional booklet.
  - Use the competency suggestions in the instructor's manual to test for adequate understanding of the concepts.
6. Instruct on five-card hands:
  - Introduce the ranking orders of five-card hands (i.e. straight, flush, full house) with reference to illustrated examples in the learner's instructional booklet.
  - Use the competency suggestions in the instructor's manual to test for adequate understanding of the concepts.
7. Introduce the general rules and playing method:
  - How to deal the cards.
  - How to start a game.
  - How to complete a round.
  - How to continue a round.
  - How to end a game.
8. Practice:
  - The four learners will practice with supervision from the instructor.
  - As the game proceeds the instructor will take on more and more of a peripheral role of coaching and fading (Greeno et. al, 1996). In other words, the instructor will reduce the amount of guidance to the learners. This will take place as the learners begin to grasp the game with more confidence and will no longer need the intervention of the instructor. The group will attempt to answer any question raised during the game itself. The instructor will only clarify when an incorrect answer is given. This will allow the learners to practice their newly acquired knowledge and reinforce the application of the rules.
  - The learners will be practicing the entire game of Big Two which incorporates all of the above-mentioned elements. It takes the learners to higher levels of thinking, that of synthesis and analysis. They will be

practicing organizing their cards into suits and one-, two- and five-card hands. The learners will be practicing how to start a game, deal the cards, complete a round, continue a round, and end a game. With these practices the learners will gain competencies in each of the sections of instruction.

- During these practices, the instructor will be providing appropriate feedback related to the learners' questions and concerns. Depending on the group, this feedback could consist of simply providing correct orders of suits, reminding them of different elements needed in one-, two- and five-card hands. The feedback could also simply be praising the students when they have successfully completed a turn, round, or game.

## Development process supporting the instructional approach

From the analysis that included a survey of our target audience, research on the topics of stress and cultural relationships and assistance from two SMEs, the Reigeluth Model was determined the most appropriate for our instruction. The outline sequence of the content lent itself to the creation of an instructional booklet. An instructor's guide was created in the same basic format as the instructional booklet with the addition of notes to assist the instructor. See the following diagram for an illustration of the development process.



A booklet was chosen due to the fact it was small and easy to carry around, inexpensive to produce and would satisfy the instructional needs of this product. A more in-depth description of why this was chosen can be found in the major development decisions section. We decided to use visuals within the booklet to help the learners visualize the process of how the game is played.

## Major components

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### ***Developing instructional materials for instructors***

The instructor received a booklet with instructions similar to the learner's instruction booklet. However, the teacher's manual had additional notes to:

- Present the objectives and activities in each section.
- Give the instructor suggestions on ways to teach each part of the game.
- Provide a measure of competency the student should be able to achieve.

### ***Developing instructional materials for learners***

The instructions for Big Two are small enough to carry around for easy reference. The instructions are clear and concise. Using Reigeluth's approach as a guide, the instructions are organized in a procedural format. A mix of general information, demonstration and practice are incorporated into the instruction. The booklet is designed to be not only functional, but visually pleasing using white space, color, font, and alignment properly. Because of the informal, relaxed nature of Big Two, the learners were not given the learner's guide until after the instruction was completed. The instructions for learners are to be used as a reference for future game playing.

### ***Training the instructor***

The instructor was first trained to instruct the learners in the game of Big Two. The training took place in a similar setting as the learners, however, the instructor was trained one-on-one by SME Yat-Soon. The instructor was Carrie, a Chinese International student who had never played the game of Big Two. After the instructor learned to play Big Two, she was then trained on how to teach Big Two, using the instructor manual as a guide.

### ***Presenting the instruction***

As described earlier, the instructor taught the learners how to play Big Two. After a basic overview with demonstrations, learners practiced Big Two under the direction of the instructor. The learners then played Big Two with minimal assistance from the instructor.

The designers decided the instructor would not communicate the instructional strategy or tactics used in the instruction to the learner. This was chosen because the instruction spoke for itself and was understood by the learners without understanding the underlying instructional strategy. The activities and sequence were presented to the learners as an outline, but there was no rationale provided for the decision of the activities and sequence.

## Key development decisions and justification

1. Paper-based instruction: This was chosen as it is portable and allows Big Two to be taught in areas where computers and electronic aids are not readily accessible. These instructional materials can also be viewed as job aids due to their quick reference capabilities.
2. Color Visuals: These were selected over black-and-white visuals as suit color was related to the content being learned. Heinich, Molenda, Russell, and Smaldino (1999) found that visuals motivate learners by attracting their attention, holding their attention, generating emotional responses and simplifying information that is difficult to understand.

3. Verbal Elements: Serifed typeface Times New Roman was used for printed text and a harmonizing sans serif Arial for titles. The number of lettering-style variations was limited to four as recommended by Heinich et al. (1999). Letter coloring is dark to ensure contrast and all capitals are avoided to help ensure legibility.
4. Table of Contents: A table of contents was located at the front of the manual to mitigate the time required to locate specific manual content.
5. Digital Pictures: This type of medium provided an appealing iconic visual. The pictures showed students engaged in a game of Big Two in an effort to draw attention and create motivation in the learner.
6. Convenient-sized Booklet: This was chosen due to its reference and portability capabilities. Consequently, the rules could be carried in a pocket or book bag eliminating the need to rely on memory to play the game. This booklet contained many of the same features job aids provide as noted by Rossett (1996) by providing information, perspectives, and examples that can be called upon by individuals in time of need in the environment.
7. Objectives and Activities: For the ease of the instructor, the objectives and activities were provided in each section of the instructor's booklet. They were located on the upper right hand corner of the booklet for easy access and clarity. Black text was used on a colored background in order to catch the eye of the instructor.
8. Competency Suggestion: The competency suggestion was placed in the right hand margin and underneath the objectives and activities. This suggestion allowed the instructor to quickly glance at the right hand margin and have an idea on what to use to assess the learning of the learners for that section. The suggestions were also with black text and a colored background to be easily perceived by the instructor.
9. Instructor's Notes: Notes are included in the instructor's manual to clarify points of instruction. These notes highlighted what is important and what they may encounter in the instruction.
10. Quick Reference: A quick reference was placed in the appendix of the instructor and learner manual. This allows both the instructor and the learner to quickly refer to the basic rules and some examples.
11. Due to the nature of instruction (i.e. teaching learners to play a card game), a fatal error is by nature not an occurrence that is detrimental to the physical or mental well-being of the learners. Neither can it result in an irreversible situation that may eliminate the progress of the game. In the instruction's context, a fatal error is therefore viewed as a mistake that is committed by learners if (1) they fail to recall the correct ranking orders of suits and hand types, (2) they fail to recall the principles in creating a valid hand type, or (3) they fail to observe the playing methods. Examples of each fatal error type are shown below:
  - Learner plays a hand that is of lower ranking than the hand discarded by the preceding player. If the error is identified by the other players, the learner must then withdraw that particular hand and either play another valid hand or pass a turn.

- Learner plays a hand that is invalid. If the error is identified by the other players, the learner must then withdraw that particular hand and either play another valid hand or pass a turn.
  - Learner fails to announce "LAST CARD" when they are left with one card. If the error is identified by the other players, they will acknowledge the mistake and the game will proceed. Similarly, if a learner forgets to guard a player who wins the game with his/her last card, the learner will be penalized by being the sole loser for that game and shuffles the cards for the next game.
12. Examples are used in four ways: (1) illustrate the components that constitute a valid hand, (2) using examples to test learner's ability to identify the type of hand, (3) use examples to test the learner's ability to rank two different types of hands, and (4) use examples to test the learner's ability to rank two hands of the same type.
13. Non-examples are illustrated during the course of the lesson. For example, when the instructor asks the learners to identify the type of hand or differentiate the ranking orders of two hands, any wrong reply can be considered as a non-example. After the instructor explains why the reply is wrong, the learners will eventually recognize the differences and subsequently assimilate the principles into their minds. Other non-examples will be readily available during the first game after the lesson. Learners will frequently commit fatal errors which require immediate intervention, follow by clarification from the instructor. Such non-examples are in fact more meaningful to the learners as they are experiencing them in person.

## Expected maintenance and distribution requirements

Within the game of Big Two, the major issues anticipated to arise in the maintenance and distribution of our instruction in the future were the following:

### ***Storage and maintenance of the original documents.***

The original documents, including the pictures, outlines, and text were saved as two hard copies and digitally on two zip disks. The documents were stored in this way to be flexible in the maintenance and distribution of the materials. Two hard copies were saved in case if one is lost, a backup copy is available. Also, with these paper-based copies, quick duplications will be easy to make using a copier. The reason for choosing to store the information digitally is as time progresses and ideas for revised instruction are proposed and accepted, authorized persons will be able to access the original zip disks and add or subtract items necessary to the improvement of the instruction. This can be accomplished quickly and efficiently through the technology available. This was also chosen due to budget constraints (paper and zip disks are relatively inexpensive) and the fact that most instructors and learners have access to these technologies.

### ***Distribution of the instruction.***

The instruction will be distributed to interested persons by contacting one of the original members of the group. Copies are easily made, and people can play this game throughout the entire world. Shipping costs are charged to the consumer, but the instructions to the game are inexpensive. A website will also be provided for those who have the downloading and printing capabilities. The manuals will be in PDF format. This will be easy for those with the above mentioned capabilities to access free and easily distributed materials.

# Evaluation

## Methods used to evaluate the instruction

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For the formal evaluation, a pre-test and post-test were administered to each learner previous to and immediately following the instruction. From these tests the following conclusions arose:

- Content accuracy.
- Instructional quality.
- Visual or production quality.
- Usability.
- Appropriateness of objectives.
- Overall instructional effectiveness.

After analyzing the data and observing the games successfully played by the learners, it was determined that the instruction was effective. Although some errors and confusions were encountered, which are addressed in the revision section, overall the instruction successfully met the objectives of the training.

## Findings from evaluation

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Useful quantitative and qualitative findings were collected through observing the instruction and conducting pre- and post-tests. These findings are collected from observing four learners and an instructor. Pre- and post-tests were given to each of the four learners. Quantitative findings are discussed first, followed by a discussion of qualitative findings.

The designers observed how much time was spent on various instructional activities. Table 1 shows the events of instruction and the approximate time spent on each event.

Table 1: Instructional Event Timetable

Instructional Event	Time
Introduction and pre-test	10 minutes
General instruction (explanation of rules)	20 minutes
Practice: game one	18 minutes
Practice: game two	14 minutes
Conclusion and post-test	10 minutes

Before conducting the instruction, it was anticipated that the total instruction time would take a minimum of two hours. Actual total instruction time was

approximately 72 minutes. It was also anticipated that there would be a larger difference in the time of completing game one as opposed to game two.

Table 2 compares the five questions of the pre- and post tests that relate to the learners' understanding of the rules. Because there were 4 learners and 5 questions, there were a total of 20 responses. None of the 4 learners had ever played Big Two. However, 3 of the 4 players had played Poker previous to the instruction which helped 1 learner understand the ranking of five-card hands. Please refer to Appendix B, questions 3-6, 8 and Appendix C, questions 1-5.

Table 2: Pre- and Post-Test Responses

Test	Correct Responses	Incorrect Responses
Pre-Test	4	16
Post-Test	18	2

The designers anticipated that the learners would respond correctly to every question on the post test. However, the findings show that 2 learners answered the ranking of five-card hands incorrectly on the post-test. Because 3 of the 4 learners answered the multiple choice question correctly on the pre-test, it was determined that it was a poor question. Despite the post-test analysis finding, the primary objective to have learners successfully complete a game with minimal teacher intervention was achieved.

The secondary objective, to reduce student stress, was statistically successful. On a scale of 1 to 7, with 1 being low and 7 being high, all 4 learners reported a stress level of 5 or higher on the pre-test. Because 4 is the mean, it was determined that anything above would be considered a high stress level. The post-test revealed lower stress levels as a result of playing Big Two with 1 learner going from a 7 to a 4, another from a 5 to a 4, another from a 7 to a 5, and lastly from a 5 to a 2. Observation indicated that the learners were having fun as they were laughing and enjoying the game.

The findings revealed that the other secondary objective of cross-cultural interaction was not accomplished. When the 4 learners were asked if they believed their ability to play Big Two would enable them to better interact with Chinese students, they all answered no.

The content was sufficient for the learners. The explanation of the general rules was not conducted as envisioned by the instructional designers. One learner explained what he liked least by stating "usually in learning a card game there is not so much instruction beforehand—it was a little formal." The designers had hoped to see more interaction in the explanation. When other learners were asked what they enjoyed least, they stated the instructor was not able to answer all their questions and the rules were confusing. Another learner stated she simply wasn't good at card games, although she won both games.

The general responses from the students were very positive. They seemed to enjoy the instruction and felt confident in their abilities to successfully complete a game of Big Two. Because of the inherent motivational nature of Big Two,

learners were interested even before the instruction began. In observing them during the instruction, they seemed to be interested in learning by their upright posture, open eyes, smiling faces, laughter, and cheerful voices. There was plenty of healthy interaction between the learners and the instructor and the instruction seemed to move at a comfortable pace for all involved. When asked what they liked most about the training, the learners responded that it was a fun experience, the game was easy to learn, the relaxed atmosphere, and the instructor's personality.

Comment: Subjective or explain what your healthy is. A rubric would be nice 😊

Although the instruction was not conducted exactly as anticipated by the designers, the instruction was successful. Learners were able to successfully complete a game of Big Two and also feel stress relief.

## Revisions to be made to the instruction

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The following revisions were made on the instruction based on the findings in the formative evaluation:

1. More concise and elaborated explanations to rules and examples were added to the beginner's guide. For example, the symbols for the suits in the section "Ranking of Suits" were rearranging in a top-down manner and an arrow was used to indicate the ranking order. Also, more explanations were added under the section "straight" and "straight flush" to help learners understand the difference between a valid straight hand and an invalid hand. These explanations were further supported with illustrated examples.
2. Appendices were added at the end of the Instructor's Manual and Beginner's Guide. These tables describe ranking orders of suits, one-card hands and five-card hands and the different rules in ranking five-card hands of the same type. This addition is the result of observations made on the first batch of learners when they were seen constantly referring to the beginner's guide during the first two games. The game flow was inevitably hindered as the learners were trying to locate the needed information. Now, by adding the appendices at the back of the guide, learners can make quick references easily without delaying the game.
3. Three sets of additional information were added into the Instructor's Manual: Objectives, Activities, and Competency Suggestion. They were further color-coded using lightly toned colors to differentiate their functions and to draw the instructor's attention. The initial box outline and italicized fonts were removed as well to enhance visual aestheticism and readability of the instructions. These changes were necessary as it was observed that, during the first lesson, the instructor was unclear on the objectives of each section of instruction in the guide and the appropriate activities to help reinforce the new knowledge into the learners' cognitive structure. Some of the activities and suggestions will now enhance the learners' learning process by activating any prior knowledge that they may possess while others help facilitate creation of new schemas in their concept maps that allow easier assimilation of related knowledge in the later sections of instructions. One example is to first assess the level of learners' prior knowledge through queries. Another example is to immediately ask some learners to perform tasks that are related to the content that was covered earlier (e.g. arranging a

specific hand, identifying a type of hand or determining the ranking orders between two hands).

4. A color scheme was adopted using dark blue for main headings and headers. This is to enhance the visual aestheticism of the guide and to achieve consistency with the main color used on the cover page.

In addition to the changes that were mentioned, several possible revisions may be considered in the future. However, they are not included in the latest version of instruction as more observations on new groups of learners are necessary in order to confirm the needs for their inclusion.

1. Large rectangular cardboards that display examples of five-card hands may be employed as job aids for the instructor. This may be necessary if the class size is more than four learners so that everyone in the class can see the examples clearly regardless of the distance away from the instructor. The demand for such instruction will be monitored to gauge the class size.
2. Advanced rules may be included in the instruction if subsequent classes exhibit sufficient proficiency and prior knowledge in Poker. They may find the current version too easy to understand. Rules such as scoring system and three-player game will make the game more challenging for such learners.

## Authorship of the report

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The following table shows the primary and secondary authors of each section in this project report. Tory Neiwert was the primary editor.

Section	Primary Author	Secondary Author
Executive Summary	Tory Neiwert	Wade Oliver
Objectives for the instruction, Description of the instruction, Revisions to be made to the instruction	Yat-Soon Lee	
Process used for this analysis, Expected maintenance and distribution requirements, Methods used to evaluate the instruction	Tom Archibald	
Needs analysis, Development process supporting the instructional approach, Instructor and learner manual	Wade Oliver	Instructor and learner manual content: Tom Archibald, Yat-Soon Lee, Lindy Marler, Tory Neiwert
Content analysis, Learner analysis, Context analysis, Instructional approach and justification for the approach, Major components, Findings from evaluation, Authorship of the report	Lindy Marler	
Key development decisions and justification	Tom Archibald Tory Neiwert	
Appendix A: Survey Appendix B: Pre-Test Appendix C: Post-Test	Tory Neiwert	Wade Oliver, Tom Archibald, Yat-Soon Lee, Lindy Marler

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# Appendix A:

## Analysis: Needs Analysis Survey

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### Survey

1. On a scale of 1 to 5, with 5 being greatly enjoy and 1 being do not enjoy at all, how much do you enjoy playing card games?  
1 2 3 4 5
2. On a scale of 1 to 5, with 5 being highly interested and 1 being not at all interested, how interested are you in learning a card game that is commonly played in Chinese-populated regions?  
1 2 3 4 5
3. On a scale of 1 to 5, with 5 being highly interested and 1 being not at all interested, how interested are you in interacting with other people by playing a card game?  
1 2 3 4 5
4. Which of the following poker hand do you recognize? (circle all that apply)  
Straight Flush Royal Flush Full house Four-of-a-kind
5. Please rank the following poker hands in ascending order:  
\_\_\_Straight \_\_\_Flush \_\_\_Royal Flush \_\_\_Full house \_\_\_Four-of-a-kind
6. Rate your current stress level on a scale from 1 to 5, where 1 is not at all stressed and 5 is highly stressed.  
1 2 3 4 5

# Appendix B:

## Evaluation: Pre-Test

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1. Have you ever played the game Big Two? YES NO
  
2. Have you ever played Poker? YES NO
  
3. Please rank the following suits from smallest to largest  
\_\_hearts \_\_diamonds \_\_spades \_\_clubs
  
4. Please rank the following Big-Two hands from smallest to largest  
\_\_straight \_\_flush \_\_straight Flush \_\_full house \_\_four-of-a-kind
  
5. In the game Big Two, which of the following is the highest card?  
ace of spades two of spades king of diamonds joker
  
6. What card must be discarded to start the game? \_\_\_\_\_ of \_\_\_\_\_
  
7. Please circle your **current** stress level on a scale from 1 to 7, where 1 is not at all stressed and 7 is highly stressed  
1 2 3 4 5 6 7
  
8. Which of the following Big Two statements is not true?
  - A. The objective of the game is to discard all the cards in a player's hand.
  - B. When a player has only one card left in possession, he/she must declare "Last Card."
  - C. The player with the largest hand at the end of the game is the winner of the game.
  - D. A player has the option to discard a hand that is of higher ranking than the previous player.

# Appendix C:

## Evaluation: Post-Test

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1. Please rank the following suits from lowest to highest  
\_\_\_hearts \_\_\_diamonds \_\_\_spades \_\_\_clubs
  
2. Please rank the following hands from smallest to largest:  
\_\_\_straight \_\_\_flush \_\_\_royal \_\_\_full house \_\_\_four-of-a-kind
  
3. In the game Big Two, what is the highest card?  
ace of spades two of spades king of diamonds joker
  
4. Which of the following Big Two statements is not true?
  - A. The objective of the game is to discard all the cards in a player's hand.
  - B. When a player has only one card left in possession, he/she must declare "Last Card."
  - C. The player with the largest hand at the end of the game is the winner of the game.
  - D. A player has the option to discard a hand that is of higher ranking than the previous player.
  
5. What card must be discarded to start the game? \_\_\_\_\_ of \_\_\_\_\_
  
6. Do you feel that playing Big Two helped reduce your stress level? YES NO
  
7. Having played Big Two, please circle your **current** stress level on a scale from 1 to 7, where 1 is not at all stressed and 7 is highly stressed  
1 2 3 4 5 6 7
  
8. Do you feel that knowing Big Two enables you to better interact with Chinese students?  
YES NO
  
9. Do you plan on playing this game again? YES NO
  
10. What did you enjoy the most about the training?
  
  
11. What did you enjoy the least about the training?