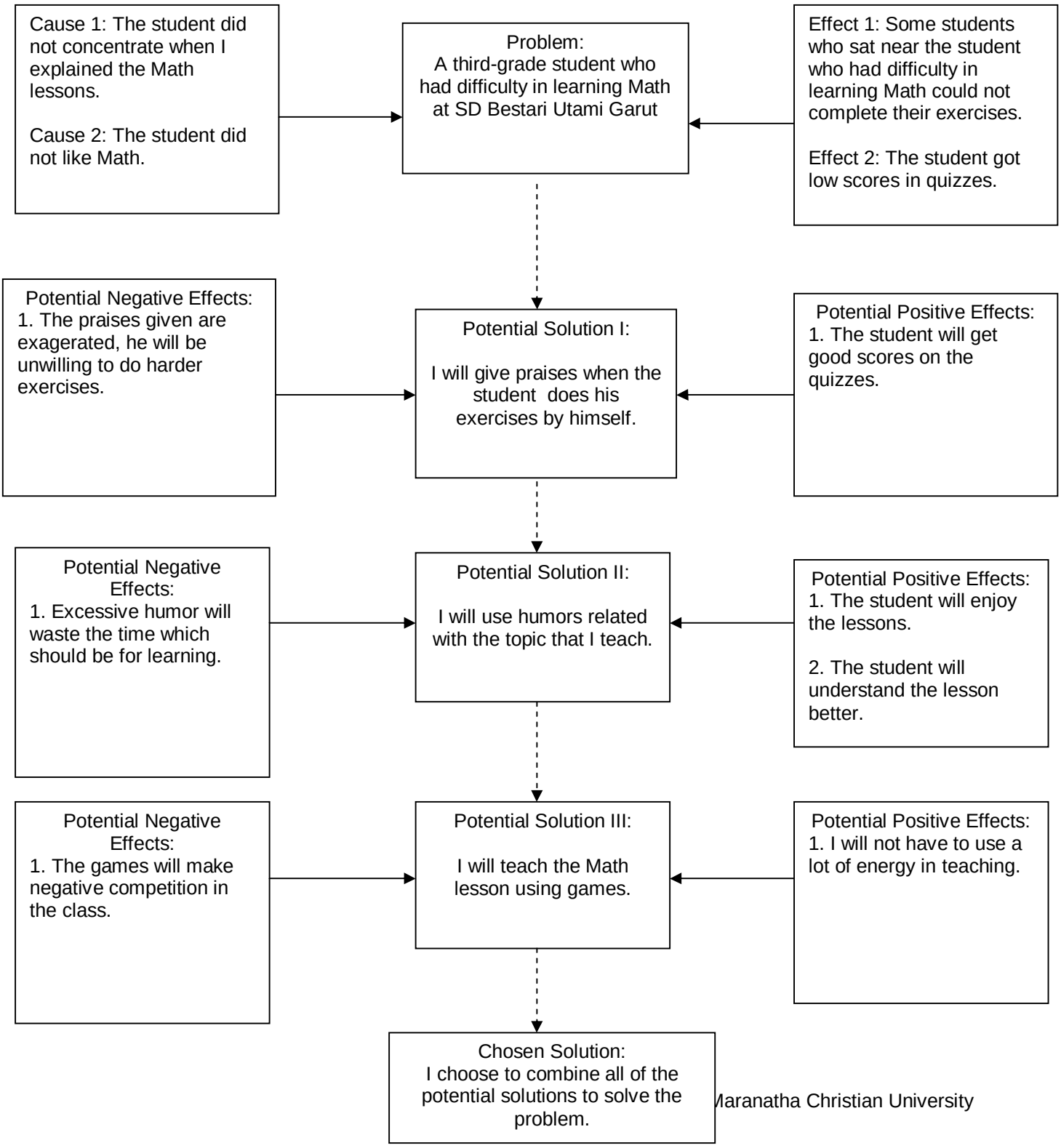
APPENDIX A: FLOWCHART



APPENDIX B.1: TRANSCRIPTION OF THE INTERVIEW

Name of interview	: Kristianto Natanael
Name of responder	: Dede Gusnadi
Day & date of interview	: Tuesday 18 June
Time	: 20.15
Location	: Phone Interview

Kris : Ya halo selamat malam Pak Dede?

Dede : Halo slamat malam mas.

Kris : Nah ehh gini saya mau nanya - nanya dikit ajah tentang Salman, boleh yah pak

Dede : Ya boleh – boleh hahaha

Kris : Gini, eeee. Kita tahu ya kalo misalnya Salman itu punya masalah sama belajar Matematikanya.

Dede : Betul sekali

Kris : Nah kira-kira penyebab dari kesulitannya Salman itu apa?

Dede : Hmmm,untuk penyebab kesulitan dalam belajar Matematika yah mas yah. Jadi dia itu, dia pernah cerita sama saya kalo dia itu ga suka sama Matematika tp dia lebih menyukai pelajaran yang lain gitu. Seperti mungkin seni.

Kris : Ohh jadi salah satu dia punya kesulitan itu memang karna dia ga suka Matematika.

Dede : Iya betul sekali.

Kris : Kalo misalnya dampak yang terjadi ketika dia mengalami kesulitan itu apa ajah Pak?

Dede : Kalo dampaknya

Kris : Efeknya yah

Dede : Efek dalam dia kesulitan belajar itu jadi nilai dia itu sering jelek mas, jd sering anjlok. Kebetulan saya juga udah ngajar dia dari kelas 2 SD nah waktu kelas 2 juga memang nilainya jelek.

Kris : Bukannya Mam Yenyen yang ngajar?

Dede : Ngga bukan, saya sempet ngajar dia.

Kris : Oh waktu itu bapa sempet ngajar dia.

Dede : Betul.

Kris : Ohh, trus kalo misalnya, itu kan ya memang nilainya jelek sih, nah kalo efeknya, kalo buat temen temennya yang laen apa? Ada ga?

Dede : Untuk ke temen temennya, jadi biasa sih gini sih mas waktu di kelas. Waktu saya lagi nerangin ato kadang saya, kan kalo Matematika itu harus sering latihan latihan gtu yah, saya kan sering kasih untuk latihan latihan exercisesnya ke mereka tapi waktu saya kasih tugas ke mereka kan saya biasa kasih individual tuh.Khususnya juga untuk Salman sendiri. Nah kadang Salman ini dia ga bisa ngerjain sendiri jadi dia minta bantuan ke temen-temennya sedangkan temen-temennya itu masih belum selesai ngerjain tugas-tugasnya juga gitu jadi dia sering ganggu teman-temannya untuk bantu dia mengerjakan tugasnya itu.

Kris : oh jadi, memang dia suka minta bantuan. Kalo saya sih liat dia, ga pernah juga minta bantuan sama teman-temannya gtu. Eh sori maksudnya suka minta bantuan teman-temannya gtu. Memang sebelum saya datang udah kaya gtu?

Dede : Iyah emang udah sering dia minta bantuan ke teman-temannya.

Kris : oh dia sering gtu. Dapet tugas langsung minta bantuan ajah ke temen temennya?

Dede : Jadi dia baca sebentar trus dia langsung minta bantuan ke teman temannya. Jadi kadang dia ga mau usaha dulu gtu buat kerjain tugasnya.

Kris : oke kalo gtu pak terima kasih banyak sebelumnya yah pak.

Dede : Iyah sama sama yah mas yah.

Kris : Terima kasih pak.

APPENDIX B.2: TRANSCRIPTION OF THE INTERVIEW

Name of interview	: Kristianto Natanael
Name of responder	: Salman Mohammad
Day & date of interview	: Sunday 16 June
Time	: 14.34
Location	: Salman's house

Kris	: Nah yu, kalo menurut kamu pelajaran Matematika itu kayak gimana?
Salman	: Hmm, susah.
Kris:	: Susah. Ada yang laen gak?
Salman	: Hmmm. Susah ajah sih.
Kris	: Itung-itungannya yang susah gtu?
Salman	: Itung-itungannya.
Kris	: Kamu suka salah ngitung?
Salman	: Iya.
Kris	: Terus apa lagi selain itu?
Salman	: Susah ajah sih. Aku lebih suka IPS daripada Mat.
Kris	: Emang kenapa ga suka Mat?
Salman	: Susah ngitungnya trus gurunya juga galak.
Kris	: Maksudnya guru yang mana? Guru Mat yg sebelum sekarang ngajar kamu gtu?
Salman	: Iyah yang dulu.
Kris	: Oke makasih yah.

APPENDIX C: EXAMPLES OF MATH GAMES

4 Great Math Games

Favorite Activities From Marilyn Burns to Try in Your Classroom

Instructor™

The Game of Pig (Grades 3–8)

Math concepts: This game for two or more players gives students practice with mental addition and experience with thinking strategically.

The object: to be the first to score 100 points or more.

How to play: Players take turns rolling two dice and following these rules:

1. On a turn, a player may roll the dice as many times as he or she wants, mentally keeping a running total of the sums that come up. When the player stops rolling, he or she records the total and adds it to the scores from previous rounds.

2. But, if a 1 comes up on one of the dice before the player decides to stop rolling, the player scores 0 for that round and it's the next player's turn.

3. Even worse, if a 1 comes up on both dice, not only does the turn end, but the player's entire accumulated total returns to 0.

After students have had the chance to play the game for several days, have a class discussion about the strategies they used. You may want to list their ideas and have them test different strategies against each other to try and determine the best way to play.

Two-Dice Sums (Grades 1–8)

Math concepts: Students of all ages can play this game, as long as they're able to add the numbers that come up on two dice. While younger children benefit from the practice of adding, older students have the opportunity to think about the probability of the sums from rolling two dice.

The object: to remove all the counters in the fewest rolls possible.

How to play: Two or more players can play. Each player needs 11 counters, a game strip that lists the numbers from 2 to 12 spaced far enough apart so the counters can fit on top of each number, and a recording sheet. Here are the rules for playing:

1. Each player arranges 11 counters on the game strip and records the arrangement.

2. Once the counters are arranged, players take turns rolling the dice.

3. For each roll, all players can remove one counter if it is on the sum rolled. Players keep track of the number of rolls of the dice it takes to clear their game board.

After students have had the chance to play the game for several days or so, have a class discussion about the different ways they arranged the counters and the number of rolls it took.

Have them write about the arrangements that are best for removing the counters in the fewest number of rolls. For an extension, try Which Number Wins?

Which Number Wins? (Grades 1–8)

Math concepts: In this individual activity, students roll two dice and record the results. Make a recording sheet that is an 11 x 12 block grid with the numbers 2 through 12 across the top. While young children gain practice with addition facts, older children can examine the data, compare results with other classmates, and think about why some sums are more likely than others. To do the activity, students need two dice and a recording sheet.

The object: to roll the dice and record the number fact in the correct column, stopping when one number gets to the finish line.

How to play: Post a class chart that lists the numbers from 2 to 12 and have students make a tally mark to show the winning sum. Have each child do the experiment at least twice.

After you've collected the data, discuss with the class why it seems that some sums "win" more than others. Young children may not be able to explain it, but older students often figure out that there is only one way to get the sums of 2 and 12, and six ways to get a sum of 7.

After discussing the data, return to the game of Two-Dice Sums and see if students revise their strategies. You may want to ask students to write about the game and the likelihood of two-dice sums.

How Long? How Many? (Grades 3–5)

Math skills: This two-person game involves probability and strategy, and gives children experience with multiplication in a geometric context.

The object: to make rectangular arrays with Cuisenaire Rods and place them on 10-by-10-centimeter grids until no more space is available. The game encourages students to think strategically as they consider where to place their rectangles to avoid being blocked.

How to play: students need Cuisenaire Rods, one die, and a grid sheet for each (Make a 10cm x 10cm grid. Also leave space for students to record how many of their squares are covered and uncovered.) The rules are:

1. On his or her turn, a player rolls the die twice to determine which Cuisenaire Rods to take. The first roll tells "how long" a rod to use. The second roll tells "how many" rods to take.

2. Players arrange their rods into a rectangle, place it on their grid, and trace it. They write the multiplication sentence inside.

3. The game is over when one player can't place a rectangle because there's no room on the grid. Then players figure out how many of their squares are covered and how many are uncovered and check each other's answers.

After students have had experience playing the game, talk with them about strategies for placing rectangles and figuring out their final scores.

Source: “4 Great Math Games.” Teachers. 2013. Scholastic. 20 June 2013

<http://teacher.scholastic.com/lessonrepro/lessonplans/grmagam.htm>.