CRASH! – Calculating Risk Associated with Safety and Health
Assigned SHIP grant #2009XH00118
Dates of Project: April 1, 2010 –March 31, 2011

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Washington Business Week (Foundation for Private Enterprise Education Association of Washington Business Institute 253-815-6900

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PART I

Organization Profile

Washington Business Week (Foundation for Private Enterprise Education)

Since 1976, Washington Business Week has successfully prepared high school students to enter the workforce by giving them the skills, confidence and values to succeed in life — no matter their career choice. Our mission is to educate and inspire high school students to recognize their potential as responsible employees, employers, and citizens. We do this by immersing students in an intensive week-long program of experiential learning. Programs are offered in business, healthcare, energy, manufacturing and entrepreneurship. For more information: www.wbw.org

Association of Washington Business Institute

Founded in 2001 as an affiliate of the Association of Washington Business, the AWB Institute focuses on an array of human resource and employment issues, including workforce development and education; workplace safety; environmental compliance; and competitiveness. The Institute advocates for public policy positions at the state and federal levels and develops best practices for Washington employers and members of AWB. For more information: www.awbinstitute.org

❖ Abstract

Funding from the SHIP grant program allowed for the creation, testing and dissemination of the CRASH health and safety simulation. CRASH is an interactive experiential learning tool, a "Safety and Prevention" game that provides teen and adult participants the resources, knowledge and motivation to create safer workers and workplaces. Different from other business/management simulations, the CRASH simulation is specifically designed to address issues of health and safety in the workplace. While common business principals are introduced, the main focus is effective risk management as a strategy for successful business operations. Ultimately, the CRASH simulation serves to broaden participants' understanding of workplace risk and underscore the importance of prevention, both for individuals and businesses. Using a "hands on" methodology it creates an immersive experience where participants can learn first-hand how investments in health and safety positively impact business profitability, worker morale, and customer relations. Project evaluation and stakeholder feedback indicate that the CRASH simulation is an effective tool for education high school students and adults about health and safety in the workplace.

Purpose of Project

The purpose of this project was to design, test and implement an evidence based simulation that allows participants to explore health and safety in the context of a real-world business scenario. The CRASH simulation teaches teens & adults about preventing accidents, illnesses and work related injuries and the associated costs/benefits from the viewpoints of employees, employers and state regulatory agencies. Participants walk away from the simulation with the following outcomes:

- Increased awareness of common accidents, injuries, illnesses and their causes
- Increased knowledge of prevention strategies and their relative effectiveness
- Increased willingness to abide by safety standards, rules and regulations and build awareness for the government agencies regulating workplace safety
- Increased understanding of worker rights
- Increased understanding of the costs and benefits to business managers and owners associated with investments in workplace safety

The CRASH simulation uses a board game format, accommodating 4-6 participants per board, and up to 100 participants per session. A trained facilitator supports play and helps guide the experience to ensure that anticipated learning outcomes are achieved. Each management team will make financial decisions for 12 months of business operation. Beyond basic operating costs, teams will have to determine the size and scope of their investments in health and safety activities — given limited resources. For every quarter of play, teams will have the opportunity to recalibrate their prevention strategy based on their growing understanding or risk management. Following are some unique elements of the simulation design:

Experiential: Just memorizing information is useful, but it has been proven that learning through discovery, using information in a way that stirs up emotions, decision making and problem solving, is truly a model for changing attitudes and behaviors. It is often referred to as "experiential" or "discovery learning", and it works. Simulated activities and games are safer than the real thing (drivers education & flight simulations), can be fun (computer & board games) and offer a "learn-by-doing" effect that surpasses other modes of learning. Add a little competition and extreme variables, and the audience becomes engaged beyond those passively watching videos or listening to lectures. The CRASH simulation leaves a lasting impression by allowing participants to navigate the unforeseen challenges, hazards and financial decisions of the typical workplace.

Realistic: The CRASH simulation design is entirely informed by topical data collected from Washington Department of Labor and Industries, survey data collected from more than 200 Washington businesses, and industry specialists. The objective of this research was to ensure that risk, rewards, and consequences are represented realistically and with the appropriate magnitude of impact.

Easy to Facilitate: CRASH has been intentionally designed to allow anyone to be able to facilitate game activities. This training manual assumes that the facilitator comes to the game with little prior background knowledge regarding health and safety in the workplace. Every

attempt has been made to provide simple and easy to administer instructions for setting up board games, getting teams started, facilitating large group debriefing, and administering follow-up activities.

Portable and Scalable: The CRASH simulation operates as a stand-alone activity that can be delivered in a variety of settings to broad range of audiences. The game has been tested with both high school aged youth and adult populations. Additionally, the board game design allows for portability and can be played without electronic equipment or the need for a power source. This is particularly important for in school settings where access to computers and other equipment can sometimes be challenging. The simulation is also scalable in terms of length of delivery – ideally facilitated in a 2-3 hour time frame, but flexible to meet participant needs.

Statement of the Results Evidence of the results

Overall, the development and implementation of the CRASH simulation went very well. The simulation has been tested with diverse audiences and has undergone a series of revisions resulting in a strong design that clearly emphasizes key learning outcomes related to health and safety. Across all sessions, participants expressed positive feedback for the simulation experience, and articulated an improved understanding of (and appreciation for) health and safety in the workplace. Through simulation play and large group facilitated follow-up conversations, participants' holistically evaluated issues of health and safety – considering the perspectives of all stakeholders in society.

The simulation appears to be an effective and engaging tool for teachers, businesses, and public sector agencies to use in future educational endeavors. All materials, a facilitator's manual with detailed instructions, and an introductory video are available for free and open to the public at http://www.awbinstitute.org/crash/ Similar but copyrighted management simulations sell for \$900 per game pack and we estimate that the CRASH simulation can be assembled for as low as \$60 per game pack — and can be used time and again. The simulation was designed with this economy in mind, and every measure was taken to lower production costs (making it less cost prohibitive for schools and teachers to participate in the future).

A major lesson learned through this process is the importance of time. The original plan was to develop a simulation that was scalable, meaning it can be played over one or more hours depending on the availability of time. What we have found is that the game is not effectively played under less than an hour and a half time frame. Ideally the game is played in two hours (especially for adult audiences where more discussion of strategy takes place). The longer time commitment is also important for thorough debriefing and large group discussion. During the Business Week sessions, many of the groups only had 70 minutes to complete game play. While we still received positive feedback, there was a clear concern for lack of time and the ability to finish game play. This was moderately demoralizing for students and perhaps obstructed them from coming away with as many clear learning outcomes. For the groups with more time to invest (or even time broken up over several days), the feedback was more consistently in alignment with anticipated outcomes.

As the project team evaluated this development mid-summer, we became concerned that the longer time commitment might present a major barrier for future dissemination. We questioned if teachers and schools would have the time required not only play the game, but also to assemble materials and review the facilitators manual. It was decided that a second, supplementary activity would be developed and piloted offering teachers a less time and resource intensive option for introducing the topic of health and safety in the classroom. This activity (included in the facilitator's manual) preserves many of the features unique to CRASH (business simulation, scenario based, competitive outcome, etc...), but can be delivered at virtually no cost and in less than 40-60 minutes. While participants of the alternative curriculum did not walk away with the same depth of knowledge (particularly regarding the financial management implications), they did report improved awareness and understanding of basic health and safety at the same rates at CRASH! participants.

Another major lesson learned by the project team is the need for strong facilitation. We originally anticipated training our adult business volunteers to facilitate the game with their small group of students – each playing in their respective "company" room. We quickly identified that volunteers possess varying levels facilitation experiences, which impacted the overall outcome or success of the experience. The simulation, while representing a rather simplified business model, is still quite complex (perhaps more complex than we first envisioned). While this complexity contributes to richer leaning outcome, it can be challenging for the novice player to facilitate their own session – especially given time constraints. As the weeks progressed, we modified the facilitation so that multiple groups played together in one room at the same time. This way the adult volunteer could still guide their group of students through the simulation, but one or more experienced facilitators could provide the basic instructions to the larger group, and answer questions during game play. Ideally – fifty students total, with 5-7 student per table (board game) was the most successful scenario.

The CRASH simulation was evaluated through surveys distributed to students and through verbal feedback provided by adult volunteers during the afternoon "company advisor" meetings. Because the simulation was being tested throughout the summer, this feedback allowed for iterative adjustments improving the CRASH experience for adults and student as the summer progressed. Students reported the following outcomes for the final version of the simulation:

Better understanding of how accidents, injuries, and illness occur in the workplace: 100% yes
Better understanding of how prevention strategies are implemented in the workplace: 96% yes
More likely to follow safety rules and guidelines in my current or future workplace: 89% yes
Better understanding of the costs and benefits associated with health and safety: 96% yes
This is an effective way to learn about health and safety: 92% yes

Actual written feedback is highlighted under the feedback section below. Volunteer advisor feedback was also really positive (especially by the end of the summer when administrative kinks had been worked out). A couple have expressed interest in bring the simulation back their own companies and facilitating a session with managers.

The CRASH project served the following adult and youth audiences:

Business Week	750 Students	About 8% graduated seniors; 72% juniors &
Students, 2010 Summer Programs	representing about 200 high schools	sophomores; 20% freshmen.
Business volunteers who spend a full week mentoring high school students at Business Week	90 representatives from 35 different businesses in Washington	About 60% were new to the Business Week programs and 40% had previous experience working with teens.
Other adults in groups facilitated by Alicia Diefenbach, a speaker and trainer	20 adults from a variety of businesses	This group was independent of the Business Week program. Their experience was facilitated by Alicia Diefenbach.
Other students outside of the Business Week Program	50 students in the Seattle area.	Alicia Diefenbach facilitated some groups in schools and several outside of the school environment.

Ultimately, the project team was able to successfully accomplish all of our anticipated project goals, with minor only modifications (timing, design, etc...) along the way. We think the CRASH simulation is a huge success and are pleased to be able to share the final product with the public in the future. It has added a valuable exercise to our week long curriculum and will continue to benefit Business Week participants and volunteers in the future.

Measures to judge success

Survey and focus group sessions were designed explicitly to align with the stated outcomes for this project.

Relevant processes and Lessons Learned

Two major lessons (explained in greater detail under the "Statement of Results" section) were learned in the delivery of the CRASH simulation: timing and facilitation. The simulation takes at least 90 minutes to complete, although 2 or more hours is ideal. Additionally, strong facilitation is the key for positive participant outcomes. The game has a lot of elements and requires significant guidance to get participants started. Strong facilitation is also beneficial for the

debriefing following game play. Because the Business Week program serves a large number of students at one time (not totally authentic to a school experience) we asked a trained facilitator to test the simulation in a classroom setting. While she still encountered time constraints, she felt that the classroom experience was ideal — the right number of total students, high levels collegiality, and favorable room design. This appears to be the optimal conditions for delivery, assuming enough time can be set aside (in one session or over several sessions) to thoroughly play the game.

Product Dissemination

All materials, a training manual, and introductory video are now available online and free to the public. Through direct service, the simulation was promoted to adult volunteers and participants representing 45 different companies. Stephen Hyer, Project Manager for this grant program also introduced the simulation and the work being done by the project team at 26 events to more than 400 community members (a list highlighting some of these events is provided below). The simulation materials and website will also be made available to Washington Business Week program affiliates, including Junior Achievement, DECA, and FBLA. These organizations combined serve an additional 120,000 students annually and partner with hundreds of teachers in Washington State. Additionally, the AWB Institute has will promote CRASH to all of the 7,350 Association of Washington Business members.

Feedback

- It's not just regurgitating facts, but its applying them in real-life situations
- Because we came up with our own plans and strategy and actually got to use the knowledge we learned
- It helps us consider money, production income, and safety for the employees
- It was effective because the group activity allowed for the students to gain a better understanding of how to improve company safety
- I learned a lot about the rights of workers that I didn't know before
- It was effective because there is a creative portion to it
- It was really challenging, but helped us understand the costs of safety at work
- Helps us learn while doing stuff ourselves which gives us hands on experience
- It was a competition which made us want to learn.
- The business aspect of this game was fun, felt like we were really running our own business. It's important to protect your workers.

Sample Adult Participant Feedback:

This is a good means for considering the total financial impact of health and safety.
 Interesting to see it in the business context, we usually just hear about the impact to individuals

- The structure and format of the game work really well once you get started. Strong facilitation is really important early in game play, there is a lot to learn
- This was a fun exercise; helps underscore the importance of prevention. The business/profitability aspect of play was motivating, you really wanted to win!
- This is good, not only in content, but because it is collaborative you can work with your team to develop strategy. A good way to spice up an otherwise boring topic.

Sample Facilitator Feedback (Alicia Diefenbach, Contract Facilitator):

As within any educational environment, the physical set up of a room is key. An ideal physical environment for game play allows for a room of tables large enough to accommodate each game player around the board. This allows for maximum input and discussion amongst all players. Also, time is a major consideration – there is a lot to learn before play commences, so ample time must be provided to complete all four quarters. This was a major constraint for most sessions. Also, for classroom based sessions, it is important to consider set up (tables, etc...) – classrooms with individual desks are challenging.

Game Play:

The vast majority of participants indicated that the interactive experience is an ideal way to not only introduce, but to educate. Adult and teen participants alike expressed surprise not only at their interest in the data, but that learning about the subject of health and safety expense and prevention was enjoyable via interactive game play.

Accident and Injury Awareness:

Nearly all participants agreed that their awareness of accident and injury awareness was expanded by playing CRASH!

Adult players with past and current executive level experience did not experience enhanced awareness of accident and injury awareness, but did contribute to discussion endorsing the message of CRASH! and the importance of such awareness amongst all employees.

Willingness to Abide by Safety Standards:

All game players agreed that it makes good sense to abide by safety standards, rules, and regulations.

Teen groups discussed the challenges of insuring that employees follow those standards with regard to the financial investment their fictional fishing company made within the CRASH!

Teens were also surprised at the actual costs associated with protecting employees through safety measures in conjunction with government agencies that regulate workplace safety and enforce workers' rights with regard to workplace safety.

Understanding of Worker Rights:

Nearly all game players agreed that knowledge of workers' rights is not only important, but is a responsibility shared both by employer and employee. Teen participants were most often surprised that there is government regulation of safety and standards within all workplaces, and that these regulations are to benefit both employers and employees.

Increased Understanding of the Costs and Benefits to Businesses Investing In Safety Measures:

Game play opinions shared during discussion of expenses associated with safety measures differed amongst the age groups with a general consensus that such expenditures benefit both employer and employee.

Nearly all teens agreed that they would like their employers to spend maximum resources to keep their employees safe, and indicated a value for their employer caring about the work environment. When considering from the employer perspective, they agreed that safety measures should be taken that largely keep employees safe but that it's an expensive undertaking.

During adult participant game discussion, general consensus was that it's the responsibility of employers to provide a safe work environment for employees, but to find that place where minimum expense on safety and prevention measures meets regulatory requirements and provides maximum safety for employees.

Project's promotion of prevention

General workplace safety education often occurs at the point of employment via a short video or written manual. During that time, employees are inundated with all sorts of new information, forms to fill out and responsibilities to assume. It is no wonder that 110 workers in our state are killed yearly and over 200,000 employees report injury/illness in the workplace. Teens are particularly vulnerable as they have little exposure to the world of work. According to the 2009 Competitiveness Redbook, WA state ranks 3rd in the nation in accidents and injuries per 100 workers. Moreover, injury rates for teenagers are 2-3 times higher than they are for working adults (Washington Department of Labor and Industries).

While many workplace safety projects focus specifically on knowledge and enforcement, few focus on helping employees and employers accept the importance of prevention. Health and safety training is most successful if prevention is part of the "attitude" and "culture" of a workplace. In order to reduce the number of workplace accidents, illnesses and injuries, employers and employees must be 1) aware of common occurrences, 2) educated on prevention strategies, and 3) motivated to take proactive measures to protect themselves and their organization.

The CRASH simulation uses experiential learning as a motivational tool for helping participants to both understand and personalize a deeper knowledge of the costs and benefits associated with health and safety management. It introduces participants to the wide range of consequences associated with unsafe or unhealthy work environments. It then allows them to discover how effective risk management can mitigate risk and contribute to business succession. Participants walk away with a better appreciation for how their actions as an employee or as a manager can make a difference in personal safety, business success, and broader social prosperity. This new knowledge translates to better decision making on the job and a higher regard for risk management in general. The difference is "learning by doing."

Uses

How might the products of your project be used within the target industry at the end of your project?

Is there potential for the products of the project to be used in other industries or with different target audiences?

CRASH activities will continue to be used with future cohorts of Washington Business Week participants. The CRASH simulation has been tested effectively with teens and adults, and is appropriate for a wide range of audiences. We anticipate that the simulation will be useful in youth education, post-secondary workforce education programming, business training and management programs, and in ongoing professional development of current employees. It provides valuable learning outcomes to employees, managers, and business owners. It also is well suited for the classroom environment and makes a nice stand-alone unit in business education, industry training, and life skills classes.

Additional Information

Project Type		Industry Classification (check industry(s) this	
☐Best Practice		project reached directly)	
☐Technical Innovation		11 Agriculture, Forestry, Fishing and Hunting	
☐Training and Education Development		☐ 21 Mining ☐ 22 Utilities	
☐Event☐Intervention		23 Construction	
Research		31-33 Manufacturing	
☐Research ☐Other (Explain):		42 Wholesale Trade	
□Other (Explain):		44-45 Retail Trade	
		48-49 Transportation and Warehousing	
		51 Information	
Target Audianes		☐ 52 Finance and Insurance	
Target Audience:		☐ 53 Real Estate and Rental and Leasing	
		54 Professional, Scientific, and Technical Services	
High school teens in WA state.	ı	55 Management of Companies and Enterprises	
		☐ 56 Administrative and Support and Waste	
		Management and Remediation Services	
Languages:		☐ 62 Health Care and Social Assistance	
guuguu		71 Arts, Entertainment, and Recreation	
		72 Accommodation and Food Services	
English		81 Other Services (except Public Administration)	
		92 Public Administration	
Please provide the following in		List, by number above, industries that	
(information may not apply to all projects)	project products could potentially be	
# classes/events:		applied to.	
# hours trained			
# companies participating in project	75	Applicable to all audiences listed above.	
# students under 18	950		
# workers	150		
# companies represented	60	Potential impact (in number of persons or	
# reached (if awareness activities)		companies) after life of project? At the very	
Total reached	1235	least, 950 high school students and 100	
		business volunteers annually. Great potential	
		to reach thousands of additional students and	
		adults through dissemination activities and	
		free materials available online.	
Have there been requests for p	roject produ	cts from external sources? Not as of April	
2011. If Yes, please indicate sources of		,	

PART II

SAFETY AND HEALTH INVESTMENT PROJECTS SHIP Final Expenditure Report Budget Summary

Project Title: CRASH!

Project #: 2009XH00118 Contact Person: Steve Hver

April 1, 2010 Start Date:

Report Date: May 18, 2011 Contact #: 253-815-6900

Project Completion Date: March

31, 2011

Total budget for the project Total SHIP Grant Award	\$_99,217
	\$99,217
Total of SHIP Funds Used	\$_99,217
Budget Modifications (if applicable)	\$ Overage was added to in-kind
Total In-kind contributions	\$95,102
Total Expenditures (Lines 3 + 4 + 5)	\$194,319

Instructions:

- Complete the Supplemental Schedule (Budget) form first (on the next page).
- The final report must include all expenditures from date of completion of interim report through termination date of grant
- Indicate period covered by report by specifying the inclusive dates
- Report and itemize all expenditures during specified reporting period per the attached supplemental schedules
- Forms must be signed by authorized persons (see last page)
- Forward one copy of the report to (Name), SHIP Project Manager, PO Box 44612, Olympia, WA 98504-4612.

SAFETY AND HEALTH INVESTMENT PROJECTS

SHIP Final Expenditure Report Supplemental Schedules (Budget)

Project Title: CRASH!

Project#:

2009XH00118

Contact Person: Steve Hyer

Total Award S: 99,217

Report Date: May 18, 2011

Contact #: 253-815-6900

ITEMIZED BUDGET -- How were SHIP award funds used to achieve the purpose or your project?

A. PERSONNEL	Budgeted for Project	Actual	Difference
1. Steve Hyer, Project Manager, \$6500/mo at 15% =\$975 + fringe= \$234/mo	\$14,508	\$17,604	\$3,094
2. Grant Gilmore, AWBI, \$5300/mo at 15% =\$795 + fringe= \$191/mo	\$11,830	\$11,830	\$0
3. Tracey Turcotte, Program Manager, \$4100/mo at 30% =\$1230 + fringe=\$295/mo	\$12,202	\$13,148	\$946
4. Sharon Prager, Grant Manager, \$4300/mo at 15% =\$645 + fringe= \$155/mo	\$9,598	\$5,822	-\$3,775
5. Alisa Johnson, Admin Support, \$3100/mo at 15% =\$975 + fringe= \$122/mo	\$6,919	\$7,290	\$371
Fringe Benefits (specify rate and base): calculated at 24% of salary			
Subtotal	\$55,057	\$55,693	\$636

*Briefly explain why variances occurred: Sharon Prager left Washington Business Week during the summer of 2010. Any variance in allocation of hours is due to her absence and subsequent redistribution of duties related to this project. In aggregate, budgeted personnel costs are aligned well with actual costs. Any overage will be contributed in-kind by Washington Business Week.

B. SUB-CONTRACTORS	Budgeted for Project	Actual	Difference
1)Shannon Matson	\$11,520	\$11,520	\$0
2)Alicia Haus	\$ 4,000	\$ 4,000	\$0
Subtotal	\$15,520	\$15,520	\$0

C. TRAVEL	Budgeted for Project	Actual	Difference
Steve Hyer	\$1,749	\$2,310	\$561

Sharon Prager Shannon Matson	\$880 \$495	\$506 \$495	-\$374 \$0
Alicia Haus	\$165	\$165	\$0
Subtotal	\$3,389	\$3,476	\$187

*Briefly explain why variances occurred: Due to Sharon's early departure from the project, some of her mileage was transferred to cover additional duties assumed by Steve Hyer. Also, Steve's was able to make more presentations and attend more community outreach events than first anticipated. Any overage will be contributed in-kind by Washington Business Week.

D. SUPPLIES (itemize by category)	Budgeted for Project	Actual	Difference
Game Boards and Pieces	\$9,600	\$9,600	\$0
Conference Fees	\$750	\$750	\$0
Subtotal	\$10,350	\$10,350	\$0
*Briefly explain why variances occurred:			1 11 11 11 11 11

E. PUBLICATIONS (production and dissemination)	Budgeted for Project	Actual	Difference
1)Training Manuals 2)Copies	\$800 \$5,180	\$800 \$5,360	\$0 \$179
Subtotal	\$5,980	\$6,160	\$179

*Briefly explain why variances occurred: We ended up with more drafts of the game through the testing phase than first anticipated. Any overage will be contributed in-kind by Washington Business Week.

F	Budgeted for Project	Actual	Difference
DIRECT COSTS (sum of A through E)	\$90,196	\$91,199	\$1,003
INDIRECT COSTS (Specify rate and base – not to exceed 10% of direct costs)	\$9,020	\$9,120	\$100
TOTAL	\$99,217	\$100,319	\$1,102*

*Washington Business Week is contributing any actual costs exceeding the SHIP approved budget as an inkind contribution to the project – see below.

IN-KIND CONTRIBUTIONS	Budgeted for Project	Amount Paid
Project Costs Above SHIP Funding	\$0	\$1,102
WBW Student Services	\$5,000	\$5,000
AWBI Additional Services	\$1,200	\$1,200
On-site Costs	\$30,000	\$30,000
Volunteer Services	\$3,000	\$3,000
Value of Volunteer Time	\$54,800	\$54,800
Subtotal	\$94,000	\$95,102

I hereby certify that the foregoing report is true in all respects and that the expenditures have been made with the provisions of the SHIP grant and for the purposes approved:

Foundation For Private Enterprise	Stephen A. Hyer
Education	Executive Director
Washington Business Week	
33305 1 st Way S, B-212	W .
Federal Way, WA 98003	EW.
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I hereby certify that the expenditure	es listed on this report were made with my
approval:	a marl
5/18/11	la Har
Date	Signature of Project Manager

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