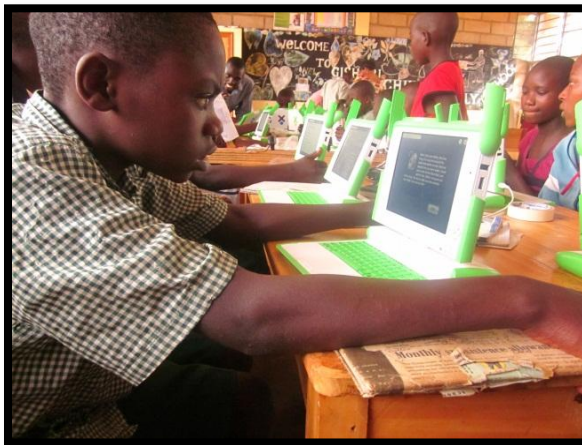


2012

*Bana Dukine: Using Technology to  
Teach Conflict Resolution Skills*  
Project Evaluation Report



Search for  
Common  
Ground

KATHERINE CONWAY and  
THEOGENE MUGISHA

Search for Common Ground - Rwanda

June 2012

## Table of Contents

|   |           |
|---|-----------|
| <b>Executive Summary</b> .....  | <b>3</b>  |
| <b>I. Introduction</b> .....  | <b>4</b>  |
| <b>II. Results</b> .....  | <b>7</b>  |
| 1) Appropriateness of the Computer Game .....                           | 7         |
| 2) Conflict Resolution Skills .....                                     | 11        |
| 3) The ability of children to relate the game to their real lives ..... | 16        |
| <b>III. Conclusions</b> .....   | <b>19</b> |
| <b>IV. Recommendations</b> .....  | <b>20</b> |
| <b>Annexes</b> .....  | <b>21</b> |

## Executive Summary

Bana Dukine is a computer game designed to teach conflict resolution skills and create a space for Rwandan students to practice these skills. The game was designed through a partnership between Serious Games Interactive, Search for Common Ground (SFCG), and the Rwandan Ministry of Education – with the financial support of the United States Institute for Peace (USIP). The computer game comes at a time when the Rwandan government is increasingly focused on the roll out of technology initiatives and well as the ongoing processes of peace, unity, and reconciliation within the country. The target audience of the game is Rwandan primary school students who are in the fourth or fifth year (9 – 11 years old).

After the development of the game and before the national roll out, Search for Common Ground conducted an evaluation in primary schools in each province of Rwanda. The evaluation assessed three crucial elements of the game, including, the appropriateness of the game for the target group, level of increased knowledge about conflict resolution, and whether the game translated to the students' real life. The evaluation found that the game is appropriate based on students' ability to understand it as well as their desire to play. Although the game was found to be appropriate for the students, the evaluation highlighted the high level of knowledge the students already had about conflict resolution. After 45 minutes of game play, the evaluation did not show an increase in students' knowledge of conflict resolution. However, students and teachers commented that students had learned through playing the game. Thus, moving forward, Bana Dukine will serve as an important safe space for students to practice conflict resolution skills.

The evaluation conducted by Search for Common Ground demonstrates that the computer game should be included as a complement to the ongoing peace and conflict resolution education within primary schools. In a culture where students are more conflict adverse, the private safe space of the computer game will help to practice important conflict resolution skills that can be translated into the students' real life.

## I. Introduction

In the 18 years since the genocide, Rwanda has undergone major changes and growth. Central to the transformation process is the “Vision 2020,” a Rwandan development strategy that emphasizes technology-based growth.<sup>1</sup> In recent years, Rwanda’s economic growth rate has reached the high levels of 6-7%.<sup>2</sup> One of the goals of Vision 2020 is the installation of thousands of computers into Rwandan schools to improve the education and computer literacy of the majority of primary school students. Additionally, major strides have been taken to overcome ethnic, social, and geographic divides through the “One Rwanda” campaign which encourages Rwandans to view themselves as Rwandan, not as belonging to a specific tribe or ethnicity. These are two pillars that support the government’s efforts to move the country forward.

While conflict resolution and peace are taught in schools, conflicts and differences of opinion are rarely discussed on a personal level.<sup>3</sup> The Ministry of Education introduced a new peace and conflict mediation syllabus within schools.<sup>4</sup> Although the effort is positive, limited debates and open discussions hinder what the students can actually learn. The new generation is growing up in the shadow of the genocide without the conflict resolution skills to actively create a new future. SFCG research shows that segregation still remains – within marriage choices, business dealings, and social relationships.<sup>5</sup> The divisions on the societal level and the lack of productive dialogue about conflict affect the growth of youth. A recent study conducted by SFCG found that when presented with a personal conflict, Rwandan youth are nearly three times more likely to try to ignore or avoid the situation than in neighboring Burundi.<sup>6</sup>

Bana Dukine (Kids, let’s play!) is a computer game that enables students to learn and practice conflict resolution skills through playing the game. The game is designed for Rwandan children ages 9-11. In order to design and rollout the Bana Dukine program, SFCG partnered with the Ministry of Education, including the One Lap Top per Child (OLPC) program and USIP. OLPC is championed by the Rwandan government and it aims to distribute more than 100,000 laptops to Rwandan primary schools. President Kagame launched the program in 2008 with an initial 80,000 lap tops. Since then, OLPC has reached at least one school in each of Rwanda’s four-hundred and sixteen sectors. Additionally, OLPC has trained over 2,000 teachers to implement the computer game. OLPC coordinates with district governments to connect schools to the national electricity grid to power the computers. In schools that are located too far from the

---

<sup>1</sup> Ministry of Finance and Economic Planning: <http://www.minecofin.gov.rw/ministry/key/vision2020>

<sup>2</sup> <http://www.bloomberg.com/news/2011-08-09/rwanda-s-economic-growth-rate-may-exceed-7-this-year-central-bank-says.html>

<sup>3</sup> Search for Common Ground. “Sondage sur les émissions de Génération Grands Lacs et les attitudes des étudiants dans les universités de Bukavu, Kigali, Butare, Bujumbura et Ngozi.” SFCG, Bukavu. January, 2009.

<sup>4</sup> Muhoza, Adeline. NURC Takes on the Journey to Reconciling a Healing Nation. *New Times*, August 26, 2009.

<sup>5</sup> Search for Common Ground. “Sondage sur les émissions de Génération Grands Lacs et les attitudes des étudiants dans les universités de Bukavu, Kigali, Butare, Bujumbura et Ngozi.” SFCG, Bukavu. January, 2009; IRDP. *Ethnic identity and social cohesion in Rwanda: Critical analysis of social and political challenges*. IRDP, Kigali. September, 2009.

<sup>6</sup> Search for Common Ground. “Sondage sur les émissions de Generation Grands Lacs et les attitudes des étudiants dans les universités de Bukavu, Kigali, Butare, Bujumbura et Ngozi.” SFCG, Bukavu. January, 2009.

grid, OLPC is working with the Ministry of Infrastructure to install solar energy.<sup>7</sup> The laptops provide the critical technology for the computer based educational game, and thus the national roll out of the Bana Dukine program will mirror that of OLPC. The Ministry of Education has implemented a peace and mediation curriculum in recent years, and the computer game is designed as a complement to the already existing education.

The purpose of the Bana Dukine program is to support the government's reconciliation and conflict resolution education efforts, while leveraging the new technology being introduced and emphasized. The game was created through a partnership with Serious Games Interactive and the Rwandan Ministry of Education with the support the US Institute for Peace (USIP). The game seeks to *increase students' knowledge of the causes of conflict and the skills to resolve conflict*. Through the game, the students control the character "little lion," who is tasked with distributing water to the other animals around a water hole. When conflicts arise between the animals, it is the responsibility to little lion to resolve them. Thus, students choose the best response to a conflict through a series of conflict dialogues.

**The two central objectives of the program are as follows:**

- 1) Increase understanding among Rwandan schoolchildren of the causes of conflicts, constructive strategies to resolve them and apply these approaches in their daily lives.
- 2) To develop interactive, new and replicable conflict resolution tools that leverage the Government of Rwanda's national rollout of ICT and can be adopted in comparable contexts.

**Through the above objectives, the following targets were developed:**

- 1) Participating children are able to identify causes of conflict and strategies to resolve conflict constructively,
- 2) Participating children apply conflict transformation strategies in their daily lives and communities,
- 3) The data and project results inform the broader fields of peacebuilding, serious game development and post-conflict education, providing best practices for future development.

To help measure the impact of the game at this stage, SFCG conducted an evaluation of the project. Since the work of SFCG is completed on the project, the evaluation is a final evaluation for SFCG; however, it is a mid-term evaluation for the full rollout of the program that will be undertaken by the Ministry of Education in the coming months. The goal of the evaluation is to assess whether the computer game is appropriate for the students and to understand if and what they learned through playing the game. Overall 400 students and 40 teachers participated

---

<sup>7</sup> <http://rwandaolpc.wordpress.com/>

in interviews or in focus groups. SFCG conducted evaluations in two primary schools in two districts within each of the four provinces of Rwanda and Kigali, for a total of 20 primary schools. Due to the lack of national roll out of the game a full evaluation of the previously mentioned goals is not possible. Thus, the evaluation undertaken in June 2012 assesses the following objectives:

**Evaluation Objectives:**

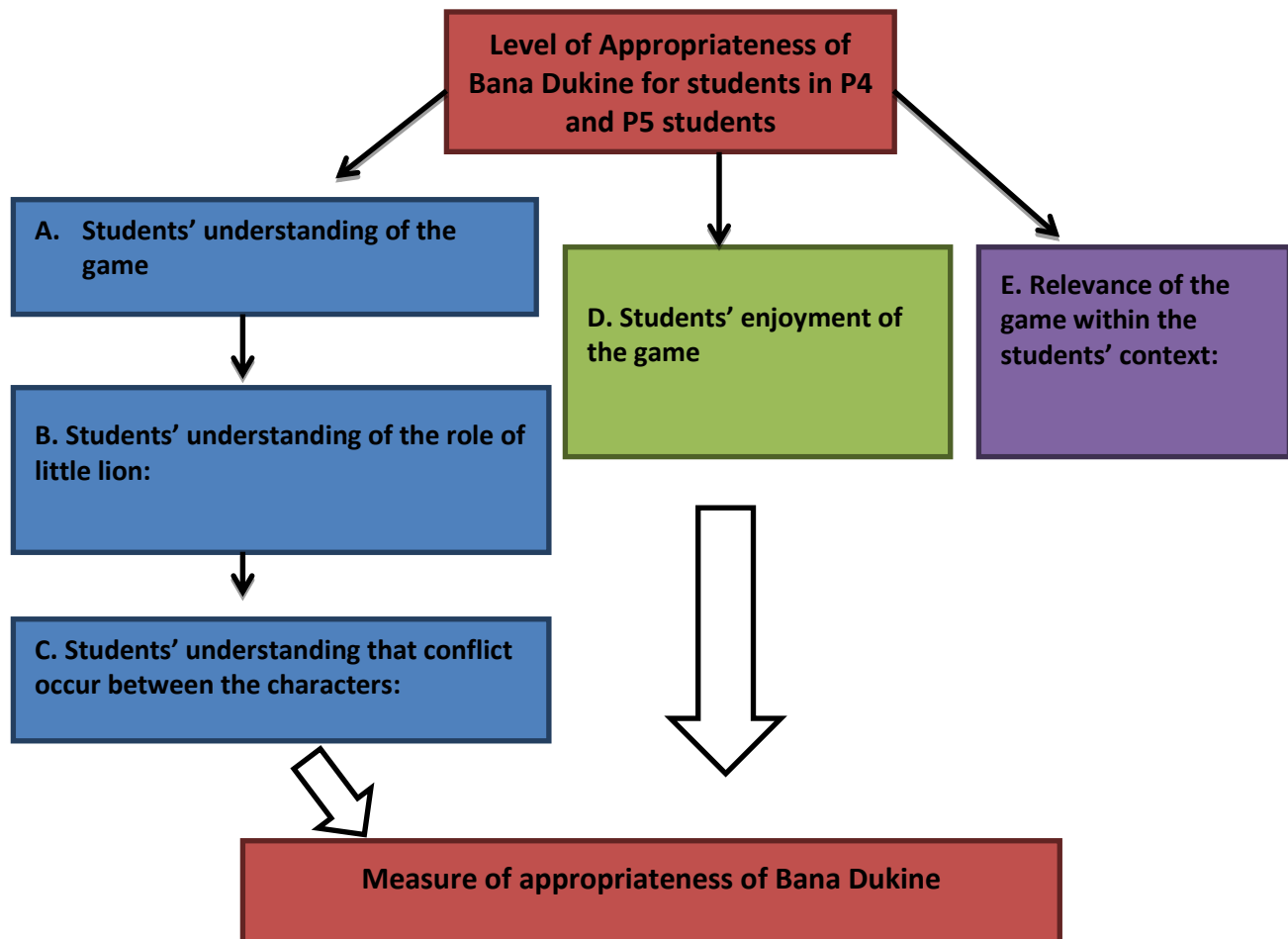
- To understand if the game is appropriate for students in grades P4 and P5 (primary school);
- To assess if students learned to identify conflict and about conflict resolution skills; and
- To assess if students can relate the game to conflict in their lives.

The following report seeks to analyze the data collected through evaluations in 20 primary schools. The majority of the data is qualitative and thus Search for Common Ground staff sought to give it context to draw conclusions for the future implementation of the game. The evaluation covers three major criteria: appropriateness, understanding of conflict resolution, and the ability to relate the game to their life. Under each of these areas, Search for Common Ground staff analyzed the data based on the focus groups, interviews, and observations.

## II. Results

### 1) Appropriateness of the Computer Game

The evaluation first assessed the “appropriateness” of the computer game. The definition of appropriateness as an evaluation criterion is two-fold. The Oxford Dictionary defines “appropriateness” as: “suitable, acceptable, or correct for a given circumstance.” Additionally, within peace building and development evaluations, “appropriateness” is often linked with the criteria of relevance and addresses the overall impact of a project. The OECD guidelines define “appropriateness” as “the need to tailor humanitarian activities to local needs, increasing ownership, accountability, and cost-effectiveness accordingly.”<sup>8</sup> The UNDP definition complements that of OECD and defines appropriateness as cultural acceptance as well as the feasibility of the activities of the initiative.<sup>9</sup> SFCG has defined “appropriateness” for the purpose of this evaluation as the following: **the ability of students to understand the Bana Dukine computer game, their enjoyment of the game, and the overall relevance of the game within their specific context.**



<sup>8</sup>[http://www.google.rw/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=8&ved=0CG4QFjAH&url=http%3A%2F%2Fwww.ceecis.org%2Fremf%2FService3%2Funicef\\_eng%2Fmodule4%2Fdocs%2F4-5-2\\_linking-evaluation-criteria-to-evaluation-questions.doc&ei=1dnyT4jwHMiZhQfco6zPCQ&usg=AFQjCNHSDyIzBkX0QSCwhOxZQYDZndzc6A](http://www.google.rw/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=8&ved=0CG4QFjAH&url=http%3A%2F%2Fwww.ceecis.org%2Fremf%2FService3%2Funicef_eng%2Fmodule4%2Fdocs%2F4-5-2_linking-evaluation-criteria-to-evaluation-questions.doc&ei=1dnyT4jwHMiZhQfco6zPCQ&usg=AFQjCNHSDyIzBkX0QSCwhOxZQYDZndzc6A)

<sup>9</sup><http://web.undp.org/evaluation/handbook/ch7-4.html>

### *Students' understanding of the game*

One of the major aims of the Bana Dukine project is for students to learn through playing the game. Consequently, it is important to understand in this evaluation, if students understand how to play the game. In response to the open-ended question: *“What have you seen in the game?”* Over half of the focus groups reported that they saw animals, little lion, and conflicts. Students also mentioned water, reconciliation, sharing, and conflict resolution. These are the same general elements that Bana Dukine was designed to highlight – in order to create a virtual practice space for students to try conflict resolution strategies. Based on the level of responses of the focus groups dictating the above elements of the game, the basic design of the game was understood by and resonated with the students. While the data demonstrated slight variations in responses between provinces, focus groups conducted in each province still highlight that students can identify the major elements of the game.

In response to the question, *“did you understand how to play the game?”* nearly all of the students responded “yes.” In only 1 out of 20 focus groups, two students say that they did not understand the game. Students were also asked to describe the game, and in each focus group, they described the little lion distributing water drops and trying to resolve conflicts. This was the basic “plot” of the game and therefore we can conclude that students understood the game.

SFCG researchers also observed students playing the game and the researchers asked students additional questions about the decisions they (students) made within the game. Based on researcher observation, the students quickly learned how to move the little lion, collect water drops, switch days, and click on the conflict dialogues. The game playing showed that students were focused on the ideas of sharing water and on helping the little lion to resolve the conflicts. Additionally, observations by teachers showed that students understood the game. In the interview with teachers, they commented that as the students played, they learned the game better and answered more conflict dialogues questions correctly. This feedback demonstrates that students understood the intended lessons of the game.

Since the role of the little lion in solving conflicts is vital to the students' understanding of the game, SFCG researchers looked specifically at how they understood his role. The majority of students saw the little lion's role as distributing water and resolving conflicts. In over half of the focus groups, students identified that the little lion makes decisions (11/20 focus groups) – mostly related to sharing water and conflict resolution (7/20 focus groups). Many of the other comments made by students in response to the role of the little lion related to “helping the animals,” “advising others,” “taking care of animals,” “avoiding conflict,” etc. These responses also relate to conflict resolution, and thus show that students see the little lion's role as assisting the other animals in some manner with solving conflicts. Teachers also commented that students understood the role of little lion, and only a few had required assistance.



Additionally, in 19 out of 20 focus groups, students responded that “yes” they had seen conflict in the game. Students commented that they saw conflicts between the animals, and that they saw the animals talking to each other in a bad way, and disrespecting each other. This question shows that the game was designed in a way where students could recognize the conflicts. Additionally, nearly all of the teachers noted that students could identify conflicts while playing the game. Therefore those students, within this context, were able to pick out a conflict.

#### *Students’ enjoyment of the game*

The category “enjoyment” was included in the assessment of appropriateness, because in order for the students to learn from the game they must play it – and they will play it more often if they enjoy it. This is an especially relevant part of the criterion based on the OLPC model, where students can take the lap tops home. In all of the focus groups, students responded that they liked the game. Additionally, students in all of the focus groups said they would play again and that they would share the game with a brother or sister.

**Table I: What students liked about the game**

| Elements of the game that students liked   | # of focus groups mentioned in | Elements students disliked                   | # of focus groups mentioned in |
|--|--------------------------------|--|--------------------------------|
| Little lion acting as a mediator/protector | 7*                             | Conflicts/disagreements/fights               | 14*                            |
| Sharing water                              | 10*                            | Lack of respect                              | 6                              |
| How animals solved problems                | 10*                            | Animals refusing to help                     | 1                              |
| Respect                                    | 1                              | English                                      | 1                              |
| Reconciliation/unification                 | 5                              | Selfish animals                              | 3                              |
| How the animals helped each other          | 4                              | Did not like that the animals could not talk | 1                              |
| Good leadership                            | 1                              | Jealousy                                     | 2                              |
| How the animals spoke to each other        | 2                              | Misunderstandings                            | 1                              |
| Animals (different types)/nature           | 4                              | Bad advice given to some animals             | 1                              |
| How to manage conflict                     | 3                              |  |                                |
| Hard work                                  | 2                              |  |                                |
| How they (the student) choose good answers | 2                              |  |                                |

\* Mark the responses with the higher numbers.

Overall the students enjoyed the game, particularly the character of the little lion and his role in solving conflicts. It is interesting to note that the highest rate of response was that students did not like that there was conflict in the game. This data appears to confirm the previously mentioned research conducted by SFCG that Rwandan students are more conflict-adverse than

other nationalities, making the intervention relevant. The importance students place on conflict resolution can be inferred from the most popular elements of the game, i.e. conflict resolution and sharing water.

All in all, students liked the game, even if they disliked the conflicts between the animals. The data demonstrates that they want to play the game, which is the first step in learning from it.

### *Conclusions*

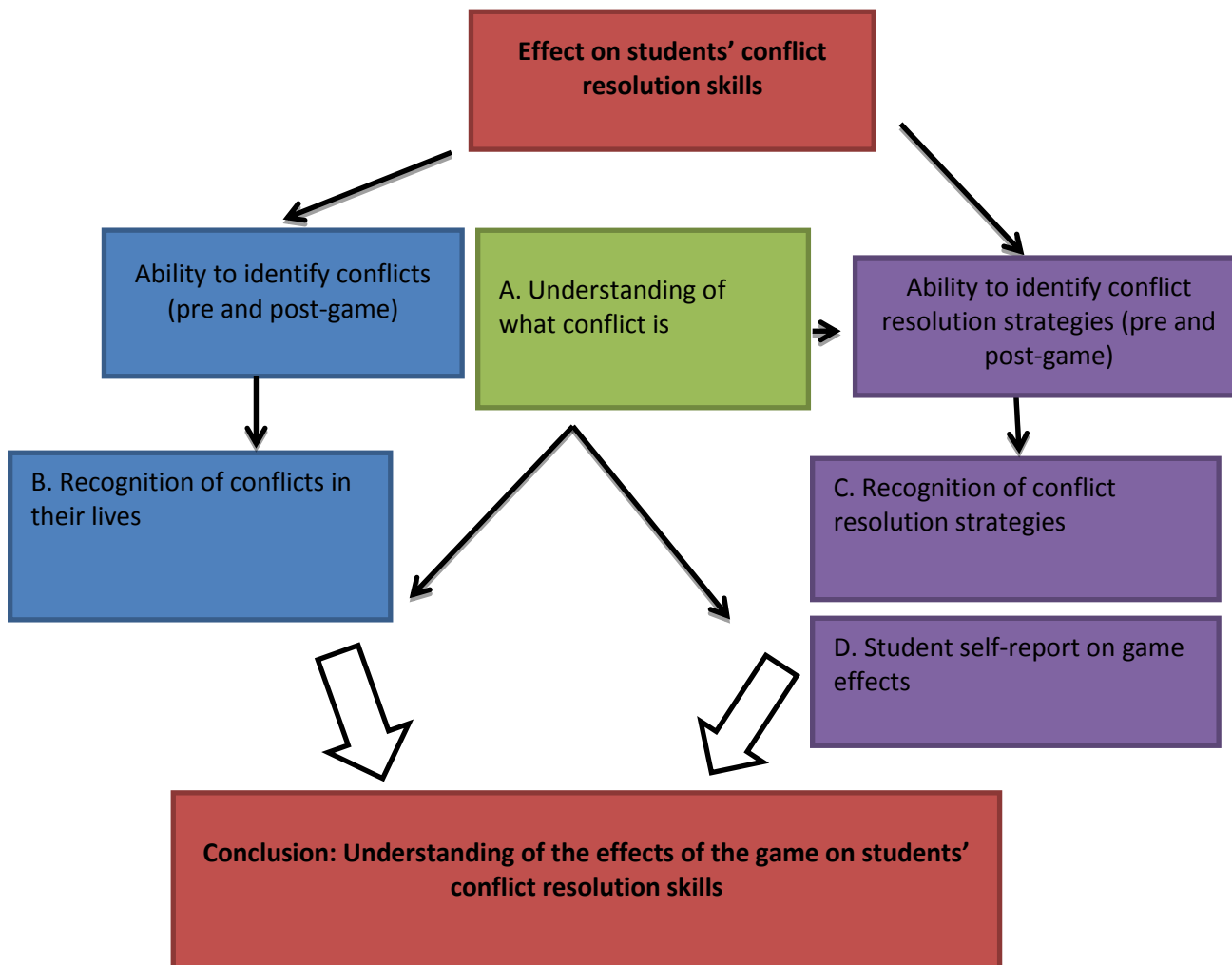
Appropriateness is the first criterion that will help SFCG and partners understand if Bana Dukine meets the design objectives. The previously mentioned data shows that the majority of students are able to understand how to play the game and the majority enjoyed it. The fact that students saw in the game what designers intended for students to see (i.e. the little lion, water, conflict, etc.), understood the role of the little lion, and enjoyed playing means that the game is appropriate. Referring back to the OECD definition of appropriateness, the fact that the game meets these two categories: understanding and likeability means that it is appropriate for children of this age group in this context.

This conclusion is supported by feedback from teachers in response to the question: *Is the game appropriate for students in grades P4 and P5?* Teachers generally felt that P4 and P5 are good age groups to implement the computer game. Students in P4 and P5 are generally between 9-11 years old and are learning to deal with conflicts, and thus it is the right time for education around conflict resolution strategies. Similarly to previous findings, teachers felt that the game was appropriate because the students understood how to play and appeared to enjoy playing. Due to the appropriateness of the game for this age group/context, the next criterion assesses what students learned from the game, which will help answer the question of whether a wider roll out of the game should be pursued.

## 2) Conflict Resolution Skills

Bana Dukine is designed to complement the existing knowledge of students in P4 and P5 conflict resolution education and to create a space for them to practice these skills. The game takes students through a series of conflict dialogues, which allow them to choose from a variety of possible outcomes. Within the context of P4 and P5 (generally 9-11 year olds), SFCG has divided conflict resolution skills to assess two central elements. **Conflict resolution skills are defined for the purpose of this evaluation as the ability to identify conflict and conflict resolution strategies.**

The methodology of the evaluation to assess this criterion is outlined in the diagram below. Firstly, the context for assessing conflict resolution is based on students' understanding of what conflict is. The data collected to answer this question will be pertinent throughout the rest of the evaluation. Secondly, the evaluation assessed whether students identify the same types of conflicts in their lives before and after playing the game. Thirdly, the evaluation assessed students' identification of conflict resolution strategies pre and post-game play.



### *Students understanding of conflict*

The evaluation first assessed the understanding of conflict among students in P4 and P5 to provide context for the subsequent game playing and evaluation. Based on the age group of the students and the context of Rwanda, it is important for researchers to understand how children understood the word and idea of “conflict,” due to the effects this would have on the identification of conflicts and conflict resolution skills. The following chart shows the responses to the question: *what is conflict?*

**Table II: Definition of Conflict**

| Response                     | # of times response given in a focus group | Provinces of Rwanda              |
|------------------------------|--|----------------------------------|
| Disagreement                 | 14   | East, Kigali, North, South, West |
| Hatred                       | 6  | East, Kigali, North, South       |
| Stealing                     | 2  | East                             |
| Fighting                     | 5  | East, Kigali, North              |
| War                          | 2  | Kigali                           |
| Lack of respect              | 3  | Kigali, North                    |
| Family issues                | 2  | Kigali, South                    |
| People not liking each other | 4  | North, West                      |
| Misunderstanding             | 4  | North, South, West               |
| Bullying/aggression/abuse    | 3  | North, South                     |
| Jealousy                     | 2  | North, South                     |
| Lack of peace/unity          | 4  | North, South, West               |

Rwandan students in levels P4 and P5 understand conflicts as “disagreement, hatred, people disliking each other, misunderstandings, and the lack of peace or unity.” These words form the context in which they recognize conflict and potentially begin to identify conflict resolution skills. This understanding is most likely a combination of their education in school through the peace and mediation curriculum as well as their education at home. Additional researcher observations mention that students were open to talking about conflict and describing how they view it and see it in their lives. While some responses varied between provinces, the categories with the highest level of response were seen in nearly all of the regions. These parallels demonstrate the appropriateness of the game in all of Rwanda’s provinces.

#### **A. Recognition of Conflict**

The first piece of the definition of “conflict resolution skills” for the purpose of this evaluation is the ability to recognize conflict in one’s life. Thus, the focus group discussions with students were designed to assess where they see conflict in their own life and if this changed as a result of playing the game. Change is measured by more students within focus groups identifying more types of conflict in their lives after playing the game.

The majority of students see conflict in their daily lives (17 of the focus groups). Students were able to identify a wide variety of conflicts, including, the actors in the conflicts (other students or family members) and the potential reasons (alcohol, stealing, etc.). The table below dictates the types of conflicts students see in their lives and how this was reported before and after playing the computer game.

**Table III: What kinds of conflicts do you find in your life?**

| Response                     | # of focus groups (pre) | # of focus groups (post) | Change (+/- 2 focus groups are noted) |
|------------------------------|-------------------------|--------------------------|---------------------------------------|
| Conflict within the family   | 11                      | 8                        | -3                                    |
| Between husband/wife         | 5                       | 9                        | +4                                    |
| Lack of sharing              | 5                       | 11                       | +6                                    |
| Conflict between students    | 11                      | 9                        | -2                                    |
| Fighting due to alcohol      | 5                       | 6                        | +1                                    |
| Stealing                     | 5                       | 6                        | +1                                    |
| Conflicts based on land      | 8                       | 6                        | -2                                    |
| Conflicts based on ethnicity | 4                       | 0                        | -4                                    |
| Disagreement                 | 8                       | 3                        | -5                                    |

The data collected pre and post-game playing shows inconclusive results on changes based on exposure to the game. After playing, more focus groups recognized conflicts between husbands and wives, and conflicts due to a lack of sharing. Additionally, less focus groups mentioned conflicts within the family (more generally), conflicts between students, conflicts over lack of sharing, conflicts based on ethnicity, and more general disagreements. The inconclusive results on what students learned through playing the game is not surprising given that they appeared to have a high level of understanding of conflict and conflict resolution. In addition, students were only exposed to the game for a limited amount of time (45 minutes). Thus, the game may serve as a complement to their education and creates a safe environment for students to practice conflict resolution, especially among the more conflict adverse population.

## B. Recognition of conflict resolution strategies

In addition to recognizing conflict, SFCG sought to understand if students recognized conflict resolution strategies and if this recognition was affected by playing the game. Students identified a number of conflict resolution strategies within the computer game, including, the little lion helping the animals to resolve conflicts, reconciliation, talking about problems, forgiveness, learning to play together, learning to respect one another, and apologizing. Students stated that they responded to conflict within their own lives in similar ways to the game. The table below demonstrates how students respond (self-reported response) to conflicts within their own lives. The chart records responses given before and after playing the computer game.

**Table IV: Recognition of Conflict Resolution Strategies**

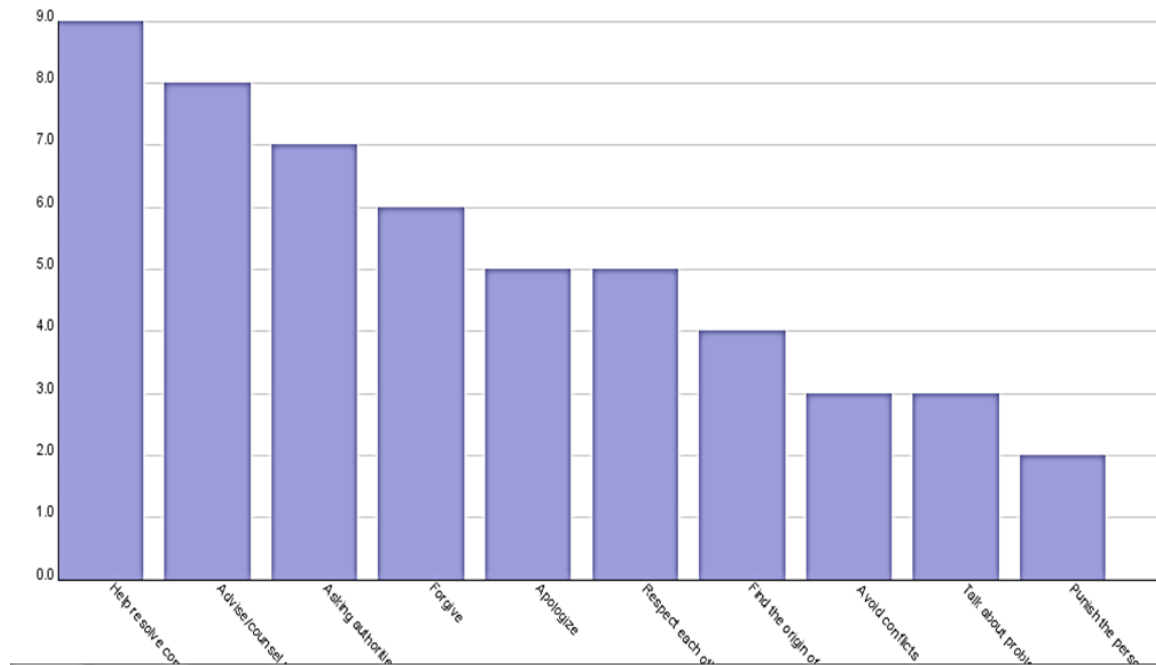
| Response   | # of focus groups pre-test | # of focus groups post-test | Change | Self-reported future changes |
|--|----------------------------|-----------------------------|--------|------------------------------|
| Try to reconcile                                 | 9                          | 12                          | +3     | 9                            |
| Tell parents/teacher/security /local leaders     | 14                         | 16                          | +2     | 7                            |
| Ask people to apologize                          | 9                          | 7                           | -2     | 5                            |
| Ask people to forgive                            | 8                          | 5                           | -3     | 6                            |
| Advise people                                    | 7                          | 7                           | 0      | 8                            |
| Encourage people to talk                         | 7                          | 4                           | -3     |                              |
| To create unity                                  | 4                          | 1                           | -3     | 3                            |
| Punish the one who caused it/make them apologize | 2                          | 3                           | +1     | 2                            |

The results for the identification of conflict resolution strategies are similar to the previous analyzed results (Table III) for conflict identification. Students appear to have high levels of abilities to recognize conflict resolution skills, which would affect how much they learned during 45 minutes of game play. The results of the focus groups show that in some cases more types of responses were given after playing the game, such as attempts at reconciliation, reporting the conflict to leaders, and punishing the person who caused the conflict. On the other hand, some responses diminished after playing the game, including, asking people to apologize, asking people to forgive, encouraging people to talk, and creating unity.

After playing the computer game, students commented on strategies they will use to resolve conflicts in their lives. In the majority of cases, the data resembles the data from the pre and post-tests of the above Table IV. Only the number of students that mentioned reporting the

conflict to a parent/security/etc. is lower in the students' view of future actions. The numbers in the final column of the table above, *self-reported future changes*, are reflected in the graph below.

### Self-Report Changes



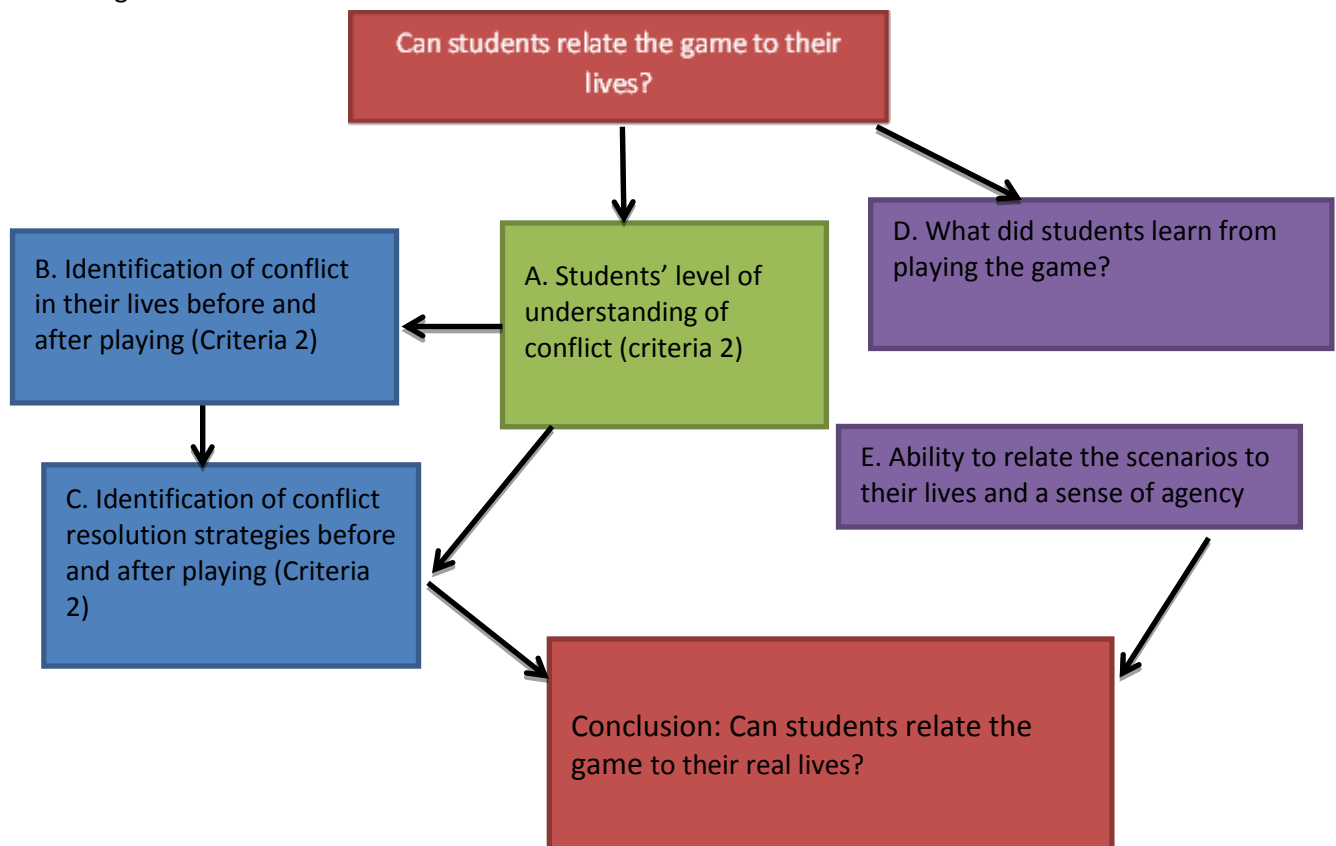
The highest numbers of responses include helping to resolve conflicts and advising/counseling on solving conflicts. This demonstrates that students see themselves as having a role/responsibility in conflict resolution – not only when they are involved. Students' individual responses to conflict (such as forgiveness/apologies) have lower numbers of responses than supporting others in resolving conflicts. This sense of agency is an element of conflict resolution skill building that translates the computer game into the students' real life. If future evaluations are undertaken by the Ministry of Education they will show the effects of the game on actual behavior change.

### Conclusion

The results of the evaluation, based on the partial implementation of the program in 20 schools, are inconclusive in terms of conflict resolution skills learned by the students. However, the results show that students have a dynamic understanding of conflict and conflict resolution skills, suggesting previous education on the topic. The game served more as a “practice space” than a place where the skills were first introduced. Additionally, students felt as though they learned through playing the game and that they will now use more conflict resolution skills in their lives.

### 3) The ability of children to relate the game to their real lives

The game is designed to present conflict scenarios that students find in their everyday lives, for example, people calling others bad names or children not sharing a soccer ball. This final section of the evaluation assesses whether the game translates from the computer screen into understanding within the student’s life. This assessment is based on the data presented for criterion 2, on recognition of conflict and conflict resolution skills, and whether the lessons from the game are transferrable to the student’s life. Thus, the assessment will look at whether students display a sense of agency within conflict identification and resolution. “Agency” is the link between watching and learning from a video game and using the learned conflict resolution strategies in one’s life.



#### A. Student learning from the game

Students took away a number of lessons from the game, all of which are phrased in a way that relates to their real lives. Below are the responses to the question: *What did you learn from the game?*

**Table V: Student learning from Bana Dukine**



| Response   | # of focus groups |
|--|-------------------|
| To help others                                       | 5                 |
| To avoid conflict/encourage others to avoid conflict | 7*                |
| How to solve conflicts                               | 15*               |
| To play together/create unity                        | 3                 |
| To reconcile   | 3                 |
| To apologize   | 4                 |
| Listen to parents                                    | 3                 |
| Complete responsibilities                            | 4                 |
| To identify the conflict causer                      | 3                 |
| To talk about the problem                            | 3                 |
| When to get support in conflict resolution           | 6*                |
| To share   | 7*                |

The majority of the responses relate to conflict resolution, conflict prevention, when to get support while in a conflict, and sharing. Interviews with teachers yielded the same results – the students learned “conflict resolution” through playing the game. The responses to the data are phrased in a way that shows the students relate the actions they saw in the game to their real life. The data supports previously examined data in this report, demonstrating that students learned the intended lessons while playing the game.

### B. Sense of Agency

All of the teachers interviewed believed that the students would be able to relate the scenarios in the game to their real lives. Because the students had to choose the best response to the conflict scenarios, they processed actions that they themselves would take in their own lives.

The majority of students believe that they make decisions about resolving conflicts in their life (stated in 18 out 20 focus groups). any of the actions that students take to resolve conflict, listed below, mirror the decisions and actions of the little lion.

#### Action taken by students in response to conflict:

- Apologize/tell people to apologize (6)
- Help to solve the problem (3)
- Avoid creating conflicts/getting involved (6)
- Advise people (7)
- Talk about problems/help people talk about problems (3)
- Unify/reconcile people (6)
- Support people in talking (2)
- Tell authorities/parents/someone older (11)

- Identify the conflict causer (4)
- Punish people (2)

The majority of the responses involved taking some sort of action when conflict occurs, including apologizing, helping to solve the problem, advising people, unifying/reconciling people, telling authorities, and identifying the conflict causer. However, in six focus groups, students mentioned avoiding conflict. All in all, students demonstrate a sense of agency in conflict resolution, yet the tendency to avoid conflicts is still present.

### *Conclusion*

Students report that they learned about conflict resolution through the game, which is supported by the opinions of teachers. Additionally, both groups report that the skills learned in the game can be related to the student's real life. This demonstrates the efficacy of the game in designing a space where students can explore conflict resolution that resonates with the situations they confront in their daily lives. The evaluation also sought to understand if students felt a sense of agency over conflict resolution in their own lives. While the evaluation does not establish direct causality between the student watching/understanding little lion's role and taking an active role in conflict resolution within their own life, it does demonstrate that students feel that they make decisions about conflict and outlines the action that they take. Students are aware that they play a role in the process, which is an important element of learning conflict resolution skills.

### III. Conclusions

- The game is appropriate for this age group, in that students enjoyed playing it and understood the intended elements of the game.
- The evaluation does not demonstrate an actual change in knowledge of conflict identification or conflict resolution skills.
  - This does not necessarily point to the game not meeting its intended goals, but may be a function of how the evaluation was conducted and/or the lack of full implementation of the program. See Annex 1 for more information on the evaluation methodology.
  - Rwandan children are educated in conflict resolution within the public school system, and thus they had a high level of knowledge, which may account for the evaluation not showing a change based on the game. The game was designed as a complement to ongoing curriculum, and thus the ideas were not introduced for the first time within the game.
- Self-reporting by students and teachers demonstrate that students had gained knowledge and skill through playing the game that they would incorporate into their real life. This speaks to the potential of full implementation of the program to effect behavior change within students.
- Students feel a sense of agency in resolving conflicts in their real lives; however, in more than 25% of the focus groups, students mentioned avoiding conflicts as a conflict resolution strategy.
- In assessing the greater program context, it is important to consider the challenges of working on technology initiatives in rural areas where electricity, computer malfunction, and difficulties with installation make program implementation and evaluation difficult.

#### IV. Recommendations

- In the coming months, Bana Dukine should be rolled-out on the national level by OLPC and the Rwandan Ministry of Education.
  - Further implementation and evaluation of Bana Dukine by the Ministry of Education will demonstrate if knowledge and skills are gained through playing the game and whether or not they translate into behavior change within the students' lives.
  - Observations from the evaluation revealed that students have a high level of understanding of conflict resolution and thus the game should be introduced within the classroom as a complement to ongoing curriculum.
- Search for Common Ground will present the program and evaluation findings to USIP and other partner organizations.
- Search for Common Ground will publicize the program.

## Annexes

### **Annex I: Evaluation Methodology**

SFCG conducted a mixed-method evaluation that reached 400 students across 20 schools in the 4 provinces and Kigali City of Rwanda. The evaluation included the views of 40 teachers within the same schools. The methodology included interviews with teachers, one-on-one guided game consultation with students, and focus group discussions with students. The focus group discussion with students included a pre-test and post-test component, which allowed staff to see if there were any immediate changes from 45 minutes of exposure to the game. For a list of focus group discussion questions, see Annex II.

#### **1. Focus group discussions**

In each school, focus group discussion took place before and after students had the opportunity to play the game. The focus groups were conducted in Kinyarwanda and included a mix of P4 and P5 boys and girls. Researchers asked the students a series of questions about their understanding of conflict, what they do when they see conflict, the types of conflict they saw in the game, etc. For a full list of questions see the interview guide.

#### **2. Interviews with teachers**

In each school, Search for Common Ground conducted interviews with teachers. Opinions were gathered from two-three teachers in each school. Interview questions covered topics, such as, how teachers feel the students understood and handle conflict and whether Bana Dukine was an appropriate game for P4 and P5 students.

#### **3. One on one guided consultations with students**

Search for Common Ground staff observed two students in each school while they played the game. During these observations or “guided consultations,” the staff member observed how the student played the game (i.e. the decisions they made) and asked questions. For example, when a student chooses a certain action in response to conflict between characters in the game, the staff member asked why they choose that specific response. This type of interview will help in assessing whether the game is appropriate and what the students are learning as they play the game.

## **Annex II: Interview Guides**

### **I. Focus Group Discussions with children**

#### *Pre-test Questions:*

1. What is conflict? Do you understand the word conflict? (if the students do not understand conflict than researchers will use phrases, such as: disagreeing, fighting, not liking each other)
2. Are there conflicts in your life?
  - What types of conflicts do you see?
  - Why do people have conflicts?
3. What do you do when people are having a conflict?

#### *Post-test Questions:*

1. What have you seen in the game?
2. Did you understand how to play the game?
3. In the game, did you see any conflicts?
  - Which characters had conflicts? How did you know?
  - Why did they have conflicts?
4. What did you learn from the game?
5. Can you tell me about little lion?
  - What was his role in the game?
  - Did he make decisions?
  - What kinds of decisions did little lion make?
6. Were the conflicts between the animals resolved?
7. What kinds of conflicts do you find in your life?
8. What do you do when conflicts happen?
9. Why do conflicts happen?
10. Do you make decisions about resolving conflict in your life?
  - What types of decisions do you make?
11. What do you do when people are having a conflict?

**II. Interviews with teachers**

1. What do you think students learned?
2. Do you think students could understand the game?
3. Could students identify conflicts while playing the game?
4. Did students understand their role as little lion to help resolve conflicts?
5. Do you think students will be able to relate the scenarios in the game to their real lives?
6. Is the game appropriate for students?

**III. Instructions for one on one game play**

A staff member or research from SFCG will sit with one child (two per school – one boy and one girl, chosen randomly) and observe their game play. They will ask the student to speak out loud about what they are doing, i.e. why they click the button, why they gave rain drops to a certain animal, and why they choose a certain response to a conflict dialogue. The researcher will ask questions if the student stops dictating their moves. Throughout the conversation the researcher will take notes on comments the student makes, which will be in or later translated to English.

### Annex III: Methodology Limitations

Due to the nature of the program, and the limited implementation time, there are various limitations to the evaluation methodology. The limitations are outlined below:

- Students were not **randomly selected** in all of the schools. In some cases only certain students have had access to computers and thus know how to use them. It was outside the scope of the program and the evaluation to teach students computer skills in addition to teaching them how to play the game.
- Although all researchers underwent the same training with SFCG in Kigali, differences occurred in the **implementation of the methodology**. One example is researchers hearing/recording different numbers of answers from each focus group, i.e. in some groups students had more time to respond and more responses were factored into the overall evaluation. This skews the results that are based on the number of items mentioned per focus group.
- In some case, evaluation teams struggled with the **installation of the game, malfunctioning of computers, and spotty electricity**. At times this made accessing and playing the game difficult. It is important to note that not all students, whose responses are noted in the evaluation, had the same access to the game. For one of the focus group schools, the power was lost and they were not able to play the game at all. In the data considered in the evaluation, this school is missing.
- The information recorded from each focus group is based on the majority of the students answering a certain way. However, the data does not show the relative percentages of answers, so it is difficult to know if the whole group answered a certain way or a slight majority – unless otherwise noted in the data.
- **Forty-five minutes of** playing time proved not enough time to gauge the effecting on the students. Further testing must be completed to understand in greater depth the effects of the game on their understanding and behavior in daily life.