CPR training for students: creating heroes among us

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CPR Training for Students: Creating Heroes Among Us

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Abstract

In the United States there is high number of people who have died from cardiac arrest. However, most of these deaths can be prevented if people know how to react. Cardiac arrest can happen to anyone at any time. Most commonly, these incidents occur in the victim’s home surrounded by loved ones. Through interviews with trained first responders, the chances of saving the victim improve greatly when they arrive on the scene and a civilian is preforming CPR. The goal of this project is to reach a younger group of people so they will be equipped to respond in an emergency for the majority of their lives. The state of California, currently, does not require class time be used to teach CPR in their high schools. To reach the younger members of society, a CPR and First Aid course was organized at a local high school to teach students the necessary skills and how to respond in an emergency. This project is going to show that anyone may be called on to save the life of a family member, friend of stranger and they should be ready to help.
CPR Training for Students: Creating Heroes Among Us

One Friday afternoon in the summer of 2007 I was driving alone on a back road outside of Gilroy, California. I like taking back roads to help me relax and clear my head. The road is a narrow two lane highway and is surrounded by nature, with very little signs of civilization.

As I was driving, I approached a large bend in the road. The road wrapped around a small hill, hiding the road ahead of me. As I got closer, two motorcycles appeared from around the bend and started coming towards me with the second rider following behind the first. They were both wearing bright colored leather jackets to match their brightly colored street bikes. As they made the turn the second motorcycle slipped and the rider and the bike went crashing through a small fence and bounced off a mound of dirt and finally came to a stop in a grass field. His friend did not see or hear the crash and kept going down the road. I suddenly stopped my truck knowing I was the only one who could help the fallen motorist.

I ran through the hole in the fence and through the field approaching the injured man. He was not moving and I could see blood on his face through underneath his helmet. I could see that he was breathing but unconscious. My first, and really only thought was not to touch or move the man. I did not know what to do and was worried if I moved him something worse could have happened. When I tried to call 9-1-1, my cell phone had no service. I didn’t want to leave him there alone but I needed to call for help. When the other rider came back to find his friend, I got back in my truck and drove until I could find service.
Help finally arrived and emergency services were able to get the injured rider on to a helicopter to take him to a hospital. When the helicopter left, there was a since that he was going to survive the accident. His friend was in good spirits, considering what had happened to his friend. His friend thanked me for stopping and helping to save his friend. He also told me that the injured rider had just had a new baby girl only one month before that day. At that moment I was glad to have done what I could to help. For the next few months I was hoping to receive word about what happened to the man but I never heard what had happen to him.

About two years later I was driving down the same road again. I slowed down as I approached the crash site just to think about what happened that day. As I drove past the site, I noticed a memorial with a picture of street bike rider racing. I knew what this meant, the man that I tried to help, doing all that I could, died from the injuries he suffered in that accident. I was shocked when I saw the memorial. I thought for sure he survived and was somewhere taking care of his daughter.

Watching the first responders work to save the rider, I could only watch helplessly. I wanted to help but did not have the skills to get involved. I don’t know that if I had been trained in CPR and first aid that he would have been saved, but I often wonder what more I could have done in that situation. The thought of uncertainty and questioning what could have happened is the reason why I want to show how important it is to have skills in CPR and first aid.
The Concern- “What is the problem?”

Sudden cardiac arrest is a growing problem in the United States. Sudden cardiac arrest is when the electric impulses become wildly disruptive which will cause the heart to stop beating. “Approximately 424,000 people of all ages experience EMS-assessed out-of-hospital [sudden cardiac arrest] each year (more than 1,000/day) and nine out of 10 victims die.”

Of those hundreds of thousands of cases, 88 percent of those occur in the home. This indicates, if CPR must be performed, odds are it will be on a loved one, and during a cardiac episode outside the home, CPR is performed only about 32 percent of the time by a bystander. I want to help increase that number. This is a problem because many of these deaths can be prevented when CPR is being performed.

CPR only saves lives because the process is designed to allow for more time for first responders to arrive. Performing chest compressions does not bring the victim back; chest compressions send oxygen to the brain keeping the brain alive. Because victims make their recoveries with treatments performed at the hospital, there are some people who question the necessity of bystanders knowing CPR. Studies have shown that survival rates are low when CPR is performed waiting for help:

A 2012 study showed that only about 2% of adults who collapse on the street and receive CPR recover fully. Another from 2009 showed that anywhere from 4% to 16% of patients who received bystander CPR were eventually discharged from

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1 Sudden Cardiac Arrest Foundation, 2014
2 American Heart Association- CPR statistics
3 American Heart Association- CPR statistics
the hospital. About 18% of seniors who receive CPR at the hospital survive to be discharged, according to a third study.4

The stats provided in the article were low, however, they did not mention the survival rates of victims who were not given CPR by a bystander. There were also no alternatives given to performing CPR. Until there are better alternatives, CPR is the only way to help save someone:

If bystander CPR is not provided, a sudden cardiac arrest victim’s chances of survival fall 7 percent to 10 percent for every minute of delay until defibrillation. Few attempts at resuscitation are successful if CPR and defibrillation are not provided within minutes of collapse.

What is the purpose for these articles? Do they want someone to find an alternative? Do they think CPR training is a waste of time for non-medical citizens? Statistics have shown that survival rates increase when CPR is performed on a victim, even if the increase is not a drastic one.

The main purpose of CPR is to continually send oxygenated blood to the brain after the heart has suddenly stopped. Performing chest compressions on the victim’s chest until emergency services arrive is the best way to send oxygen to the brain. Without oxygen being sent to the brain, the brain will begin to suffer permanent, unrecoverable, damage as quickly as four minutes and after six minutes the victim will

4 CNN Health
If performed quickly enough, CPR can extend this time period considerably, giving the victim a better chance to survive.

CPR can be performed as long as necessary until paramedics arrive or the heart starts functioning properly again. Back in 2011, a man from the United Kingdom was saved when twenty-five people took turns performing CPR for 90 minutes before help arrived. The chest compressions the members of the small town were executing continually sent oxygen to the brain.

When the emergency dispatcher first receives the 9-1-1 call, they must then relay the call to the closest available fire station and ambulance. These responders will have to drop what they are doing and get into their rig to head to the emergency location. All of this takes time. More time than the victim has. The four to six minutes the brain has to survive, is not a reasonable response time for emergency service vehicles. From the moment the victim’s heart stops to the arrival of the first responders, roughly ten minutes has already past. “Some municipalities, especially in California, have even moved response time standards to 12 or 15 minutes for private EMS…” That time could also be extended by variables such as traffic or weather or location. After that much time, the victim will have no chance for survival, unless someone administers CPR.

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5 Medline Plus
6 Mail Online
7 EMS World
The Solutions - “What has been done/could be done?”

CPR course will be the most effective way to teach this information. From personal experiences, in-person course would be the most effective over an online version of the same course. Students would be able to ask questions and would be able to be shown proper technique and have theirs evaluated.

Local courses can be found at redcross.org and there other smaller organizations that will certify those who want to take the course. The cost of these courses, range from $20 to over $100. These courses are also held online and in the classroom. Most classroom periods are six hours long.

Some states make it mandatory for their high school students to learn CPR. Currently, 16 of the 50 states have mandatory laws for high schools teach CPR to their students. Only two of the 16 had laws in place prior to the year 2012. Students in these states must pass the CPR requirement in order to graduate. Several states have had bills introduced but have not passed in to law yet. California is one of the 18 states who have not introduced any laws requiring mandatory CPR students. With the state’s population, California needs to implement a program into their high schools.

Method

For this Capstone Project the researcher has investigated how CPR instructors and high school educators view teaching high school students basic CPR knowledge and what they think could be done to improve it. Based on an analysis of the data and the relevant

8 School CPR Blog
research literature, the researcher used what he has learned to formulate an action that responds to the focus issue in a way that inspires, informs, or involves a particular audience. After interviewing CPR instructors, the researcher used what he has learned to inform students the importance of knowing basic CPR skills. This is important because having this information could save the life of a family member or friend.

**Context**

Christopher, California is a growing city with a most of the population being young families. The city has developed quickly over the past ten years with many new homes being built along with a new high school. Columbus High School, where the action took place, is the city’s newest high school. The school was built only within the last six years. The school’s population is predominantly white and Hispanic with small populations of black and Asian students. Columbus has excellent facilities for teaching and athletics.

**Participants and Participant Selection**

The researcher will invite one CPR instructor and one Columbus High School staff member to participate in this study. This group of prospective participants is being invited to participate because their relevant experience, expertise, knowledge, roles and responsibilities are appropriate for teaching the information and providing a facility to hold the course.

**Researcher**

The researcher is CPR certified and a future firefighter/EMT. They have taken the CPR training course three times and feels, in the case of an emergency, they will react in a
way that will help the situation. This is important to them because the information from the course will help give victims a chance to survive before help arrives. The researcher wants to reach as many people as possible, especially young people.

**Student Survey Questions**

1. Year: Freshmen Sophomore Junior Senior
2. Gender: Male Female
3. Do you plan on attending college after high school? Yes No Unsure
4. Future Profession: __________________________ Unsere
5. What do you know about CPR training? Anything?
6. Have you ever taken a CPR class? Yes No
   a. If yes, have you ever had to use it? Yes No
      If yes, explain.
   b. If no, have you ever been in a situation where knowing CPR could have helped someone? Explain.
7. If your school offered CPR training would you attend? Yes No Maybe

**Procedure**

It was important, first, to get in contact with a certified CPR instructor who is willing to teach young people. Some may think high school students are not an appropriate age group to teach this material. There will also usually be a fee to pay the instructor and some needs the researcher will need to provide. These can be discussed in the initial interview. After a CPR instructor agrees to teach the course, the next step would be to find a place to hold the course.

Because high school students are the target audience, researchers should get in
touch with a local high school and ask them if any of their facilities are available to use. These facilities are designed to hold large groups of people in a classroom setting. If the school has a gym, that would be ideal. Gyms have a lot of space and it is easy to set up rows of chairs for the audience and any tables needed by the instructor. Also, ask if the school needs any release forms or wavers to hold the course. Then find a date that works for the researcher, CPR instructor, and the facilities.

The final step for preparing course, researchers need to find a way to get the word out to students so they are aware of the course. After the school agrees to host the activity, they will help spread the word to their students. Most high schools have bulletins or morning announcements and writing a short description of the course will inform the students. Also, creating flyers to post around campus is another way to inform students. After the researcher has designed the flyer, some schools will even print them out and hang them up. If possible, get in touch with coaches and teachers and have them talk to their athletes and students. This will make sure students hear about the course and the coaches and teachers can give the benefits of knowing CPR.

Morning Bulletin

“This Saturday, March 29th, at 9 am in the main gym, Coach Bloom and Coach Kyle will be hosting a course to teach CPR and First Aid to all Christopher High School. Students who attend the course will receive community service hours as well as a two year CPR certification. The cost of the course is $10 per student due on the day of the course. To sign-up, go to the main office and write your name down on the sign-up sheet provided. Be someone’s hero!”
Also, set up a sign up sheet somewhere on campus, like the main office, where the students can sign up for the course. This will allow the researcher to get an idea of the number of students who will be attending and can plan accordingly. If there are a low number of students signed up, invite coaches, who need a CPR certification, or teachers or other adults who want to attend.

On the day of the course, the researcher should set up the chairs and tables as needed. Before the class gets started, the researcher should give a short introduction and thank everyone for coming. When introducing the course, be sure the students know to ask questions if they have them. During the presentation, give full control to the instructor. They are trained to instruct so do not interfere with their rhythm. After the course, have the students sign the necessary forms to receive their certification cards and be sure to collect the money from students if required.

**Data Analysis**

Transcribed surveys and interviews will be analyzed for emergent themes.

**Results**
The collection of my data was a smooth experience. The researcher had a game plan that went the way he thought, and hoped, it would. The researcher knew when and how to reach the students for surveys and knew the people he wanted to interview to organize the course. Because he already has experience working at the school and is familiar with some of the students and school faculty, he had an advantage in his data collection.

Before the interviews with the CPR instructor and the necessary school faculty, the researcher went to the high school, where the course was held, and surveyed twenty six students about their knowledge and interest about CPR. The researcher wanted to see if there was a desire among the students in attending a course that offered this information. After the small sample size was taken, we learned more than half of the students surveyed would take a CPR course if their school offered one.
When students were asked what they already know about CPR techniques, the most common response written was “Nothing” (11 responses). However, seven students wrote either “breathing problems” or “mouth-to-mouth and/or chest compressions,” indicating knowing what CPR is but may not know the proper techniques. There was also one response that “involved food,” referring to the Heimlich maneuver. The survey did not ask about specific details about their knowledge but many students had an idea of what CPR is. Finally, five students knowledge of CPR was “saves lives.”

The results of the surveys collected showed there was a great desire, among the students, to learn CPR. This survey was also given before students were aware of the community service incentive and there was still a positive response. This information is very encouraging leading up to the interviews with the instructor and school officials.

The main theme found from my interviews with both the instructor and the school’s athletic director and activities director was their eagerness to help. They thought the class was a good idea for the students and did what they could to make the organization of the course as easy as possible.

Finally, as a football coach at the high school, the instructor has made connections with many of the parents of the players. Living in a small town, the researcher and those parents see each other all over town, at the grocery store or restaurants, and casually spoke to them about the action. This was another instance where they showed positivity about the idea and even said they would make sure to tell their children about the course.

Everyone who was interviewed or told about the action did not have any conflicts with what was going to be taught to the students. The topic of CPR is not a controversial
issue so it was not surprising with all the positive responses. The complexities with this topic come with arranging a date for all of the participants, including the instructor, the availability of the school’s facilities and student’s schedules.

**Action Description and Justification**

The main goal of this project is to teach CPR and First Aid to as many high school students as possible. Finding effective ways to reach the students is the challenge. They need to see the benefits of knowing the information and the consequences that will occur if no one is able to help a victim. To reach the students, the material must be presented so the students will retain and understand the information for most of their lives.

**Options**

There are three options that are designed to reach many students to share the CPR information. The options include organizing a CPR course inviting high school students, integrating CPR training into the curriculum, and handing out informational broachers. With all three options, grabbing the attention of the students is the focus. All these options can reach our target audience. With CPR courses and handout more people could be reached because people outside of the school could attend the class or read the handouts.

**Evaluations of Options**

To decide the option that would be best, a table with three standards was created. The three standards are: cost, time, and reasonableness. Cost is always an issue,
especially with school budgets. The cost standard refers to the cost to the school. Every action will take time but some will take more than others and not all educators will have time to organize the right action. The final standard is the action’s reasonableness. Reasonableness refers to the likelihood the action can be executed quickly. In Table 1.1, the project options are rated using the rubric criteria.

<table>
<thead>
<tr>
<th>Table 1.1</th>
<th>Cost</th>
<th>Time</th>
<th>Reasonableness</th>
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<tbody>
<tr>
<td><strong>CPR Course</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4 Hour Course</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
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<tr>
<td><strong>Integrating into Curriculum</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Several Class Periods</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Handout Informational Flyers/Broachers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
</tbody>
</table>

The first option is organizing a CPR course. With the connections of the researcher, this action will be easy. The only cost would be the money owed to instructor. The school would let us use their resources for free and the participant’s fee would pay the instructor. The amount of time is low for this action. The interviews would be quick and the course would take three to four hours. Due to the cost and time required to organize the course, a CPR course would be the most reasonable.

The second option would be integrating the material into the curriculum. This action will cost the most and take the most time to organize. With the amount of students
who will be taking the course, other instructors must be hired. And the school would have to pay for the cost because the lesson is mandatory. Also, to integrate it into the curriculum, several class periods would be needed to cover all the material. This action is the least reasonable as well. To organize this action, meetings and interviews with more people would be required because we would need to decide what material would be cut. We would also need to allow the parents, of students under 18 years old, the right to keep their child out of the course if they choose. There are more meetings about the course than teaching the course when the material is integrated into the curriculum.

The final action would be handout informational flyers and broachers. This would not coast much to the schools. The cost of the action could be completely with the researcher if the school does not want to pay of it. The majority of the action will be standing outside the school handing out the flyers. There will also be a lot of time designing a flyer the student will want to read. Depending on how many flyers are printed, this could take several hours over several days. This is also very reasonable because many students will see the flyer. However, because a student takes the flyer does not mean they will read it or understand the material.

Decision Making

After observing the positives and negative of all three actions I decided to teach organize a CPR course for the students. This course will cost the participants $10 each and all that pay the instructor. The CPR course will not be any extra cost to the school. In the organization of the course, the researcher can email and briefly speak with school officials to arrange a date when the action will be held.
In this action, only students who are interested in the material will attend the course. When participants are interested in the material, they are focused and there is no energy used grabbing their attention. Asking students to attend could also be a problem because this may result in a low number of participants. If attendance is low, the instructor or school may not be willing to continually involve themselves in the process.

This action was an easy choice because the stakeholders were interested in helping. If this course is a success and the researcher may want to implement this course in other local schools. When he starts working with other schools and instructors, there could be roadblocks that will slow down the process of reaching the students.

**Action Documentation**

The main objective of this project is to educate high school students in CPR and First Aid techniques. When students began signing up for the course, the amount of interest participants was not as high as was expected so the objective shifted to educating the community. Students who did sign up were then encouraged to invite parents and siblings. Also, coaches who need their certification were welcomed to attend and participate in the course. The leaders were not aware of how many participants would attend until the day of the course.
The gym was set up with twenty eight chairs in four rows and they were all facing a table that was used by the instructor. The course was scheduled to begin at 9 am but it was pushed back to 9:15 to make sure no one arrived late. When the class was ready to begin, twenty five participants had showed up to learn these valuable skills, twenty of which were students. There was also two coaches who attended, one coach even brought his wife and two younger daughters. He let us know his oldest daughter, 12 years old, will begin babysitting soon and he and his wife wanted her to be prepared in case of an emergency. The extra time, also, gave the instructor and researcher extra time to set up the practice dummies the students will be working on, as well as discus how they will introduce themselves and the reason why they were all there.

The researcher felt, because it was his project, he needed to address the students first. He introduced himself and talked about the project and why he is passionate about the material. He then introduced the instructor and gave a short background of his expertise in the subject. After the instructor was introduced, he then gave the class a more detailed description of his background and talked briefly about what they were going to be learning.
The style of this particular CPR course was taught like a lecture. For the majority of his instruction, the instructor stood in front of the class and gave them the information they needed and students were encouraged to ask any questions that they had. Due to the duration of this course lasting only slightly more than three hours, the lecture style worked best because it allows for a lot of information to be given in a short time. With the lecture style, students can focus on the material and there were not many times when students needed to move around and then have to refocus. The first portion of the class was focused on CPR and after the break the material turned to First Aid.

Before the students were given a break, roughly two hours into the course, there was an interactive portion. This interactive portion was to allow the students to practice giving a victim chest compressions and proper technique when having to breathe for the victim. To get through everyone quickly, there were twelve dummies placed in a line and all the students each got a turn practicing. This was important because the students will have a better chance to remember the techniques if they physically perform the movements. The instructor paced in front of the students and gave them the step by step process while the students performed them. Also, if a student was not properly executing a movement, chest compressions and breathing, the instructor would correct them and made sure they were doing everything right.
After the break and the First Aid section, students were given their certification cards and a booklet to take with them. The researcher than thanked everyone of spending their Saturday morning learning the skills that will hopefully be with them forever.

While reflecting on the experience, the researcher was impressed with all the questions that the audience had asked during the course. The researcher was worried about how much time it would take for young students to begin to lose their focus and begin watching the clock instead of the instructor. The questions were intelligent and showed that they were really interested. The majority of the questions were, “What if…” questions, and the instructor answered each question honestly with great detail.

The things happened the way they did during the project because the researcher worked with an instructor who have a great deal of experience with teaching the material. The action moved along very smoothly and the instructor touched on every point he intended to. The audience also helped in making the action a positive experience. They were greatly interested in the material and the questions they asked helped the instructor with his explanations of the material.
If this activity was done again, the researcher would try and do multiple courses during the school year to reach more people. Other than the quantity of courses offered, the researcher would do everything the same. The people who were involved in setting up the activity were helpful and made the process very easy. The researcher was fortunate to find people who thought the course was a good idea and were very willing to help reach the people who wanted to learn CPR and First Aid.

**Critical Reflection**

This project was my first chance to give back to my home town community and do something positive and impactful. During the process of organizing this course, I learned a lot about myself. I learned that helping people and teaching people is something that I really enjoy. More specifically, I enjoy teaching people how to help themselves. I also get to do this as a football coach and seeing students, or players, learn to trust themselves is what being a teacher is all about.

For my first time organizing an event like this, the people I approached about helping put on the event made the process very easy. I enjoyed working with people who were able to see what I was trying to accomplish with the course and do everything they could to make sure this action was successful. They made it easy for me to share this material that I am becoming passionate about. This project gave me a chance to implement my future career as a fire fighter into educating young people. Having what I will be doing in the future as the inspiration for the project, gave me the motivation to create a course that I want to continue to organize.
By continuing the course I will be promoting change within the community. I am promoting the knowledge the community needs to protect their friends and family members. I was proud of the young people who participated. Their active participation during the course showed me their interest was high and they want to be able to protect their community, if they are asked to do so. With this first CPR course, the change has already started. The participants recognized the information’s importance and what they are capable of with it. Hopefully, in the future, they will keep their certifications current and inspire others to become certified as well.

**Liberal Studies Themes**

Even though the primary focus my future career will not be in education, the themes I have learned within the course work of the Liberal Studies will help me with my future development. As a future fire fighter, these themes taught me how to communicate with others and understand their different backgrounds.

**Developing educator.** Although I will not be in a traditional classroom, the skills I have learned will help me with managing the students I will be working with. As a coach on the football field, much like a teacher in the classroom, I need to relate to my players. I need them to be interested in what I am teaching so they will be prepared for their tests on Friday night. I need to be able to push the better players to be better than they were the previous day, while also inspiring those who have never played football before.

**Diversity and multicultural scholar.** Diversity and multiculturalism seemed to be a theme throughout the majority of the courses in Liberal Studies. The department promotes diversity and tries to show different cultures in the community. The lessons in
this section, are going to be beneficial in my future. I am going to working with and trying to help people from different backgrounds than my own. I knew to accept others and their differences but with the diversity lessons I have learned, I learned these different experiences made us who we are.

**Innovative technological practitioner.** In most classes, power point and Prezi was a must for presentations. I was forced to learn how to create slides that kept the audience’s attention. We also used programs like Excel for collecting data. Technology and I do not always agree but I was forced to learn. In my future as a fire fighter, I am not sure if these skills will be necessary but I know that I have them.

**Social justice collaborator.** Trying to influence social change was an interesting aspect of the major. Having many conversations with other students and listen to their opinions, it helped me develop my own opinions. The readings from Multicultural Literature for Children and Young Adults put me into social situations different from own and forced me see what individuals go through. These conversations along with the reading material, made me think about myself and what I need to do to promote social change in my own community.

**Subject matter generalist.** This major forced me to expand my horizion by taking courses in many different fields. When I was an Environmental Science major, math and science were the main focus of all the classes. With liberal studies, I was able to learn about art, as well as take in-depth history and English classes that have changed the way I read articles and novels in my personal time. This major helped me become a more rounded individual.
Future Plans

This I hope to be starting the fire academy as well as continue coaching high school football. Even though education in a classroom is not in my future, the skills I have learned in Liberal Studies will used in non-traditional classrooms. I plan on teaching young people how to play football and possibly teach people about healthy lifestyles when I become a CrossFit trainer within the next year. I look forward to educating both adults and teens about physical activities that I am very passionate about. I also hope to find a way to continue my work in getting CPR into local high schools.
References


- National Safety Council. http://www.nsc.org/products_training/Training/firstaidandCPR/Pages/FirstAidCPR.aspx#.U3rquSgXKot

