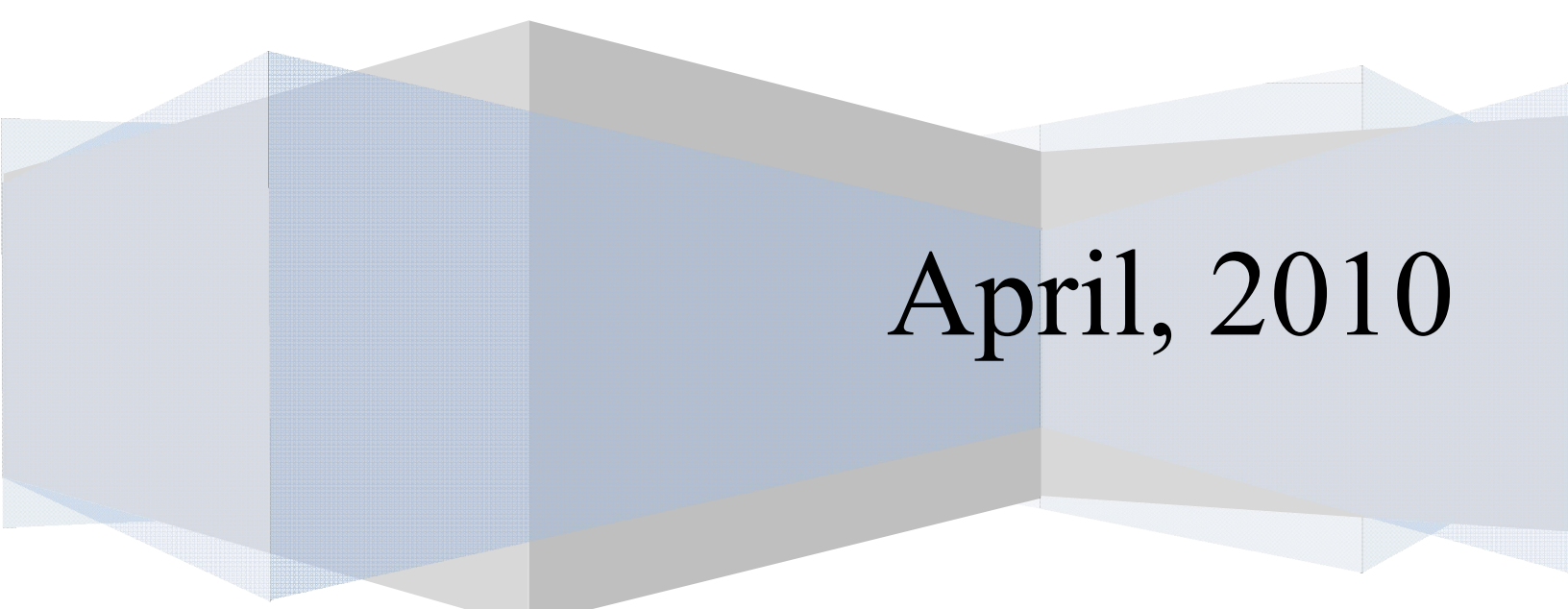


York University – Marketing Research II (ADMS 4265)

Emergency Preparedness Lesson (EPL)

Research Report

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| Baird, Sarah | 208666612 |
| Lopez de Leon, Jhonatan | 208618167 |
| Olortegui Rodriguez, Angie | 209414269 |



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Executive Summary

For many years Canadian neighbourhoods have been affected by natural or man-made disasters leading to terrible damage and human losses. As a response, York University's MA Disaster and Emergency Management Students (referred to as MA Students) sought funding to create an emergency management lesson plan in collaboration with the Experiential Education (EE) department at York University.

During the last week of March, the MA Students delivered an emergency preparedness lesson (EPL) plan to grade five and six students. The lesson plan took a proactive approach on the creation of an Emergency Kit, including clips of disasters, the preparation of an emergency kit and other related activities. The overall goal of the project was to empower and educate these students through a 45 minute emergency preparedness lesson (EPL) on disaster and emergency management.

The most effective manner of gaining insight into the effectiveness of the lesson plan was to conduct a 2-part questionnaire which included both structured and unstructured questions. Our research aimed at collecting and analyzing quantitative data from the surveys to answer what the level of success of the EPL is, and measuring how much information the students retained after the administration of the lesson plan. Three indicators of success were: 1) the knowledge that students gained, 2) how much the students enjoyed the lesson, and 3) the willingness students have to spread the knowledge to family and friends.

The findings of the marketing research study of a total of 141 respondents (students) and 4 primary school teachers are:

Conclusion 1: Knowledge Gain

Answers revealed that while students knew what an emergency kit was and its general use they lacked sufficient knowledge on how to create one with the specific items essential for an emergency. After the lesson plan, kids could easily identify items that must and must not go into an emergency kit. However, detailed information like how many days an emergency kit should last was not retained by kids.

Recommendation 1:

The emergency preparedness lesson plan teaches what an emergency kit is, what it is used for, and how to create one. As most students were previously aware of the "what it is" and the "what it is used for," the lesson plan should therefore continue to focus on aspects of building the kit, and interactively emphasize information such as "how long it should last for." In addition, any free time obtained from focusing less on other aspects

that do not show any gains, could be used to teach students how to “react” in case of an emergency.

Conclusion 2: Lesson design/group dynamics likability

The design of the lesson plan proved to be successful. The majority of students liked working in groups, they had fun with the dynamics of lesson overall, and felt they learned about handling emergencies.

Recommendation 2:

Our recommendation is to continue using group dynamics as a learning tool. Not only should students discuss among their peers the items to be included in the emergency kit, but they should also play knowledge games about the use of the items as well as emergency reaction tips. This would help students remember the importance of the items, why it should be included in the kit, and how to react in general about an emergency.

Conclusion3: Intentions

Given how much the students enjoyed the lesson plan design, students were eager to communicate their knowledge with their family and friends.

Recommendation 3:

Student's intentions can vary from their actual behaviour, therefore, further research should be done in order to reveal if they communicated what they learned and how.

Introduction

For many years Canadian neighbourhoods have been affected by natural or man-made disasters leading to terrible damage and human losses. For instance, in 1954 hurricane Hazel struck the Toronto area leaving homeless and dead people. In 2008 the disastrous Sunrise Propane Explosion incident caused thousands to evacuate from their homes in the Black Creek area. As a response, **York University's Experiential Education Office**¹ in the Faculty of Liberal Arts and Professional Studies obtained a competitive grant through State Farm Insurance² to create an emergency management lesson plan.

The intention of the grant was to enable Master of Arts students in York University's Disaster and Emergency Management program to design a lesson plan appropriate for grade five and six students in TDSB schools to increased their knowledge of disaster and emergency management events such as fires, explosions, and natural disasters. Assistance in designing a lesson plan was obtained by an Ontario certified teacher.

During May of 2009 (phase one) and March 2010 (phase two), the MA students and the TDSB certified teacher designed and delivered an emergency preparedness lesson (EPL) plan to grade five and six students. The lesson plan took a proactive approach on the creation of an Emergency Kit, including clips of disasters, the preparation of an emergency kit and other related activities. The overall goal of the project was to empower and educate these students through a fifty minute emergency preparedness lesson (EPL) on disaster and emergency management.

Phase one feedback from students, teachers, principals, and the TDSB's Health and Safety Manger was very positive; it was thus decided that delivering a slightly modified lesson plan to additional schools would be of benefit. Also determined was that feedback data from students and teachers would provide a comprehensive insight into the effectiveness of phase two of the initiative. This report focuses on responses and feedback regarding 'phase two' (March, 2010) of the EPL.

Decision Problem:

Given the success of EPL's phase one, the York University's Experiential Education Office needs to know:

1. How properly the lesson plan is designed to effectively prepare grade 5 and 6 students for emergency situations?

¹ www.yorku.ca/laps/ee

² <http://www.yorku.ca/yfile/archive/index.asp?Article=12343>.

2. What is the impression the students have of the program and their willingness to propagate what they learned?
3. Is there any increase of knowledge among the students on handling life threatening catastrophes as a result of the program? In other words, if the lesson has an impact, do kids understand and like the interaction techniques used by the instructors? If not, what are the features of the lesson plan that are not fulfilling the goal of learning about safety management by students?
4. Feedback from school teachers who observe the EPL is necessary to be collected.

Research Problem:

Based on the decision problem, this study will focus on the next three most important points:

1. Measurement of the knowledge that students might have gained after the lesson plan.
2. How much the students enjoyed the lesson.
3. The willingness students have to spread the knowledge to family and friends.

Information Required:

1. We need to test students in order to know how much they know about emergency preparedness before and after the lesson plan is taught in order to determine the effectiveness of the EPL.
2. To identify the EPL's adequacy, we need to gather information about satisfaction, from students and teachers.
3. Finally, student's future intentions are important to know. For this we need to know if students are willing to spread the EPL's "brand".

Research Method:

Descriptive Research – Student Survey:

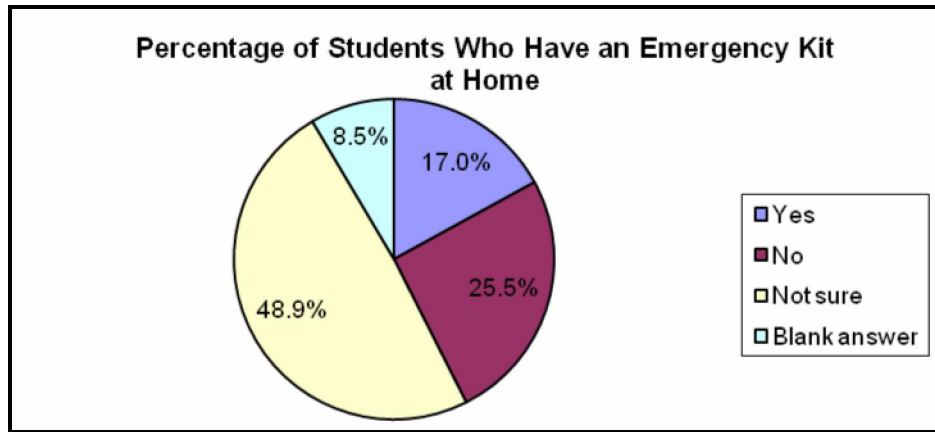
A 2-part questionnaire was administered to the students to determine whether they gained knowledge from the lesson plan. The first part was administered during the introduction of each member of the team from York University. It tested how much the students knew before the lesson. The second part was delivered after the lesson. It included the same questions asked in the first part to account for the difference of knowledge. It also included other questions to test how much students retained from certain elements taught during the lesson, how much they enjoyed it and what the intent to do with their knowledge was gained. All together, the 2-part questionnaire, revealed the program effectiveness. Both questionnaires included structured and unstructured questions.

Exploratory research – Interview with teachers (by e-mail):

Exposure of teachers to the lesson plan delivery helped to gain insights on how their pupils considered the lesson plan, and to provide feedback for improvement. Following the delivery of a lesson plan, teachers' opinions were asked through open-ended questions. Grade 5 and 6 teachers answered a 5-question questionnaire via e-mail and fax.

Data Analysis and Results

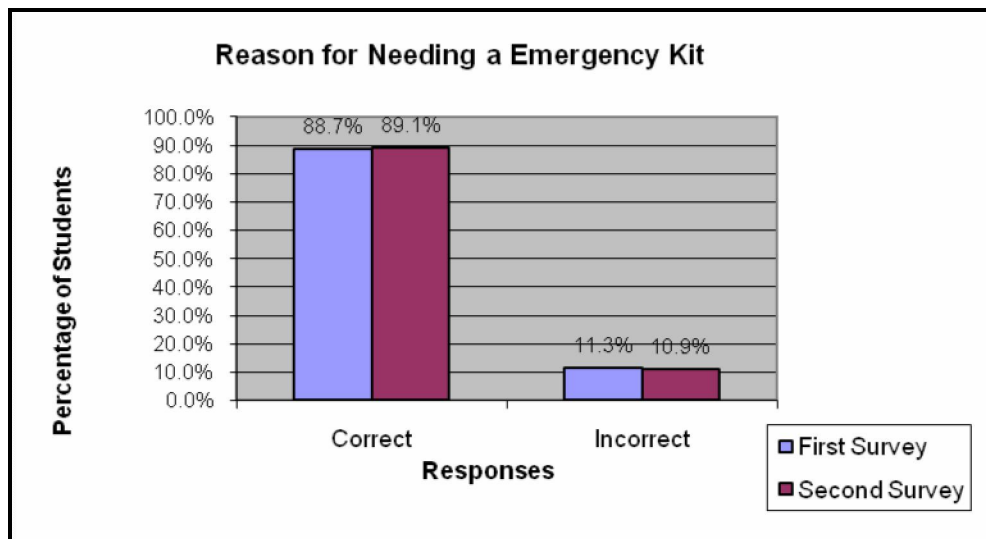
Graph #1



Question belong to First Survey (N=141)

Represented in the graph is the percentage of students who have an emergency kit at home. As per the data from the first questionnaire, 48.9% of students were unsure as to whether they had a kit at home. This may include those students who are unaware of what an emergency kit is and students who are unaware of whether they had one. 25.5% reported not to have one, even though they might have not known they did. 17% said they had one. And 8.5% did not answer. Further data may be required to get the accuracy of these responses.

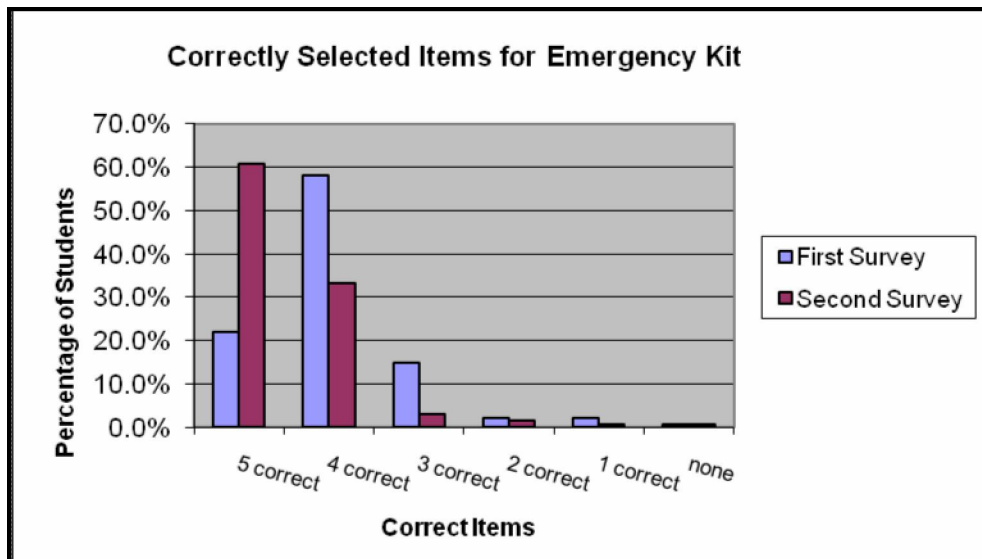
Graph#2



First Survey (N=141), Second Survey (N=138)

Illustrated in the graph is the percentage of correct responses given by students as to why one may need an emergency kit. Collected from both questionnaires (before and after the lesson plan), the data shows that the majority of students answered correctly with 89.1% from the first survey and 88.1% from the second survey (the decrease can be attributed to some missing answers from the second survey). This shows that students were previously aware and may not have gained knowledge on this subject after the lesson plan. The true nature of why there wasn't any increase of knowledge of this aspect should be further investigated.

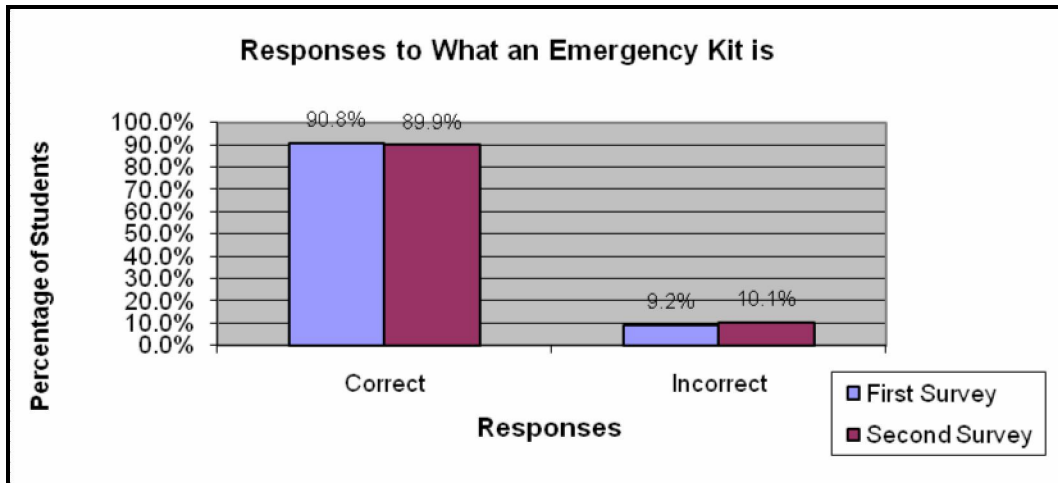
Graph #3



First Survey (N=141), Second Survey (N=138)

Illustrated in the above graph are the correct items that would be needed in an emergency preparedness kit. On the first survey only 22% of students correctly selected 5 items that should go in an emergency kit, contrasting the 60% of students that did so on the second survey. The difference is a result of knowledge gained after the lesson plan about selecting items that must be packed in an emergency kit. Combining these answers with the kids' opinions about the lesson plan strongly suggests that interactive learning is a good option for kids to retain knowledge.

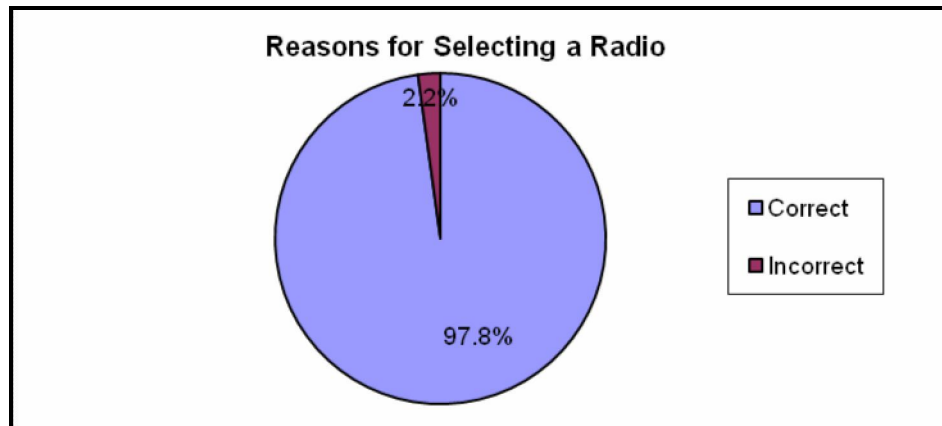
Graph #4



First Survey (N=141), Second Survey (N=138)

Shown in the above graph is the percentage of responses regarding what students thought an emergency kit is. Using data from both questionnaires, we see a decrease in correct responses from 90.8% in the first survey to 89.9% in the second survey, which can be attributed to missing answers from the second survey. The true nature of why there wasn't any increase of knowledge of this aspect should be further investigated; However, note that big percentage of kids that already know what an emergency kit is.

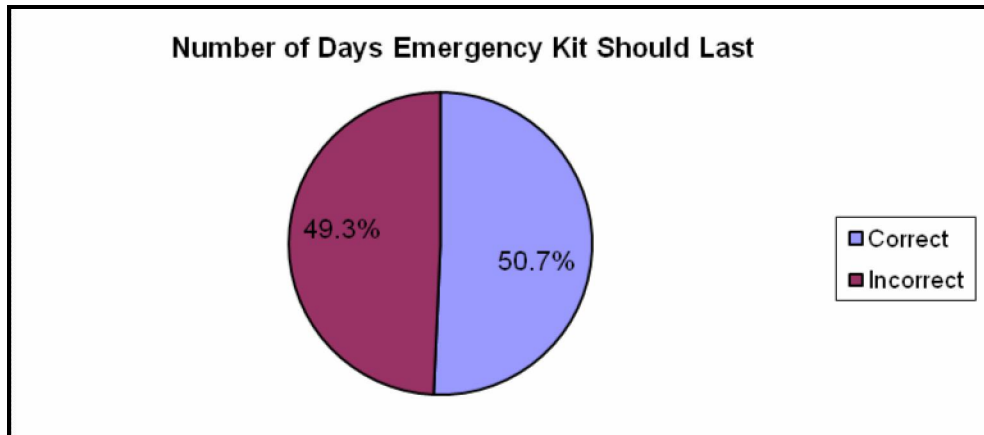
Graph# 5



Question belong to Second Survey (N=138)

Represented in the graph is the percentage of responses given by students for selecting a radio. As per the data from the second survey, 97.6% of students answered correctly the questions of what should a radio be used for in case of an emergency. This illustrates the retention students had from what they were taught in contrast with the fact that in the first survey, many student didn't know that a radio was one of the correct items of an emergency kit.

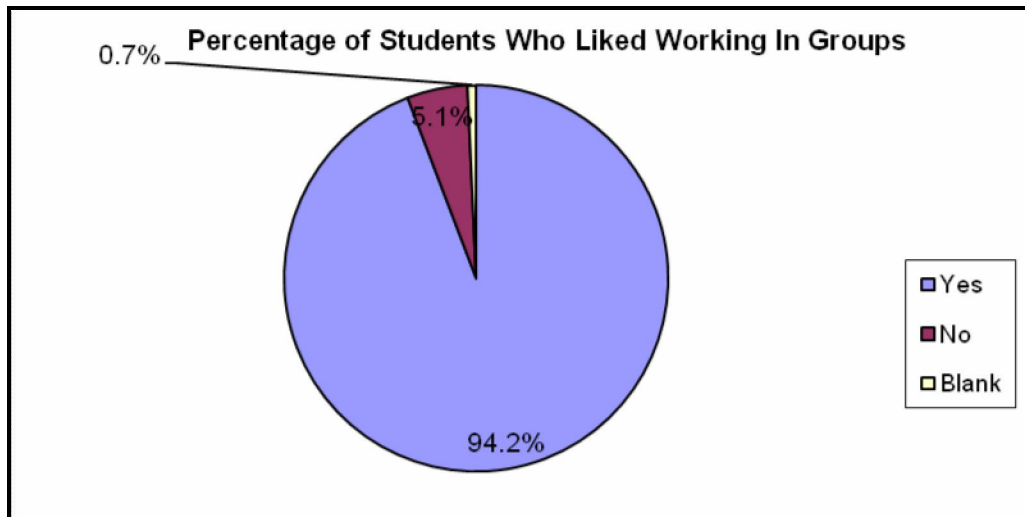
Graph #6



Question belong to Second Survey (N=138)

From the above graph the percentage of students who correctly answered the question of how many days an emergency kit should last for, is 50.7%. This shows that a high number of students (49.3%) answered incorrectly, “7days” was the most frequent wrong answer. Given the success of the knowledge retention with respect to the contents of the Emergency Kit through the Bin’s Activity exercises, it should be considered to use a different approach to teach the children abstract key concepts such as duration for a kit’s use.

Graph#7

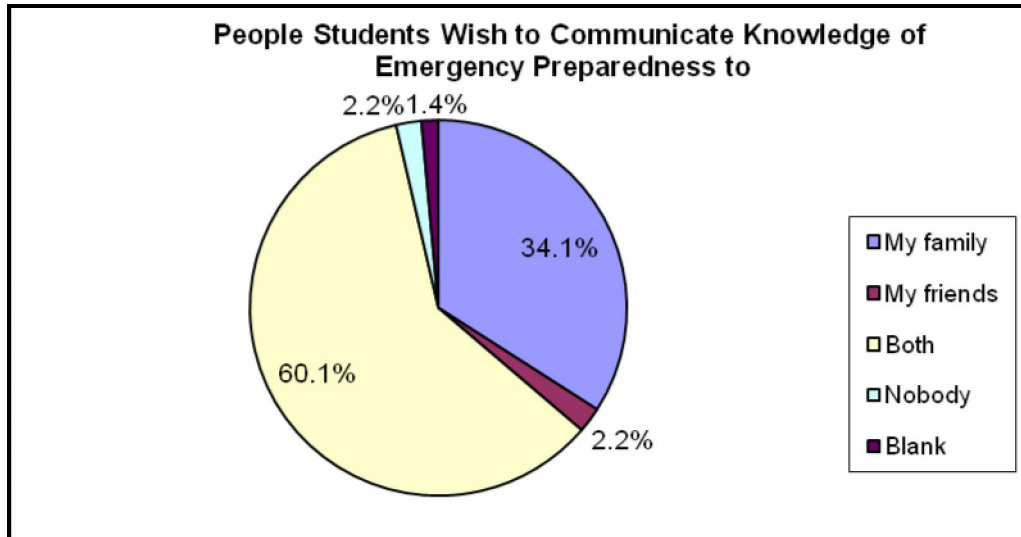


Question belong to Second Survey (N=138)

Illustrated in the above graph is the percentage of students that enjoyed working with others by completing exercises within a group setting. Collected from the second survey, the data presents that 94.2% of students liked to work with their peers. This illustrates

the effectiveness of the emergency lesson plan design by allowing students to interact with peers in a collective manner. Most of the student's answers were focused on that they liked being with their friends, observing their reactions, and discussing what to include in an emergency kit.

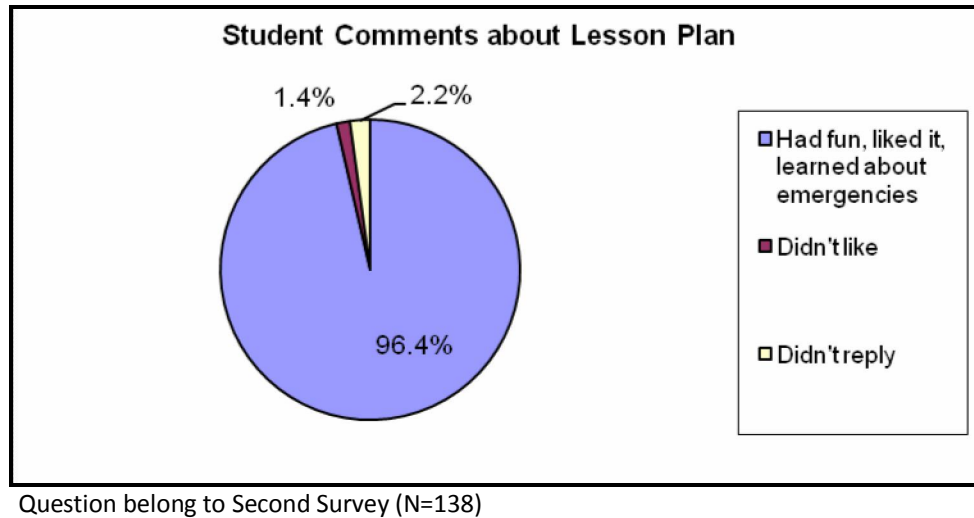
Graph#8



Question belong to Second Survey (N=138)

The above graph illustrates the percentage of those a student wishes to communicate knowledge of emergency preparedness to. As per the data collected from the second survey, 60.1 % of students felt they were going to inform both their friends and family about what they learned, while 34.1 said they were going to tell their families only. This shows the impact of the lesson plan on the students and what they intent to do with the knowledge gained.

Graph #9



Illustrated in the above graph is the percentage of student comments that have been summarized into three categories. From the collected data from the second survey, the majority of students at 96.36% had fun, enjoyed and felt they learned about emergency preparedness.

Result # 10: Teachers' responses

Teachers were asked five questions pertaining to student reactions, delivery of lesson plan and any changes they might suggest. Three indicators of success were to be discussed: 1) the knowledge that students gained, 2) whether the design kept students engaged, and 3) incorporation of the lesson plan into the TDSB curriculum.

The findings resulted in overall positive comments from four out of six teachers given the surveys. Teachers felt the lesson plan design connected students with various aspects including hand-outs, video, discussions, and practical information needed to be prepared. Observing students working effectively with their peers when asked to build an emergency kit demonstrated an application of the material learnt. Teachers believed the discussion about emergency preparedness got students to think critically about this topic that may not have been considered before the lesson plan. Without being too long students were able to keep an interest in the topic and take away relevant information. As such, teachers felt that, "incorporating the lesson plan would benefit the students and connected them to the arts and science curriculum."

Conclusions and Recommendations with regards to the Research Questions

Research Question 1: Gain Knowledge

Conclusion 1:

To test the knowledge gained by students, three out of eight key questions were asked twice: Q1, Q2, Q3 from the first questionnaire were asked before, and Q1, Q2, Q4 from the second questionnaire were asked after the lesson plan. This allowed us to obtain the percentage change in learning. The order of the questions was changed slightly as to not appear very obvious.

The answers revealed that while students knew what an emergency kit was (see graph #4) and its general use (see graph #2), they lacked sufficient knowledge on how to create one with the specific items essential for an emergency. Students knowledge on getting five out of five (5/5) items correct increased by 40.9% after the lesson plan (see graph #3). Two more questions (Q3, Q5), focused on specific elements taught on the emergency kit preparation, which showed that 98% of students retained what a hand crank radio should be used for, however, only 51% knew the correct answer to how many days the kit should last for (3).

Recommendation 1:

The emergency preparedness lesson plan teaches what an emergency kit is, what it is used for, and how to create one. As most students were previously aware of the “what it is” and the “what it is used for,” the lesson plan should therefore continue to focus on aspects of building the kit, and interactively emphasize information such as “how long it should last for.” In addition, any free time obtained from focusing less on other aspects that do not show any gains, could be used to teach students how to “react” in case of an emergency.

Research Question 2: Lesson design/group dynamics likability

Conclusion 2:

The design of the lesson plan proved to be successful since the majority of students liked working in groups (see graph #7), they had fun with the dynamics of lesson overall, and felt they learned about handling emergencies (see graph #9 and open-ended answers).

Recommendation 2:

Since 94% of students enjoyed working within a group environment, and this facilitates students effective learning, our recommendation is to continue using group dynamics as a learning tool. Not only should students discuss among their peers the items to be

included in the emergency kit, but they should also play knowledge games about the use of the items as well as emergency reaction tips. This would help students remember the importance of the items, why it should be included in the kit, and how to react in general about an emergency.

Research Question 3: Intentions to spread to word

Conclusion3:

Given how much the students enjoyed the lesson plan design, 34.1% were eager to communicate their knowledge with their family and 60.1% to both friends and family (see graph #8).

Recommendation 3:

Student's intentions can vary from their actual behaviour, therefore, further research should be done in order to reveal if they communicated what they learned and how.

Additional Note

From the responses to whether students had an emergency kit at home, it can be concluded that the lesson plan is useful in some form since 25.5% of students did not have an emergency kit, 48.9% were not sure, and only 17% had one. All of the groups, whether they had a kit or not, can be assumed to not necessarily have the knowledge on how to create one, or know details about what goes in it, how to use it, and why it is important to have one at home.

With the opinions of the teachers, a more experienced perspective could be gained to support the lesson plan design. Populating a database of such responses can add to the sources that helped the improvement of the lesson plan, and preserve historical qualitative data to support the program in the future.

General Conclusion

Overall, teachers and students approved of the Emergency Management Lesson Plan. Students were more aware of natural disasters and their consequences, they understood the importance of an emergency kit and its components, they approved the design of the program referring to it as interactive and fun because they enjoyed the group atmosphere. Finally and most importantly, students were eager to communicate their positive impressions about the Emergency Lesson Plan to their friends and parents.

As for the school teachers, they agreed on the benefits that the Emergency Lesson Plan brought to their students: increased critical thinking and increased feeling of empowerment within their students. They also agreed that the Lesson Management Plan was very well designed and effective overall. Finally they agreed on the importance of preparing students for natural emergencies, and that this kind of lesson would be a good connection to the science curriculum.