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Road fatalities continue to be among the top 10 causes of death in the world, with Bangalore being among the top 3 cities in India with the most number of crashes.

- World Health Organization, 2020

Grand Challenge

One of the loftiest challenges the city of Bangalore faces is road safety. The public health issue has become an increasing concern in Bangalore over the past 20 years. With deteriorating infrastructure, huge influxes in human migration, and lack of knowledge on safe driving practices, Bangalore is combating high amounts of crashes and traffic-related fatalities. As told by the local police, officers feel incapable of adequately controlling traffic, resulting in surges of traffic violations and traffic accidents.

With an increase in average income, the quantity of private vehicle purchases has also contributed to higher amounts of traffic. This has reduced the reliance on public transportation, making a competitive dynamic between private and public transportation on the roads. It is difficult to improve infrastructure and to motivate the police to engage in enforcement, but one thing that is feasible is the ability to implement an educational platform. Based on interviews with the public, discussions with the Institute of Public Health, Bengaluru, and college students from Saint Joseph's College, it was recognized that an engaging educational platform would be the most effective way to inform the public about road safety.

Road traffic injury is now the leading cause of death for children and young adults aged 5-29 years old, ranking Bangalore’s crashes as 4th most deadly.

The causes of road fatalities are arranged into five main categories: speeding, distracted driving (mobile use), driving under the influence, not wearing a seatbelt, and not wearing a helmet. This is an important issue that needs to be addressed in a universal educational manner, with the intention of increasing the awareness of safe driving practices.

1 Lane, 2007: 35
2 Lane, 2007: 38
3 Lane, 2007: 44
4 Lane, 2007: 48
5 World Health Organization, 2020
6 Ministry of Road Transport and Highways, 2018: 25-27
After numerous interviews, it was discovered that many road users are aware of the basic road rules such as the general speed limit, stop lights, and the legality of mobile use. What seemed to be lacking was the knowledge of how to drive safely, such as following lane discipline and not jumping signals. There are numerous laws in place to ensure the safety of all road users, but there is no effective system to update and educate drivers with knowledge beyond what is required to get their license. Due to the rapid increase of road users and the government's inability to fund and implement road safety measures, India has been unable to create a solid education system for road safety. It was quickly discovered, through roadside discussions, that road users tend to follow what they believe to be the rules; lack of road safety awareness can be attributed to increases in road fatalities, crashes, and violations.

In 2019, Bengaluru was the number one most congested city in the world. Due to the amount of people and poor government planning, this public health issue affects the lives of everyone in Bangalore, from travelers to rickshaw drivers to those on public transport and pedestrians. It is nearly impossible to pick out one group of people that this problem does not affect, as most locals come in contact with roads in some manner. Any person that has used some form of transportation, walked on the roads or ridden their motorcycle has been at risk for being involved in some kind of traffic incident.

**Current Situation**

The biggest impact that people can have on road safety is having a sense of self efficacy for following traffic laws. Unfortunately, this is not the case for many who use the road. There is a common misunderstanding of old traffic laws versus updated traffic laws, halting the ability to generate positive change. Although driving schools do exist, they are not all consistently teaching students about updated traffic rules. Since driving schools do not provide proper information, many learn to drive from friends and relatives, many of which never learned the true laws of the road.

Interviews with policemen compared to the public showed varying differences in opinion. From policemen saying that the road infrastructure is more than sufficient for the density of Bangalore, to stating the staggering statistic that 3-4 road users die per week in one intersection, the disconnect of statistics and awareness is destructive. Taking this into consideration, quantitative interviews were done to understand where locals stood on the issue of road safety. When asking to rate the safety of the roads on a scale of 1-5 with 1 being safe and 5 being extremely unsafe, the majority of users said 3 and above. The average response of 3.667 is an indicator that the public considers the roads to be unsafe.

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7 World Health Organization, 2018
8 Tom Tom, 2020
While the extent of the issue may not be fully understood, people are aware their road systems need improvement.

Additionally, interviews with auto drivers, motorcycle drivers, and uber drivers all stated that they received their knowledge on the roads through the licensing process and have minimal information on the road laws. This did not seem to bother them as long as they were able to safely get from point A to point B. Many stated that the problem seems to be due to the dangerous driving habits of those around them. Creating a solution that properly educates road users and creates safer drivers could help increase feelings of security while using the roads.

A common theme in road safety is the lack of government involvement. When a low-and-middle country has other pressing issues such as poverty, pollution, and lack of proper sanitation, road safety tends to fall low on the list. In addition, it is extremely expensive to change the road infrastructure, especially because of the high traffic density that Bangalore experiences. The lack of responsibility from the government angers the public as they fear driving on the poorly maintained roads; meanwhile, the government appears to have no plans to improve infrastructure. Thus, why it is crucial that the next generation of drivers is equipped with the proper knowledge of safe driving.

Road safety is an important issue that is not discussed enough amongst the youth as young, new drivers are not afraid of the consequences that come with reckless driving. This is mainly due to the fact that road safety education is not heavily enforced in driving school nor by the police. Schools and teachers stated in an interview, that the police or an organization will only come in once or twice a year to educate students on road safety. Without consistent dialogue on road safety, there is not a complete understanding on the importance of the grand challenge, nor is there motive to fix the current status of the roads. To combat this issue, the first step is to implement an educational platform that truly motivates students to want to learn about road safety.

**Solution**

Real solutions have to be time oriented and measurable; a change in infrastructure or working directly with the government can be very time intensive and costly. The Indian government prioritizes funding for agriculture and the business sector. Other NGOs, such as the Institute of Public Health, Bengaluru, have taken on the responsibility to improve road safety. The Safer Road Bengaluru has been collecting data

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9 India Government Spending, 2004-2019
for over three years, a great example of a project proving that the government should allocate more funding to road safety. Given the program's time constraints, a solution that does not involve the government is necessary to initiate road safety education.

Through extensive literature review, interviews, and ideating, the education sector became the most plausible source to tackle the road safety grand challenge. Thus, an interactive, multiplayer card game that will both educate and promote enjoyable experiences is the most viable option to prepare the future generations. Combining the effectiveness of “Serious Games” and common Indian games, the creation of Stayin’ Alive came to life.

“Serious Games” is an area where many successful educational games have come to fruition, the sole purpose is to better people's awareness on various subjects. For instance, the Department of Defense made “warfighters more efficient, effective, knowledgeable and flexible” through game based learning. Beyond the Department of Defense, there are reputable accounts of information in the area of game-based learning. Evidence found at a US institution, proved that game-based learning increases the test scores of students; the increase was significant in three separate trials divided by degree. Another study that was done by “Serious Games” proved that an interactive game can promote and enforce education. This study tested if an online game could help improve anxiety and depression in youth. Both positive and negative experiences would appear in the game and the test subject would have to try to alleviate these situations. The goal of the game: to get the user to understand how different emotions and opinions create positive or negative outcomes. Results of the game showed significant improvement in anxiety and depression in youth, compared to the control group, proving that a situational game can successfully stimulate and educate the players.

Based on this data, it was concluded that an educational game, like Stayin’ Alive, will increase awareness by equipping the target audience with knowledge on road safety. This increase in awareness through gaming will enhance players understanding of information and has been proven successful at engaging players and facilitating discussion.

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10 Thalmann, 2014: 5
11 Blunt, 2007: 1
12 Blunt, 2007: 1
13 Blunt, 2007: 1-12
14 Flemming, 2014: 237
15 Odenweller 1998: 78
Stayin’ Alive

A factor kept in mind while designing Stayin’ Alive was the psychology model, “The Curve of Forgetting”. This states that awareness cannot be achieved if the target audience forgets what they’ve previously learned. With this taken into consideration, Stayin’ Alive has incorporated recurring situation cards, allowing those who are actively listening to have an advantage during gameplay. Each repeated card further cements information in players minds by reminding them what correct answers, or action cards, pair with the situation. With the combination of action cards and repetition, players will learn to actively listen for the correct remedies with the chance of getting outrun by their peers. The gameplay will produce lasting memories by skill, luck, and chance all immersed in the subject of road safety.

With Stayin' Alive, it is crucial to hook an audience early on and have positive first impressions so generations to come will have an appreciation for road safety. Along with their pre-existing workshops, IPH’s Safer Roads Bengaluru team will kick start Stayin Alive through free game testing workshops at schools. Using IPH’s funding from grants and other resources, they will be able to keep circulating the game within the community and make it a conversational piece. To gain the interest of schools beyond SRB’s reach, the Stayin’ Alive team is looking to partner with other road safety organizations and governmental agencies in other parts of India. Partnering with more road safety advocates will not only spread knowledge, but also give road safety the attention it deserves. With the support of schools, locals, and organizations, the government will have no choice but to pursue the issue of road safety.

Additionally, schools interested in putting the game in their curriculum or those individually interested in buying a copy, can purchase it on the Stayin’ Alive website. The website incorporates a how to play video, a tab where to purchase copies of the game, and additional information about the game. The revenue for the product would primarily come in through online sales, while SRB and potential partners would use their funds to further broadcast it to more people. Extension packs are to be created in the future to keep the game sustainable, new and exciting with fresh content.

Customers and Beneficiaries

Determining the customer base is one of the most important factors to the success of Stayin’ Alive. Being able to have a solid customer will allow for a consistent distribution to the target beneficiary. The target audience is teenagers between the ages of 13-18 years old, the period in which the beneficiary is learning how to drive or is about to begin driving. This age range has been determined through meetings with school officials and feedback from NGOs that support this game. To allow the game to be available to as many beneficiaries as possible, the game should be available for purchase through multiple customer bases.

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16 Finkenbinder, 1913: 21
Creating a business platform for Stayin’ Alive allows the game to both be available to customers, who will put it into the hands of the beneficiary and for beneficiaries themselves. One customer could be local game stores around Bangalore, as well as small shops along the streets where vendors sell school supplies and other educational needs. These businesses currently do not hold games specifically about road safety, so this could be a new addition to the market. The business created from the game is made with the purpose to create awareness about road safety among the future generations.

The ability to be financially stable is central to ensuring Stayin’ Alive will be sustainable for the future. In order to have a successful product, the Stayin’ Alive team has estimated the start-up cost of ten-thousand USD or seven-hundred thousand rupees. The cost will mainly go to the hiring of employees: Stayin’ Alive employees will consist of one supervisor, translator, web designer, and two card designers. The supervisor and web designer will work Monday-Friday with the purpose of ensuring product quality and customer satisfaction, as well as maintaining the Stayin’ Alive Website. The supervisor will be given a monthly income of Rs. 17,200, while the web designer will receive Rs. 22,917 per month. The translator and the two card designers will work concurrently, twice a month. Their purpose will be to create and modify the game in order to maintain customer interest and diversify road facts within the card game. The translator will be paid Rs. 710 per day and the card designers will each be paid Rs. 110 per day.

The average cost of making one card deck is Rs. 1000 with the monthly expense of Rs. 41,767 for Stayin’ Alive’s business. If Stayin’ Alive were to sell 7 card sets in the first month and continue increasing by 3 card sets each month following, it would take approximately a year and a quarter to break even.

To further save cost and keep the price of Stayin’ Alive low, a partnership will be formed with the manufacturing company in charge of printing the game. Through this partnership, Stayin’ Alive employees will have a safe and comfortable workspace to create new card content, as well as direct contact with the manufacturer to ensure timely delivery and proper handling.

Make it Real
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As a company, Stayin’ Alive realizes that road safety is one of the grandest challenges of them all. A card game is not going to directly solve the country’s road fatality rate or make up for the lack of road safety education in school curriculums. The game however, can draw attention to a problem worth making progress toward. By introducing a nontraditional form of road safety education for school kids and teens, teachers will be more willing to incorporate this game in their curriculum because it has the support of an accredited road safety organization and actually gets students to engage with the material. Based on primary data, coming from pre- and post- surveys, participants have shown an enhancement of road
safety knowledge after playing the game. Results have shown that players find the game exciting and data pulled from the analysis of these surveys show players are indeed learning. More data on this is shown in the appendix, pages 30-32, Pre- and Post- Surveys.

Stayin’ Alive has gone through 8 stages of transformation, receiving feedback from various credible audiences. Among the Stayin’ Alive team, basic graphics, concepts, ideas and rules were developed to form the game. Based on previous experiences with gaming and knowledge pulled from literature review, the team confidently put together this educational tool. IPH’s Safer Roads Bengaluru team was able to help guide the game to focus on important road issues and ideas. With their feedback, it was more clear what to prioritize in the game to ensure only useful information would be retained. In addition, the game was also tested with 3 separate college groups: Saint Joseph College Commerce students, School of Public Health students, and HKBK College of Engineering students. Feedback from these groups served the purpose of filling in the remaining gaps and unforeseen kinks during gameplay. Framework modifications were finalized after the college game testing and the game became ready for its last peer-review. The GCIL translator and coordinator, Elbin gave the product a final look to correct any lingering American slang or words unfamiliar to the Indian version of English.

After methodically testing and shaping the game to perfection, it was then played by students at the school of Parikrama. These students were within the game’s target audience and displayed large amounts of positive feedback. With a successful test and proof that the game has left players with more road safety knowledge than before, the next step was to leave copies with IPH’s Safer Roads Bengaluru team.

A vital partner to Stayin’ Alive’s team is Safer Roads Bengaluru. To start a movement, it all starts with one follower. IPH’s already well-established community relationships will help get the first couple schools on board to use our non-traditional educational tool. Once there is evidence that schools are using the Stayin’ Alive game and there is a credible road safety organization supporting the game, it becomes much easier to convince others to follow the movement. The Stayin’ Alive team has found it to be most difficult at finding schools wanting to use the game right away with little evidence, but Safer Roads Bengaluru is the remedy card to this situation, since they already are in close contact with many schools about road education.

Copies of Stayin’ Alive have been left in the hands of Safer Roads Bengaluru to continue furthering the game’s reach and publicizing it to other local schools. In addition to IPH, a website has been created as another access point for the game. Since the game is a universal, low cost solution it can spread to so many different customers. Thus, two different platforms have been created to make the game that much more accessible to the public. First, as stated, IPH’s Safer Roads Bengaluru team is a non-profit, so schools and organizations may contact them for a free trial with the game. Then, once those have experienced the game, they can purchase it online with the interactive Stayin’ Alive website.

Stayin’ Alive is an educational tool that can encourage local road users to take initiative and feel some sense of self-efficacy. Regardless of the current status or future status of Stayin’ Alive, the intention and value of the game can lead to increased focus and awareness in road safety. Hopefully, paving the way for the government and those closely related to pay attention and create more systemic change. Stayin’ Alive: a game for India and a game for you.
Citations


World Health Organization. 2020. “Road Traffic Injuries”. **Road traffic injuries**

# Appendix: Table of Contents

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I) Theory of Change

I want to clarify my priorities by defining my goals and the path to reach them.

Institute of Public Health
Amanda, Taryn, Lorenza, and Robert

THEORY OF CHANGE

What is the problem you are trying to solve?

Road users in Bangladesh are not equipped with adequate tools to promote safe driving practices.

The importance of road safety is not incorporated into their education system at a young age.

Road users do not see the ripple effect that their uneducated driving practices have on the safety of India’s roads.

Who is your key audience?

Students that are soon-to-be road users.

What is your entry point to reaching your audience?

Partnering with the Institute of Public Health to promote our product in school settings.

Utilizing IPH’s preexisting connection to schools, will help to ensure the power of an educational tool and grow networks.

What steps are needed to bring about change?

Creating a workable prototype that is educational and enjoyable.

Creating long-lasting partnerships between IPH and schools.

Creating platforms to sell and promote our game to further the reach.

What is the measurable effect of your work?

Increased familiarity with first-aid supplies (pre vs. post scores)

Sustained purchase of our game

Increase use of safety tools to prevent death

What are the wider benefits of your work?

Increased knowledge on post-crash response

Increased appreciation of road education

Increased self-awareness on the importance of road safety

What is the long-term change you see as your goal?

An atmospheric change on the perception of road safety, hopefully leading to increased government attention and connections between road users. This should lead to less deaths and more structure on the roads.

KEY ASSUMPTIONS

That school children see this as an issue.

That schools would want their students or that students themselves, would want to learn.

That the solution and the partnerships will engage students.

That we are able to quantify these measurements.

That schools would continue the product use to create these larger benefits.

STAKEHOLDERS

IPH, schools, students, teachers, online users, current and future road users.
ii) Randomized Control Trial

Context:
To test the effectiveness of Stayin’ Alive in increasing road safety knowledge. The goal of the game is to educate students to make safer and more aware road users.

Participants:
Students that are currently attending school between the ages of 13-18. Randomize students into a control and testing group based on participants' birthdays.

Control Group:
Students will be given a pre-survey to test their initial knowledge of road safety laws/awareness. These students will then be given reading material that includes the same information that Stayin’ Alive includes. They will be given 30 minutes to read the material and will be asked to take additional material home and to try and read it everyday for the next week.

Test Group:
Students will be given the same pre-survey as the control group to test initial knowledge on laws and awareness. They will also be given the same reading material as the control group and given 30 minutes to read it. Separate from the control group, this group will then be given the card game to take home and asked to play the card game for 15 minutes everyday the next week.

Testing Results:
After one week, all students will be asked to take a post-survey. They will all take the same post-survey to compare results to the first survey, which will include asking how many times they played the game or read the material.

Analysis:
After the testing phase, the results of the pre- and post- surveys will be compared to check for differences in knowledge levels. Then, comparison of the driving scores of both groups to check for behavior change. If the testing group shows significant differences in safer driving, then it can be attributed to the game.
iii) Empathy Maps

Beneficiary:

Empathy Map Canvas

1. **Who are we empathizing with?**
   - **WHO:** High school student aged 15-18 or college student aged 18-18
   
2. **What do they need to do?**
   - **GOAL:** Students must learn proper information about road safety in a fun, interactive manner. Specifically, they need to learn about
     - Driving to school safely
     - Not getting drink or drugs while driving
     - Not getting into car accidents

3. **What do they think and feel?**
   - **PAIN:** We want to get a driver's license, but we can't because we don't have money for the test.
   - **GAIN:** Students feel satisfaction knowing that they have learned proper road safety techniques.

4. **What do they hear?**
   - **HEAD:** You need to get your driver's license before you can get your car.
   - **HEAR:** Your teacher told you that you need to get your driver's license before you can drive.

5. **What do they say?**
   - **SAID:** We want to get a driver's license, but we can't because we don't have money.

Customer:

Empathy Map Canvas

1. **Who are we empathizing with?**
   - **WHO:** High school student aged 15-18 or college student aged 18-18

2. **What do they need to do?**
   - **GOAL:** Students need to understand proper road safety practices and implement them in their daily lives.
   
3. **What do they think and feel?**
   - **PAIN:** Students may feel nervous or anxious about driving.
   - **GAIN:** Students feel a sense of accomplishment and confidence.

4. **What do they hear?**
   - **HEAD:** Your teacher reminds you about the importance of road safety.
   - **HEAR:** Your teacher emphasizes the importance of road safety.

5. **What do they say?**
   - **SAID:** We need to learn proper road safety practices to stay safe.

6. **What do they do?**
   - **DO:** Students participate in road safety workshops and training sessions.
   
7. **What do they see?**
   - **SEE:** Students observe traffic rules and regulations in their daily lives.
   
8. **What do they say?**
   - **SAID:** We need to participate in road safety programs to ensure our safety.

9. **What do they do?**
   - **DO:** Students continue to participate in road safety programs and workshops.
iv) Documentation of Prototypes

CARDS:

Prototype #1: Created by cutting computer paper and handwriting the significance of each card.

Prototype #2: The information on Prototype #1 was digitized using Microsoft Word.
Prototype #3: The prototype was created using an editing program called Scribus. Additional information was added to the cards, as well as clarifications. Three cards were replaced from Prototype #2 to become Turbo Taxi, Ticket, and Caught. This version of the card game was tested by Saint Joseph's College students.
Prototype #4: Prototype 4 pivoted away from the original game type and was completely reinvented. The new game was made with the intention of being simpler and more enjoyable, as well as educational. The main difference between the current and previous version is that the current version involves 3 separate card types: fun, situational, and solution. A new component added to prototype #4 was the heart ranking which indicated the severity of the situation and solution cards. Fun cards were incorporated to make the game more engaging, adding uncertainty, and small victories over other players. This prototype was tested by members of IPH.
Prototype #5: Similar to prototype #4 there are 3 separate card types: Situational, Remedy, and Action. The image on the Situation card was removed in order to be more informational, Remedy cards, previously known as solution cards, were reduced to an image with a title, and the Action cards remain similar to the previous version; title, image and short description. Orange, green, and white indicators were placed on the bottom right side of the cards to identify Situation, Remedy, and Action Cards. Other modifications were done, such as removing the hearts and adding Death Cards. The latter was done to ensure shorter games. This version of the game was tested by Padmashree College of Public Health.
Prototype #6: Card indicators such as color and name were moved to the top of the card to ease visibility. The font and wording were modified to decrease difficulty in reading, as well as improve visuals. A Remedy card, along with a few Action cards were modified in order to clarify their use and to make the game more enjoyable. This game iteration was tested by students attending HKBK School of Engineering.
Prototype #7: All cards were translated from American English to the local understanding of English with the help from SJC Students and Elbin, GCIL translator and coordinator. The information on the Situation cards were altered to reduce confusion when reading, in addition to placing the situation card answers at the bottom of the card. Along with the above modifications, visuals were also changed for clarity and increased significance. This version did not get tested but followed another redesign.
Prototype #8: For the final prototype, the printed copy of the prototype was individually taped to 152 UNO cards in order to resemble a card set. This allowed for less deterioration of the cards while playing, as well as easier shuffle and play. Prior to the specially ordered, hard copy of the prototype, minor changes were done such as font color and size. Additional Death cards were added to include motorcycle and pedestrian crashes (not shown below). This version was tested with kids 14-15 years old at the school of Parikrama.
Instructions:

Prototype #1-3: Within the deck, there are various traffic crashes. Each player takes turns drawing cards, combating the car crashes and the last player who has been the safest on the road wins.

Setup

1. Remove all traffic crashes and set aside
2. Based on the number of players, use the following cards
   - 2-3 players - use cards with a star
   - 4-7 - use only cards without the star
   - 8-10 - use all cards
3. Remove all ambulances and set them aside and give one to each player
   Shuffle the extra ambulances back into the deck
4. Shuffle and give each player 7 cards
   - so the total should be 7 + ambulance = 8 cards
5. Insert the corresponding amount of traffic crashes back into the deck so that there's one less than the total number of players.
   - Example: 4 players needs 3 traffic crashes
6. Shuffle the deck and put facedown on the table.

The player who last rode the metro or a mode of public transportation begins the game.

To play, you can either...
Pass: play no cards and pull from the deck to end your turn
Or
Play: play a card by placing it face up on top of the discard pile. Follow the instructions on the card. You can continue playing as many cards as you want until you draw a card from the deck.

The last player who hasn’t crashed WINS!

Card Specification

Car Crash (9 cards)
When you draw this, the card must be shown to the group right away. Unless you have an Ambulance or one of the special combos to prevent this car crash, you are dead. If you save
yourself with an Ambulance, take the Car Crash card and place it within the draw pile. Want to target the player next to you? Place the Car Crash on the top of the deck. Want to keep it suspenseful? Place the Car Crash card anywhere. If you die from the Car Crash card, remove the card from the deck.

Ambulance (10 cards)
If you draw a Car Crash, you can use your Ambulance card to save you from dying. Place your Ambulance card on top of the discard pile. After, take the Car Crash card and randomly place it within the draw pile. Want to target the player next to you? Place the Car Crash on the top of the deck. Want to keep it suspenseful? Place the Car Crash card anywhere. The ambulance is the most powerful card in the deck.

Caught (11 cards)
With this Caught card, you immediately end your turn and force the player next to you to take two cards in a row. The victim of the Caught card takes two cards separately from the beginning of their turn. If your victim of a Caught card plays another Caught card, the next player has to pick up that amount plus two more (ex: 4, then 6, and so on). The Caught card cannot be skipped by a Traffic Police card.

Use Public Transportation (10 cards)
Immediately end your turn without drawing a card. If you play this Public Transportation card, you skip your turn and it moves onto the next player.

Look Both Ways (6 cards)
Privately view the top 3 cards from the draw pile and put them back in the exact same order. Do not show the cards to the other players and do not reorder the cards you picked up.

Zebra Shuffle (6 cards)
Shuffle the entire draw pile thoroughly; this is especially useful for when you know a Car Crash card coming.

Traffic Police (10 cards)
Stop any action thrown at you, besides an Ambulance or Car Crash card as if the card below never even existed. You can also play a Traffic Police card on top of another Traffic Police card to produce two double negatives that turn into a yes. Technically, you can use the Traffic Police card at any point, even if it is not your turn.

Safe Cards (7 of each)
These cards are powerless on their own, but if you collect any 2 matching cards such as: two Stay Strapped cards, you can play them as a pair to steal a random card from another player. The Safe Cards mimic 5-preventative actions to car crashes including: Stay Strapped – wearing seatbelts, Rainbow Rickshaw – opting for an alternative driving when drunk, Hail the Helmet –
wearing a safe, full-helmet, *Zoom Focused* – not using your phone while driving, and *Slow and Steady* – staying the speed limit. Most importantly, if you collect 1 of each of these Safe Cards and keep them together, they act as another diffuse card to save a friend in need. Use this combo card to revive someone from a *Car Crash* card so that you combine decks and work together.
Prototype #5-7:

**Game Setup:**
Players: 3-9
- Separate the cards in two decks, one with the situation cards and one with the remedy plus action cards (picture)
- Deal each player 5 remedy cards
- Shuffle both decks together and place the deck in the center of players
- Now you can view your hand and start the game

**To Play:**
1. Now, the last person to use public transportation goes first
2. Draw one card from the draw pile
3. There are three possible card types to pick up from the pile: situation card, remedy card, and action card
   - If you draw a situation card, read it out loud to the other players without seeing them the card face
   - The other players should be actively listening to decide which remedy card needs to be played
   - The player to put the correct card down first wins the situation card and keeps it as a point

   a. If you draw an action card, follow the instruction on the card and put in the discard pile

   b. If you draw a remedy card, add it to your hand and use sometime during the game

   c. If you draw a death card, you are out of the game, put the card in the discard pile and keep your situation card till the end

4. Next player draws and repeats the steps above

5. The game ends once there is only one player left who has not drawn a death card

The player with the most situation card wins.
Prototype #8:
“How to Play” Video:

Link to the video on Youtube: https://youtu.be/UVtQNtXdeE
v) Website Demo

The Stayin’ Alive Website was created with the intention of creating easy purchasing access. In the future, the website will expand to incorporate an online road safety game, more road facts, extension packages of Stayin’ Alive and partnering road safety organizations. The following is the link to Stayin’ Alive: [https://stayinalive](https://stayinalive)

Homepage:

Road Facts:

[Image of Road Facts]

**Dangerous Roads**

- **56** Non-Car Users Die DAILY on Indian roads
- **#1** Cause of Road Crashes is OVERSPEEDING
- **76%** Of motorcycle injuries become SEVERE head injuries
About us:

Stayin' Alive

An exciting new card game with the goal to engage and educate young drivers before they enter the roads.

You compete amongst players to remedy the most common road incidents and test your driving knowledge to see if you're Stayin' Alive.

How to Play?:

It's as easy to play as looking both ways before crossing the road!
Buy Today:

Buy today!

One deck includes:
- 48 Situation Cards
- 48 Remedy Cards
- 24 Action Cards
- 8 Death Cards
For a Total of 128 cards

Each deck also comes with an instruction manual on how to play!

First Name

Last Name

Enter Your Email *

Checkout
vii) Feedback on Prototypes

Prototype #1

Instant feedback for the first prototype among our group was that the cards were not visually appealing, it consisted of only words in colored markers. A lot of the cards were not consistent in wordings or handwriting styles, creating confusion. The use of some images could make the game more interesting and memorable rather than trying to only memorize words on cards. Another issue with this prototype is that its framework was based off another currently made game. The thought of changing this game enough to be different and issues with copyright were frequent questions for this first innovation.

Prototype #2

Did not receive feedback. This prototype was a digitized version of prototype 1 with images.

Prototype #3

Feedback on prototype 3 was on the actual game and physical aspects of the cards. This feedback came from local SJC students and a professor on the GCIL program. The cards were visually appealing, however were so thin it was often easy to tell which card was being drawn from the deck. Another quick realization was that the cards were hard to shuffle because they had no weight or stiffness behind them. Some of the cards did not properly convey desired information. The rainbow rickshaw was supposed to represent finding a safe ride home after a night of drinking, but fellow gamers could not sift through the extra content on the card. There were mixed reactions on the overall game play, some found the game to be fun in a new way, but requested some revisions be made on the clarity of the cards. On the other hand, the game was disinteresting and way too complex, even after reading the directions. This feedback led us to question the overall game. Also information collected from the pre and post surveys indicated that little to no information was being retained.

Prototype #4

With a completely reinvented game lots of feedback followed it. This test was done with members of the Institute of Public Health. Removing the hearts on every card that indicates the severity of all situations and remedies was the first major source of feedback. With the removal of the hearts, players would have to actually read the content on the card and learn more while playing. The vocabulary on a few cards was not completely clear for an Indian based audience.
**Prototype #5**
This version of the game was tested by Padmashree College of Public Health. The main feedback received was that the “How do you solve it?” card was not clear on its purpose and that the cards were too thin. The latter caused additional issues while playing the game, such as cards blowing away, picking up more than one card, and being see-through. Overall the gameplay was enjoyable, although it was indicated that some statistics could become too repetitive. For an older age range, reading the answers as blanks seemed most effective, but for a younger age group reading the answers aloud was suiting.

**Prototype #6**
This version of the game was tested by HKBK, an engineering college. The three main pieces of feedback were that the game was very time consuming, the vocabulary was confusing and that the winner was unclear.

**Prototype #7**
Prototype 7 was not tested, but incorporated changes based on feedback from prototype 6. A GCIL translator, as well as SJC Students helped refine all the wording on the card game in order for the game to make sense in an Indian context. In addition to this, an instructional video was created in place of written instruction with the hope of being a better tool for explaining the rules and boundaries of the game.

**Prototype #8**
The final iteration of the game was tested by teenagers, ages 14-15 years old. The instructional video was shown and was received better than when reading instructions. Feedback from the teens and the teachers were that the game was exciting and different from any other card game.
vii) Pre- and Post- Survey

The goal of the product is to be an effective road safety tool, the Stayin' Alive Team monitored this through a series of surveys. Before the Stayin' Alive card game was played, the participants completed an 8-question pre-survey to understand the participants baseline knowledge of road safety. Once Stayin' Alive was played, a post-survey with nearly the exact same questions was given. The goal was to see if there was a change in the participants' answers before and after the game, in other words, to see if they were retaining road safety information from the game.

Pre-Survey:

1. What is the main cause of vehicle crashes on the freeway?
2. What number should you call for the Emergency Service?
3. What is the fine for driving on a footpath?
4. You looked at your phone to change a song and ended up hitting a pedestrian. What's the best way to help?
5. Which of these are laws within the Motor Vehicle Act?
6. Hitting your head, getting a concussion, and breaking your leg all result from driving on the sidewalk. How can you prevent these injuries?
7. What does the Good Samaritan act do?
8. How many safe driving practices can you think of? Example: Don't use phone, call ambulance....

Post-Survey:

1. What is the main cause of vehicle crashes on the freeway?
2. What number should you call for the Emergency Service?
3. What is the fine for driving on a footpath?
4. You looked at your phone to change a song and ended up hitting a pedestrian. What's the best way to help?
5. Which of these are laws within the Motor Vehicle Act?
6. Hitting your head, getting a concussion, and breaking your leg all result from driving on the sidewalk. How can you prevent these injuries?
7. What does the Good Samaritan act do?
8. How many safe driving practices can you think of? Example: Don't use phone, call ambulance....
9. How much would you pay for this game?
10. Scale of 1-5, how fun was this game?
Sample Data:

Question #2: What number should you call for Emergency Services? Correct Answer: 108

Pre-Survey: 54.2% of participants selected the correct answer

Post-Survey: 82.1% of participants selected the correct answer

Question #4: You looked at your phone to change a song and ended up hitting a pedestrian. What's the best way to help? Correct Answer: Be a Good Samaritan

Pre-Survey: 12% of participants selected the correct answer

Post-Survey: 46.2% of participants selected the correct answer

Question #5: Which of these are laws within the Motor Vehicle Act? Correct Answer: Signal Jumping is Illegal

Pre-Survey: 41.7% of participants selected the correct answer

Post-Survey: 69.2% of participants selected the correct answer
Post-Survey Question only: Scale of 1-5, how fun was this game?

Overall 97.1% of participants rated the game to be 3 or above, meaning that Stayin’ Alive was viewed to be relatively fun.
viii) Business Model

The Business Model Canvas

- **Key Partners**
  - Institute of Public Health,
  - Safer Roads team will help connect us with local schools thanks to their already established relationship with the community.
  - Card manufacturers will help produce copies of our card games.
  - Partnering with a few schools will give the game a support group, convincing other potential customers it works.
  - Partnering with other road safety organizations would help extend the reach of Stayin' Alive and make the game an even more accredited education tool.

- **Key Activities**
  - Selling the product online through the Stayin' Alive website.
  - IPH and other partners will be providing free game testing of the product.
  - Key Resources
    - Decks of cards
    - Partners to promote and extend the reach of the card game.

- **Value Propositions**
  - We provide an educational tool different from the standard lecture style of learning. The activity is meant to prime young drivers before they get behind the wheel with first aid knowledge and situational awareness. This gives the beneficiary a foundation to look back on before they transition on the roads.

- **Customer Relationships**
  - Maintain relationships with our associates and partners to provide a strong support group for road safety.

- **Customer Segments**
  - Local schools looking to incorporate road safety and/or a non-conventional educational activity.
  - Road safety organizations wanting a supplementary tool to go with their lectures and/or events.
  - Parents looking to educate their kids on road safety and the English language.

- **Cost Structure**
  - Card Production
    - Transportation costs to customers
    - Website subscription/maintenance

- **Revenue Streams**
  - Website sales
Every morning, Shivraj and his family would eat breakfast at the table while playing card games; it was their morning tradition before beginning their long day ahead.

Squished between his brother and father on the back of his dad's scooter, they sped through intersections and weaved through traffic to ensure they were always on time for school.

One day after school, Shivraj and his brother waited for what seemed like forever, but their father never showed up.

Puzzled, they began their long walk home when they passed a swarm of people surrounding a crash; Shivraj pushed his way to the front of the crowd and discovered his father's helmet split in two.

Overwhelmed with sadness and frustration, Shivraj knew how difficult it would be to stay strong for his younger brother, so before breaking the news, Shivraj pulled out the familiar card game that his father so loved.

Still in mourning, Shivraj became determined to educate himself and pass the rules of the road onto his brother while finding a way to ensure no one else loses their family to the streets.

In remembrance of his father, Shivraj came to realize that he could combine his father's love for cards and the importance of road safety in an educational game to teach others about the precious value of life.